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Administrative Law Judge	:	A. Rosas
Public Advocates Office	:	K. Do (née Nguyen)
Witness(es)	:	

PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

REPORT ON CUSTOMER SERVICE, ESJ PLAN, PLANT FOR CHICO, OROVILLE, MARYSVILLE, WILLOWS AND DIXON, AND MULTIPLE COMMON PLANT ISSUES

California Water Service Company
General Rate Case

Application 24-07-003

San Francisco, California
January 28, 2025

555904277

TABLE OF CONTENTS

Page

MEMORANDUM I

CHAPTER 1 CUSTOMER SERVICE 1-1

I. INTRODUCTION 1-1

II. SUMMARY OF RECOMMENDATIONS 1-1

III. ANALYSIS 1-1

A. General Order 103-A Compliance 1-1

B. Customer Contacts Received by CPUC's Consumer Affairs Branch 1-2

C. Customer Complaints Received by CWS 1-3

D. CWS's Safety Program 1-3

IV. CUSTOMER CONCERNS REGARDING HIGH BILLS 1-4

V. CONCLUSION 1-5

CHAPTER 2 ENVIRONMENTAL AND SOCIAL JUSTICE ACTION PLAN 2-1

I. INTRODUCTION 2-1

II. SUMMARY OF RECOMMENDATIONS 2-1

III. ANALYSIS 2-2

IV. CONCLUSION 2-3

CHAPTER 3 CARRYOVER PROJECTS 3-1

I. IN PROGRESS PROJECTS (CARRYOVER PROJECTS) 3-1

CHAPTER 4 NORTHERN VALLEY REGION (CHICO AND OROVILLE) PLANT 4-1

I. INTRODUCTION 4-1

II. SUMMARY OF RECOMMENDATIONS 4-1

III. ANALYSIS – CHICO DISTRICT 4-2

A. Specific Projects 4-2

1. PID #133034 400 Zone Wildfire Pump Storage Facility 4-2

B. Under Threshold Projects 4-3

1. PID# 133029 and PID# 123979 CH 050 Partial Station

Rebuild 4-4
2. PID# 133030 CH 080 Automatic Discharge Valve 4-5
CWS includes a 10% contingency in its direct cost estimates for the Automatic Discharge Valve 4-5
3. PID# 133031 CH 064 New Generator 4-5
Further discussion on generators is located 4-5
IV. ANALYSIS – OROVILLE DISTRICT 4-6
A. Specific Projects 4-6
1. PID # 133123, #133124, #133125-Station 015 Treatment Plant Improvements, Chlorine System, and Sediment Basin Pipeline Improvement 4-6
V. CONCLUSION 4-7
CHAPTER 5 MARYSVILLE PLANT 5-1
I. INTRODUCTION 5-1
II. SUMMARY OF RECOMMENDATIONS 5-1
III. ANALYSIS 5-2
A. Specific Projects 5-2
1. PID #133118 – Marysville Well Siting Study 5-2
2. PID #133119 – Well Property Acquisition 5-2
A. Under the Threshold Project 5-3
1. PID # 133402 MRL Fire Flow/Hydrant Testing Equipment 5-3
IV. CONCLUSION 5-4
CHAPTER 6 COMMON PLANT: PUMP AND MOTOR REPLACEMENT 6-1
I. INTRODUCTION 6-1
II. SUMMARY OF RECOMMENDATIONS 6-1
III. ANALYSIS 6-2
IV. CONCLUSION 6-3
CHAPTER 7 COMMON PLANT: CATHODIC PROTECTION SYSTEMS IMPROVEMENT PROGRAM 7-1
I. INTRODUCTION 7-1

II. SUMMARY OF RECOMMENDATIONS....7-1
III. ANALYSIS....7-2
IV. CONCLUSION....7-2
CHAPTER 8 COMMON PLANT: SERVICE LINE REPLACEMENT PROGRAM....8-1
I. INTRODUCTION....8-1
II. SUMMARY OF RECOMMENDATIONS....8-1
III. ANALYSIS....8-2
IV. CONCLUSION....8-2
CHAPTER 9 COMMON PLANT: CONTROL VALVE OVERHAUL....9-5
I. INTRODUCTION....9-5
II. SUMMARY OF RECOMMENDATIONS....9-5
III. ANALYSIS....9-5
IV. CONCLUSION....9-6
CHAPTER 10 COMMON PLANT: MOTOR CONTROL CENTERS AND PANELBOARD REPLACEMENT....10-1
I. INTRODUCTION....10-1
II. SUMMARY OF RECOMMENDATIONS....10-1
III. ANALYSIS....10-2
IV. CONCLUSION....10-2
CHAPTER 11 COMMON PLANT: NEW GENERATORS AND REPLACEMENTS....11-1
I. INTRODUCTION....11-1
II. SUMMARY OF RECOMMENDATIONS....11-1
III. ANALYSIS....11-1
IV. CONCLUSION....11-3
CHAPTER 12 COMMON PLANT: LAND HELD FOR FUTURE USE....12-1
I. INTRODUCTION....12-1
II. SUMMARY OF RECOMMENDATIONS....12-1
III. ANALYSIS....12-1
A. Land in Rate Base but Not in Service....12-1

IV. CONCLUSION 12-3
APPENDIX A – Qualification Sof Witness
APPENDIX B - Common Plant CWS versus Cal Advocates Budget Comparison
ATTACAHMENTS

MEMORANDUM

The Public Advocates Office at the California Public Utilities Commission ("Cal Advocates") examined application material, data request responses, and other information presented by California Water Service Company ("Cal Water or CWS") in Application ("A.") 24-07-003 to provide the California Public Utilities Commission ("Commission" or "CPUC") with recommendations in the interests of ratepayers for safe and reliable service at the lowest cost. Katherine Do (née Nguyen) prepare this report under the general supervision of Program Manager Richard Rauschmeier, Program and Project Supervisor Syreeta Gibbs, and Project Lead Edward Scher. Emily Fisher and Megan Delaporta are Cal Advocates' legal counsel.

Although every effort was made to comprehensively review, analyze, and provide the Commission with recommendations on each ratemaking and policy aspect presented in the Application, the absence from Cal Advocates' testimony of any particular issue connotes neither agreement nor disagreement of the underlying request, methodology, or policy position related to that issue.

CHAPTER 1 CUSTOMER SERVICE

I. INTRODUCTION

This chapter presents Cal Advocates' analysis and recommendations for California Water Service Company (Cal Water or CWS) customer service and reporting standards.

II. SUMMARY OF RECOMMENDATIONS

CWS complies with customer service and reporting standards per General Order 103-A Appendix E. However, affordability is a significant concern for CWS ratepayers, based on customer complaints.

III. ANALYSIS

A. General Order 103-A Compliance

General Order (GO) 103-A requires annual reporting on customer service quality standards.[1] CWS appears to be compliant with GO-103-A Appendix E standards. Results are shown in Table 1-1 below.[2]

Table 1-3: GO 103-A Appendix E Performance Results[3]

	2019	2020	2021	2023	2023
Telephone Performance Standards Results					
Call Answer Performance ≥ 80%	91%	94%	93%	90%	87%
Abandoned Call Rate ≤ 5%	2%	1%	1%	1%	1%
Billing Performance Standards Results					

[1] General Order (GO) 103-A at Appendix E 1 to 6. https://docs.cpuc.ca.gov/PUBLISHED/Graphics/107118.PDF

[2] Attachment 1-1, CWS Response to Cal Advocates' Data Request (DR) KN3-005, Questions 1 - 4 at 2-15 and Attachment "KN3-005 Attachment #1 Standards and Performance."

[3] Attachment 1-1, CWS Response to DR KN3-005 (GO 103-A Appendix E) Question 1 - 4, Attachment "KN3-005 Attachment #1 Standards and Performance."

Bill Rendering ≥99%	100%	100%	100%	100%	100%
Bill Accuracy ≤ 3.0%	0.2%	0.2%	0.2%	0.2%	0.2%
Payment Posting Error ≤ 1%	-	-	-	-	-
Meter Reading Performance Standards Results					
% Meters not read ≤ 3.0%	0.3%	1.4%	0.7%	0.5%	0.8%
Work Completion Performance Standards Results					
Work completion ≤ 5%	0.5%	0.3%	0.7%	0.2%	0.1%

B. Customer Contacts Received by CPUC's Consumer Affairs Branch

The Commission's Consumer Affairs Branch (CAB) is responsible for assisting consumers with questions and informally resolving disputes with their utility service providers.[4] As part of the current GRC, Cal Advocates examined CAB's data on contacts from CWS's customers during the past five years (2019-2023).

CAB categorizes customer contacts into five types. Table 1-2 below summarizes CWS's customer contacts with CAB by type from 2019 through 2023.

Table 1-2: Contacts Received by CAB from CWS Customers Annually[5]

Types of Contact	2019	2020	2021	2022	2023
Complaint	8	6	5	5	7

[4] Consumer Affairs Branch https://www.cpuc.ca.gov/about-cpuc/divisions/news-and-public-information-office/consumer-affairs-branch

[5] Attachment 1-3 "Standard Disclosures for CAB Data" CPUC Consumer Service and Information Division, revised August 23, 2024.

Informal Complaint	36	22	36	31	36
Phone Contact	136	108	88	190	218
Inquiry	N/A	N/A	N/A	N/A	N/A
Misdirected	3	1	3	3	2
Total Contacts	183	137	132	229	508

C. Customer Complaints Received by CWS

GO103-A, Appendix E, Section 5, states that the percentage of complaints forwarded from the CAB to the utility for resolution must be less than or equal to 0.1% of total customers, as shown in Table 1-3 below.[6] CWS's customer complaint resolution performance was at 0.01% between 2019 to 2023.

Table 1-3: CWS GO-103A Response to Regulatory Complaints Performance Standard

	2019	2020	2021	2022	2023
No. of Complaints Reported to Utility[7]	44	28	41	36	43
No. of Customers[8]	502,420	505,358	507,912	509,877	511,533
No. Complaints as % of Customers	0.01%	0.01%	0.01%	0.01%	0.01%
GO-103A Compliance Status (≤ 0.1%)	Compliant	Compliant	Compliant	Compliant	Compliant

D. CWS's Safety Program

The Commission should find CWS's safety program to be sufficient. CWS provided the Risk and Resilience Assessments (RRAs) and has an Emergency Response Plan (ERP) in place.[9]

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[6] GO 103-A, Appendix E at 5. https://docs.cpuc.ca.gov/PUBLISHED/Graphics/107118.PDF

[7] Attachment 1-3 "Standard Disclosures for CAB Data" CPUC Consumer Service and Information Division, revised August 23, 2024.

[8] A.24-07-003 All Districts RO Books at Chapter 2.

[9] Attachment 1-2, CWS's response to Cal Advocates' Data Request JMI-008, Question 1.d at 6. The ERP and RRA for each district is confidential. The confidential attachments #1-31 are not included with this

Cal Advocates reviewed CWS's compliance with the America's Water Infrastructure Act (AWIA), which requires CWS to provide proof of submission of a Risk and Resilience Assessment Certification (RRAC) to the United States Environmental Protection Agency (EPA) for water systems serving more than 3,300 people.[10] CWS submitted a RRAC for all its districts except for the Antelope Valley, Kern River Valley, and Redwood Valley districts, customer service areas on June 25, 2021 as these districts serves less than 3,300 people.[11] CWS's safety program meets regulatory requirements.

IV. CUSTOMER CONCERNS REGARDING HIGH BILLS

The CPUC's Consumer Affairs Branch (CAB) recorded 191 customer complaints between 2019 to 2023."[12] Out of these 191 complaints, approximately 50 percent were associated with "high bills."[13] Customers' concern with CWS high bills is even more apparent in the written comments on the CPUC docket for the 2024 GRC application. Since the 2024 GRC application was filed in July 2024, there have been 25 public comments submitted that voice concern over rate increases.[14]

On the CPUC public comments docket, one customer from the San Carlos District writes, "My rate went from $65.67 in April to … $388.28 in July … You are forcing families out."[15] Another 18 public comments raised the specific concern of the doubling of their bills or of other concerns regarding the rate increase.

Report).

[10] Attachment 1-2, CWS's response to Cal Advocates' Data Request JMI-008, Question 1.a. and 1.b. at 4 to 5.

[11] Attachment 1-2, CWS's response to Cal Advocates' Data Request JMI-008, Question 1a at 3. Note: AWIA does not require an RRAC from districts serving less than 3,300 people.

[12] See Table 1-2: Contacts Received by CAB from CWS Customers Annually

[13] Attachment 1-3 "Standard Disclosures for CAB Data" CPUC Consumer Service and Information Division, revised August 23, 2024.

[14] A.24-07-003, Public Comment Docket. https://apps.cpuc.ca.gov/apex/f?p=401:65::::::

[15] A.24-07-003, Public Comment Docket. Peggy Reinders from San Carolos CA 94070 (August 23, 2024) https://apps.cpuc.ca.gov/apex/f?p=401:65::::::

Another channel through which customers have voiced their concerns is a city council meeting. On October 15, 2024, the City of San Carlos held a city council meeting that included an agenda where CWS customers voiced concerns on the rate increase and council members could question a CPUC representative that was present about the increase.[16]

With ratepayer frustration increasing over high CWS customer bills, the Commission should consider what additional burden customers would face with the proposals of CWS in this application.

V. CONCLUSION

CWS is compliant with GO 103-A standards and maintains a safety program that is sufficient and in compliance with the AWIA. However, based on customer bill complaints the Commission should adopt all reasonable measure to provide customers with rate relief.

[16] San Carlos City Council Meeting. Dated Tuesday October 15, 2024 City Council Tues, 10.15.24 Regular Meeting.

LIST OF ATTACHMENTS FOR CHAPTER 1

	Attachment #	Description
1	Attachment 1-1	CWS Water Response to DR KN3-005
2	Attachment 1-2	CWS Response to DR JMI-008 (AWIA Compliance)

CHAPTER 2 ENVIRONMENTAL AND SOCIAL JUSTICE ACTION PLAN

I. INTRODUCTION

This section addresses whether CWS' proposed 2024 GRC projects achieve the goals of the Commission's Environmental and Social Justice (ESJ) Action Plan.[17] In February 2019, the CPUC released the first version of an ESJ Action Plan to regulate essential utility services, to protect consumers and safeguard the environment, and assure safe and reliable access to ALL Californians.[18] CWS submitted numerous capital projects and measures that it claims meet the Commission's Action Plan for ESJ communities.

II. SUMMARY OF RECOMMENDATIONS

CWS presented a list of 1492 capital projects, along with other measures, to meet the Commission's ESJ Goals.[19],[20] These CWS proposed programs, plans, and operations are evaluated in a separate sections of Cal Advocates' testimony. Each witness for Cal has prepared analysis on whether the proposed projects are reasonable. This chapter analyzes whether the proposed projects encompass the Commission's intended ESJ Goals in ESJ communities.[21] The Commission should find that approximately 37% of CWS's capital projects intended to meet ESJ Goals are within ESJ communities as defined by CalEnviroScreen 4.0. census tracts.

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[17] A.24-07-003, Assigned Commissioner's Scoping Memo and Ruling, Issue 11 at 3 (filed November 8, 2024).

[18] Environmental and Social Justice Action Plan Version 1.0. https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/reports/env-and-social-justice-actionplan-20190221docx.pdfv

[19] Attachment 2-1, CWS Response to DR KN3-001, Attachment 1 – Projects Supporting ESJ Goals.xls; .

[20] A.24-07-003. CWS Testimony Book 3 at 60-74.

[21] The CPUC's Environmental and Social Justice (ESJ) Action Plan 1.0 established an ESJ Communities Definition as residents identified as predominantly communities of color or low income, underrepresented in policy setting, subject to more environmental hazards, and likely to experience disparate implantation of environmental regulations and socio-economic investments in their communities. CPUC ESJ Action Plan 2.0 at 2, available at https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/esj-action-plan-v2jw.pdf.

III. ANALYSIS

According to the CPUC, "[the] ESJ Action Plan establishes a series of goals related to health and safety, consumer protection, program benefits, and enforcement in all sectors the CPUC regulates. The goals include making sure members of ESJ communities participate in CPUC proceedings and decision making and that investments in clean energy resources, transportation and communication services benefit all communities."[22] CWS submitted projects meeting goals two, three, four, and six for review, which are specifically defined for ESJ communities.

CWS claims that the proposed measures and projects target ESJ Action Plan goals, including the company's low-income customer assistance program, capital improvement program, advanced metering infrastructure program, customer outreach, and wildfire management.[23] However, CWS's inclusion of these projects and investments in the ESJ section of its application should not be viewed by the Commission as justifying the need or reasonableness of the proposed project.

Cal Advocates used the CalEnviroScreen4.0 census tract to define ESJ communities as it is mapped by GIS (Geographical Information System), and well-known to the Commission.[24] CalEnviroScreen4.0 provides census tracts with a score, and census tracts that score in the top 25% are identified as disadvantaged communities.[25] Utilizing a CWS's list of capital projects intended to support ESJ goals, Cal Advocates was able to identify which projects fall within districts scored in the top 25% of

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[22] "ESJ Action Plan Goals," *Environmental and Social Justice Action Plan*, CPUC, available at https://www.cpuc.ca.gov/news-and-updates/newsroom/environmental-and-social-justice-action-plan.

[23] A.24-07-003 Testimony Book #3 at 60, line 5 to 11.

[24] This method identified Bakersfield, Northern Valley Region, Dixon, Kern River Vally, South Bay Region (Dominguez), East LA, Marysville, Monterey, Selma, Stockton, Visalia, and Willows as ESJ communities. This is in close comparison to CWS' method in Testimony Book #3 at 61:20 - 24. However, Cal Advocates' method for identifying ESJ communities excludes the Palos Verdes as an ESJ community.

[25] CPUC ESJ Action Plan 2.0 at 2, available at https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/esj-action-plan-v2jw.pdf.

CalEnviroScreen4.0. Only 548 out of the proposed 1492 (37%) capital projects are located within ESJ communities.

IV. CONCLUSION

"Environmental justice" means "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."[26] CWS provides an action plan that includes 1492 capital projects intended to achieve the Commission's ESJ goals, but only 37% of these capital projects occur in ESJ communities.

[26] "About the ESJ Action Plan," *Environmental and Social Justice Action Plan*, CPUC, available at https://www.cpuc.ca.gov/news-and-updates/newsroom/environmental-and-social-justice-action-plan.

LIST OF ATTACHMENTS FOR CHAPTER 2

	Attachment #	Description
1	Attachment 2-1	CWS Response to DR KN3-001

CHAPTER 3 CARRYOVER PROJECTS

I. IN PROGRESS PROJECTS (CARRYOVER PROJECTS)[27]

The Commission should deny CWS's request to include previously funded but incomplete projects (carryovers) into rate base.

For the Chico, Marysville, Oroville, Willows, and Dixon districts, there are 25 projects designated as "In Progress" that have already been funded through rates in the previous GRC under the assumption that they would have been providing service. CWS provides a list of reasons for project delays, but they do not justify burdening ratepayers with paying for projects multiple times without realizing any benefit. The Commission's role is to act a substitute for competition,[28] and in a competitive market, CWS would not be able to charge customers profit on incomplete projects.

For further information and specific budget adjustments on In Progress Projects (carryovers), see the direct testimony of Mr. Sari Ibrahim.

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[27] In Progress Projects includes non-specific, over-schedule, and other in progress projects.

[28] "Our objective through regulation is to act as a substitute for competition." D.96-04-050, citing D.86-08-083.

CHAPTER 4 NORTHERN VALLEY REGION (CHICO AND OROVILLE) PLANT

I. INTRODUCTION

This chapter presents analyses and recommendations for Plant in Service for CWS's Northern Valley Region (Chico and Oroville Districts).

CWS requests approximately $67 million for 2025-2027 in the Northern Valley Region.[29] This amount is approximately 20% higher than CWS's recorded plant additions from 2021-2023 in the same region.[30]

The following recommendation on CWS' proposed plant additions also reflect recommendations in Cal Advocates' Common Plant Issues testimony regarding control valve overhauls and replacements, cathodic protection systems and components replacements, generator replacements, service replacements, panelboard replacements, water quality analyzers, meter vault lid replacements, pressure vessel replacements, main replacements, pump and motor replacements, physical security upgrades, vehicle replacements, unscheduled and non-specific projects.

II. SUMMARY OF RECOMMENDATIONS

The Commission should:

Chico District-

- Deny CWS's requested placement of $2,753,487 in 2027 rate base for the 400 Zone Wildfire Pump Storage Facility because the project will not be in service by the end of the period during which rates are being established in this GRC;
- Deny CWS's requested $682,011 in 2026 to fund the proposed Station 050 partial rebuild because CWS has not provided evidence that the station will be in service by the end of the 2024 GRC;

[29] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx.

[30] Recorded 2021-2023 for Chico and Oroville Districts was $52,762,305. California Water Service Company (CWS) North Valley Region Results of Operation (RO) 2024 General Rate Case (GRC) at 95 - 96.

- Deny CWS's budget request for $456,045 in 2027 to install a new fixed generator at CH 064. CWS should also explore more cost-effective alternatives, such as a mobile generator.

Oroville District-

- Deny a total budget request for $2,213,746 in 2027 for CWS's short-term improvements for working measures that will become obsolete by the end of the 2027 GRC period.

III. ANALYSIS – CHICO DISTRICT

The following discussion presents Cal Advocates' analyses and recommended adjustments to CWS's requested capital budget for specific projects and projects that are under the threshold for providing specific justification (under the threshold projects have a direct cost less than $700,000).[31] Cal Advocates' recommended budget removes contingency and other cost adders. See the direct testimony of Mr. Sari Ibrahim on cost adders for further discussion.

A. Specific Projects

1. PID #133034 400 Zone Wildfire Pump Storage Facility

The Commission should deny CWS's budget request for $2,752,487 in 2027 to build a new pump storage facility, because the project will not be in service by the end of the period during which rates are being established in this GRC.

The surveying, design, and permitting for the storage facility will be completed under PID #124797.[32] In its 2024 general rate case (GRC), CWS states that it has not finalized the design process or determined the scope for drainage and piping for the project.[33] CWS also indicates that it has not acquired the required local permits for the

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[31] A.24-07-003, CWS North Valley Region Capital Project Justification Book North Valley Region at NVR PJ-8. Note: Each district has a different project threshold.

[32] Cal Advocates did not protest the proposed project in the 2021 general rate case (GRC).

[33] A.24-07-003, CWS North Valley Region Capital Project Justification (PJ) Book at NVR PJ-19. "As the site for this pump storage facility has not been finalized yet, the scope for site specific items such as…drainage and piping are still to be determined."

proposed project.[34] In fact, as of December 13, 2024, CWS has not begun permitting due to being in the process of acquiring the land to install the pump storage facility.[35] Once, CWS acquires the property, they will begin the design and permitting process.[36] Based on CWS's failure to complete the design process for this project as scheduled, it's highly uncertain whether the pump storage facility will provide service to ratepayers by the end of 2027. Therefore, the Commission should deny CWS's budget request for the proposed pump storage facility in the 2024 GRC. CWS can request to add this project to rate base when the pump storage facility is in service.

Permitting issues are just one of fourteen different reasons CWS provides to explain the delays that led to many projects being over budget and/or over-schedule.[37] Other reasons for delay offered by CWS include unexpected issues with material, consultation availability, and Covid-19's impacts to the supply chain.[38] However, these factors are common in the construction industry and are not unique or exclusive to CWS. It is CWS's responsibility to schedule and prioritize its projects to meet the proposed completion date it provides in each GRC. Therefore, the Commission should hold CWS responsible for its failure to fulfill its project management responsibilities and prevent ratepayers from continuing to fund CWS profit on projects that are not complete.

B. Under Threshold Projects

For the Chico District, CWS categorizes capital projects with a direct cost under $700,000 as under the threshold projects.[39] CWS does not provide a detailed written justification for these projects.

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[34] CWS North Valley Region PJ Book at NVR PJ-19. "Local permitting may impose additional aesthetic requirements." This indicates that CWS has not acquired all permits to begin construction.

[35] Attachment 4-2: CWS Response to Data Request KN3-010, question 5.b at 8.

[36] Attachment 4-2: CWS Response to Data Request KN3-010, question 5.b. at 8.

[37] A.24-07-003, CWS North Valley Region PJ Book at NVR PJ-46 - 48.

[38] A.24-07-003, CWS North Valley Region PJ Book at NVR PJ-46 –47.

[39] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-8. Note: Each district has a different project threshold.

1. PID# 133029 and PID# 123979 CH 050 Partial Station Rebuild

The Commission should deny CWS's budget request for carryover project PID# 123979 of $211,733 in 2024 to complete the design step and newly proposed PID# 133029 of $682,011 in 2026 toconstruct a station rebuild, because CWS has not provided evidence that the station will be in service by the end of the 2024 GRC. Rate payers will not see any benefit before the proposed completion date.[40] Approving the project to be added to rate base prior to the completion of the project would result in ratepayers funding unreasonable costs (including utility profit) without the benefit of a functional product.

The CH 050 Partial Station rebuild is a multi-step project (design and construction).[41] In the 2021 GRC, under PID# 123979, CWS requested a budget for the design step of the rebuild, to be completed by the end of 2023.[42] CWS did not complete the rebuild design by the end of 2023 and claims that the design will now be completed by the end of 2024.[43] In this GRC, CWS estimates that construction will be completed by May of 2026.[44] However, due to the schedule delays that CWS has experienced to-date, it is highly uncertain that the design step of this project will be completed on time in order to complete the construction step during the period in which rates are being established in this proceeding. If CWS manages to overcome its schedule delays and complete the station rebuild by the proposed 2026 date, then it can recover the cost of

[40] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-7. Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-006 Attachment 1.xlsx.

[41] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-55. Note: Each district has a different project threshold.

[42] Attachment 4-3: A.21-07-002 Project Justification Book Chico at CH PJ-43.

[43] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx.

[44] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-006 Attachment 1.xlsx.

design and construction in its 2027 GRC. However, ratepayers should not be required to repeatedly pay for a project that has failed to provide service.

The Commission should therefore deny CWS's budget request and should only approve the budget when the utility can provide evidence that the station rebuild is complete and providing service to ratepayers.

2. PID# 133030 CH 080 Automatic Discharge Valve

The Commission should approve an adjusted budget of $262,809 in 2026 for the automatic discharge valve at Station CH 80. This recommendation is the CWS requested budget excluding the 10% contingency cost.[45]

CWS includes a 10% contingency in its direct cost estimates for the Automatic Discharge Valve.[46] The Commission should remove project contingency from the proposed project budget, consistent with Cal Advocates' direct testimony by Mr. Sari Ibrahim.

3. PID# 133031 CH 064 New Generator

In accordance with Cal Advocates' analysis and review on generators in Chapter 13, the Commission should deny the funding for a proposed fixed generator in the Chico District. Historically, CWS has not been able to complete its projects by the proposed completion dates. CWS admits that the fixed generators proposed in the 2021 GRC in the Visalia and Stockton Districts are not complete. Moreover, the proposed generator at the Stockton District is still in the preliminary design phase of the project, and equipment has not been procured yet.

To protect ratepayers from repeatedly funding projects without receiving any of the intended benefits, CWS should seek cost recovery for the CH 064 generator once it is in service.

Further discussion on generators is located in Chapter 11.

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[45] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-006 Attachment 1.xlsx.

[46] Attachment 4-1: CWS Response to DR SIH-006 (Proposed Capital Projects), SIH-006 Attachment 1.xlsx.

IV. ANALYSIS – OROVILLE DISTRICT

The following discussion presents Cal Advocates' analyses and recommended adjustments to CWS's Orville District requested capital budget. Contingency has been removed for all project recommendations based on the direct testimony of Mr. Sari Ibrahim.

A. Specific Projects

1. PID # 133123, #133124, #133125-Station 015 Treatment Plant Improvements, Chlorine System, and Sediment Basin Pipeline Improvement

The Commission should deny CWS's requested total budget of $2,213,746 in 2027 for Station 015 Improvements.[47] The proposed Station 015 Improvements include three projects under three different PIDs: preliminary design of the new flocculation/sedimentation basin and sludge removal by remote operated vehicle (ROV)(PID #133123), chlorine system replacement (PID #133124), and widening existing outlet drain (PID #133125).[48], The proposed sludge removal and widening of an existing outlet drain are short-term improvements to Station 015 while CWS works on implementing a new flocculation and sedimentation treatment train where all the above requested short-term improvements will be unnecessary as soon as the end of the 2027 GRC period.[49]

On top of the improvements being short-term, the Orville District currently already has working measures set up to deal with the issues that it is proposing short-term improvements for in the 2024 GRC.

There are also problems associated the short-term improvements that CWS has stated, for the ROV sludge removal, the rate of sludge being withdrawn by the ROV may

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[47] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-47 to 88 to 89, 93, and 99.

[48] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-82.

[49] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-98. "The proposed project scope for the 2027 GRC includes: Construction of a new 7.2 MGD flocculation and sedimentation basin equipped with plate settlers and telescopic sludge collection system."

not be sufficient for CWS intentions and additional operations will be needed.[50] This project proposal also involves a possible purchase of an ROV which would become obsolete when CWS completes the sedimentation/flocculation basin project in the 2027 GRC.[51]

For PID #133124, CWS proposes to replace a chlorine treatment system that is currently functional.[52] Due to the functionality of the chlorine treatment system and the upcoming large multi-million-dollar operations to construct the flocculation/sedimentation basin, it is likely that CWS may propose alternative solutions to the chlorine treatment system and once again a proposed project for Station 015 in the 2024 GRC becomes obsolete. Which would leave ratepayers funding three different projects without any long-term benefits.

V. CONCLUSION

The Commission should deny CWS's proposed funding for projects that are short-term improvements on top of working measures CWS currently already has in place. These improvements will also become obsolete by the end of the 2027 GRC period following CWS's multi-million-dollar treatment plant additions.

[50] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-96 and NVR PJ-85.

[51] A.24-07-003, Project Justification Book North Valley Region at NVR PJ-96 and NVR PJ-85. "These vehicles can be purchased or rented form vendors."

[52] A.24-07-003 Project Justification Book North Valley Region at NVR PJ-90.

Table 4-1: Summary of Cal Advocates' Recommendations

Year		2025		2026		2027	
Description		(A)	(B)	(C)	(D)	(E)	(F)
	PID	CWS	Cal Adv	CWS	Cal Adv	CWS	Cal Adv
400 Zone Wildfire Pump Storage Facility	133118	-	-	-	-	$2,753,487	$0
Station 050 Partial Rebuild	133029	-	-	$682,011	$0	-	-
CH064 New Generator	133031	-	-	-	-	$456,045	$0
Automatic Discharge Valve	133030	-	-	$298,800	$262,809	-	-
Oro Station 015-Treatment Plant	133123,	-	-	-	-	$1,95,620	$0
	133124,	-	-	-	-	$603,798	$0
	133125	-	-	-	-	$404,692	$0

LIST OF ATTACHMENTS FOR CHAPTER 4

	Attachment #	Description
1	Attachment 4-1	CWS Response to Data Request SIH-006 (Proposed Capital Projects
2	Attachment 4-2	CWS Response to DR KN3-010
3	Attachment 4-3	CH_2021_GRC_Justification_Book_FINAL
4	Attachment 4-4	CWS Response to DR KN3-007

CHAPTER 5 MARYSVILLE PLANT

I. INTRODUCTION

This chapter presents analyses and recommendations for Plant in Service for CWS's Marysville District.

CWS requests approximately $6.5 million for 2025-2027 in the Marysville District.[53] This amount is approximately 30% higher than CWS's recorded plant additions from 2021-2023 in the same region.[54]

The recommendations on CWS's proposed plant additions also reflect recommendations from Cal Advocates' Common Plant Issues testimony regarding control valve overhauls and replacements, cathodic protection systems and components replacements, generator replacements, service replacements, panelboard replacements, water quality analyzers, meter vault lid replacements, pressure vessel replacements, main replacements, pump and motor replacements, physical security upgrades, vehicle replacements, unscheduled and non-specific projects.

II. SUMMARY OF RECOMMENDATIONS

The Commission should:

- Deny the well siting study budget of $206,261 in 2026 because it provides no benefit to ratepayers;
- Deny the requested $614,396 in 2027 to purchase land for a future well site because land not in use does not provide benefits to ratepayers and could lead to unfairly burdening ratepayers with maintenance expenses; and
- The Commission should remove the 10% added project contingency from CWS's proposed project budget, consistent with Cal Advocates' recommendation regarding contingency.

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[53] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx.

[54] Recorded total costs for 2021-2023 was $4,435,347. A. 24-07-003 CWS Marysville RO 2024 GRC at 77.

III. ANALYSIS

The following discussion presents Cal Advocates' analyses and recommended adjustments to CWS's requested capital budget for specific projects and under the threshold projects. Cal Advocates removes the added contingency on all project recommendations. See direct testimony of Mr. Sari Ibrahim for further discussion on contingency.

A. Specific Projects

1. PID #133118 – Marysville Well Siting Study

The Commission should remove $206,261 from CWS's requested budget for the well siting study because it provides no benefit to ratepayers.[55]

The benefits related to the proposed well siting study are speculative at this time because the results of these studies are unknown until completed. CWS's request to receive profit on an incomplete and inconclusive study would shift the entire risk of the proposed study onto ratepayers, as the study may not result in an actual project. Ratepayers should only pay for in-service projects that provide tangible ratepayer benefits. CWS should request the cost of a well siting study in a future rate case after the results of the study are determined will lead to a useful project for ratepayers. For this rate case, the Commission should deny CWS' request for advance ratepayer funding of the proposed study.

2. PID #133119 – Well Property Acquisition

CWS requests $614,396 in 2027 to acquire land for a future well site.[56] The Commission should not include the cost of the land purchase until the well is in service and provides a benefit to ratepayers.

CWS states that a well project can take between six to nine years to complete, which equates to two to three rate case cycles.[57] This means that the land purchased

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[55] A.24-07-003 Project Justification Book Marysville District at MRL PJ-30.

[56] A.24-07-003 CWS Marysville Project Justification Book at 24.

[57] A.24-07-003 CWS Marysville Project Justification Book at19.

during this rate case cycle would not provide a benefit to ratepayers during this rate case cycle yet ratepayers under CWS's proposal would be funding shareholder profit as if the project was used and useful in providing service.. Further, CWS acknowledges the challenges that local ordinances pose for construction on undeveloped land,[58] and that it has not decided what plot of land to purchase.[59] Therefore, it is unlikely that the land purchase will provide any benefit to ratepayers during the period in which rates are being established in this proceeding. Ratepayers should only pay for used and useful projects that provide tangible benefits.

Cal Advocates further discusses the practice of purchasing land held for future use and resulting financial harms to ratepayers in Chapter 12.

If the Commission decides to approve a budget for this project, the Commission should remove the project contingency from CWS's proposed project cost, consistent with recommendations in the direct testimony of Mr. Sari Ibrahim.

A. Under the Threshold Project

1. PID # 133402 MRL Fire Flow/Hydrant Testing Equipment

CWS includes a 10% contingency in its direct cost estimates for fire flow and hydrant testing equipment.[60] The Commission should remove project contingency from the proposed project budget, consistent with Cal Advocates' recommendation regarding contingency.

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[58] A.24-07-003 CWS Marysville Project Justification Book at 22.

[59] A.24-07-003, CWS Marysville PJ Book at 22. "Cal Water recommends purchasing a favorable property identified in the well siting study ..."

[60] Attachment 4-1 CWS Response to DR SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx.

IV. CONCLUSION

The Commission should deny any land purchase that will be incapable of providing customer service during the period in which rates are being established in this proceeding. CWS's acquisition of land without a clear and concise plan in place may result in ratepayers never realizing the benefits intended by purchasing the land. CWS may seek recovery of the costs of property acquisition once it can establish the infrastructure is used and useful to ratepayers. The Commission should also deny any added contingency costs. Table 5-1 below is a cost summary per year.

Table 5-1: Summary of Recommendations.

Year		**2025**		**2026**		**2027**	
Description		**(A)**	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
	PID	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Well Siting Study	133118	-	-	$206,261-	$0	-	-
Well Property Acquisition	133119	-	-	-	-	$614,396	$0

CHAPTER 6 COMMON PLANT: PUMP AND MOTOR REPLACEMENT

I. INTRODUCTION

Pumps and motors are an important part of a water system's infrastructure because they allow a utility to pump ground water, move water through the system, and boost water pressure when necessary.[61]

There are many factors that can affect the lifespan of a pump, including the type of pump, how often it is used, environmental conditions, and maintenance.[62] Addressing environmental concerns, such as preventing sand from entering the pump, and routine maintenance can extend the useful life of pumps and motors.[63]

II. SUMMARY OF RECOMMENDATIONS

As shown below in Table 6-1, the Commission should approve an adjusted pump and motor budget of $1,321,982 in 2025, $1,773,284 in 2026 and $1,416,810 in 2027. Cal Advocates' adjusted budget is based on the historical replacement rate and excludes project contingency.

Table 6-1: Pump and Motor Replacement Budget Comparison[64]

	2025		2026		2027	
Description	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Pump and Motor Replacement	$1,803,324	$1,321,982	$2,755,383	$1,773,284	$2,115,035	$1,416,810

[61] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-199

[62] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-199

[63] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-200

[64] Calculation: Cal Advocates' 2025 budget recommendation = $1,904,330 (2025 CWS Direct Cost) * 0.9 (Removing contingency factor)*(1-0.21) 26% CWS over forecast

III. ANALYSIS

The Commission should grant an adjusted pump and motor replacement budget based on CWS's historical replacement. Cal Advocates collected historical replacement data for the last 10 years (2015-2024) to depict CWS's replacement, as shown below in Table 6-2.

Table 6-2: Historical Pump and Motor Replacement Rate per Year

Years	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Specific Pump and Motor Replacement	14	24	19	19	13	17	20	23	19	19
10-Year Average	19									

Per the 10-year average, CWS was able to perform approximately 19 pump and motor replacement projects a year.[65] However, CWS proposes to replace an average of 24 pump and motor replacement per year in the 2024 GRC (2025-2027) as shown in Table 1-4.[66] This planned replacement rate is approximately 26% more than the average replacement rate in the past ten years.[67] Therefore, the proposed replacement budget should be consistent with the historical replacement rate for pump and motor replacement.

Table 6-4: Future Pump and Motor Replacement Rate

Years	2025	2026	2027
Specific Pump and Motor Replacement	22	29	20
Average	24		

[65] Attachment 6-1, CWS Response to Public Advocates Office Data Request KN3-011 (Common Plant), "KN3-011 Attachment 17_1.k_A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motor Replacement.xlsx," Tab "Historical Replacement."

[66] Attachment 6-1, CWS Response to Public Advocates Office Data Request KN-011 (Common Plant), "KN3-011 Attachment 17_1.k_A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motor Replacement.xlsx," Tab "Requested Replacement."

[67] 24-19/19 =26%

CWS also includes a 10% contingency in its direct cost estimates for the Pump and Motor Replacement Program.[68] The Commission should remove project contingency from the proposed project budget, consistent with Cal Advocates' recommendation regarding contingency.[69]

IV. CONCLUSION

The Commission should approve an adjusted pump and motor budget of $1,321,982 in 2025, $1,773,284 in 2026 and $1,416,810 in 2027 based on CWS's historical pump and motor replacement rate. The adjustment budget also excludes contingency. Ratepayers should also receive a refund on any expenditures not used for specific pump and motor replacement projects.

[68] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-006 Attachment 1.xlsx.

[69] See the Direct Testimony of Mr. Sari Ibrahim regarding cost adders related to contingency.

LIST OF ATTACHMENTS FOR CHAPTER 6

	Attachment #	Description
1	Attachment 6-1	CWS Response to DR KN3-011

CHAPTER 7 COMMON PLANT: CATHODIC PROTECTION SYSTEMS IMPROVEMENT PROGRAM

I. INTRODUCTION

CWS uses Cathodic Protection (CP) systems to extend the lives of ferrous elements of the water system.[70] CWS installed CP on tank and pipeline infrastructures as a sacrificial lining to suppress unwanted anodic corrosion.[71] The purpose of the improvement program is to maintain, update, and regularly replace the CP system as the CP are being consumed in the process of protecting ferrous infrastructures.[72]

II. SUMMARY OF RECOMMENDATIONS

The Commission should approve an adjusted cathodic protection budget of $193,191 in 2025, $198,021 in 2026 and $202,972 in 2027, as shown below in Table 7-1. The adjusted budget is based on CWS's historical replacement rate and will protect ratepayers from funding projects that are unlikely to be completed.

Table 7-1: Cathodic Protection Replacement Comparison

	2025		2026		2027	
Description	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Cathodic Protection Systems Improvement	$202,709	$193,191[73]	$368,625	$198,021[74]	$162,934	$202,972[75]

[70] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-289

[71] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-289

[72] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-289

[73] Attachment 7-1: CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Attachment 340_2.f, Tab "Historical CPS Replacement". Calculation: $551,647 Sum of Plan CPS Replacements between 2022-2024 divide 3 representing 3 years=$183,882. $183,882*1.025(capital inflation factor by CWS)^2=$193,191

[74] $183,882. $183,882*1.025(capital inflation factor by CWS)^3=$198,021

[75] $183,882. $183,882*1.025(capital inflation factor by CWS)^4=$202,972

III. ANALYSIS

The proposed budget for its cathodic protection replacement should mimic its historical replacement rate. Between the years 2022 to 2024, CWS's planned replacement cost for CP systems as $551,647.[76] This averages a budget of $183,882 per year in the last three years. Therefore, the 2024 GRC budget should mimic the historical replacement budget with an added 2.5% inflation factor provided by CWS.

The proposed replacement budget based on historical replacements will prevent ratepayers from funding replacements without receiving the intended benefit, the Commission should authorize the adjusted budget to replace cathodic protection systems. This budget is based on CWS's three-year average (2022-2024) actual historical replacement with an added 2.5% inflation rate.[77]

IV. CONCLUSION

The Commission should authorize an adjusted budget based on the historical replacement budget for cathodic protection systems, because it reflects CWS's replacement capabilities using a realistic projection based on CWS's past performance.

[76] Attachment 7-1: CWS Response to Public Advocates Office Data Request KN3-011 Attachment 340 2.f, Tab "Historical CPS Replacement", Years 2022-2024 of Planned Projects.

[77] Attachment 7-1: CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Attachment 340 2.f, Tab "Historical CPS Replacement".

LIST OF ATTACHMENTS FOR CHAPTER 7

	Attachment #	Description
1	Attachment 7-1	CWS Response to DR KN3-011 Q2e-f_Attachment 340

CHAPTER 8 COMMON PLANT: SERVICE LINE REPLACEMENT PROGRAM

I. INTRODUCTION

Service lines are pipelines that take water from the distribution main to the water meters that are located on or near each customer's property.[78] CWS proposes to replace 32,903 plastic service lines as part of the common plant replacement program in the next 25 years.[79] Due to the nature of the plastic materials, CWS has recorded a higher failure rate and is proposing a programmatic replacement of the plastic service lines.[80]

II. SUMMARY OF RECOMMENDATIONS

The Commission should approve an adjusted budget of $700,592 in 2025, $736,060 in 2026 and $773,322 in 2027, as shown below in Table 8-1. This budget is based on CWS's cost per service replaced.[81] The adjusted budget will protect ratepayers from funding projects that are unlikely to be completed within this GRC period.

Table 8-1: Service Line Replacement Comparison Between CWS and Cal Adv

	2025		2026		2027	
Description	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Proposed Budget for Bakersfield Plastic Services	$6,988,593	$700,592	$7,119,322	$736,060	$7,266,066	$773,322
Proposed Number of Plastic Service Replacement	387	-	384	-	383	-
Number of Plastic Pipes Replaced between 2022-2024[82],[83]	25	-	25	-	25	-

[78] CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-370

[79] CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-378 and PJ-370

[80] CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-370

[81] Attachment 8-1, CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Q. 4b at 26. $18,058 (2025)*25=$451,450, $18,540 (2026)*25=$461,250, and $18,971 (2027)*25=$474,275

[82] A. 24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-374, "This program replaced 25 plastic services per year with new coper services connection."

[83] Attachment 8-1: CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Q. 4a

III. ANALYSIS

In its 2021 GRC, Cal Water requested a capital project budget for a programmatic plastic service line replacement in the Bakersfield District to replace 25 service lines between 2022-2024.[84] CWS was able to replace the 25 plastic pipes successfully. So, in the 2024 GRC, CWS proposes to continue this programmatic replacement into the next 25 years to replace a total of 32,913 plastic service lines.[85] However, the 2024 GRC programmatic replacement is 1,154 plastic services between 2025-2027, which is approximately 15 times greater than the rate at which it has been replacing plastic services in the Bakersfield District.[86] Since the Bakersfield programmatic plastic service replacement started with the 2021 GRC and CWS only replaced 25 plastic pipes in the 2021 GRC period, it is not reasonable to forecast a 15 times greater replacement rate.

Therefore, to ensure that ratepayers benefit from the proposed projects that they fund, the Commission should base the 2024 GRC programmatic service line replacement budget for the Bakersfield District on the 2021 GRC program replacement rate of 25 services per year multiplied with the cost per replacement per service provided discovery.[87] If CWS is capable of replacing the proposed 1,154 plastic services in the next 3 years (2025-2027), it should demonstrate that the work is complete and seek recovery of the remaining cost of replacement in the subsequent GRC.

IV. CONCLUSION

The Commission should authorize a service line replacement budget based on a realistic schedule for replacement. Cal Advocates recommends an adjusted budget of

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at 26. "Cal Water does not track the cost and number of services replaced by material type."

[84] Attachment 8-2: A.21-07-002, CWS Bakersfield 2021 GRC Capital Project Justification (PJ) Book at BK PJ-136 to 139.

[85] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-378

[86] Attachment 8-1: CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Q. 4b at 26.

[87] Attachment 8-1: CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Q. 4b at 26.

$700,592 in 2025, $736,060 in 2026 and $773,322 in 2027. CWS has profited in previous GRCs by overpromising and underdelivering on these projects. Accordingly, the Commission should authorize a budget based on CWS's historical plastic service main replacement capabilities.

LIST OF ATTACHMENTS FOR CHAPTER 8

	Attachment #	Description
1	Attachment 8-1	CWS Partial Response #3 FINAL to DR KN3-011
2	Attachment 8-2	BK_2021_GRC_Justification_Book_FINAL

CHAPTER 9 COMMON PLANT: CONTROL VALVE OVERHAUL

I. INTRODUCTION

Control valves control the flow, pressure, and level of water in different portions of a water system.[88] A control valve overhaul allows worn internal parts of the valve to be replaced without removing the valve from the system, and without replacing parts of the valve that are still in good condition.[89] Cal Water states that it uses a risk-based asset management approach to determine and prioritize which control valves need to be replaced.[90]

II. SUMMARY OF RECOMMENDATIONS

The Commission should approve an adjusted control valve overhaul budget as shown below in Table 9-1. Cal Advocates' recommended budget is the proposed CWS budget excluding the added projected contingency.

Table 9-1: Control Valve Overhaul and Replacement Comparison

	2025		2026		2027	
Description	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Control Valve Overhaul and Replacement	$5,279,480	$2,218,421	$5,440,679	$2,291,438	$4,967,445	$2,096,828

III. ANALYSIS

Cal Advocates collected historical control valve overhaul data for the last five years (2020-2024) to depict CWS's control valve overhaul, as shown below in Table 1-2.

[88] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-304

[89] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-304

[90] Attachment 9-1: A.21-07-002, Common Plant 2021 GRC_PJ Book," Section h. Control Valve Overhaul and Replacement at Common Plant PJ – 65.

Table 9-2: Historical Control Valve Overhaul per Year

Years	2020	2021	2022	2023	2024	5-year Annual Average
Overhaul	106	56	180	239	74	**131**

Table 9-3: Proposed Control Valve Overhaul per Year

Years	2025	2026	2027	3-year Annual Average
Overhaul	286	302	283	**290**

CWS historically performed a five-year annual average of 131 control valves overhauls. However, in the 2024 GRC (2025-2027) CWS proposes to replace a three-year annual average of 290 overhauls per year in the 2024 GRC (2025-2027) as shown in Table 9-3.[91] This planned overhaul rate is approximately 54% more than the average annual replacement rate in the past five years (2020-2024).[92] Therefore, the proposed replacement budget should be consistent with the historical control valve overhaul. The Commission should grant a budget for control valve overhaul of 54% less than the proposed control valve overhaul budget for the 2024 GRC.

IV. CONCLUSION

The Commission should approve an adjusted control valve overhaul proposed budget by CWS. The adjusted control valve overhaul budget less than 54% of the proposed budget to be consistent with CWS's control valve overhaul annual average in the past 5 years.

[91] Attachment 9-2: CWS Response to Public Advocates Office Data Request KN-011 (Common Plant), "KN3-011 Attachment 16_3.g_A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement"

[92] Removed 54% from each valve overhaul project to account for historical rate of overhaul.

LIST OF ATTACHMENTS FOR CHAPTER 9

	Attachment #	Description
1	Attachment 9-1	Common Plant_2021_GRC_Justification Book
2	Attachment 9-2	CWS Response to DR KN3-011

CHAPTER 10 COMMON PLANT: MOTOR CONTROL CENTERS AND PANELBOARD REPLACEMENT

I. INTRODUCTION

Motor control centers (MCCs) are used in water systems to act as central command hubs for controlling electric motors throughout the system.[93] MCCs allow for efficient management of water flow based on the demand.[94] CWS proposes to replace its electrical systems, including Motor Control Centers (MCCs), panelboards, control equipment, and other power distribution equipment as part of the common plant justification.[95] CWS includes a 10% contingency to its direct cost estimates for the MCC and Panelboard Replacement Program.[96] This contingency adds an additional $7,549,464 to CWS's requested MCC and Panelboard budget.

II. SUMMARY OF RECOMMENDATIONS

The Commission should approve CWS's MCC and Panelboard replacement budget without the contingency amount. Table 10-1 compares CWS's requested budgets for 2025-2027 with Cal Advocates' recommended amounts.

Table 10-1: MCC and Panelboard Replacement, CWS's Requested versus Cal Advocates' Recommendation, 2025-2027

Year	2025		2026		2027	
Description	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
MCC and Panelboard Replacement	$22,221,045	$16,496,875	$2,394,767	$1,789,974	$2,960,901	$2,212,495

[93] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-408.

[94] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-410.

[95] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-415.

[96] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx.

III. ANALYSIS

CWS includes a 10% contingency in its direct cost estimates for the MCC and Panelboard Replacement Program.[97] The Commission should remove project contingency from the proposed project budget consistent with its decision in the 2021 GRC.[98] Using an added near blanket contingency factor for forecasting produces an inaccurate budget is not reasonable. The removal of contingency for MCC and Panelboard replacement is consistent with Cal Advocates' recommendation regarding contingency.[99]

IV. CONCLUSION

The Commission should approve an adjusted MCC and Panelboard replacement budget as proposed by CWS, but without the contingency amounts. Added contingency without support produces an inaccurate forecast budget.

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[97] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx.

[98] D.24-03-042 at 27.

[99] See the direct testimony of Mr. Sari Ibrahim regarding cost adders.

CHAPTER 11 COMMON PLANT: NEW GENERATORS AND REPLACEMENTS

I. INTRODUCTION

CWS depends on generators as a backup to restore lost power to pumps or wells during outages, including Public Safety Power Shutoff (PSPS) events.[100] CWS proposes to purchase new portable generators and fixed generators in Capital Improvement Projects and to replace generators as part of the Common Plant.

II. SUMMARY OF RECOMMENDATIONS

The Commission should deny CWS's funding request for fixed generator replacement and new fixed generators as they are not cost effective. Mobile generators are a more cost effective and versatile solution to power outages. CPUC Resolution ESRB-8 introduces the use of mobile generators for critical facilities to provide backup power during a wildfire event. Lastly, CWS should take advantage of Resolution ESRB-8 by collaborating with the electric IOUs (investor own utilities) to evaluate the need for all generator types for backup power prior to purchasing generators for fire season and PSPS (public safety power shutoff season).

Table 10-1: Generator Replacement, CWS's Requested versus Cal Advocates' Recommendation, 2025-2027

	2025		2026		2027	
Description	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Generators Replacement	$0	-	$0	-	$8,247,455	$0

III. ANALYSIS

The Commission should exclude from rates the budget for fixed generator replacements and all new fixed generators. Only July 12, 2018, the CPUC issued Resolution ESRB-8 that established policies for electrical IOUs to de-energize (also

[100] A.24-07-003, CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-446.

referred to as power shut off events) as a protection system for fire safety hazards.[101] In this resolution, the Commission discusses the electric IOU's roles in a de-energization event that affects critical facilities. The resolution states the "IOUs shall assist critical facility customers to evaluate their needs for backup power and determine whether additional equipment such as a mobile generator is needed".[102] This introduces the capability, quality, and usage of portable generators for critical facilities in the event where backup power is needed in an such as a storm or wildfire event.[103]

CWS states that the proposed fixed generators are necessary to restore lost power to pumps or wells during outages.[104] CWS does not consider the use of mobile generators instead opting for costly fixed generators without producing a cost-benefit analysis.[105] For example, a proposed fixed generator cost estimate is $456,044,[106] while a proposed portable generator In the LA County Region cost estimate is $29,167.[107] Moreover, since they are portable, mobile generators have the benefit of being able to serve different facilities as needed.

Using mobile generators to power critical infrastructure is widely practiced. For example, Southern California Edison maintains 20 mobile generators for priority use by critical facilities during PSPS events,[108] and water systems are specifically named as one

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[101] Attachment 11-1, -Resolution ESRB-8 at 2.

[102] Attachment 11-1, -Resolution ESRB-8 at 7.

[103] Support for Critical Facility Customers, Pacific Gas and Electric Company (PG&E) (May 2024), https://www.pge.com/assets/pge/docs/outages-and-safety/safety/critical-facilities-customer-fact-sheet.pdf.

[104] CWS Common Plant 2024 GRC PJ Book at Common Plant PJ-446.

[105] Attachment 11-2: CWS Response to Public Advocates Office Data Request KN3-011 Response #3 Q.9.c.

[106] Attachment 11-3: CWS Response to Public Advocates Office Data Request KN3-04 Response Part 2 Attachment CH PID# 133029_Cost Estimate

[107] Attachment 4-1: CWS Response to Public Advocates Office Data Request SIH-006 (Proposed Capital Projects), SIH-06 Attachment 1.xlsx at Row 1695, Column F. PID# 132967

[108] "Critical Facilities and Critical Infrastructure," "Availability of Mobile Backup Power," Southern California Edison website. https://www.sce.com/wildfire/critical-facilities-infrastructure.

of the industry sectors where these mobile generators may be used.[109] In addition, Southern California Edison and Pacific Gas and Electric Company (PG&E) recognize water systems as a critical facility and alert water utilities of upcoming PSPS events up to three days before they occur.[110] Other Class-A water utilities served by Southern California Edison, such as Liberty Utilities (Apple Valley Ranchos Water Company), have plant sites that can be powered through mobile generators.[111]

Lastly, with ESRB-8 as support, CWS should collaborate with its electric IOUs to evaluate its readiness for a power outage event prior to purchasing fixed and portable generators for backup power during fire and PSPS season events.[112]

IV. CONCLUSION

The Commission should deny CWS's funding request for fixed generator replacements and new fixed generators as they are not cost effective. Mobile generators provide similar functions at a lower cost and greater versatility because of their portable nature. Based on Resolution ESRB-8 the Commission recognizing the use of mobile generators for a de-energize period for critical facilities to be used for power backup and CWS's cost estimate on that portable generators are more cost effective. Lastly, CWS should take advantage of Resolution ESRB-8 by collaborating with the electric IOUs to evaluate the need for portable generators for backup power prior to purchasing generators.

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[109] "Critical Facilities and Critical Infrastructure," "Water and Wastewater Systems," Southern California Edison website. Critical Facilities and Critical Infrastructure.

[110] "SCE's 2020 Planning for Public Safety Power Shutoffs." Southern California Edison presentation. Microsoft PowerPoint - SCE Presentation for 2020 PSPS Plans.pptx.

[111] Attachment 11-4: Liberty Utilities (Apple Valley Ranchos Water Company) Technical Report Excerpt at 14-8.

[112] Attachment 11-1, -Resolution ESRB-8 at 7.

LIST OF ATTACHMENTS FOR CHAPTER 11

	Attachment #	Description
1	Attachment 11-1	ESRB-8
2	Attachment 11-2	CWS Partial Response #3 FINAL to DR KN3-011
3	Attachment 11-3	KN3-004
4	Attachment 11-4	Apple Valley Technical Report Excerpt

CHAPTER 12 COMMON PLANT: LAND HELD FOR FUTURE USE

I. INTRODUCTION

Land held for future use is a long-term investment because the utility purchases land in advance and saves it for later use in daily operations.[113] However, only the land used for an in-service water infrastructure is beneficial to ratepayers. CWS includes land assets that are not in service in rate base, which leads to a negative financial impact on ratepayers.

II. SUMMARY OF RECOMMENDATIONS

The Commission should remove a total of $1,021,385 in land held for future use from the 2023 recorded plant, because this dollar amount corresponds to land held for future use included in rate base that currently provides no benefit to ratepayers.[114] Due to this, ratepayers have unfairly paid over $4 million dollars in rates for land that does not provide any benefits. Additionally, there are associated operating expenses for land held for future use that ratepayers should not be financially responsible. Therefore, the Commission should remove $339,549 in operating expenses to relieve ratepayers from unreasonable expenses without any benefits. Lastly, the Commission should prevent CWS receiving additional ratepayer funding (including a shareholder profit in rates) for land that is not going to be in service.

III. ANALYSIS

A. Land in Rate Base but Not in Service

Cal Advocates identified 214 properties that CWS includes in rate base but are not in service, for a total amount of $1,021,385 under the Asset Account 103061.[115] The

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[113] Land Held for Future Use definition: https://www.lawinsider.com/dictionary/land-held-for-future-developmentdisposition.

[114] Attachment 12-1, CWS Partial Response #1 to DR KN3-008, Q.1.a at 2; CWS Response #2 to DR KN3-008, Q1.a. at 2, "KN3-008 Attachment #2_CORRECTION.xlsx"

[115] ROM CH07_RO_RB_PLT.xlsx, Tab "Rec PLT CWS Adj WS-1.2," Under Asset Account 103061, Column R.

earliest date of purchase was in 1927.[116] Assuming a ten percent annual rate of return, ratepayers would have unfairly paid over $4 million dollars in rates for land that does not provide any benefits.[117]

Ratepayers should only be required to pay for the reasonable capital costs of land that provides direct and ongoing benefits or is used and useful and provides adequate and reasonable service. According to CWS, the 214 properties are not being used but are currently included in rate base.[118] As the Commission stated in the 2021 GRC decision, it would be unreasonable to require current ratepayers to bear costs for projects which currently provide no current benefit and are not expected to provide benefits during the current GRC period.[119]

At the same time, CWS continues to request funding to purchase land in the current GRC without ratepayers seeing the benefits by the end of the current rate case cycle.[120] For example, in the Marysville District, CWS proposes to acquire well property under PID#133119, yet CWS does not expect the well property acquisition to be in service until after two to three rate case cycles.[121]

Not only does land held for future use not provide any benefits to ratepayers, but ratepayers also have to shoulder operation and maintenance (O&M) and administrative and general (A&G) expenses associated with these properties, such as property taxes, landscaping, and security services.[122] During discovery, Cal Advocates asked CWS to provide expenses associated with the land held for future use account. CWS responded

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[116] Attachment 12-1, CWS Partial Response #1 to DR KN3-008, Q.1.a at 2; CWS Response #2 to DR KN3-008, Q1.a. at 2, "KN3-008 Attachment #2_CORRECTION.xlsx"

[117] Attachment 12-1, CWS Partial Response #1 to DR KN3-008, Q.1.a at 2; CWS Response #2 to DR KN3-008, Q1.a. at 2, "KN3-008 Attachment #2_CORRECTION.xlsx"

[118] Attachment 12-1, CWS Partial Response #1 to DR KN3-008, Q.1.a at 2; CWS Response #2 to DR KN3-008, Q1.a. at 2, "KN3-008 Attachment #2_CORRECTION.xlsx"

[119] D.24-03-042 at 30.

[120] A. 24-07-003 Marysville Project Justification Book at MRL PJ-19.

[121] See detailed discussion regarding PID# 133119 at Chapter 5.

[122] Attachment 12-1, CWS Partial Response #1 to DR KN3-008, Q.1.b. at 2.

that it does not track these expenses as they are not bid out to contractors. Ratepayers should not be responsible for expenses related to plant that is not use and useful. The Commission should reduce operating expenses by $339,549 to account for the expenses related to land held for future use.[123] .

IV. CONCLUSION

The Commission should remove a total of $1,021,385 from the 2023 recorded plant that corresponds to land held for future use. Since ratepayers have unfairly paid over $4 million dollars in rates that does not provide any benefits, the Commission should prevent CWS from receiving additional ratepayer funding (including a shareholder profit in rates) for land that is not going to be in service. The Commission should also reduce the operating expense for the 2026 test year by $$339,549 because ratepayers are not responsible for expenses associated with land that does not provide any ratepayers benefits.

[123] According to the A.24-07-003 Application Current Rate Making Summary Table at 5, the 2023 recorded total rate base was $1,910,254,799 this corresponded to $635,046,033 in recorded expenses. Based on the recorded numbers related to land held for future use ($1,021,385) would correspond to $339,549 in expenses. Based on the current inflation rate total expense associated with land held for future use equals $359,736 in 2026. This is adjusted in ROM CH05_OM_FDR_Other AG Tab "Cal Adv Adj for NonSpec WS-2".

LIST OF ATTACHMENTS FOR CHAPTER 12

	Attachment #	Description
1	Attachment 12-1	DR KN3-008

Appendix A:
Qualifications of Witness

QUALIFICATIONS AND PREPARED TESTIMONY
OF
KATHERINE DO (NEE NGUYEN)

Q1. Please state your name, business address, and position with the California Public Utilities Commission ("Commission").

A1. My name is Katherine Do (née Nguyen) and my business address is 505 Van Ness Avenue, San Francisco, California 94102. I am a Utilities Engineer in the Water Branch of the Public Advocates Office.

Q2. Please summarize your educational background and professional experience.

A2. I obtained the Bachelor and Master of Science Degree in Civil Engineering from the California State University, Fullerton. I have been employed at the CPUC since November 2022. Prior to joining the CPUC, I have worked on flood control and water/wastewater design and management projects.

Q3. What is your responsibility in this proceeding?

A3. I am responsible for CWS's 2024 GRC Impacts to ESJ Communities and Customer Service. Additionally, I am responsible for plant issues in the Chico, Marysville, Oroville, Willows and Dixon Districts and the following common plant issues; pump and motor replacement, cathodic protection systems, control valve overhaul and replacement, generator replacement program, service replacement program, and MCC/Panelboard Replacement Program.

Q4. Does this conclude your prepared direct testimony?

A4. Yes, it does.

Appendix B:
Common Plant CWS versus
Cal Advocates Budget Comparison

	2025		2026		2027	
Description	**(A)**	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
	CWS	**Cal Adv**	**CWS**	**Cal Adv**	**CWS**	**Cal Adv**
Pump and Motor Replacement	$1,803,324	$1,321,982	$2,755,383	$1,773,284	$2,115,035	$1,416,810
Cathodic Protection Systems Improvement	$202,709	$193,191	$368,625	$198,021	$162,934	$202,972
Service Line Replacement	$6,988,593	$700,592	$7,119,322	$736,060	$7,266,066	$773,322
Control Valve Overhaul	$5,279,480	$2,218,421	$5,440,679	$2,291,438	$4,967,445	$2,096,828
MCC and Panelboard Replacement	$22,221,045	$16,496,875	$2,394,767	$1,789,974	$2,960,901	$2,212,495
Generator Replacement	$0	-	$0	-	$8,247,455	$0

LIST OF ATTACHMENTS FOR CHAPTER 1

	Attachment #	Description
1	Attachment 1-1	CWS Water Response to DR KN3-005
2	Attachment 1-2	CWS Response to DR JMI-008 (AWIA Compliance)

Attachment 1-1:
CWS's Response to DR KN3-005

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Melody Singh (916) 329-1856
Manager, Revenue msingh@calwater.com

Date: **November 1, 2024** Re: **KN3-005** Subj: **GO-103A Appendix E**	Request Received from CPUC: **October 21, 2024** Requested Due Date: **October 28, 2024** **Extension Granted to:** **November 1, 2024**

Comments:

- **Full response attached.**
- **Response provided by Customer Service and Operations.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **KN3-005 Attachment #1 – Standards and Performance**
  - **KN3-005 Attachment #2 – Service Interruptions**

Data Requests and Responses

In a tabulated Excel spreadsheet format, please provide the annual data described below in a. through e. for each Customer Service Area (CSA), for each year from 2019 through 2023:

1. **Telephone Performance Standards**

   a. Total number of customer phone contacts requesting to speak with a customer service representative (CSR) during normal business hours.
   Response: See KN3-005 Attachment #1 Standards and Performance

   b. Number of calls attempting to reach a utility representative (other than CSR).
   Response: See KN3-005 Attachment #1 Standards and Performance

   c. Number of calls in which customer reached a CSR within 30 seconds.
   Response: See KN3-005 Attachment #1 Standards and Performance

   d. Number of calls during normal business hours in which the customer was unable to reach a utility representative within 30 seconds.
   Response: See KN3-005 Attachment #1 Standards and Performance

   e. In cases where the customer was unable to reach a CSR within 30 seconds, please provide the reason(s) for the delay.
   Response: See KN3-005 Attachment #1 Standards and Performance

   f. Number of calls abandoned by customer before reaching a CSR during normal business hours.
   Response: See KN3-005 Attachment #1 Standards and Performance

2. **Billing Performance Standards**

   a. Total number of customer bills scheduled to be rendered.
   Response: See KN3-005 Attachment #1 Standards and Performance

   b. Number of bills actually rendered within seven calendar days of the scheduled billing date.
   Response: See KN3-005 Attachment #1 Standards and Performance

   c. Number of bills not rendered within seven business days of the scheduled billing date, excluding: i) accounts activated 10 calendar days prior to the normal billing cycle, and ii) accounts scheduled to receive a final bill within 10 calendar days after the normal billing cycle
   Response: See KN3-005 Attachment #1 Standards and Performance

   d. Number of bills rendered with inaccuracies, excluding billing inaccuracies strictly due to estimations and billing inaccuracies that did not affect the calculation of the bill and/or that were not the utility's fault.
   Response: See KN3-005 Attachment #1 Standards and Performance

e. Number of bills found inaccurate after being sent to a customer and brought to the utility's attention either by the customer's complaint or by the utility's own efforts.
Response: See the table in response 2.d in KN3-005 Attachment #1 Standards and Performance. Note that the language in Question 2.d and the language in Question 2.e describe the same data set identified in GO 103-A.

f. Total number of payments posted.
Response: See KN3-005 Attachment #1 Standards and Performance

g. Number of payment posting errors (for each CSA).
Response: See KN3-005 Attachment #1 Standards and Performance

h. Number of payment posting errors attributable to the utility.
Response: See KN3-005 Attachment #1 Standards and Performance

3. Meter Reading Performance Standard

a. Total number of meter readings scheduled.
Response: See KN3-005 Attachment #1 Standards and Performance

b. The number of meters completed out of the total number of meters.
Response: See KN3-005 Attachment #1 Standards and Performance

4. Work Completion Performance Standards

a. Number of scheduled appointments missed.
Response: See KN3-005 Attachment #1 Standards and Performance

b. Number of scheduled appointments.
Response: See KN3-005 Attachment #1 Standards and Performance

c. Number of customer requested work not completed on or before the scheduled date.
Response: See KN3-005 Attachment #1 Standards and Performance

d. Number of jobs resulting from customer requests for meter turn ons, meter read over, disconnects and reconnects.
Response: See KN3-005 Attachment #1 Standards and Performance

e. Number of jobs resulting from customer requests for meter turn ons, meter read over, disconnects and reconnects not completed on or before the scheduled date.
Response: See the table in response 4.c. in KN3-005 Attachment #1 Standards and Performance. Note that the language in Question 4.c. and the language in Question 4.e. describe the same data set identified in GO 103-A.

f. Number of customer orders not completed on or before the scheduled data. Excluding any orders not completed due to events outside the utility's control.
Response: Cal Water does not have data that excludes orders not completed due to events outside the utility's control.

5. Service Interruptions

a. All emergency interruptions involving more than 10 service connections.
Response: Please see KN3-005 Attachment #2 Service Interruptions

b. All scheduled interruptions involving more than 10 service connections.
Response: Please see KN3-005 Attachment #2 Service Interruptions

A2407003 Public Advocates DR KN3-005 (GO 103-A Appendix E)

Years: 2019 – 2023

1.0 Telephone Performance Standards

1.a Total number of customer phone contacts requesting to speak with a customer service representative (CSR) during normal business hours.

District	2019	2020	2021	2022	2023
Bayshore	33,262	24,749	26,639	27,798	30,898
Bakersfield	133,522	89,924	81,905	91,484	101,217
Bear Gulch	16,413	24,749	11,656	11,159	12,234
Chico	28,964	19,818	18,571	20,902	20,326
Dixon	2,402	N/A	1,400	2,414	2,166
East Los Angeles	34,855	19,966	18,025	22,614	23,231
Kern River Valley/Antelope Valley	3,310	5,728	6,563	7,492	7,842
King City	1,871	1,408	1,350	2,233	2,518
Livermore	12,634	9,060	8,977	9,379	9,126
Los Altos	11,390	8,674	10,463	10,454	10,638
Marysville	6,043	6,323	6,169	4,460	4,361
Oroville	5,364	3,834	3,710	4,007	4,545
Rancho Dominguez	70,670	46,553	45,712	49,580	46,831
Redwood Valley	1,783	1,481	1,294	2,488	2,836
Salinas	27,918	18,979	17,240	17,629	19,640
Selma	7,234	5,721	5,316	5,883	6,140
Stockton	64,555	37,444	33,387	38,154	45,211
Visalia	43,535	26,112	23,922	26,705	29,221
Westlake	5,583	4,577	4,271	5,503	4,603
Willows	2,020	2,098	1,235	1,960	2,149
Grand Total	**513,328**	**357,198**	**327,805**	**362,298**	**385,733**

1.b Number of calls attempting to reach a utility representative (other than CSR).

District	2019	2020	2021	2022	2023
Bayshore	1	1	2	1	4
Bakersfield	13	6	6	3	3
Bear Gulch	2	1	0	1	1
Chico	0	0	1	1	1
Dixon	1	1	1	0	1
East Los Angeles	1	2	1	2	4
Kern River Valley/Antelope Valley	5	2	8	5	5
King City	0	0	0	0	0
Livermore	1	0	2	1	0
Los Altos	0	0	1	2	1
Marysville	0	0	0	0	0
Oroville	0	0	0	0	1
Rancho Dominguez	5	5	7	8	6
Redwood Valley	3	0	1	0	1

Salinas	0	0	1	0	1
Selma	0	0	0	0	0
Stockton	4	1	6	5	7
Visalia	0	0	0	0	1
Westlake	1	0	0	0	0
Willows	0	0	0	0	1
Grand Total	**37**	**19**	**37**	**29**	**38**

1.c Number of calls in which customer reached a CSR within 30 seconds.

District	2019	2020	2021	2022	2023
Bayshore	31,469	23,912	25,751	25,858	27,233
Bakersfield	115,449	84,126	75,751	80,962	86,697
Bear Gulch	15,192	23,912	11,203	10,376	10,792
Chico	26,128	18,631	17,022	18,218	17,176
Dixon	2,363	N/A	1,249	2,204	1,873
East Los Angeles	32,379	18,569	16,734	20,183	21,054
Kern River Valley/Antelope Valley	2,832	5,359	6,126	6,932	7,006
King City	1,816	1,362	1,307	2,082	2,289
Livermore	11,671	8,394	8,530	8,877	8,203
Los Altos	10,421	8,193	10,131	9,812	9,565
Marysville	5,997	6,213	5,833	4,040	3,780
Oroville	5,118	3,627	3,409	3,624	3,982
Rancho Dominguez	66,332	44,021	41,720	44,122	42,357
Redwood Valley	1,658	1,332	1,164	2,266	2,496
Salinas	26,192	17,456	16,441	16,519	17,341
Selma	6,979	5,506	5,072	5,386	5,405
Stockton	56,055	34,408	29,969	33,470	38,399
Visalia	40,799	24,581	22,960	23,666	25,008
Westlake	5,215	4,294	3,992	4,980	4,238
Willows	2,003	2,015	1,118	1,790	1,863
Grand Total	**466,068**	**335,911**	**305,482**	**325,367**	**336,757**

1.d Number of calls during normal business hours in which the customer was unable to reach a utility representative within 30 seconds.

District	2019	2020	2021	2022	2023
Bayshore	1,793	837	888	1,940	3,665
Bakersfield	18,073	5,798	6,154	10,522	14,520
Bear Gulch	1,221	837	453	783	1,442
Chico	2,836	1,187	1,549	2,684	3,150
Dixon	39	N/A	151	210	293
East Los Angeles	2,476	1,397	1,291	2,431	2,177
Kern River Valley/Antelope Valley	478	369	437	560	836

King City	55	46	43	151	229
Livermore	963	666	447	502	923
Los Altos	969	481	332	642	1,073
Marysville	46	110	336	420	581
Oroville	246	207	301	383	563
Rancho Dominguez	4,338	2,532	3,992	5,458	4,474
Redwood Valley	125	149	130	222	340
Salinas	1,726	1,523	799	1,110	2,299
Selma	255	215	244	497	735
Stockton	8,500	3,036	3,418	4,684	6,812
Visalia	2,736	1,531	962	3,039	4,213
Westlake	368	283	279	523	365
Willows	17	83	117	170	286
Grand Total	**47,260**	**21,287**	**22,323**	**36,931**	**48,976**

1.e In cases where the customer was unable to reach a CSR within 30 seconds, please provide the reason(s) for the delay.

District	2019	2020	2021	2022	2023
Bayshore	Higher call volume				
Bakersfield					
Bear Gulch					
Chico					
Dixon					
East Los Angeles					
Kern River Valley/Antelope Valley					
King City					
Livermore					
Los Altos					
Marysville					
Oroville					
Rancho Dominguez					
Redwood Valley					
Salinas					
Selma					
Stockton					
Visalia					
Westlake					
Willows					

1.f Number of calls abandoned by customer before reaching a CSR during normal business hours.

District	2019	2020	2021	2022	2023
Bayshore	218	76	86	204	392

Bakersfield	3,067	812	606	1,055	1,485
Bear Gulch	229	76	24	76	157
Chico	510	138	175	311	339
Dixon	20	N/A	15	13	37
East Los Angeles	549	186	139	213	211
Kern River Valley/Antelope Valley	482	173	64	38	85
King City	29	8	8	19	34
Livermore	312	105	54	44	65
Los Altos	198	73	25	35	74
Marysville	25	63	92	46	58
Oroville	51	55	45	39	65
Rancho Dominguez	678	231	267	344	336
Redwood Valley	83	38	14	19	31
Salinas	521	220	117	149	350
Selma	149	93	26	50	87
Stockton	2,783	555	659	481	796
Visalia	582	247	89	315	478
Westlake	143	70	28	30	30
Willows	53	34	20	19	32
Grand Total	**10,682**	**3,253**	**2,553**	**3,500**	**5,142**

2.0 Billing Performance Standards

2.a Total number of customer bills scheduled to be rendered.

District	2019	2020	2021	2022	2023
Bayshore	614,034	616,351	611,504	611,587	610,871
Bakersfield	845,793	860,871	859,131	860,862	862,516
Bear Gulch	221,312	616,351	220,589	220,400	220,664
Chico	333,745	338,073	337,505	339,730	340,787
Dixon	34,414	34,810	35,424	35,641	35,751
East Los Angeles	310,446	307,033	309,548	309,394	308,625
Kern River Valley/Antelope Valley	54,158	54,795	54,924	55,836	55,965
King City	30,600	31,213	31,759	32,172	32,562
Livermore	216,119	218,101	216,752	217,443	217,439
Los Altos	221,190	222,169	219,992	220,394	219,525
Marysville	43,925	44,263	43,583	43,524	42,651
Oroville	40,699	40,975	40,819	41,092	40,985
Rancho Dominguez	1,005,935	1,010,383	1,005,382	1,007,804	1,006,076
Redwood Valley	11,597	11,899	12,113	13,256	12,774
Salinas	325,671	327,418	325,117	325,602	324,579
Selma	74,814	75,078	74,507	74,950	75,343
Stockton	515,621	518,383	517,286	519,127	521,475
Visalia	519,005	529,387	533,119	541,972	547,990
Westlake	77,984	78,241	77,781	77,950	78,102
Willows	27,714	27,965	27,674	27,538	27,382
Grand Total	**5,524,776**	**5,963,759**	**5,554,509**	**5,576,274**	**5,582,062**

2.b Number of bills actually rendered within seven calendar days of the scheduled billing date.

District	2019	2020	2021	2022	2023
Bayshore	613,833	616,239	611,324	611,306	610,161
Bakersfield	844,685	860,093	857,590	859,913	860,963
Bear Gulch	221,223	616,239	220,482	220,301	220,454
Chico	333,735	337,288	337,438	339,521	340,280
Dixon	34,360	34,790	35,347	35,583	35,719
East Los Angeles	310,394	306,820	309,389	309,272	308,376
Kern River Valley/Antelope Valley	53,938	54,655	54,764	55,821	55,934
King City	30,369	31,102	31,670	32,104	32,500
Livermore	216,106	218,089	216,710	217,346	217,318
Los Altos	221,099	221,879	219,692	219,985	219,172
Marysville	43,884	44,256	43,575	43,504	42,632
Oroville	40,680	40,950	40,762	41,059	40,952
Rancho Dominguez	1,004,558	1,007,782	1,002,086	1,004,445	1,002,023
Redwood Valley	11,488	11,796	12,067	13,212	12,679
Salinas	325,042	327,094	325,046	325,435	324,319

Selma	74,800	75,073	74,482	74,885	75,279
Stockton	515,238	518,126	516,230	517,967	521,080
Visalia	518,940	529,310	532,980	541,715	547,251
Westlake	77,969	78,241	77,717	77,921	77,821
Willows	27,681	27,937	27,582	27,447	27,346
Grand Total	**5,520,022**	**5,957,759**	**5,546,933**	**5,568,742**	**5,572,259**

2.c Number of bills not rendered within seven business days of the scheduled billing date, excluding: i) accounts activated 10 calendar days prior to the normal billing cycle, and ii) accounts scheduled to receive a final bill within 10 calendar days after the normal billing cycle

District	2019	2020	2021	2022	2023
Bayshore	201	112	180	281	710
Bakersfield	1,108	778	1,541	949	1,553
Bear Gulch	89	112	107	99	210
Chico	10	785	67	209	507
Dixon	54	20	77	58	32
East Los Angeles	52	213	159	122	249
Kern River Valley/Antelope Valley	220	140	160	15	31
King City	231	111	89	68	62
Livermore	13	12	42	97	121
Los Altos	91	290	300	409	353
Marysville	41	7	8	20	19
Oroville	19	25	57	33	33
Rancho Dominguez	1,377	2,601	3,296	3,359	4,053
Redwood Valley	109	103	46	44	95
Salinas	629	324	71	167	260
Selma	14	5	25	65	64
Stockton	383	257	1,056	1,160	395
Visalia	65	77	139	257	739
Westlake	15	0	64	29	281
Willows	33	28	92	91	36
Grand Total	**4,754**	**6,000**	**7,576**	**7,532**	**9,803**

2.d Number of bills rendered with inaccuracies, excluding billing inaccuracies strictly due to estimations and billing inaccuracies that did not affect the calculation of the bill and/or that were not the utility's fault.

District	2019	2020	2021	2022	2023
Bayshore	920	789	860	872	1,044
Bakersfield	3,071	1,485	4,569	1,948	2,499
Bear Gulch	252	789	211	459	425
Chico	323	1,924	278	362	482
Dixon	18	32	22	28	28

East Los Angeles	1,215	737	537	431	350
Kern River Valley/Antelope Valley	94	104	77	74	59
King City	85	121	141	95	123
Livermore	80	117	102	126	210
Los Altos	115	123	304	1,008	433
Marysville	30	41	70	62	50
Oroville	73	56	90	82	106
Rancho Dominguez	1,270	1,344	1,491	1,395	1,646
Redwood Valley	9	8	17	28	26
Salinas	173	189	240	430	463
Selma	121	141	73	97	96
Stockton	822	680	744	612	1,261
Visalia	316	448	607	716	808
Westlake	32	49	37	55	58
Willows	49	58	26	21	24
Grand Total	**9,068**	**9,235**	**10,496**	**8,901**	**10,191**

2.e Number of bills found inaccurate after being sent to a customer and brought to the utility's attention either by the customer's complaint or by the utility's own efforts.

See the table in response 2.d., above. Note that the language in Question 2.d and the language in Question 2.e describe the same data set identified in GO 103-A.

2.f Total number of payments posted.

District	2019	2020	2021	2022	2023
Bayshore	572,388	563,722	561,041	554,705	565,107
Bakersfield	711,009	686,816	668,539	652,540	687,532
Bear Gulch	208,681	563,722	203,859	201,105	206,105
Chico	304,442	298,901	297,087	294,144	299,522
Dixon	31,058	30,286	30,325	30,314	31,572
East Los Angeles	279,196	267,465	263,616	260,466	269,238
Kern River Valley/Antelope Valley	49,613	48,257	47,150	47,196	49,281
King City	26,701	25,711	25,521	25,674	26,522
Livermore	119,847	197,660	197,083	195,376	200,333
Los Altos	210,679	207,979	206,325	204,062	207,510
Marysville	37,924	36,206	34,946	34,149	34,646
Oroville	35,830	33,214	31,837	30,804	31,816
Rancho Dominguez	926,875	910,529	907,760	899,425	917,915
Redwood Valley	11,338	10,294	10,384	11,115	11,994
Salinas	289,504	277,298	271,614	268,215	274,801
Selma	64,484	60,483	59,651	58,635	60,985
Stockton	433,499	409,958	400,101	394,868	414,852

Visalia	447,098	440,460	434,310	431,915	448,153
Westlake	74,450	73,005	72,605	71,827	72,824
Willows	24,418	23,307	23,280	22,877	23,492
Grand Total	**4,859,034**	**5,165,273**	**4,747,034**	**4,689,412**	**4,834,200**

2.g Number of payment posting errors (for each CSA).

District	2019	2020	2021	2022	2023
Antelope Valley/Kern River Valley	32	19	13	9	14
Bakersfield	536	240	147	132	190
Bayshore	58	69	92	77	116
Bear Gulch	29	18	34	21	59
Chico	118	114	127	66	88
Dixon	55	30	23	10	14
East Los Angeles	177	60	61	33	66
King City	52	30	25	12	32
Livermore	95	60	42	27	40
Los Altos	17	26	33	23	53
Marysville	32	32	20	8	25
Oroville	48	13	35	23	13
Rancho Dominguez	162	120	132	80	108
Redwood Valley	15	14	5	7	14
Salinas	77	68	77	72	136
Selma	59	40	44	27	18
Stockton	191	151	121	116	131
Visalia	140	97	99	192	94
Westlake	5	9	12	8	7
Willows	60	36	13	14	11
Grand Total	**1,958**	**1,246**	**1,155**	**957**	**1,229**

2.h Number of payment posting errors attributable to the utility.

District	2019	2020	2021	2022	2023
Antelope Valley/Kern River Valley	32	19	13	9	14
Bakersfield	536	240	147	132	190
Bayshore	58	69	92	77	116
Bear Gulch	29	18	34	21	59
Chico	118	114	127	66	88
Dixon	55	30	23	10	14
East Los Angeles	177	60	61	33	66
King City	52	30	25	12	32
Livermore	95	60	42	27	40
Los Altos	17	26	33	23	53
Marysville	32	32	20	8	25

Oroville	48	13	35	23	13
Rancho Dominguez	162	120	132	80	108
Redwood Valley	15	14	5	7	14
Salinas	77	68	77	72	136
Selma	59	40	44	27	18
Stockton	191	151	121	116	131
Visalia	140	97	99	192	94
Westlake	5	9	12	8	7
Willows	60	36	13	14	11
Grand Total	**1,958**	**1,246**	**1,155**	**957**	**1,229**

**Includes customer errors. Unable to separate the data.*

3.0 Meter Reading Performance Standard

3.a Total number of meter readings scheduled.

District	2019	2020	2021	2022	2023
Bayshore	625,707	630,351	625,170	624,536	621,305
Bakersfield	747,138	775,528	789,666	811,255	834,632
Bear Gulch	220,892	630,351	219,771	220,922	221,276
Chico	360,554	364,528	365,369	369,105	369,876
Dixon	35,642	36,296	36,711	36,735	36,946
East Los Angeles	312,912	314,929	312,439	313,404	313,665
Kern River Valley/Antelope Valley	54,926	55,582	55,243	56,724	56,760
King City	31,896	32,594	33,383	34,023	34,416
Livermore	221,927	223,481	221,182	221,574	222,332
Los Altos	222,819	222,546	220,598	219,803	219,991
Marysville	44,587	44,970	44,202	44,427	44,568
Oroville	41,997	42,295	42,026	42,937	42,779
Rancho Dominguez	1,006,445	1,007,938	1,000,893	1,006,477	1,005,286
Redwood Valley	11,509	11,825	11,760	13,156	12,912
Salinas	337,573	338,406	334,658	335,866	336,635
Selma	72,908	73,298	72,936	76,298	77,191
Stockton	523,020	527,291	523,201	525,703	530,476
Visalia	542,789	551,622	554,981	565,264	569,916
Westlake	86,040	83,264	82,134	83,047	82,924
Willows	28,613	28,904	28,542	28,708	28,633
Grand Total	**5,529,894**	**5,995,999**	**5,574,865**	**5,629,964**	**5,662,519**

3.b The number of meters completed out of the total number of meters.

District	2019	2020	2021	2022	2023
Bayshore	625,644	630,342	625,126	624,371	620,937
Bakersfield	742,602	766,690	777,732	801,345	818,335
Bear Gulch	220,841	630,342	219,724	220,835	219,618
Chico	360,533	354,198	365,014	368,850	369,220
Dixon	35,609	36,270	36,708	36,727	36,910
East Los Angeles	312,859	300,420	310,240	313,103	313,216
Kern River Valley/Antelope Valley	54,806	55,426	52,390	56,375	56,499
King City	31,824	32,542	33,308	34,008	34,391
Livermore	221,910	223,469	221,091	221,391	222,157
Los Altos	222,798	222,504	220,500	219,691	219,849
Marysville	44,587	44,969	44,183	44,344	44,495
Oroville	41,588	40,202	41,267	42,673	42,020
Rancho Dominguez	1,001,258	970,417	994,421	1,001,003	996,367
Redwood Valley	10,790	11,366	11,339	12,751	12,720
Salinas	336,688	335,923	334,359	333,889	335,425

Selma	72,873	73,271	72,789	75,822	76,398
Stockton	517,075	522,911	515,675	519,613	520,744
Visalia	542,715	551,336	549,842	564,467	565,218
Westlake	86,032	83,253	82,124	83,001	82,895
Willows	28,606	28,894	28,535	28,699	28,614
Grand Total	**5,511,638**	**5,914,745**	**5,536,367**	**5,602,958**	**5,616,028**

4.0 Work Completion Performance Standards

4.a Number of scheduled appointments missed.

District	2019	2020	2021	2022	2023
Bayshore	12	1	10	2	2
Bakersfield	19	8	22	2	6
Bear Gulch	2	1	2	1	4
Chico	2	10	2	1	2
Dixon	3	0	0	0	1
East Los Angeles	6	2	5	2	1
Kern River Valley/Antelope Valley	1	1	5	3	1
King City	0	1	2	0	0
Livermore	6	3	9	2	0
Los Altos	7	5	8	0	0
Marysville	0	0	0	0	0
Oroville	2	2	1	1	0
Rancho Dominguez	28	7	7	5	1
Redwood Valley	5	0	0	0	0
Salinas	12	1	11	5	1
Selma	0	0	3	0	2
Stockton	10	0	8	5	0
Visalia	5	2	7	4	2
Westlake	0	0	0	0	1
Willows	0	0	0	0	0
Grand Total	**120**	**44**	**102**	**33**	**24**

4.b Number of scheduled appointments.

District	2019	2020	2021	2022	2023
Bayshore	1,427	1,225	1,377	1,460	1,673
Bakersfield	5,909	1,935	1,759	2,421	3,116
Bear Gulch	1,121	1,225	910	790	781
Chico	1,373	1,179	1,226	1,057	1,294
Dixon	266	96	100	199	178
East Los Angeles	1,688	625	499	631	911
Kern River Valley/Antelope Valley	151	55	369	527	594
King City	27	22	63	130	190
Livermore	651	539	688	697	700
Los Altos	566	435	719	803	831
Marysville	113	72	94	223	305
Oroville	233	118	146	282	377
Rancho Dominguez	2,176	1,733	2,342	2,256	2,289
Redwood Valley	68	8	25	129	168
Salinas	1,269	972	814	877	1,077

Selma	20	12	121	183	273
Stockton	4,063	2,626	1,979	2,183	3,299
Visalia	1,961	978	1,065	1,143	1,291
Westlake	101	74	162	175	187
Willows	24	5	41	147	191
Grand Total	**23,207**	**13,934**	**14,499**	**16,313**	**19,725**

4.c Number of customer requested work not completed on or before the scheduled date.

District	2019	2020	2021	2022	2023
Bayshore	12	0	15	5	5
Bakersfield	147	35	113	4	12
Bear Gulch	7	0	3	1	5
Chico	19	35	11	1	9
Dixon	7	3	3	0	2
East Los Angeles	11	1	2	5	5
Kern River Valley/Antelope Valley	13	1	7	2	2
King City	7	3	0	0	0
Livermore	22	2	11	3	1
Los Altos	9	5	19	5	4
Marysville	12	1	0	0	2
Oroville	7	4	10	1	1
Rancho Dominguez	176	7	32	5	30
Redwood Valley	18	2	5	0	1
Salinas	21	2	40	1	6
Selma	26	3	6	0	7
Stockton	58	9	10	31	7
Visalia	1	3	7	14	31
Westlake	0	1	1	0	3
Willows	2	2	2	0	1
Grand Total	**575**	**119**	**297**	**78**	**134**

4.d Number of jobs resulting from customer requests for meter turn ons, meter read over, disconnects and reconnects.

District	2019	2020	2021	2022	2023
Bayshore	6,220	5,913	6,752	6,299	6,075
Bakersfield	17,922	12,045	10,835	12,348	13,248
Bear Gulch	2,725	5,913	2,830	2,459	2,380
Chico	7,597	6,741	6,352	5,864	5,483
Dixon	624	540	574	491	401
East Los Angeles	3,363	1,778	1,883	2,095	2,267
Kern River Valley/Antelope Valley	1,100	1,150	1,097	1,241	1,326
King City	496	414	435	462	537

Livermore	2,928	2,889	3,150	2,752	2,190
Los Altos	1,909	1,928	2,524	2,157	2,122
Marysville	819	771	768	880	818
Oroville	1,056	1,021	763	788	793
Rancho Dominguez	8,952	8,314	8,850	7,875	7,922
Redwood Valley	460	358	301	391	372
Salinas	4,252	3,522	3,360	3,264	3,411
Selma	1,432	1,194	1,007	1,153	1,413
Stockton	8,255	6,262	6,522	7,851	8,323
Visalia	9,489	7,557	8,140	8,333	8,653
Westlake	969	1,015	1,046	861	822
Willows	576	444	456	473	500
Grand Total	**81,144**	**69,769**	**67,645**	**68,037**	**69,056**

4.e Number of jobs resulting from customer requests for meter turn ons, meter read over, disconnects and reconnects not completed on or before the scheduled date.

See the table in response 4.c., above. Note that the language in Question 4.c. and the language in Question 4.e. describe the same data set identified in GO 103-A.

4.f Number of customer orders not completed on or before the scheduled data. Excluding any orders not completed due to events outside the utility's control.

Cal Water does not have data that excludes orders not completed due to events outside the utility's control.

Completed By

Submitted By:	Nishaik Tillman	Customer Relations Manager
Manager:	Theresa Baptiste	Director of Customer Service

Emergency Interuptions

District	2019	2020	2021	2022	2023	Total
AV	0	0	0	1	1	2
BAY	89	75	74	79	85	402
BG	47	27	39	38	43	194
BK	5	4	5	7	10	31
CH	20	12	12	6	7	57
DIX	0	0	0	0	0	0
DOM	11	31	21	19	23	105
ELA	45	40	55	63	56	259
HR	7	8	6	2	12	35
KC	2	5	2	3	5	17
KRV	3	4	4	4	3	18
LIV	8	12	8	8	2	38
LAS	10	8	7	4	11	40
MRL	1	0	1	2	0	4
ORO	6	3	7	3	10	29
PV	16	20	18	24	46	124
RDV	0	1	1	1	1	4
STK	55	29	27	42	45	198
SEL	1	0	4	3	0	8
SLN	7	10	23	16	19	75
VIS	1	1	1	2	6	11
WLK	1	2	1	1	1	6
WIL	4	5	6	5	5	25
Total	339	297	322	333	391	1682

Scheduled Interuptions

District	2019	2020	2021	2022	2023	Total
AV	0	0	0	0	0	0
BAY	77	67	65	79	83	371
BG	88	76	54	44	46	308
BK	14	9	25	14	17	79
CH	24	17	20	24	31	116
DIX	1	0	1	1	2	5
DOM	36	14	21	15	17	103
ELA	25	21	27	26	13	112
HR	11	15	8	11	12	57
KC	2	3	8	9	8	30
KRV	0	1	2	1	1	5
LIV	15	20	25	5	30	95
LAS	46	59	87	81	105	378
MRL	4	1	1	4	2	12
ORO	4	0	6	2	9	21
PV	15	15	17	14	27	88
RDV	0	0	1	0	0	1
STK	24	17	41	35	69	186
SEL	1	1	1	5	8	16
SLN	15	9	28	26	22	100
VIS	1	0	0	2	21	24
WLK	0	2	0	0	2	4
WIL	1	1	2	2	1	7
Total	404	348	440	400	526	2118

Attachment 1-2:
CWS's Response to DR JMI-008 (AWIA Compliance)

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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From: **California Water Service** 2024GRCDataRequest@calwater.com

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Patrick Alexander (408) 367-8230
General Rate Case Manager palexander@calwater.com

Melody Singh (916) 329-1856
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Date: **September 3, 2024** Re: **JMI-008** Subj: **AWIA Compliance**	Request Received from CPUC: **August 26, 2024** Requested Due Date: **September 3, 2024**

Comments:

- **Full response attached.**
- **Response provided by Engineering.**
- **Attachments contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **Confidential JMI-008 Att 1 Q.1d_Phase 3 RRA_Dixon**
  - **Confidential JMI-008 Att 2 Q.1d_Phase 3 RRA_King City**
  - **Confidential JMI-008 Att 3 Q.1d_Phase 3 RRA_Marysville**

Confidential JMI-008 Att 4 Q.1d_Phase 3 RRA_Oroville
Confidential JMI-008 Att 5 Q.1d_Phase 3 RRA_Salinas
Confidential JMI-008 Att 6 Q.1d_Phase 3 RRA_Selma
Confidential JMI-008 Att 7 Q.1d_Phase 3 RRA_Travis
Confidential JMI-008 Att 8 Q.1d Phase 3 RRA_Westlake
Confidential JMI-008 Att 9 Q.1d_Phase 3 RRA_Willows
Confidential JMI-008 Att 10 Q.1d_Antelope Valley ERP_May 2024
Confidential JMI-008 Att 11 Q.1d_Bakersfield ERP_May 2024
Confidential JMI-008 Att 12 Q.1d_Bayshore ERP_July 2024
Confidential JMI-008 Att 13 Q.1d_Bear Gulch ERP_June 2024
Confidential JMI-008 Att 14 Q.1d_Chico ERP_June 2024
Confidential JMI-008 Att 15 Q.1d_CSS_ERP_ July 2024
Confidential JMI-008 Att 16 Q.1d_Dixon_ERP_July 2024
Confidential JMI-008 Att 17 Q.1d_ELA ERP_May 2024
Confidential JMI-008 Att 18 Q.1d_KRV ERP_June 2024
Confidential JMI-008 Att 19 Q.1d_King City ERP_June 2024
Confidential JMI-008 Att 20 Q.1d_Livermore ERP_June 2024
Confidential JMI-008 Att 21 Q.1d_Los Altos ERP_May 2024
Confidential JMI-008 Att 22 Q.1d_Marysville ERP July 2024
Confidential JMI-008 Att 23 Q.1d_Oroville ERP_June 2024
Confidential JMI-008 Att 24 Q.1d_Rancho Dominguez ERP_June 2024
Confidential JMI-008 Att 25 Q.1d_Salinas ERP_June 2024
Confidential JMI-008 Att 26 Q.1d_SEL-TV-ML ERP_JUNE 2024
Confidential JMI-008 Att 27 Q.1d_Stockton ERP_June 2024
Confidential JMI-008 Att 28 Q.1d_Travis_ERP_July 2024
Confidential JMI-008 Att 29 Q.1d_Visalia ERP_June 2024
Confidential JMI-008 Att 30 Q.1d_Westlake ERP_June 2024
Confidential JMI-008 Att 31 Q.1d_Willows ERP_July 2024
JMI-008 Att 32 Q.1d AWIA Confidentiality Memo

Data Requests and Responses

America's Water Infrastructure Act (AWIA) Compliance (All Districts)

1. Section 2013 of the America's Water Infrastructure Act states that community water systems shall review their risk and resilience assessments (R&RAs) and Emergency Response Plans (ERPs) at least once every five years after the applicable certification submission deadlines.[1] Accordingly, the most recent deadlines for the ERPs were September 30, 2020 for systems serving a population over 100,000, June 30, 2021 for systems serving a population between 50,000 - 99,999, and December 31, 2021 for systems serving a population between 3,301 - 49,999.[2]

   In the 2021 rate case, Cal Water stated that the R&RA for the three priority categories was required to be completed by March 31, 2020 for Priority 1 systems, December 31, 2020 for Priority 2 systems, and June 30, 2021 for Priority 3 systems.[3]

   a. Cal Water states that all districts "have updated and fully vetted their ERPs."[4] For each system, please provide the date of the most recent update completed and the scheduled or approximate completion date of the next ERP update.
   Response:

   For AWIA compliance, Cal Water reviewed each risk and resilience report (RRA) for each water system and generated individual technical memorandums for each system serving more than 3,300 people to ensure the ERPs were in compliance with the findings of the RRAs. Various sections of the ERPs were revised to reflect new information from the ERP technical memorandums. The following list shows the district, last ERP certification date, last ERP update, approximate completion date of the next ERP, and the next AWIA ERP certification deadline.

[1] Section 2013 of America's Water Infrastructure Act, Frequently Asked Questions. (https://www.epa.gov/sites/default/files/2020-04/documents/awia_s2013_faqs_final.pdf).
[2] Section 2013 of America's Water Infrastructure Act, Frequently Asked Questions. (https://www.epa.gov/sites/default/files/2020-04/documents/awia_s2013_faqs_final.pdf).
[3] Cal Water Additional Testimony (from A.21-07-002), p. 97, lines 14-20.
[4] Testimony Book #3, p. 52, line 28.

District	System	Last ERP Certification	Last ERP update	Next ERP certification deadline	Next planned ERP update	Notes
Antelope Valley	Antelope Valley	N/A	5/1/2024	N/A	5/1/2025	No AWIA requirement
Bayshore	San Carlos	6/30/2021	7/1/2024	6/30/2026	7/1/2025	
Bayshore	San Mateo	9/30/2020	7/1/2024	9/30/2025	7/1/2025	
Bayshore	South San Francisco	6/30/2021	7/1/2024	6/30/2026	7/1/2025	
Bear Gulch	Bear Gulch	6/30/2021	6/1/2024	6/30/2026	6/1/2025	
BK	Bakersfield	9/30/2020	5/1/2024	9/30/2025	5/1/2025	
BK	North Garden	12/31/2021	5/1/2024	12/31/2026	5/1/2025	
Chico	Chico	9/30/2020	6/1/2024	9/30/2025	6/1/2025	
Dixon	Dixon	12/31/2021	7/1/2024	12/31/2026	7/1/2025	
East Los Angeles	East Los Angeles	9/30/2020	5/1/2024	9/30/2025	5/1/2025	
Kern River Valley	Kern River Valley	N/A	6/1/2024	N/A	6/1/2025	No AWIA requirement
King City	King City	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Livermore	Livermore	6/30/2021	6/1/2024	6/30/2026	6/1/2025	
Los Altos	Los Altos	6/30/2021	5/1/2024	6/30/2026	5/1/2025	
Marysville	Marysville	12/31/2021	7/1/2024	12/31/2026	7/1/2025	
Oroville	Oroville	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Rancho Dominguez	Dominguez	9/30/2020	6/1/2024	9/30/2025	6/1/2025	
Rancho Dominguez	Hermosa Redondo	6/30/2021	6/1/2024	6/30/2026	6/1/2025	
Rancho Dominguez	Palos Verdes	6/30/2021	6/1/2024	6/30/2026	6/1/2025	
Redwood Valley	Redwood Valley	N/A	7/1/2024	N/A	7/1/2025	No AWIA requirement
Salinas	Los Lomas	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Salinas	Oak Hills	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Salinas	Salinas	9/30/2020	6/1/2024	9/30/2025	6/1/2025	
Salinas	Salinas Hills	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Selma	Selma	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Stockton	Stockton	9/30/2020	6/1/2024	9/30/2025	6/1/2025	
Travis	Travis AFB	12/31/2021	7/1/2024	12/31/2026	7/1/2025	
Visalia	Visalia	9/30/2020	6/1/2024	9/30/2025	6/1/2025	
Westlake	Westlake	12/31/2021	6/1/2024	12/31/2026	6/1/2025	
Willows	Willows	12/31/2021	7/1/2024	12/31/2026	7/1/2025	

b. For each system, please provide the date of the most recent R&RA update completed and the scheduled or approximate completion date of the next R&RA update.

Response:

The following table shows each system, the date of the most recent RRA update, and the date of the next required certification.

District	System	Last RRA update	Next RRA certification deadline	Notes
Antelope Valley	Antelope Valley	7/31/2022	N/A	No AWIA requirement
Bayshore	San Carlos	12/31/2020	12/31/2025	
Bayshore	San Mateo	3/31/2020	3/31/2025	
Bayshore	South San Francisco	12/31/2020	12/31/2025	
Bear Gulch	Bear Gulch	12/31/2020	12/31/2025	
BK	Bakersfield	3/31/2020	3/31/2025	
BK	North Garden	6/30/2021	6/30/2026	
Chico	Chico	3/31/2020	3/31/2025	
Dixon	Dixon	6/30/2021	6/30/2026	
East Los Angeles	East Los Angeles	3/31/2020	3/31/2025	
Kern River Valley	Kern River Valley	7/31/2022	N/A	No AWIA requirement
King City	King City	6/30/2021	6/30/2026	
Livermore	Livermore	12/31/2020	12/31/2025	
Los Altos	Los Altos	12/31/2020	12/31/2025	
Marysville	Marysville	6/30/2021	6/30/2026	
Oroville	Oroville	6/30/2021	6/30/2026	
Rancho Dominguez	Dominguez	3/31/2020	3/31/2025	
Rancho Dominguez	Hermosa Redondo	12/31/2020	12/31/2025	
Rancho Dominguez	Palos Verdes	12/31/2020	12/31/2025	
Redwood Valley	Redwood Valley	7/31/2022	N/A	No AWIA requirement
Salinas	Los Lomas	6/30/2021	6/30/2026	
Salinas	Oak Hills	6/30/2021	6/30/2026	
Salinas	Salinas	3/31/2020	3/31/2025	
Salinas	Salinas Hills	6/30/2021	6/30/2026	
Selma	Selma	6/30/2021	6/30/2026	

Stockton	Stockton	3/31/2020	3/31/2025	
Travis	Travis AFB	6/30/2021	6/30/2026	
Visalia	Visalia	3/31/2020	3/31/2025	
Westlake	Westlake	6/30/2021	6/30/2026	
Willows	Willows	6/30/2021	6/30/2026	

c. Please confirm whether Cal Water is requesting funding in this rate case related to updating the R&RAs and ERPs. If so, please specify where in Cal Water's RO model these costs are recorded.

Response:
The majority of the costs incurred for this effort took place in 2020 and 2021. These expenses are included in Cal Water's five-year historical average, which serves as the baseline for our forecast. We will update our RRAs and ERPs in 2026 and 2027, the Test Year and Escalation Year for this proceeding. Cal Water did not request any additional funding over the escalated historical average.

d. Please provide copies of R&RAs updated more recently than July 1, 2021 and ERPs updated more recently than January 1, 2022, if any.

Response:
Please see Confidential Attachments #1-31. This includes all priority 3 RRAs (last certified on 12/31/2021) and all ERPs (last updated in 2024).

Attachment 1-3:
CAB's Response Data

Case Num	Case Type	Disposition	Receipt Date	Closed Date	Utility Code	Utility Name	Subcategory_1	Subcategory_2	Subcategory_3
324035	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-01-2014	07-01-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
324045	PHONE CONTACT	MISDIRECTED - UTILITY	07-01-2014	07-01-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
324086	PHONE CONTACT	MISDIRECTED - UTILITY	07-01-2014	07-01-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
324416	PHONE CONTACT	MISDIRECTED - UTILITY	07-07-2014	07-07-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
324569	IMPOUND	IN CONSUMER FAVOR	07-08-2014	07-11-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
324652	PHONE CONTACT	MISDIRECTED - UTILITY	07-09-2014	07-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
324939	PHONE CONTACT	MISDIRECTED - UTILITY	07-14-2014	07-14-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
324990	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-14-2014	07-14-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
325194	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-15-2014	07-15-2014	WTA60	California Water Service Company	Other Charges	NULL	NULL
325252	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-16-2014	07-16-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
325253	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-16-2014	07-16-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
325319	PHONE CONTACT	MISDIRECTED - UTILITY	07-16-2014	07-16-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
325388	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-17-2014	07-17-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
325392	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-17-2014	08-12-2014	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
325534	PHONE CONTACT	MISDIRECTED - UTILITY	07-18-2014	07-18-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
325549	PHONE CONTACT	MISDIRECTED - UTILITY	07-18-2014	07-18-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
325589	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-18-2014	07-18-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
325617	PHONE CONTACT	MISDIRECTED - UTILITY	07-21-2014	07-21-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
325843	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2014	07-22-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
325864	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2014	07-22-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
326021	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-23-2014	08-04-2014	WTA60	California Water Service Company	Other Charges	NULL	NULL
326034	PHONE CONTACT	MISDIRECTED - UTILITY	07-23-2014	07-23-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
326039	PHONE CONTACT	MISDIRECTED - UTILITY	07-23-2014	07-23-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
326113	PHONE CONTACT	MISDIRECTED - UTILITY	07-24-2014	07-24-2014	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
326121	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-24-2014	07-24-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
326156	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-24-2014	07-24-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
326174	PHONE CONTACT	MISDIRECTED - UTILITY	07-24-2014	07-24-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
326232	PHONE CONTACT	MISDIRECTED - NON-JURISDICTIONAL	07-25-2014	07-25-2014	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
326529	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-28-2014	08-29-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
326530	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-29-2014	07-29-2014	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
326558	PHONE CONTACT	MISDIRECTED - UTILITY	07-29-2014	07-29-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
326628	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-29-2014	07-29-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
326674	PHONE CONTACT	MISDIRECTED - UTILITY	07-29-2014	07-29-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
326703	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-30-2014	07-30-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
326757	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-29-2014	08-07-2014	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
326818	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-30-2014	07-30-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
326888	PHONE CONTACT	MISDIRECTED - UTILITY	07-31-2014	07-31-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
326979	PHONE CONTACT	MISDIRECTED - UTILITY	08-01-2014	08-01-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
327101	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-01-2014	08-01-2014	WTA60	California Water Service Company	Meter Reading Issue	High Bill	NULL
327229	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-04-2014	08-12-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
327360	PHONE CONTACT	INQUIRY ANSWERED	08-05-2014	08-05-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
327423	PHONE CONTACT	MISDIRECTED - UTILITY	08-05-2014	08-05-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
327430	PHONE CONTACT	MISDIRECTED - UTILITY	08-06-2014	08-06-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
327526	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-06-2014	08-06-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
327532	PHONE CONTACT	MISDIRECTED - UTILITY	08-06-2014	08-06-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
327639	PHONE CONTACT	MISDIRECTED - UTILITY	08-07-2014	08-07-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
327667	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-07-2014	08-07-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
327787	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-08-2014	08-08-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
327797	PHONE CONTACT	MISDIRECTED - UTILITY	08-08-2014	08-08-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
327858	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-08-2014	08-08-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
328007	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-11-2014	08-11-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
328101	PHONE CONTACT	MISDIRECTED - UTILITY	08-11-2014	08-11-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328145	PHONE CONTACT	MISDIRECTED - UTILITY	08-12-2014	08-12-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328209	PHONE CONTACT	MISDIRECTED - UTILITY	08-12-2014	08-12-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
328259	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-12-2014	08-12-2014	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
328381	PHONE CONTACT	MISDIRECTED - UTILITY	08-13-2014	08-13-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328443	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-14-2014	08-14-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
328485	PHONE CONTACT	MISDIRECTED - UTILITY	08-14-2014	08-14-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328509	PHONE CONTACT	INQUIRY ANSWERED	08-14-2014	08-14-2014	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
328511	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-14-2014	08-14-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
328555	PHONE CONTACT	MISDIRECTED - UTILITY	08-15-2014	08-15-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328657	PHONE CONTACT	MISDIRECTED - UTILITY	08-15-2014	08-15-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328663	PHONE CONTACT	MISDIRECTED - UTILITY	08-15-2014	08-15-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328704	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-18-2014	08-18-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
328858	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2014	08-19-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL

328873	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-18-2014	08-26-2014	WTA60	California Water Service Company	Other Charges	NULL	NULL
328897	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2014	08-19-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
328910	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2014	08-19-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
328943	PHONE CONTACT	INQUIRY ANSWERED	08-19-2014	08-19-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
329028	PHONE CONTACT	INQUIRY ANSWERED	08-20-2014	08-20-2014	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
329123	PHONE CONTACT	MISDIRECTED - UTILITY	08-20-2014	08-20-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
329125	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-20-2014	08-20-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
329223	PHONE CONTACT	MISDIRECTED - UTILITY	08-21-2014	08-21-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
329316	PHONE CONTACT	MISDIRECTED - UTILITY	08-22-2014	08-22-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
329345	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-22-2014	09-04-2014	WTA60	California Water Service Company	Other Charges	Rate Protest	NULL
329472	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-25-2014	10-23-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
329497	PHONE CONTACT	MISDIRECTED - UTILITY	08-25-2014	08-25-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
329655	PHONE CONTACT	MISDIRECTED - UTILITY	08-26-2014	08-26-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
329689	PHONE CONTACT	MISDIRECTED - UTILITY	08-26-2014	08-26-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
329806	PHONE CONTACT	MISDIRECTED - UTILITY	08-27-2014	08-27-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
329827	PHONE CONTACT	COMMISSION POLICY	08-27-2014	08-27-2014	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
329863	PHONE CONTACT	MISDIRECTED - UTILITY	08-27-2014	08-27-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
329874	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-27-2014	08-27-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
329987	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-28-2014	08-28-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
330018	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-28-2014	08-28-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
330236	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2014	09-02-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
330242	PHONE CONTACT	INQUIRY ANSWERED	09-02-2014	09-02-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
330306	PHONE CONTACT	MISDIRECTED - UTILITY	09-02-2014	09-02-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
330321	PHONE CONTACT	MISDIRECTED - UTILITY	09-02-2014	09-02-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
330382	PHONE CONTACT	MISDIRECTED - UTILITY	09-02-2014	09-02-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
330477	PHONE CONTACT	MISDIRECTED - UTILITY	09-03-2014	09-03-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
330523	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-03-2014	09-03-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
330561	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-04-2014	09-04-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
330571	PHONE CONTACT	INQUIRY ANSWERED	09-04-2014	09-04-2014	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
330596	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-04-2014	09-04-2014	WTA60	California Water Service Company	Refusal To Serve	Disconnection Non Payment	NULL
330600	PHONE CONTACT	MISDIRECTED - UTILITY	09-04-2014	09-04-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
330670	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-04-2014	09-04-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
330725	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-05-2014	09-05-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
330728	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-05-2014	09-05-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
330764	PHONE CONTACT	MISDIRECTED - UTILITY	09-05-2014	09-05-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
330826	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-08-2014	09-08-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
330853	PHONE CONTACT	INQUIRY ANSWERED	09-08-2014	09-08-2014	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
331055	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2014	09-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331072	INFORMAL COMPLAINT	DISCRETION UTILITY	09-09-2014	10-23-2014	WTA60	California Water Service Company	High Bill	Commission Policy/Rules	NULL
331109	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2014	09-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331111	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2014	09-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331112	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2014	09-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331192	PHONE CONTACT	MISDIRECTED - UTILITY	09-10-2014	09-10-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331244	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-10-2014	09-10-2014	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
331261	PHONE CONTACT	MISDIRECTED - UTILITY	09-10-2014	09-10-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331393	PHONE CONTACT	INQUIRY ANSWERED	09-11-2014	09-11-2014	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
331404	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-11-2014	09-11-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
331486	PHONE CONTACT	REFERRED TO UTILITY	09-12-2014	09-12-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
331674	PHONE CONTACT	MISDIRECTED - UTILITY	09-15-2014	09-15-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
331705	INFORMAL COMPLAINT	DISCRETION UTILITY	09-12-2014	10-21-2014	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
331822	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-16-2014	09-16-2014	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
331924	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-16-2014	09-16-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
331965	PHONE CONTACT	MISDIRECTED - UTILITY	09-16-2014	09-16-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
332134	INFORMAL COMPLAINT	DISCRETION UTILITY	09-18-2014	11-18-2014	WTA60	California Water Service Company	Outage	NJ Landlord/Tenant Issues	NULL
332207	PHONE CONTACT	MISDIRECTED - UTILITY	09-18-2014	09-18-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
332287	PHONE CONTACT	MISDIRECTED - UTILITY	09-19-2014	09-19-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
332386	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-19-2014	09-19-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
332551	PHONE CONTACT	MISDIRECTED - UTILITY	09-22-2014	09-22-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
332684	PHONE CONTACT	MISDIRECTED - UTILITY	09-23-2014	09-23-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
332711	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-23-2014	09-23-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
332762	PHONE CONTACT	COMMISSION POLICY	09-23-2014	09-23-2014	WTA60	California Water Service Company	Rate Protest	NULL	NULL
332923	COMPLAINT	COMMISSION POLICY	09-24-2014	09-29-2014	WTA60	California Water Service Company	Rate Protest	NULL	NULL
333001	PHONE CONTACT	MISDIRECTED - UTILITY	09-25-2014	09-25-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333008	INFORMAL COMPLAINT	DISCRETION UTILITY	09-25-2014	11-04-2014	WTA60	California Water Service Company	Bill Adjustment	Commission Policy/Rules	NULL
333027	PHONE CONTACT	MISDIRECTED - UTILITY	09-26-2014	09-26-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333048	PHONE CONTACT	NON-JURISDICTIONAL	09-26-2014	09-26-2014	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL

333073	PHONE CONTACT	MISDIRECTED - UTILITY	09-26-2014	09-26-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333085	PHONE CONTACT	NON-JURISDICTIONAL	09-26-2014	09-26-2014	WTA60	California Water Service Company	NJ Rebates/Promotions	NULL	NULL
333099	PHONE CONTACT	INQUIRY ANSWERED	09-26-2014	09-26-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333176	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2014	09-29-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
333208	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-29-2014	11-18-2014	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
333282	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2014	09-29-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333295	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2014	09-29-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
333345	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2014	09-29-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333451	PHONE CONTACT	INQUIRY ANSWERED	09-30-2014	09-30-2014	WTA60	California Water Service Company	Water Rationing/Allocation	NJ Surcharges/Taxes	NULL
333639	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-01-2014	10-01-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
333653	PHONE CONTACT	MISDIRECTED - UTILITY	10-01-2014	10-01-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333662	INFORMAL COMPLAINT	DISCRETION UTILITY	10-01-2014	11-18-2014	WTA60	California Water Service Company	Outage	NJ Landlord/Tenant Issues	Safety
333696	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-02-2014	10-02-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
333741	PHONE CONTACT	MISDIRECTED - UTILITY	10-02-2014	10-02-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
333940	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-03-2014	10-03-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
333994	INFORMAL COMPLAINT	DISCRETION UTILITY	10-04-2014	11-18-2014	WTA60	California Water Service Company	Outage	Safety	NJ Landlord/Tenant Issues
334027	PHONE CONTACT	INQUIRY ANSWERED	10-06-2014	10-06-2014	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
334060	PHONE CONTACT	INQUIRY ANSWERED	10-06-2014	10-06-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
334230	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-07-2014	10-07-2014	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
334306	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-08-2014	10-08-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
334322	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-08-2014	10-08-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
334326	PHONE CONTACT	INQUIRY ANSWERED	10-08-2014	10-08-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
334328	PHONE CONTACT	INQUIRY ANSWERED	10-08-2014	10-08-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
334351	PHONE CONTACT	NON-JURISDICTIONAL	10-08-2014	10-08-2014	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
334369	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-08-2014	10-08-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
334494	PHONE CONTACT	MISDIRECTED - UTILITY	10-09-2014	10-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
334577	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-09-2014	11-18-2014	WTA60	California Water Service Company	Bill Adjustment	High Bill	NULL
334697	PHONE CONTACT	REFERRED TO UTILITY	10-13-2014	10-13-2014	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
334771	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-13-2014	10-13-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
334833	PHONE CONTACT	REFERRED TO UTILITY	10-13-2014	10-13-2014	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
334913	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-14-2014	10-14-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
334931	PHONE CONTACT	INQUIRY ANSWERED	10-14-2014	10-14-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
334949	INFORMAL COMPLAINT	DISCRETION UTILITY	10-14-2014	11-18-2014	WTA60	California Water Service Company	Outage	NJ Landlord/Tenant Issues	NULL
334971	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-15-2014	10-15-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
335028	PHONE CONTACT	INQUIRY ANSWERED	10-15-2014	10-15-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
335097	PHONE CONTACT	MISDIRECTED - UTILITY	10-15-2014	10-15-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
335151	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-16-2014	10-16-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
335308	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-17-2014	10-17-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
335310	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-17-2014	10-17-2014	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
335331	PHONE CONTACT	MISDIRECTED - UTILITY	10-17-2014	10-17-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
335499	PHONE CONTACT	MISDIRECTED - UTILITY	10-20-2014	10-20-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
335525	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-20-2014	10-20-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
335533	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-20-2014	11-06-2014	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
335537	PHONE CONTACT	INQUIRY ANSWERED	10-20-2014	10-20-2014	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NULL
335572	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-20-2014	11-18-2014	WTA60	California Water Service Company	High Bill	Meter Reading Issue	Bill Adjustment
335787	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-22-2014	10-22-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
335828	PHONE CONTACT	INQUIRY ANSWERED	10-22-2014	10-22-2014	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
335925	PHONE CONTACT	MISDIRECTED - UTILITY	10-23-2014	10-23-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
335957	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-23-2014	10-23-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
335968	PHONE CONTACT	INQUIRY ANSWERED	10-23-2014	10-23-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
336159	INFORMAL COMPLAINT	DISCRETION UTILITY	10-24-2014	11-13-2014	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
336205	PHONE CONTACT	INQUIRY ANSWERED	10-27-2014	10-27-2014	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
336295	COMPLAINT	COMMISSION POLICY	10-27-2014	10-30-2014	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
336301	PHONE CONTACT	MISDIRECTED - UTILITY	10-27-2014	10-27-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
336359	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-28-2014	10-28-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
336435	PHONE CONTACT	MISDIRECTED - UTILITY	10-28-2014	10-28-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
336477	PHONE CONTACT	NON-JURISDICTIONAL	10-29-2014	10-29-2014	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
336501	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-27-2014	12-26-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
336566	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	10-29-2014	11-30-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
336626	COMPLAINT	COMMISSION POLICY	10-29-2014	10-31-2014	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
337014	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-03-2014	11-03-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NJ Municipal Utility
337024	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2014	11-03-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
337078	PHONE CONTACT	REFERRED TO UTILITY	11-04-2014	11-04-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
337091	INFORMAL COMPLAINT	DISCRETION UTILITY	11-03-2014	11-13-2014	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
337180	PHONE CONTACT	MISDIRECTED - UTILITY	11-04-2014	11-04-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
337228	PHONE CONTACT	MISDIRECTED - UTILITY	11-05-2014	11-05-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL

337358	PHONE CONTACT	COMMISSION POLICY	11-06-2014	11-06-2014	WTA60	California Water Service Company	Rate Design	NULL	NULL
337501	PHONE CONTACT	REFERRED TO UTILITY	11-07-2014	11-07-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
337553	INFORMAL COMPLAINT	DISCRETION UTILITY	11-06-2014	12-26-2014	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
337722	INFORMAL COMPLAINT	DISCRETION UTILITY	11-10-2014	12-04-2014	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
337756	PHONE CONTACT	MISDIRECTED - UTILITY	11-12-2014	11-12-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
337841	PHONE CONTACT	ADVISE CONSUMER TO WRITE	11-12-2014	11-12-2014	WTA60	California Water Service Company	Rate Protest	NULL	NULL
337847	PHONE CONTACT	MISDIRECTED - UTILITY	11-12-2014	11-12-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
337859	PHONE CONTACT	MISDIRECTED - UTILITY	11-12-2014	11-12-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
337957	PHONE CONTACT	MISDIRECTED - UTILITY	11-13-2014	11-13-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
337964	PHONE CONTACT	INQUIRY ANSWERED	11-13-2014	11-13-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
338128	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-14-2014	12-15-2014	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
338151	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2014	11-14-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
338260	PHONE CONTACT	MISDIRECTED - UTILITY	11-17-2014	11-17-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
338285	PHONE CONTACT	MISDIRECTED - UTILITY	11-17-2014	11-17-2014	WTA60	California Water Service Company	NJ Customer Service	High Bill	NULL
338286	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-17-2014	11-17-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
338289	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-17-2014	11-17-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
338296	PHONE CONTACT	MISDIRECTED - UTILITY	11-17-2014	11-17-2014	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
338297	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-17-2014	11-17-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
338307	PHONE CONTACT	MISDIRECTED - UTILITY	11-17-2014	11-17-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
338308	PHONE CONTACT	NON-JURISDICTIONAL	11-17-2014	11-17-2014	WTA60	California Water Service Company	NJ Company Practice	NJ Customer Service	NULL
338326	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-17-2014	11-17-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
338381	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-18-2014	01-08-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Meter Inaccuracy/Reading Issues
338424	PHONE CONTACT	MISDIRECTED - UTILITY	11-18-2014	11-18-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
338432	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-18-2014	11-18-2014	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
338455	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-18-2014	11-18-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
338487	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-18-2014	11-18-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
338738	PHONE CONTACT	NON-JURISDICTIONAL	11-20-2014	11-20-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
338776	PHONE CONTACT	INQUIRY ANSWERED	11-20-2014	11-20-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
338790	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-20-2014	11-20-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
338937	INFORMAL COMPLAINT	DISCRETION UTILITY	11-21-2014	01-22-2015	WTA60	California Water Service Company	High Bill	Meter Reading Issue	Rate Design
339271	PHONE CONTACT	MISDIRECTED - UTILITY	11-26-2014	11-26-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
339292	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-26-2014	11-26-2014	WTA60	California Water Service Company	Deposits	NULL	NULL
339294	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-26-2014	11-26-2014	WTA60	California Water Service Company	NJ Equipment	NULL	NULL
339375	INFORMAL COMPLAINT	DISCRETION UTILITY	11-30-2014	01-06-2015	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
339402	PHONE CONTACT	MISDIRECTED - UTILITY	12-01-2014	12-01-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
339653	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-03-2014	12-03-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
339714	PHONE CONTACT	COMMISSION POLICY	12-03-2014	12-03-2014	WTA60	California Water Service Company	Rate Protest	NULL	NULL
339786	INFORMAL COMPLAINT	DISCRETION UTILITY	12-03-2014	01-20-2015	WTA60	California Water Service Company	Outage	NJ Landlord/Tenant Issues	NULL
339808	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-04-2014	12-04-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
339811	PHONE CONTACT	MISDIRECTED - UTILITY	12-04-2014	12-04-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
339821	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-04-2014	12-04-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
339833	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-04-2014	12-04-2014	WTA60	California Water Service Company	Master/Sub Meters (Mobile Homes)	High Bill	NULL
339838	PHONE CONTACT	MISDIRECTED - UTILITY	12-04-2014	12-04-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
339875	PHONE CONTACT	COMMISSION POLICY	12-04-2014	12-04-2014	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
339942	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-05-2014	12-05-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
339964	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-05-2014	12-05-2014	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
340245	PHONE CONTACT	MISDIRECTED - UTILITY	12-09-2014	12-09-2014	WTA60	California Water Service Company	Unknown	NULL	NULL
340288	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-09-2014	12-09-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
340426	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-10-2014	12-10-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
340432	PHONE CONTACT	COMMISSION POLICY	12-10-2014	12-10-2014	WTA60	California Water Service Company	Rate Design	NULL	NULL
340433	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-10-2014	12-10-2014	WTA60	California Water Service Company	High Bill	Rate Design	NULL
340444	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-10-2014	12-10-2014	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
340480	PHONE CONTACT	MISDIRECTED - UTILITY	12-10-2014	12-10-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
340774	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-15-2014	12-15-2014	WTA60	California Water Service Company	NJ Customer Service	NJ Company Practice	NULL
340796	PHONE CONTACT	MISDIRECTED - UTILITY	12-15-2014	12-15-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
340807	IMPOUND	DISCRETION UTILITY	12-15-2014	01-29-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
340917	PHONE CONTACT	MISDIRECTED - UTILITY	12-16-2014	12-16-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
340985	PHONE CONTACT	REFERRED TO UTILITY	12-16-2014	12-16-2014	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
341011	PHONE CONTACT	REFERRED TO UTILITY	12-17-2014	12-17-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
341040	PHONE CONTACT	REFERRED TO UTILITY	12-17-2014	12-17-2014	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
341051	PHONE CONTACT	MISDIRECTED - UTILITY	12-17-2014	12-17-2014	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
341169	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-18-2014	12-18-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
341351	PHONE CONTACT	MISDIRECTED - UTILITY	12-19-2014	12-19-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
341586	PHONE CONTACT	INQUIRY ANSWERED	12-23-2014	12-23-2014	WTA60	California Water Service Company	Late Payment Charge - LPC	Bill Format	NJ Company Practice
341691	PHONE CONTACT	INQUIRY ANSWERED	12-24-2014	12-24-2014	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
341738	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-24-2014	12-24-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL

341780	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-26-2014	12-26-2014	WTA60	California Water Service Company	High Bill	NULL	NULL
341861	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-26-2014	01-26-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Other Charges
341898	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-29-2014	12-29-2014	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
342246	PHONE CONTACT	MISDIRECTED - UTILITY	12-31-2014	12-31-2014	WTA60	California Water Service Company	Wrong Number	NULL	NULL
342573	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-05-2015	01-05-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
342647	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-06-2015	01-06-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
342667	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-06-2015	01-06-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
342684	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-06-2015	01-06-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
342838	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-07-2015	01-07-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
342901	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-07-2015	01-07-2015	WTA60	California Water Service Company	Unknown	NULL	NULL
342942	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-08-2015	01-08-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
343011	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-08-2015	01-08-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
343012	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-08-2015	01-08-2015	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
343042	PHONE CONTACT	MISDIRECTED - UTILITY	01-09-2015	01-09-2015	WTA60	California Water Service Company	Unknown	NULL	NULL
343088	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-09-2015	01-09-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
343133	PHONE CONTACT	INQUIRY ANSWERED	01-09-2015	01-09-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
343295	PHONE CONTACT	MISDIRECTED - UTILITY	01-12-2015	01-12-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
343346	INFORMAL COMPLAINT	DISCRETION UTILITY	01-12-2015	02-25-2015	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
343479	PHONE CONTACT	MISDIRECTED - UTILITY	01-13-2015	01-13-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
343533	PHONE CONTACT	MISDIRECTED - UTILITY	01-14-2015	01-14-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
343536	PHONE CONTACT	REFERRED TO UTILITY	01-14-2015	01-14-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
343726	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-15-2015	01-15-2015	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
344045	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-20-2015	01-20-2015	WTA60	California Water Service Company	Unknown	NULL	NULL
344251	PHONE CONTACT	INQUIRY ANSWERED	01-21-2015	01-21-2015	WTA60	California Water Service Company	Master/Sub Meters (Mobile Homes)	High Bill	NJ Rebates/Promotions
344256	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-21-2015	01-21-2015	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
344261	PHONE CONTACT	MISDIRECTED - UTILITY	01-21-2015	01-21-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
344263	PHONE CONTACT	MISDIRECTED - UTILITY	01-21-2015	01-21-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
344432	PHONE CONTACT	INQUIRY ANSWERED	01-22-2015	01-22-2015	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
344462	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-20-2015	02-25-2015	WTA60	California Water Service Company	High Bill	Rate Protest	Commission Policy/Rules
344579	PHONE CONTACT	ADVISE CONSUMER TO WRITE	01-23-2015	01-23-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
344672	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-23-2015	01-23-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
344755	PHONE CONTACT	MISDIRECTED - UTILITY	01-26-2015	01-26-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
344933	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-27-2015	01-27-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
344973	PHONE CONTACT	MISDIRECTED - UTILITY	01-27-2015	01-27-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
345151	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-28-2015	01-28-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
345343	PHONE CONTACT	INQUIRY ANSWERED	01-30-2015	01-30-2015	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	High Bill	NULL
345509	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-02-2015	02-02-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
345557	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-02-2015	02-02-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
345558	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-02-2015	02-02-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
345616	PHONE CONTACT	MISDIRECTED - UTILITY	02-02-2015	02-02-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
345675	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-03-2015	02-03-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
345730	PHONE CONTACT	NON-JURISDICTIONAL	02-03-2015	02-03-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
345831	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-04-2015	02-04-2015	WTA60	California Water Service Company	Other Charges	NULL	NULL
345834	PHONE CONTACT	REFERRED TO UTILITY	02-04-2015	02-04-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
345858	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-04-2015	02-04-2015	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
346098	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-05-2015	02-05-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
346143	PHONE CONTACT	REFERRED TO UTILITY	02-06-2015	02-06-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
346161	PHONE CONTACT	MISDIRECTED - NON-JURISDICTIONAL	02-06-2015	02-06-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
346248	PHONE CONTACT	COMMISSION POLICY	02-09-2015	02-09-2015	WTA60	California Water Service Company	Rate Protest	NULL	NULL
346333	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-09-2015	02-13-2015	WTA60	California Water Service Company	Disconnection Non Payment	Rate Protest	NULL
346396	PHONE CONTACT	INQUIRY ANSWERED	02-09-2015	02-09-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
346457	PHONE CONTACT	COMMISSION POLICY	02-10-2015	02-10-2015	WTA60	California Water Service Company	Rate Protest	NULL	NULL
346544	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-11-2015	02-11-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
346668	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-11-2015	02-11-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
346753	PHONE CONTACT	INQUIRY ANSWERED	02-12-2015	02-12-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
346781	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-12-2015	02-12-2015	WTA60	California Water Service Company	Bill Format	NULL	NULL
346784	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-12-2015	02-12-2015	WTA60	California Water Service Company	Bill Adjustment	High Bill	NULL
346823	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-12-2015	02-12-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
346869	PHONE CONTACT	MISDIRECTED - UTILITY	02-13-2015	02-13-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
347148	PHONE CONTACT	MISDIRECTED - UTILITY	02-17-2015	02-17-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
347155	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-17-2015	02-17-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
347157	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-17-2015	02-17-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
347163	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-17-2015	02-24-2015	WTA60	California Water Service Company	Bill Adjustment	Bill Format	NULL
347207	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-18-2015	02-18-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
347225	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-18-2015	02-18-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
347237	PHONE CONTACT	MISDIRECTED - UTILITY	02-18-2015	02-18-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL

347307	PHONE CONTACT	MISDIRECTED - UTILITY	02-18-2015	02-18-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
347342	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-18-2015	02-18-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
347370	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-18-2015	02-27-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Meter Inaccuracy/Reading Issues
347442	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-19-2015	02-19-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
347478	INFORMAL COMPLAINT	DISCRETION UTILITY	02-19-2015	03-13-2015	WTA60	California Water Service Company	High Bill	Meter Reading Issue	Rate Protest
347783	PHONE CONTACT	MISDIRECTED - UTILITY	02-23-2015	02-23-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
347833	PHONE CONTACT	MISDIRECTED - UTILITY	02-23-2015	02-23-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
347865	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-24-2015	02-24-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
348024	PHONE CONTACT	MISDIRECTED - UTILITY	02-25-2015	02-25-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
348031	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-25-2015	02-25-2015	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
348170	PHONE CONTACT	COMMISSION POLICY	02-26-2015	02-26-2015	WTA60	California Water Service Company	Rate Design	NULL	NULL
348183	PHONE CONTACT	REFERRED TO UTILITY	02-26-2015	02-26-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
348364	PHONE CONTACT	REFERRED TO UTILITY	02-27-2015	02-27-2015	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
348465	PHONE CONTACT	MISDIRECTED - UTILITY	03-02-2015	03-02-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
348494	PHONE CONTACT	MISDIRECTED - UTILITY	03-02-2015	03-02-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
348497	PHONE CONTACT	MISDIRECTED - UTILITY	03-02-2015	03-02-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
348631	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-03-2015	03-03-2015	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
348670	PHONE CONTACT	MISDIRECTED - UTILITY	03-03-2015	03-03-2015	WTA60	California Water Service Company	Bill Not Received	Bill Adjustment	NULL
348693	PHONE CONTACT	NON-JURISDICTIONAL	03-03-2015	03-03-2015	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
348729	INFORMAL COMPLAINT	DISCRETION UTILITY	03-03-2015	04-01-2015	WTA60	California Water Service Company	Bill Adjustment	NJ Claims for Damages	NULL
349182	PHONE CONTACT	MISDIRECTED - UTILITY	03-09-2015	03-09-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
349186	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-09-2015	03-09-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
349234	PHONE CONTACT	MISDIRECTED - UTILITY	03-09-2015	03-09-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
349586	PHONE CONTACT	MISDIRECTED - UTILITY	03-11-2015	03-11-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
349683	PHONE CONTACT	MISDIRECTED - UTILITY	03-12-2015	03-12-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
349831	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-13-2015	03-13-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
350125	PHONE CONTACT	MISDIRECTED - UTILITY	03-17-2015	03-17-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
350342	PHONE CONTACT	MISDIRECTED - UTILITY	03-18-2015	03-18-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
350373	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-18-2015	03-18-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
350439	PHONE CONTACT	MISDIRECTED - UTILITY	03-19-2015	03-19-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
350498	PHONE CONTACT	MISDIRECTED - UTILITY	03-19-2015	03-19-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
350528	INFORMAL COMPLAINT	DISCRETION UTILITY	03-20-2015	04-09-2015	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NJ Landlord/Tenant Issues
350540	PHONE CONTACT	INQUIRY ANSWERED	03-20-2015	03-20-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
350722	PHONE CONTACT	MISDIRECTED - UTILITY	03-23-2015	03-23-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
350752	PHONE CONTACT	MISDIRECTED - UTILITY	03-23-2015	03-23-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
350911	PHONE CONTACT	MISDIRECTED - UTILITY	03-24-2015	03-24-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
350919	PHONE CONTACT	MISDIRECTED - UTILITY	03-24-2015	03-24-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
351076	PHONE CONTACT	MISDIRECTED - UTILITY	03-25-2015	03-25-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
351140	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-26-2015	03-26-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
351354	PHONE CONTACT	MISDIRECTED - UTILITY	03-30-2015	03-30-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
351366	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-30-2015	03-30-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
351595	PHONE CONTACT	MISDIRECTED - UTILITY	04-01-2015	04-01-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
351604	PHONE CONTACT	MISDIRECTED - UTILITY	04-01-2015	04-01-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
351618	PHONE CONTACT	REFERRED TO UTILITY	04-01-2015	04-01-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
351621	PHONE CONTACT	REFERRED TO UTILITY	04-01-2015	04-01-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
351717	PHONE CONTACT	COMMISSION POLICY	04-02-2015	04-02-2015	WTA60	California Water Service Company	Rate Design	NULL	NULL
351915	PHONE CONTACT	INQUIRY ANSWERED	04-06-2015	04-06-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
351960	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-06-2015	04-06-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
352089	INFORMAL COMPLAINT	DISCRETION UTILITY	04-06-2015	04-28-2015	WTA60	California Water Service Company	Bill Adjustment	High Bill	NULL
352093	COMPLAINT	NON-JURISDICTIONAL	04-06-2015	04-09-2015	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
352236	PHONE CONTACT	REFERRED TO UTILITY	04-08-2015	04-08-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
352245	PHONE CONTACT	MISDIRECTED - UTILITY	04-08-2015	04-08-2015	WTA60	California Water Service Company	NJ Customer Service	Balance/Level Pay Plan	NULL
352547	PHONE CONTACT	MISDIRECTED - UTILITY	04-10-2015	04-10-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
352756	PHONE CONTACT	MISDIRECTED - UTILITY	04-14-2015	04-14-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
352861	PHONE CONTACT	MISDIRECTED - UTILITY	04-14-2015	04-14-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
352900	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-14-2015	04-28-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
353131	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-17-2015	04-17-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
353144	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-17-2015	04-17-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
353269	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-20-2015	04-20-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
353347	PHONE CONTACT	MISDIRECTED - UTILITY	04-20-2015	04-20-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
353478	PHONE CONTACT	MISDIRECTED - UTILITY	04-21-2015	04-21-2015	WTA60	California Water Service Company	Disconnected In Error	NJ Customer Service	NULL
353502	PHONE CONTACT	NON-JURISDICTIONAL	04-22-2015	04-22-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
353515	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-22-2015	04-22-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
353544	PHONE CONTACT	REFERRED TO UTILITY	04-22-2015	04-22-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
353547	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-22-2015	04-22-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
353590	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-22-2015	04-22-2015	WTA60	California Water Service Company	High Bill	NULL	NULL

353595	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-22-2015	04-22-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
353668	PHONE CONTACT	MISDIRECTED - UTILITY	04-23-2015	04-23-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
353863	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-27-2015	04-27-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
354071	PHONE CONTACT	MISDIRECTED - UTILITY	04-28-2015	04-28-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
354085	PHONE CONTACT	MISDIRECTED - UTILITY	04-28-2015	04-28-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
354427	PHONE CONTACT	MISDIRECTED - UTILITY	05-01-2015	05-01-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
354435	PHONE CONTACT	MISDIRECTED - UTILITY	05-01-2015	05-01-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
354443	PHONE CONTACT	MISDIRECTED - UTILITY	05-01-2015	05-01-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
354835	PHONE CONTACT	INQUIRY ANSWERED	05-06-2015	05-06-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
354839	PHONE CONTACT	NON-JURISDICTIONAL	05-06-2015	05-06-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
354842	PHONE CONTACT	MISDIRECTED - UTILITY	05-06-2015	05-06-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
354954	COMPLAINT	COMMISSION POLICY	05-07-2015	05-12-2015	WTA60	California Water Service Company	Rate Design	NULL	NULL
355043	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2015	05-08-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
355131	COMPLAINT	COMMISSION POLICY	05-10-2015	05-12-2015	WTA60	California Water Service Company	Rate Protest	NULL	NULL
355168	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2015	05-11-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
355216	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-11-2015	05-11-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
355224	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2015	05-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
355240	INFORMAL COMPLAINT	DISCRETION UTILITY	05-11-2015	06-23-2015	WTA60	California Water Service Company	High Bill	Rate Protest	Rate Design
355295	COMPLAINT	COMMISSION POLICY	05-11-2015	05-13-2015	WTA60	California Water Service Company	Commission Policy/Rules	Water Rationing/Allocation	NULL
355330	PHONE CONTACT	INQUIRY ANSWERED	05-12-2015	05-12-2015	WTA60	California Water Service Company	Disconnection Non Payment	Late Payment Charge - LPC	NULL
355399	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-12-2015	05-12-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
355452	PHONE CONTACT	MISDIRECTED - UTILITY	05-13-2015	05-13-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
355598	COMPLAINT	COMMISSION POLICY	05-14-2015	05-21-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
355695	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-15-2015	05-15-2015	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
355706	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-15-2015	05-15-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
355722	PHONE CONTACT	MISDIRECTED - UTILITY	05-15-2015	05-15-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
355742	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-15-2015	05-15-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
356052	INFORMAL COMPLAINT	DISCRETION UTILITY	05-19-2015	08-25-2015	WTA60	California Water Service Company	Safety	NULL	NULL
356136	PHONE CONTACT	COMMISSION POLICY	05-20-2015	05-20-2015	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
356328	PHONE CONTACT	MISDIRECTED - UTILITY	05-22-2015	05-22-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
356387	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-22-2015	05-22-2015	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
356460	PHONE CONTACT	REFERRED TO UTILITY	05-26-2015	05-26-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
356501	PHONE CONTACT	MISDIRECTED - UTILITY	05-26-2015	05-26-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
356643	PHONE CONTACT	MISDIRECTED - UTILITY	05-27-2015	05-27-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
356651	INFORMAL COMPLAINT	DISCRETION UTILITY	05-27-2015	06-23-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NJ Company Practice
356703	PHONE CONTACT	MISDIRECTED - UTILITY	05-28-2015	05-28-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
356716	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-28-2015	05-28-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
356735	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-28-2015	05-28-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
356840	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-01-2015	06-01-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
357102	PHONE CONTACT	INQUIRY ANSWERED	06-03-2015	06-03-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
357223	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-03-2015	06-03-2015	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
357297	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-04-2015	07-07-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
357300	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	06-04-2015	07-07-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
357312	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-04-2015	06-04-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
357322	PHONE CONTACT	MISDIRECTED - UTILITY	06-04-2015	06-04-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
357339	INFORMAL COMPLAINT	DISCRETION UTILITY	06-04-2015	08-04-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
357362	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-05-2015	06-05-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
357365	PHONE CONTACT	MISDIRECTED - UTILITY	06-05-2015	06-05-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
357388	COMPLAINT	COMMISSION POLICY	06-05-2015	06-09-2015	WTA60	California Water Service Company	Rate Protest	Water Rationing/Allocation	Commission Policy/Rules
357391	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-05-2015	06-26-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
357441	PHONE CONTACT	REFERRED TO UTILITY	06-08-2015	06-08-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
357519	PHONE CONTACT	INQUIRY ANSWERED	06-08-2015	06-08-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
357595	MISDIRECTED	MISDIRECTED - UTILITY	06-08-2015	06-09-2015	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
357770	PHONE CONTACT	MISDIRECTED - UTILITY	06-10-2015	06-10-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
357775	PHONE CONTACT	MISDIRECTED - UTILITY	06-10-2015	06-10-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
357841	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-10-2015	06-10-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
357908	PHONE CONTACT	MISDIRECTED - UTILITY	06-11-2015	06-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
357936	PHONE CONTACT	MISDIRECTED - UTILITY	06-11-2015	06-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
357991	PHONE CONTACT	MISDIRECTED - UTILITY	06-12-2015	06-12-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
358057	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-12-2015	06-12-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
358076	PHONE CONTACT	COMMISSION POLICY	06-12-2015	06-12-2015	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
358169	PHONE CONTACT	MISDIRECTED - UTILITY	06-15-2015	06-15-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
358175	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-15-2015	06-15-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
358325	PHONE CONTACT	MISDIRECTED - UTILITY	06-16-2015	06-16-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
358326	MISDIRECTED	MISDIRECTED - UTILITY	06-16-2015	06-18-2015	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
358357	PHONE CONTACT	REFERRED TO UTILITY	06-16-2015	06-16-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL

358361	PHONE CONTACT	MISDIRECTED - UTILITY	06-16-2015	06-16-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
358438	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-17-2015	08-07-2015	WTA60	California Water Service Company	Bill Adjustment	High Bill	NULL
358483	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-17-2015	06-17-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
358488	PHONE CONTACT	INQUIRY ANSWERED	06-17-2015	06-17-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
358587	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-18-2015	07-13-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
358692	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-19-2015	06-19-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
358730	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-22-2015	06-22-2015	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
358778	PHONE CONTACT	INQUIRY ANSWERED	06-22-2015	06-22-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
358798	PHONE CONTACT	REFERRED TO UTILITY	06-22-2015	06-22-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
358807	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-22-2015	09-09-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
358824	PHONE CONTACT	MISDIRECTED - UTILITY	06-22-2015	06-22-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
358831	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-22-2015	06-22-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
358842	PHONE CONTACT	REFERRED TO OTHER CPUC BRANCH	06-22-2015	06-22-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
358843	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-22-2015	06-22-2015	WTA60	California Water Service Company	Meter Reading Issue	NULL	NULL
358900	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-22-2015	06-22-2015	WTA60	California Water Service Company	Unknown	NULL	NULL
359145	PHONE CONTACT	MISDIRECTED - UTILITY	06-24-2015	06-24-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
359150	PHONE CONTACT	MISDIRECTED - UTILITY	06-24-2015	06-24-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
359178	PHONE CONTACT	MISDIRECTED - UTILITY	06-24-2015	06-24-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
359257	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-25-2015	06-25-2015	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
359267	PHONE CONTACT	INQUIRY ANSWERED	06-25-2015	06-25-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
359374	PHONE CONTACT	INQUIRY ANSWERED	06-26-2015	06-26-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
359379	PHONE CONTACT	MISDIRECTED - UTILITY	06-26-2015	06-26-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
359389	PHONE CONTACT	COMMISSION POLICY	06-26-2015	06-26-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
359423	INFORMAL COMPLAINT	DISCRETION UTILITY	06-26-2015	09-08-2015	WTA60	California Water Service Company	High Bill	Rate Design	Commission Policy/Rules
359638	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-30-2015	06-30-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
359700	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-30-2015	06-30-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
359754	COMPLAINT	COMMISSION POLICY	06-30-2015	07-02-2015	WTA60	California Water Service Company	Rate Design	Commission Policy/Rules	Rate Protest
359853	PHONE CONTACT	COMMISSION POLICY	07-01-2015	07-01-2015	WTA60	California Water Service Company	Rate Design	NULL	NULL
359969	PHONE CONTACT	MISDIRECTED - UTILITY	07-02-2015	07-02-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
359977	COMPLAINT	COMMISSION POLICY	07-02-2015	07-07-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
359985	PHONE CONTACT	MISDIRECTED - UTILITY	07-02-2015	07-02-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
360078	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-03-2015	07-03-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
360202	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2015	07-06-2015	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
360212	COMPLAINT	NON-JURISDICTIONAL	07-06-2015	07-09-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
360249	PHONE CONTACT	MISDIRECTED - UTILITY	07-07-2015	07-07-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
360261	PHONE CONTACT	INQUIRY ANSWERED	07-07-2015	07-07-2015	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
360293	PHONE CONTACT	INQUIRY ANSWERED	07-07-2015	07-07-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
360422	PHONE CONTACT	MISDIRECTED - UTILITY	07-08-2015	07-08-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
360479	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-08-2015	07-08-2015	WTA60	California Water Service Company	High Bill	Disconnected In Error	NULL
360514	INFORMAL COMPLAINT	DISCRETION UTILITY	07-08-2015	08-07-2015	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	Rate Design	Commission Policy/Rules
360673	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-10-2015	07-10-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
360832	PHONE CONTACT	MISDIRECTED - UTILITY	07-13-2015	07-13-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
360911	PHONE CONTACT	MISDIRECTED - UTILITY	07-13-2015	07-13-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
360982	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-14-2015	07-14-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
361013	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-14-2015	07-14-2015	WTA60	California Water Service Company	Refusal To Serve	NJ Company Practice	NULL
361123	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-15-2015	07-15-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
361152	PHONE CONTACT	MISDIRECTED - UTILITY	07-15-2015	07-15-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
361222	INFORMAL COMPLAINT	DISCRETION UTILITY	07-15-2015	08-25-2015	WTA60	California Water Service Company	High Bill	Rate Protest	Rate Design
361306	PHONE CONTACT	MISDIRECTED - UTILITY	07-16-2015	07-16-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
361312	PHONE CONTACT	MISDIRECTED - UTILITY	07-16-2015	07-16-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
361314	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-16-2015	07-16-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
361319	PHONE CONTACT	COMMISSION POLICY	07-16-2015	07-16-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
361356	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-16-2015	07-16-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
361363	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-16-2015	07-16-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
361373	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-16-2015	11-06-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Water Rationing/Allocation
361442	MISDIRECTED	MISDIRECTED - UTILITY	07-16-2015	07-23-2015	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
361620	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-20-2015	07-20-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
361672	INFORMAL COMPLAINT	DISCRETION UTILITY	07-20-2015	08-14-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
361711	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-20-2015	08-25-2015	WTA60	California Water Service Company	High Bill	Rate Design	Commission Policy/Rules
361783	PHONE CONTACT	MISDIRECTED - UTILITY	07-21-2015	07-21-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
361801	PHONE CONTACT	COMMISSION POLICY	07-21-2015	07-21-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
361868	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-20-2015	09-08-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
361922	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2015	07-22-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
361976	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-22-2015	09-09-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
362015	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-23-2015	09-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
362029	PHONE CONTACT	INQUIRY ANSWERED	07-23-2015	07-23-2015	WTA60	California Water Service Company	High Bill	NULL	NULL

362039	PHONE CONTACT	COMMISSION POLICY	07-23-2015	07-23-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
362122	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-24-2015	09-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
362160	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-24-2015	09-10-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
362239	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-24-2015	09-10-2015	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
362242	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-24-2015	09-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
362250	PHONE CONTACT	MISDIRECTED - NON-JURISDICTIONAL	07-27-2015	07-27-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
362289	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-27-2015	07-27-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
362303	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-27-2015	07-27-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
362321	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-27-2015	09-10-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
362330	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-27-2015	10-07-2015	WTA60	California Water Service Company	Water Rationing/Allocation	High Bill	Commission Policy/Rules
362360	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-27-2015	10-23-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	Rate Design
362406	INFORMAL COMPLAINT	DISCRETION UTILITY	07-27-2015	09-28-2015	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
362529	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-28-2015	09-11-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	Commission Policy/Rules
362576	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-29-2015	07-29-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
362602	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-29-2015	07-29-2015	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
362624	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-29-2015	10-23-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Rate Design	Commission Policy/Rules
362693	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-30-2015	11-17-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Water Rationing/Allocation
362718	COMPLAINT	COMMISSION POLICY	07-30-2015	08-03-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	Rate Protest
362759	PHONE CONTACT	MISDIRECTED - UTILITY	07-31-2015	07-31-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
362768	PHONE CONTACT	NON-JURISDICTIONAL	07-31-2015	07-31-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
362778	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-31-2015	08-26-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Bill Adjustment	Commission Policy/Rules
362811	PHONE CONTACT	MISDIRECTED - UTILITY	07-31-2015	07-31-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
362814	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-31-2015	07-31-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
362815	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-31-2015	08-28-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
362958	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-03-2015	08-03-2015	WTA60	California Water Service Company	Other Charges	NULL	NULL
362960	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-03-2015	08-03-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
363123	IMPOUND	IN CONSUMER FAVOR	08-04-2015	09-16-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
363161	INFORMAL COMPLAINT	DISCRETION UTILITY	08-04-2015	09-11-2015	WTA60	California Water Service Company	High Bill	NJ Customer Service	NJ Company Practice
363167	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-04-2015	08-04-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
363183	INFORMAL COMPLAINT	DISCRETION UTILITY	08-04-2015	09-11-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	Rate Protest
363218	IMPOUND	IN CONSUMER FAVOR	08-05-2015	09-16-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	Commission Policy/Rules
363230	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-05-2015	02-11-2016	WTA60	California Water Service Company	Water Rationing/Allocation	Bill Adjustment	NULL
363289	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-05-2015	08-05-2015	WTA60	California Water Service Company	Other Charges	NULL	NULL
363298	INFORMAL COMPLAINT	COMPROMISE	08-05-2015	10-26-2015	WTA60	California Water Service Company	Bill Adjustment	Meter Inaccuracy/Reading Issues	NULL
363428	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-07-2015	08-07-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
363473	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-07-2015	09-15-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
363514	COMPLAINT	COMMISSION POLICY	08-06-2015	08-20-2015	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	Rate Design
363529	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-07-2015	09-15-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
363542	INFORMAL COMPLAINT	DISCRETION UTILITY	08-07-2015	09-17-2015	WTA60	California Water Service Company	Bill Adjustment	Meter Reading Issue	NJ Landlord/Tenant Issues
363543	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-07-2015	09-16-2015	WTA60	California Water Service Company	Bill Adjustment	Meter Reading Issue	NJ Landlord/Tenant Issues
363560	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-10-2015	08-10-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
363628	PHONE CONTACT	COMMISSION POLICY	08-10-2015	08-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
363670	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-10-2015	10-08-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
363836	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-11-2015	09-11-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	Commission Policy/Rules
363868	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-11-2015	08-11-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
364017	PHONE CONTACT	NON-JURISDICTIONAL	08-13-2015	08-13-2015	WTA60	California Water Service Company	NJ Rebates/Promotions	NJ Company Practice	NULL
364034	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-13-2015	08-13-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
364183	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-14-2015	08-14-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
364200	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-14-2015	11-09-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
364301	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-17-2015	08-17-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
364388	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-17-2015	12-08-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
364394	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-17-2015	07-06-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	Safety	NULL
364395	IMPOUND	COMPROMISE	08-17-2015	11-09-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
364504	PHONE CONTACT	MISDIRECTED - UTILITY	08-18-2015	08-18-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
364666	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-19-2015	08-19-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
364780	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-20-2015	08-20-2015	WTA60	California Water Service Company	High Bill	NJ Surcharges/Taxes	NULL
364800	COMPLAINT	COMMISSION POLICY	08-20-2015	08-24-2015	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
364832	PHONE CONTACT	MISDIRECTED - UTILITY	08-21-2015	08-21-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
364840	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-20-2015	02-11-2016	WTA60	California Water Service Company	Water Rationing/Allocation	Bill Adjustment	NULL
364863	PHONE CONTACT	FORWARDED TO PAO	08-21-2015	08-21-2015	WTA60	California Water Service Company	Rate Protest	NULL	NULL
364889	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-21-2015	03-30-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
364946	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-22-2015	12-10-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
364987	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-24-2015	08-24-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
364988	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-24-2015	08-24-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
364991	PHONE CONTACT	COMMISSION POLICY	08-24-2015	08-24-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Rate Protest	NULL
365045	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-24-2015	08-24-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL

365076	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-24-2015	12-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
365078	COMPLAINT	NON-JURISDICTIONAL	08-24-2015	08-26-2015	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
365127	PHONE CONTACT	MISDIRECTED - UTILITY	08-25-2015	08-25-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
365140	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-24-2015	06-29-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
365178	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-25-2015	08-25-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
365190	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-25-2015	08-25-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
365271	PHONE CONTACT	COMMISSION POLICY	08-25-2015	08-25-2015	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
365318	PHONE CONTACT	INQUIRY ANSWERED	08-26-2015	08-26-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Rate Protest	NULL
365330	PHONE CONTACT	NON-JURISDICTIONAL	08-26-2015	08-26-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
365420	PHONE CONTACT	INQUIRY ANSWERED	08-27-2015	08-27-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
365450	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-27-2015	08-27-2015	WTA60	California Water Service Company	Other Charges	NULL	NULL
365463	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-27-2015	08-27-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
365496	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-27-2015	08-27-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
365497	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-27-2015	08-27-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
365527	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-27-2015	08-27-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
365583	PHONE CONTACT	INQUIRY ANSWERED	08-28-2015	08-28-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
365609	PHONE CONTACT	COMMISSION POLICY	08-28-2015	08-28-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
365816	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-31-2015	08-31-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
365844	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-31-2015	03-30-2016	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
365954	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-01-2015	09-01-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
365982	PHONE CONTACT	MISDIRECTED - UTILITY	09-01-2015	09-01-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
365989	PHONE CONTACT	MISDIRECTED - UTILITY	09-01-2015	09-01-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
366070	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-01-2015	12-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
366102	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2015	09-02-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
366113	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2015	09-02-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
366114	PHONE CONTACT	MISDIRECTED - UTILITY	09-02-2015	09-02-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
366143	PHONE CONTACT	INQUIRY ANSWERED	09-02-2015	09-02-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
366149	PHONE CONTACT	MISDIRECTED - UTILITY	09-02-2015	09-02-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
366361	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-01-2015	12-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
366515	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-04-2015	12-10-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
366590	PHONE CONTACT	INQUIRY ANSWERED	09-08-2015	09-08-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
366591	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-08-2015	09-08-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
366623	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-08-2015	04-01-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
366626	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-08-2015	12-10-2015	WTA60	California Water Service Company	Water Rationing/Allocation	Commission Policy/Rules	NULL
366716	PHONE CONTACT	COMMISSION POLICY	09-09-2015	09-09-2015	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
366988	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-11-2015	09-11-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
367008	PHONE CONTACT	MISDIRECTED - UTILITY	09-11-2015	09-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
367017	PHONE CONTACT	MISDIRECTED - UTILITY	09-11-2015	09-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
367020	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-11-2015	12-10-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
367093	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-11-2015	04-12-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
367135	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-14-2015	09-14-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
367281	MISDIRECTED	MISDIRECTED - UTILITY	09-14-2015	09-17-2015	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
367285	IMPOUND	IN FAVOR OF UTILITY	09-14-2015	04-28-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
367461	PHONE CONTACT	MISDIRECTED - UTILITY	09-16-2015	09-16-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
367501	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-16-2015	09-16-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
367751	PHONE CONTACT	INQUIRY ANSWERED	09-18-2015	09-18-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
367770	PHONE CONTACT	MISDIRECTED - UTILITY	09-18-2015	09-18-2015	WTA60	California Water Service Company	Unknown	NULL	NULL
367788	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-18-2015	12-15-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
367794	IMPOUND	IN CONSUMER FAVOR	09-18-2015	12-11-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
367801	PHONE CONTACT	MISDIRECTED - UTILITY	09-18-2015	09-18-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
367823	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-18-2015	04-12-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
367967	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-21-2015	09-21-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
368038	PHONE CONTACT	FORWARDED TO PAO	09-21-2015	09-21-2015	WTA60	California Water Service Company	Rate Protest	NULL	NULL
368050	PHONE CONTACT	MISDIRECTED - UTILITY	09-21-2015	09-21-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
368113	PHONE CONTACT	REFERRED TO UTILITY	09-22-2015	09-22-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
368186	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-22-2015	09-22-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
368221	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-23-2015	09-23-2015	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
368379	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-24-2015	04-25-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
368397	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-24-2015	12-15-2015	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
368403	PHONE CONTACT	MISDIRECTED - UTILITY	09-24-2015	09-24-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
368553	PHONE CONTACT	MISDIRECTED - UTILITY	09-25-2015	09-25-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
368558	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-28-2015	09-28-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
368692	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-28-2015	03-17-2016	WTA60	California Water Service Company	Bill Adjustment	Water Rationing/Allocation	NULL
368729	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-29-2015	09-29-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Meter Inaccuracy/Reading Issues
368732	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-29-2015	09-29-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
368733	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2015	09-29-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL

368803	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-29-2015	09-29-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
368810	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-29-2015	09-29-2015	WTA60	California Water Service Company	Outage	NULL	NULL
368820	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-29-2015	11-12-2015	WTA60	California Water Service Company	Bill Adjustment	Water Rationing/Allocation	NULL
368830	INFORMAL COMPLAINT	COMPROMISE	09-29-2015	07-07-2016	WTA60	California Water Service Company	Outage	NULL	NULL
368882	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-30-2015	09-30-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
368911	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-30-2015	09-30-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
369057	PHONE CONTACT	MISDIRECTED - UTILITY	10-01-2015	10-01-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
369087	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-01-2015	10-01-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
369093	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-01-2015	10-01-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
369243	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-02-2015	11-17-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	Water Rationing/Allocation
369276	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-05-2015	10-05-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
369493	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2015	10-06-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
369539	PHONE CONTACT	MISDIRECTED - UTILITY	10-06-2015	10-06-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
369605	PHONE CONTACT	COMMISSION POLICY	10-07-2015	10-07-2015	WTA60	California Water Service Company	Rate Design	NULL	NULL
369620	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-06-2015	03-11-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
369639	PHONE CONTACT	MISDIRECTED - UTILITY	10-07-2015	10-07-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
369868	PHONE CONTACT	MISDIRECTED - UTILITY	10-09-2015	10-09-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
369877	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-08-2015	04-25-2016	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
369883	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-08-2015	12-07-2015	WTA60	California Water Service Company	Outage	NULL	NULL
369890	PHONE CONTACT	MISDIRECTED - UTILITY	10-09-2015	10-09-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
369945	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-09-2015	10-09-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
369948	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-09-2015	10-09-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
370025	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-09-2015	06-30-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
370066	PHONE CONTACT	MISDIRECTED - UTILITY	10-12-2015	10-12-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
370072	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-12-2015	10-12-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
370154	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-12-2015	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
370223	PHONE CONTACT	MISDIRECTED - UTILITY	10-13-2015	10-13-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
370224	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-13-2015	10-13-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
370226	PHONE CONTACT	MISDIRECTED - UTILITY	10-13-2015	10-13-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
370252	PHONE CONTACT	REFERRED TO OTHER CPUC BRANCH	10-13-2015	10-13-2015	WTA60	California Water Service Company	Rate Design	NULL	NULL
370327	PHONE CONTACT	MISDIRECTED - UTILITY	10-14-2015	10-14-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
370501	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-15-2015	10-15-2015	WTA60	California Water Service Company	Other Charges	NULL	NULL
370502	PHONE CONTACT	MISDIRECTED - UTILITY	10-15-2015	10-15-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
370555	PHONE CONTACT	REFERRED TO UTILITY	10-15-2015	10-15-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
370615	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-16-2015	10-16-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
370727	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-19-2015	10-19-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
370733	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-19-2015	10-19-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
370813	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-18-2015	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
370867	PHONE CONTACT	INQUIRY ANSWERED	10-19-2015	10-19-2015	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
371097	PHONE CONTACT	MISDIRECTED - UTILITY	10-21-2015	10-21-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
371185	PHONE CONTACT	MISDIRECTED - UTILITY	10-22-2015	10-22-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
371210	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-22-2015	10-22-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
371232	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-22-2015	10-22-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
371299	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-23-2015	10-23-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
371310	COMPLAINT	COMMISSION POLICY	10-23-2015	10-27-2015	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	Rate Design
371345	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-23-2015	05-09-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
371367	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-26-2015	10-26-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
371368	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-26-2015	10-26-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
371381	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-24-2015	06-30-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
371382	PHONE CONTACT	REFERRED TO UTILITY	10-26-2015	10-26-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
371443	PHONE CONTACT	MISDIRECTED - UTILITY	10-26-2015	10-26-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
371533	PHONE CONTACT	REFERRED TO UTILITY	10-27-2015	10-27-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
371562	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-27-2015	10-27-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
371632	PHONE CONTACT	INQUIRY ANSWERED	10-27-2015	10-27-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
371744	PHONE CONTACT	MISDIRECTED - UTILITY	10-28-2015	10-28-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
371757	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-28-2015	10-28-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
371762	PHONE CONTACT	MISDIRECTED - UTILITY	10-28-2015	10-28-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
371865	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-29-2015	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
371911	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-29-2015	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
372202	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-02-2015	03-17-2016	WTA60	California Water Service Company	Disconnected In Error	Payment Arrangements	NULL
372263	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2015	11-03-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
372305	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-03-2015	11-03-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
372347	PHONE CONTACT	MISDIRECTED - UTILITY	11-04-2015	11-04-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
372348	PHONE CONTACT	MISDIRECTED - UTILITY	11-04-2015	11-04-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
372388	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-04-2015	04-13-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
372551	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-05-2015	03-17-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL

372598	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-06-2015	11-06-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
372664	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-06-2015	11-06-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
372730	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-09-2015	11-09-2015	WTA60	California Water Service Company	Rate Protest	High Bill	Bill Adjustment
372788	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-09-2015	11-09-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
372903	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-09-2015	04-13-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
372935	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-10-2015	11-10-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
372953	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-10-2015	11-10-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
373074	PHONE CONTACT	MISDIRECTED - UTILITY	11-12-2015	11-12-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
373123	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-12-2015	11-12-2015	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
373254	PHONE CONTACT	MISDIRECTED - UTILITY	11-13-2015	11-13-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
373496	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-16-2015	03-11-2016	WTA60	California Water Service Company	Bill Adjustment	Meter Inaccuracy/Reading Issues	NULL
373535	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-16-2015	11-16-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
373657	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-17-2015	03-30-2016	WTA60	California Water Service Company	High Bill	Rate Design	Commission Policy/Rules
373676	PHONE CONTACT	ADVISE CONSUMER TO WRITE	11-18-2015	11-18-2015	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	High Bill	NULL
373714	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-18-2015	11-18-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
373759	PHONE CONTACT	COMMISSION POLICY	11-18-2015	11-18-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
373767	PHONE CONTACT	MISDIRECTED - UTILITY	11-18-2015	11-18-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
373855	PHONE CONTACT	MISDIRECTED - UTILITY	11-19-2015	11-19-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
374007	PHONE CONTACT	MISDIRECTED - UTILITY	11-20-2015	11-20-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
374043	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-20-2015	04-15-2016	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
374122	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-22-2015	03-11-2016	WTA60	California Water Service Company	Bill Adjustment	Water Rationing/Allocation	NULL
374154	PHONE CONTACT	REFERRED TO UTILITY	11-23-2015	11-23-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
374178	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-23-2015	11-23-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
374208	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-23-2015	11-23-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
374350	PHONE CONTACT	MISDIRECTED - UTILITY	11-24-2015	11-24-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
374633	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-30-2015	05-23-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
374653	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-01-2015	12-01-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
374706	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-01-2015	12-01-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
374786	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-01-2015	12-01-2015	WTA60	California Water Service Company	Other Charges	NULL	NULL
374883	PHONE CONTACT	MISDIRECTED - UTILITY	12-02-2015	12-02-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
374986	PHONE CONTACT	MISDIRECTED - UTILITY	12-03-2015	12-03-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
375024	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-03-2015	12-03-2015	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
375253	PHONE CONTACT	INQUIRY ANSWERED	12-07-2015	12-07-2015	WTA60	California Water Service Company	High Bill	NULL	NULL
375403	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2015	12-08-2015	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
375443	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2015	12-08-2015	WTA60	California Water Service Company	Rate Protest	NULL	NULL
375471	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-09-2015	12-09-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
375476	PHONE CONTACT	MISDIRECTED - UTILITY	12-09-2015	12-09-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
375547	PHONE CONTACT	INQUIRY ANSWERED	12-09-2015	12-09-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
375627	PHONE CONTACT	INQUIRY ANSWERED	12-10-2015	12-10-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
375666	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-10-2015	12-10-2015	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
375692	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-10-2015	04-25-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
375752	PHONE CONTACT	MISDIRECTED - UTILITY	12-11-2015	12-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
375766	PHONE CONTACT	MISDIRECTED - UTILITY	12-11-2015	12-11-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
375790	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-11-2015	12-11-2015	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
375846	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-11-2015	04-28-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Customer Service	NULL
376112	PHONE CONTACT	MISDIRECTED - UTILITY	12-16-2015	12-16-2015	WTA60	California Water Service Company	Wrong Number	NULL	NULL
376139	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-16-2015	12-16-2015	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
376238	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-16-2015	05-09-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
376407	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-18-2015	12-18-2015	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
376445	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-18-2015	06-30-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
376689	PHONE CONTACT	MISDIRECTED - UTILITY	12-22-2015	12-22-2015	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
377032	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-28-2015	12-28-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
377142	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-29-2015	12-29-2015	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
377345	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-31-2015	12-31-2015	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
377400	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-02-2016	03-11-2016	WTA60	California Water Service Company	Water Rationing/Allocation	Bill Adjustment	NULL
377441	PHONE CONTACT	MISDIRECTED - UTILITY	01-04-2016	01-04-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
377496	PHONE CONTACT	NON-JURISDICTIONAL	01-04-2016	01-04-2016	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
377563	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-04-2016	04-07-2016	WTA60	California Water Service Company	Bill Adjustment	NJ Company Practice	NJ Customer Service
377567	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-04-2016	04-01-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
377593	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-04-2016	03-11-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
377668	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-05-2016	06-30-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
377696	PHONE CONTACT	MISDIRECTED - UTILITY	01-05-2016	01-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
377698	PHONE CONTACT	MISDIRECTED - UTILITY	01-05-2016	01-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
377757	PHONE CONTACT	INQUIRY ANSWERED	01-06-2016	01-06-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
377875	PHONE CONTACT	INQUIRY ANSWERED	01-07-2016	01-07-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
377876	PHONE CONTACT	INQUIRY ANSWERED	01-07-2016	01-07-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL

377906	PHONE CONTACT	REFERRED TO UTILITY	01-07-2016	01-07-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
377935	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-07-2016	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
378156	PHONE CONTACT	ADVISE CONSUMER TO WRITE	01-11-2016	01-11-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
378162	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-11-2016	01-11-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
378214	PHONE CONTACT	MISDIRECTED - UTILITY	01-11-2016	01-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
378274	PHONE CONTACT	MISDIRECTED - UTILITY	01-11-2016	01-11-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
378302	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-11-2016	01-11-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
378336	PHONE CONTACT	INQUIRY ANSWERED	01-12-2016	01-12-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
378368	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-12-2016	01-12-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
378435	PHONE CONTACT	MISDIRECTED - UTILITY	01-12-2016	01-12-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
378552	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-13-2016	01-13-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
378617	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-14-2016	01-14-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
378624	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-14-2016	01-14-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
378844	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-15-2016	01-15-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
378850	PHONE CONTACT	REFERRED TO UTILITY	01-15-2016	01-15-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
378852	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-16-2015	06-28-2016	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
378877	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-17-2016	03-11-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
378934	PHONE CONTACT	MISDIRECTED - UTILITY	01-19-2016	01-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
378975	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-19-2016	01-19-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
379130	PHONE CONTACT	MISDIRECTED - UTILITY	01-20-2016	01-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
379197	PHONE CONTACT	REFERRED TO UTILITY	01-21-2016	01-21-2016	WTA60	California Water Service Company	Other Charges	NULL	NULL
379372	PHONE CONTACT	INQUIRY ANSWERED	01-22-2016	01-22-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
379437	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-22-2016	01-22-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
379441	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-22-2016	06-30-2016	WTA60	California Water Service Company	Water Rationing/Allocation	High Bill	NULL
379452	MISDIRECTED	MISDIRECTED - UTILITY	01-22-2016	01-26-2016	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
379575	PHONE CONTACT	MISDIRECTED - UTILITY	01-25-2016	01-25-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
379629	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-25-2016	01-25-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
379720	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-26-2016	01-26-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
379763	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-26-2016	01-26-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
379997	PHONE CONTACT	REFERRED TO UTILITY	01-28-2016	01-28-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
380017	PHONE CONTACT	INQUIRY ANSWERED	01-28-2016	01-28-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
380076	PHONE CONTACT	COMMISSION POLICY	01-28-2016	01-28-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
380086	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-28-2016	03-11-2016	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
380372	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-01-2016	06-29-2016	WTA60	California Water Service Company	High Bill	Rate Design	NULL
380499	PHONE CONTACT	MISDIRECTED - UTILITY	02-02-2016	02-02-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
380719	PHONE CONTACT	MISDIRECTED - UTILITY	02-03-2016	02-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
380771	COMPLAINT	COMMISSION POLICY	02-03-2016	02-05-2016	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
381151	PHONE CONTACT	MISDIRECTED - UTILITY	02-08-2016	02-08-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
381342	PHONE CONTACT	MISDIRECTED - UTILITY	02-09-2016	02-09-2016	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
381729	PHONE CONTACT	MISDIRECTED - UTILITY	02-11-2016	02-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
381990	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-16-2016	02-16-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
382201	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-16-2016	02-16-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
382214	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-16-2016	03-11-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
382422	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-18-2016	02-18-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
382627	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-19-2016	02-19-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
382899	PHONE CONTACT	MISDIRECTED - UTILITY	02-22-2016	02-22-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383022	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-22-2016	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
383178	PHONE CONTACT	MISDIRECTED - UTILITY	02-24-2016	02-24-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383325	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-25-2016	03-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
383393	PHONE CONTACT	MISDIRECTED - UTILITY	02-26-2016	02-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383434	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-25-2016	03-23-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
383456	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-26-2016	02-26-2016	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
383481	PHONE CONTACT	INQUIRY ANSWERED	02-26-2016	02-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383542	PHONE CONTACT	INQUIRY ANSWERED	02-26-2016	02-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383549	PHONE CONTACT	MISDIRECTED - UTILITY	02-26-2016	02-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383564	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-29-2016	02-29-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
383661	PHONE CONTACT	MISDIRECTED - UTILITY	02-29-2016	02-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383678	PHONE CONTACT	MISDIRECTED - UTILITY	02-29-2016	02-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
383684	PHONE CONTACT	MISDIRECTED - UTILITY	02-29-2016	02-29-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
383780	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-29-2016	05-26-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
384004	PHONE CONTACT	INQUIRY ANSWERED	03-02-2016	03-02-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
384006	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-02-2016	03-02-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
384040	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-02-2016	04-15-2016	WTA60	California Water Service Company	High Bill	Estimated Billing	NULL
384050	PHONE CONTACT	MISDIRECTED - UTILITY	03-03-2016	03-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
384217	PHONE CONTACT	MISDIRECTED - UTILITY	03-04-2016	03-04-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
384229	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-04-2016	03-04-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL

384414	PHONE CONTACT	MISDIRECTED - UTILITY	03-07-2016	03-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
384454	PHONE CONTACT	MISDIRECTED - UTILITY	03-08-2016	03-08-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
384516	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	03-08-2016	04-10-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
384597	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-09-2016	03-09-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
384661	PHONE CONTACT	MISDIRECTED - UTILITY	03-09-2016	03-09-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
384799	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-10-2016	05-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
384883	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-11-2016	03-11-2016	WTA60	California Water Service Company	High Bill	Bill Not Received	NULL
384890	PHONE CONTACT	MISDIRECTED - UTILITY	03-11-2016	03-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
384906	PHONE CONTACT	MISDIRECTED - UTILITY	03-11-2016	03-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
385013	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-13-2016	04-07-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
385052	PHONE CONTACT	MISDIRECTED - UTILITY	03-14-2016	03-14-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
385064	PHONE CONTACT	MISDIRECTED - UTILITY	03-14-2016	03-14-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
385079	PHONE CONTACT	MISDIRECTED - UTILITY	03-14-2016	03-14-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
385091	PHONE CONTACT	MISDIRECTED - UTILITY	03-14-2016	03-14-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
385324	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-16-2016	03-16-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
385327	PHONE CONTACT	MISDIRECTED - UTILITY	03-16-2016	03-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
385482	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	03-17-2016	06-29-2016	WTA60	California Water Service Company	High Bill	Rate Design	NULL
385486	INFORMAL COMPLAINT	DISCRETION UTILITY	03-17-2016	04-29-2016	WTA60	California Water Service Company	Bill Adjustment	NJ Rebates/Promotions	NULL
385562	INFORMAL COMPLAINT	DISCRETION UTILITY	03-18-2016	05-05-2016	WTA60	California Water Service Company	Water Rationing/Allocation	Other Charges	NULL
385617	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-18-2016	03-18-2016	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
385652	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-18-2016	04-18-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
385715	PHONE CONTACT	MISDIRECTED - UTILITY	03-21-2016	03-21-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
385852	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-22-2016	04-29-2016	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
385938	PHONE CONTACT	MISDIRECTED - UTILITY	03-22-2016	03-22-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
385979	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-23-2016	04-05-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
386111	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-24-2016	03-24-2016	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	Meter Reading Issue
386140	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-24-2016	03-24-2016	WTA60	California Water Service Company	Unknown	NULL	NULL
386231	PHONE CONTACT	MISDIRECTED - UTILITY	03-25-2016	03-25-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386235	PHONE CONTACT	MISDIRECTED - UTILITY	03-25-2016	03-25-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386408	PHONE CONTACT	MISDIRECTED - UTILITY	03-28-2016	03-28-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386417	PHONE CONTACT	MISDIRECTED - UTILITY	03-28-2016	03-28-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
386603	PHONE CONTACT	MISDIRECTED - UTILITY	03-30-2016	03-30-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386614	PHONE CONTACT	MISDIRECTED - UTILITY	03-30-2016	03-30-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
386680	PHONE CONTACT	MISDIRECTED - UTILITY	04-01-2016	04-01-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
386775	PHONE CONTACT	MISDIRECTED - UTILITY	04-01-2016	04-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386781	PHONE CONTACT	MISDIRECTED - UTILITY	04-01-2016	04-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386894	PHONE CONTACT	MISDIRECTED - UTILITY	04-04-2016	04-04-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
386903	PHONE CONTACT	MISDIRECTED - UTILITY	04-04-2016	04-04-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
387018	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-04-2016	05-17-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
387059	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-05-2016	04-05-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
387128	PHONE CONTACT	MISDIRECTED - UTILITY	04-05-2016	04-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
387336	PHONE CONTACT	MISDIRECTED - UTILITY	04-07-2016	04-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
387569	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-08-2016	04-29-2016	WTA60	California Water Service Company	High Bill	Rate Design	NULL
387577	PHONE CONTACT	MISDIRECTED - UTILITY	04-11-2016	04-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
387658	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-11-2016	04-11-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
387692	PHONE CONTACT	MISDIRECTED - UTILITY	04-11-2016	04-11-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
387745	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-11-2016	05-17-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
387995	PHONE CONTACT	MISDIRECTED - UTILITY	04-13-2016	04-13-2016	WTA60	California Water Service Company	Payment Error	NULL	NULL
388066	PHONE CONTACT	MISDIRECTED - UTILITY	04-14-2016	04-14-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
388167	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-14-2016	05-17-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
388227	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-15-2016	04-15-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
388245	PHONE CONTACT	MISDIRECTED - UTILITY	04-15-2016	04-15-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
388270	PHONE CONTACT	INQUIRY ANSWERED	04-18-2016	04-18-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
388331	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-15-2016	06-20-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
388411	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-15-2016	06-22-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
388423	PHONE CONTACT	INQUIRY ANSWERED	04-18-2016	04-18-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
388443	PHONE CONTACT	MISDIRECTED - UTILITY	04-18-2016	04-18-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
388463	PHONE CONTACT	MISDIRECTED - UTILITY	04-18-2016	04-18-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
388478	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-18-2016	04-18-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
388484	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-18-2016	04-18-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
388490	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-18-2016	06-22-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
388642	PHONE CONTACT	MISDIRECTED - UTILITY	04-19-2016	04-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
388749	PHONE CONTACT	MISDIRECTED - UTILITY	04-20-2016	04-20-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
388823	COMPLAINT	COMMISSION POLICY	04-20-2016	04-21-2016	WTA60	California Water Service Company	Rate Protest	Commission Policy/Rules	NULL
388848	PHONE CONTACT	MISDIRECTED - UTILITY	04-20-2016	04-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
388857	PHONE CONTACT	REFERRED TO UTILITY	04-20-2016	04-20-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL

388871	PHONE CONTACT	MISDIRECTED - UTILITY	04-20-2016	04-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
388888	PHONE CONTACT	MISDIRECTED - UTILITY	04-20-2016	04-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
388994	PHONE CONTACT	MISDIRECTED - UTILITY	04-21-2016	04-21-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
389142	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-22-2016	04-22-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
389160	PHONE CONTACT	INQUIRY ANSWERED	04-22-2016	04-22-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
389316	PHONE CONTACT	MISDIRECTED - UTILITY	04-25-2016	04-25-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
389327	PHONE CONTACT	MISDIRECTED - UTILITY	04-25-2016	04-25-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
389410	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-26-2016	05-20-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
389664	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-27-2016	07-07-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
389697	PHONE CONTACT	MISDIRECTED - UTILITY	04-27-2016	04-27-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
389736	PHONE CONTACT	MISDIRECTED - UTILITY	04-28-2016	04-28-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
389769	PHONE CONTACT	MISDIRECTED - UTILITY	04-28-2016	04-28-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
389843	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-28-2016	04-28-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
389967	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-29-2016	04-29-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
389985	PHONE CONTACT	MISDIRECTED - UTILITY	05-02-2016	05-02-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
390150	PHONE CONTACT	INQUIRY ANSWERED	05-02-2016	05-02-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
390376	PHONE CONTACT	MISDIRECTED - UTILITY	05-03-2016	05-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
390399	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-03-2016	05-03-2016	WTA60	California Water Service Company	Other Charges	NULL	NULL
390641	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-04-2016	05-04-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
390682	PHONE CONTACT	MISDIRECTED - UTILITY	05-05-2016	05-05-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
390858	PHONE CONTACT	MISDIRECTED - UTILITY	05-06-2016	05-06-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
390944	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-06-2016	05-06-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
391002	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-06-2016	05-06-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
391201	PHONE CONTACT	MISDIRECTED - UTILITY	05-09-2016	05-09-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
391359	PHONE CONTACT	REFERRED TO UTILITY	05-10-2016	05-10-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
391391	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-09-2016	06-17-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
391392	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-09-2016	05-26-2016	WTA60	California Water Service Company	Payment Error	NULL	NULL
391395	MISDIRECTED	MISDIRECTED - UTILITY	05-09-2016	05-13-2016	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
391421	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-10-2016	05-10-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
391447	PHONE CONTACT	MISDIRECTED - UTILITY	05-10-2016	05-10-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
391561	PHONE CONTACT	REFERRED TO UTILITY	05-11-2016	05-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
391571	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2016	05-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
391622	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-11-2016	05-11-2016	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
391643	PHONE CONTACT	INQUIRY ANSWERED	05-11-2016	05-11-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
391725	PHONE CONTACT	MISDIRECTED - UTILITY	05-12-2016	05-12-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
391764	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-12-2016	05-23-2016	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
391889	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-13-2016	05-13-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
391904	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-13-2016	06-21-2016	WTA60	California Water Service Company	High Bill	Meter Reading Issue	Water Rationing/Allocation
391915	PHONE CONTACT	MISDIRECTED - UTILITY	05-13-2016	05-13-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
392042	PHONE CONTACT	MISDIRECTED - UTILITY	05-16-2016	05-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
392121	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-16-2016	06-22-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
392140	PHONE CONTACT	MISDIRECTED - UTILITY	05-17-2016	05-17-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
392152	PHONE CONTACT	COMMISSION POLICY	05-17-2016	05-17-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
392154	PHONE CONTACT	INQUIRY ANSWERED	05-17-2016	05-17-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
392412	PHONE CONTACT	REFERRED TO OTHER CPUC BRANCH	05-18-2016	05-18-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
392417	PHONE CONTACT	COMMISSION POLICY	05-18-2016	05-18-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
392438	PHONE CONTACT	MISDIRECTED - UTILITY	05-19-2016	05-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
392497	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-19-2016	05-19-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
392524	PHONE CONTACT	MISDIRECTED - UTILITY	05-20-2016	05-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
392627	PHONE CONTACT	MISDIRECTED - UTILITY	05-20-2016	05-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
392628	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-20-2016	05-20-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
392666	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-20-2016	05-20-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
392807	PHONE CONTACT	MISDIRECTED - UTILITY	05-23-2016	05-23-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
392861	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-23-2016	05-23-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
392886	PHONE CONTACT	INQUIRY ANSWERED	05-23-2016	05-23-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
392887	MISDIRECTED	MISDIRECTED - UTILITY	05-23-2016	05-24-2016	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
392932	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-23-2016	07-07-2016	WTA60	California Water Service Company	Water Rationing/Allocation	Bill Adjustment	NULL
393057	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-24-2016	05-24-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
393069	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-24-2016	05-24-2016	WTA60	California Water Service Company	Other Charges	NULL	NULL
393110	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-25-2016	05-25-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
393123	PHONE CONTACT	INQUIRY ANSWERED	05-25-2016	05-25-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
393133	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-25-2016	05-25-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
393208	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-25-2016	07-13-2016	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
393240	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-26-2016	05-26-2016	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
393427	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-29-2016	07-08-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
393434	PHONE CONTACT	MISDIRECTED - UTILITY	05-31-2016	05-31-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL

393496	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-31-2016	05-31-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
393509	PHONE CONTACT	MISDIRECTED - UTILITY	06-01-2016	06-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
393512	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-01-2016	06-01-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
393663	PHONE CONTACT	MISDIRECTED - UTILITY	06-01-2016	06-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
393698	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-01-2016	07-08-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
393731	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-02-2016	06-02-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
393764	PHONE CONTACT	INQUIRY ANSWERED	06-02-2016	06-02-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
393806	PHONE CONTACT	REFERRED TO UTILITY	06-03-2016	06-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
393885	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	06-03-2016	07-11-2016	WTA60	California Water Service Company	Other Charges	NULL	NULL
394000	PHONE CONTACT	MISDIRECTED - UTILITY	06-06-2016	06-06-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
394173	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-07-2016	07-08-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
394530	MISDIRECTED	MISDIRECTED - UTILITY	06-08-2016	06-13-2016	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
394612	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-11-2016	07-11-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
394662	PHONE CONTACT	MISDIRECTED - UTILITY	06-13-2016	06-13-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
394676	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-13-2016	06-13-2016	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
394747	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-14-2016	06-14-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
394756	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-14-2016	06-14-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
394772	PHONE CONTACT	MISDIRECTED - UTILITY	06-14-2016	06-14-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
394810	PHONE CONTACT	MISDIRECTED - UTILITY	06-14-2016	06-14-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
394822	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-14-2016	06-14-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
394886	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-15-2016	06-15-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
395030	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-16-2016	06-16-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
395066	PHONE CONTACT	MISDIRECTED - UTILITY	06-16-2016	06-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395138	PHONE CONTACT	MISDIRECTED - UTILITY	06-17-2016	06-17-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395152	PHONE CONTACT	NON-JURISDICTIONAL	06-17-2016	06-17-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395197	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-17-2016	07-18-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
395316	PHONE CONTACT	REFERRED TO UTILITY	06-20-2016	06-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395336	PHONE CONTACT	MISDIRECTED - UTILITY	06-20-2016	06-20-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395337	PHONE CONTACT	MISDIRECTED - UTILITY	06-20-2016	06-20-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
395417	PHONE CONTACT	MISDIRECTED - UTILITY	06-21-2016	06-21-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395492	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-21-2016	06-21-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
395516	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-21-2016	07-18-2016	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
395615	PHONE CONTACT	INQUIRY ANSWERED	06-22-2016	06-22-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
395721	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-23-2016	06-23-2016	WTA60	California Water Service Company	Bill Format	NULL	NULL
395825	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-24-2016	06-24-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
395856	PHONE CONTACT	INQUIRY ANSWERED	06-24-2016	06-24-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
395953	PHONE CONTACT	MISDIRECTED - UTILITY	06-27-2016	06-27-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
395994	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-27-2016	06-27-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
396009	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-27-2016	06-27-2016	WTA60	California Water Service Company	Disputed Customer of Record	Payment Arrangements	NULL
396060	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-27-2016	06-27-2016	WTA60	California Water Service Company	Safety	NULL	NULL
396122	PHONE CONTACT	MISDIRECTED - UTILITY	06-28-2016	06-28-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396155	PHONE CONTACT	MISDIRECTED - UTILITY	06-28-2016	06-28-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
396198	PHONE CONTACT	REFERRED TO UTILITY	06-29-2016	06-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396203	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-29-2016	06-29-2016	WTA60	California Water Service Company	NJ Surcharges/Taxes	High Bill	NULL
396284	PHONE CONTACT	MISDIRECTED - UTILITY	06-29-2016	06-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396302	PHONE CONTACT	MISDIRECTED - UTILITY	06-29-2016	06-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396343	PHONE CONTACT	MISDIRECTED - UTILITY	06-30-2016	06-30-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
396552	PHONE CONTACT	MISDIRECTED - UTILITY	07-05-2016	07-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396721	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2016	07-06-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
396821	PHONE CONTACT	MISDIRECTED - UTILITY	07-07-2016	07-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396834	PHONE CONTACT	MISDIRECTED - UTILITY	07-07-2016	07-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
396873	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-07-2016	07-07-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
396894	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-07-2016	07-07-2016	WTA60	California Water Service Company	NJ Rebates/Promotions	NULL	NULL
396898	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-07-2016	07-07-2016	WTA60	California Water Service Company	NJ Rebates/Promotions	NULL	NULL
396983	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-08-2016	07-08-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
397083	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	07-08-2016	08-13-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
397177	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-11-2016	08-01-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
397261	PHONE CONTACT	MISDIRECTED - UTILITY	07-12-2016	07-12-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
397302	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-12-2016	07-12-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
397356	PHONE CONTACT	MISDIRECTED - UTILITY	07-13-2016	07-13-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
397386	PHONE CONTACT	INQUIRY ANSWERED	07-13-2016	07-13-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
397390	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-13-2016	07-13-2016	WTA60	California Water Service Company	Master/Sub Meters	NULL	NULL
397442	PHONE CONTACT	MISDIRECTED - UTILITY	07-13-2016	07-13-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
397484	PHONE CONTACT	MISDIRECTED - UTILITY	07-14-2016	07-14-2016	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
397596	PHONE CONTACT	MISDIRECTED - UTILITY	07-15-2016	07-15-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
397664	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-15-2016	08-30-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL

397699	PHONE CONTACT	MISDIRECTED - UTILITY	07-18-2016	07-18-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
397745	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-18-2016	07-18-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
397751	IMPOUND	COMPROMISE	07-18-2016	08-31-2016	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
397877	PHONE CONTACT	MISDIRECTED - UTILITY	07-19-2016	07-19-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
397888	PHONE CONTACT	MISDIRECTED - UTILITY	07-19-2016	07-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398087	PHONE CONTACT	INQUIRY ANSWERED	07-21-2016	07-21-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
398124	PHONE CONTACT	MISDIRECTED - UTILITY	07-21-2016	07-21-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398140	PHONE CONTACT	MISDIRECTED - UTILITY	07-21-2016	07-21-2016	WTA60	California Water Service Company	Other Charges	NULL	NULL
398149	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-21-2016	07-21-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
398193	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2016	07-22-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
398208	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-22-2016	07-22-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398323	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2016	07-25-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398428	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-25-2016	07-25-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
398533	PHONE CONTACT	INQUIRY ANSWERED	07-26-2016	07-26-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
398537	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-26-2016	07-26-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
398569	PHONE CONTACT	REFERRED TO UTILITY	07-26-2016	07-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398591	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-27-2016	07-27-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
398605	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-27-2016	07-27-2016	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
398626	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-27-2016	07-27-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
398629	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-27-2016	07-27-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
398643	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-27-2016	07-27-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
398731	PHONE CONTACT	INQUIRY ANSWERED	07-28-2016	07-28-2016	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
398766	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-28-2016	12-12-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
398824	PHONE CONTACT	MISDIRECTED - UTILITY	07-29-2016	07-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398843	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-27-2016	10-27-2016	WTA60	California Water Service Company	High Bill	Low Income/Special Needs	NULL
398850	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-29-2016	07-29-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
398879	PHONE CONTACT	REFERRED TO UTILITY	07-29-2016	07-29-2016	WTA60	California Water Service Company	Bill Format	NULL	NULL
398887	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-29-2016	07-29-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
398913	PHONE CONTACT	MISDIRECTED - UTILITY	08-01-2016	08-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
398998	PHONE CONTACT	INQUIRY ANSWERED	08-01-2016	08-01-2016	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
399056	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-01-2016	09-08-2016	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
399155	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-02-2016	08-02-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
399185	INFORMAL COMPLAINT	DISCRETION UTILITY	08-02-2016	12-27-2016	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
399248	PHONE CONTACT	MISDIRECTED - UTILITY	08-03-2016	08-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
399267	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-03-2016	08-03-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
399269	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-03-2016	08-03-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
399372	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-04-2016	08-04-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
399374	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-04-2016	08-04-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
399522	PHONE CONTACT	MISDIRECTED - UTILITY	08-05-2016	08-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
399601	PHONE CONTACT	INQUIRY ANSWERED	08-08-2016	08-08-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
399665	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-08-2016	08-15-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
399738	PHONE CONTACT	MISDIRECTED - UTILITY	08-09-2016	08-09-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
399739	PHONE CONTACT	MISDIRECTED - UTILITY	08-09-2016	08-09-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
399767	PHONE CONTACT	REFERRED TO UTILITY	08-09-2016	08-09-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
399929	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-11-2016	08-11-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
400054	PHONE CONTACT	REFERRED TO UTILITY	08-11-2016	08-11-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
400156	COMPLAINT	NON-JURISDICTIONAL	08-12-2016	08-15-2016	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
400157	PHONE CONTACT	MISDIRECTED - UTILITY	08-12-2016	08-12-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400176	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-12-2016	08-12-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
400247	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2016	08-15-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
400261	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2016	08-15-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
400307	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2016	08-15-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
400323	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2016	08-15-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
400347	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2016	08-15-2016	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
400398	PHONE CONTACT	REFERRED TO UTILITY	08-16-2016	08-16-2016	WTA60	California Water Service Company	Bill Format	NULL	NULL
400401	PHONE CONTACT	FORWARDED TO PAO	08-16-2016	08-16-2016	WTA60	California Water Service Company	Rate Protest	NULL	NULL
400461	PHONE CONTACT	MISDIRECTED - UTILITY	08-16-2016	08-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400478	PHONE CONTACT	MISDIRECTED - UTILITY	08-16-2016	08-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400492	PHONE CONTACT	NON-JURISDICTIONAL	08-16-2016	08-16-2016	WTA60	California Water Service Company	NJ Equipment	NULL	NULL
400575	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-17-2016	08-17-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
400648	COMPLAINT	COMMISSION POLICY	08-17-2016	08-25-2016	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
400683	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-18-2016	08-18-2016	WTA60	California Water Service Company	Bill Format	NULL	NULL
400771	PHONE CONTACT	INQUIRY ANSWERED	08-19-2016	08-19-2016	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
400773	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-19-2016	08-19-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
400779	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-19-2016	08-19-2016	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	NULL	NULL
400789	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2016	08-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL

400794	PHONE CONTACT	NON-JURISDICTIONAL	08-19-2016	08-19-2016	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
400800	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2016	08-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400840	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2016	08-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400848	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2016	08-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400849	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2016	08-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400901	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-22-2016	08-22-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
400985	PHONE CONTACT	MISDIRECTED - UTILITY	08-22-2016	08-22-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
400986	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-22-2016	08-22-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401004	PHONE CONTACT	INQUIRY ANSWERED	08-22-2016	08-22-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
401025	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-23-2016	08-23-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401050	PHONE CONTACT	MISDIRECTED - UTILITY	08-23-2016	08-23-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
401098	PHONE CONTACT	INQUIRY ANSWERED	08-23-2016	08-23-2016	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
401121	PHONE CONTACT	INQUIRY ANSWERED	08-23-2016	08-23-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
401203	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	08-22-2016	09-24-2016	WTA60	California Water Service Company	Unknown	NULL	NULL
401216	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-22-2016	11-28-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401217	INFORMAL COMPLAINT	DISCRETION UTILITY	08-22-2016	10-14-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401288	PHONE CONTACT	MISDIRECTED - UTILITY	08-24-2016	08-24-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
401301	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-24-2016	08-24-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
401369	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-24-2016	11-28-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401423	PHONE CONTACT	MISDIRECTED - UTILITY	08-25-2016	08-25-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
401498	PHONE CONTACT	NON-JURISDICTIONAL	08-26-2016	08-26-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
401506	PHONE CONTACT	MISDIRECTED - UTILITY	08-26-2016	08-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
401511	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-26-2016	08-26-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
401606	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-26-2016	09-02-2016	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
401623	PHONE CONTACT	MISDIRECTED - UTILITY	08-29-2016	08-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
401627	COMPLAINT	NON-JURISDICTIONAL	08-26-2016	08-30-2016	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
401686	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-29-2016	09-16-2016	WTA60	California Water Service Company	Other Charges	NULL	NULL
401701	PHONE CONTACT	MISDIRECTED - UTILITY	08-30-2016	08-30-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
401710	INFORMAL COMPLAINT	COMPROMISE	08-29-2016	09-19-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401728	PHONE CONTACT	FORWARDED TO PAO	08-30-2016	08-30-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
401800	PHONE CONTACT	REFERRED TO UTILITY	08-30-2016	08-30-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
401801	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-30-2016	08-30-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
401849	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-31-2016	08-31-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
401903	PHONE CONTACT	REFERRED TO UTILITY	08-31-2016	08-31-2016	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
401933	PHONE CONTACT	MISDIRECTED - UTILITY	08-31-2016	08-31-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
402025	PHONE CONTACT	MISDIRECTED - UTILITY	09-01-2016	09-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
402077	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2016	09-02-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
402116	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-01-2016	09-22-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
402151	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2016	09-02-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
402214	COMPLAINT	FORWARDED TO PAO	09-05-2016	09-08-2016	WTA60	California Water Service Company	Rate Protest	NULL	NULL
402286	PHONE CONTACT	MISDIRECTED - UTILITY	09-06-2016	09-06-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
402302	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-06-2016	09-06-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
402395	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-07-2016	09-07-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
402398	PHONE CONTACT	MISDIRECTED - UTILITY	09-07-2016	09-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
402416	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-07-2016	09-07-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
402499	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-08-2016	09-08-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
402537	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-08-2016	09-08-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
402671	PHONE CONTACT	INQUIRY ANSWERED	09-09-2016	09-09-2016	WTA60	California Water Service Company	Disconnection Non Payment	Bill Adjustment	NULL
402676	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2016	09-09-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
402744	INQUIRY	INQUIRY ANSWERED	09-09-2016	09-30-2016	WTA60	California Water Service Company	Unknown	NULL	NULL
402773	PHONE CONTACT	MISDIRECTED - UTILITY	09-12-2016	09-12-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
402801	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-12-2016	09-12-2016	WTA60	California Water Service Company	NJ Claims for Damages	NJ Company Practice	NULL
402820	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-12-2016	09-12-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
402846	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-12-2016	01-11-2017	WTA60	California Water Service Company	Outage	NJ Claims for Damages	NULL
402861	PHONE CONTACT	INQUIRY ANSWERED	09-13-2016	09-13-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
402919	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-13-2016	09-13-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
402924	PHONE CONTACT	MISDIRECTED - UTILITY	09-13-2016	09-13-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403035	PHONE CONTACT	MISDIRECTED - UTILITY	09-14-2016	09-14-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403065	PHONE CONTACT	NON-JURISDICTIONAL	09-14-2016	09-14-2016	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
403167	PHONE CONTACT	MISDIRECTED - UTILITY	09-15-2016	09-15-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403172	PHONE CONTACT	REFERRED TO UTILITY	09-15-2016	09-15-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
403181	PHONE CONTACT	MISDIRECTED - UTILITY	09-15-2016	09-15-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403191	PHONE CONTACT	INQUIRY ANSWERED	09-15-2016	09-15-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
403197	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-15-2016	09-15-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
403216	PHONE CONTACT	MISDIRECTED - UTILITY	09-15-2016	09-15-2016	WTA60	California Water Service Company	Wrong Number	Outage	NULL
403219	PHONE CONTACT	MISDIRECTED - UTILITY	09-15-2016	09-15-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL

403248	COMPLAINT	COMMISSION POLICY	09-15-2016	10-19-2016	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
403299	PHONE CONTACT	INQUIRY ANSWERED	09-16-2016	09-16-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
403334	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-19-2016	09-19-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
403412	PHONE CONTACT	MISDIRECTED - UTILITY	09-19-2016	09-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403469	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-20-2016	09-20-2016	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
403589	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-21-2016	09-21-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
403599	PHONE CONTACT	MISDIRECTED - UTILITY	09-21-2016	09-21-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403648	PHONE CONTACT	MISDIRECTED - UTILITY	09-21-2016	09-21-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403687	PHONE CONTACT	MISDIRECTED - UTILITY	09-22-2016	09-22-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
403693	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-22-2016	09-22-2016	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Payment Arrangements
403885	COMPLAINT	NON-JURISDICTIONAL	09-25-2016	01-06-2017	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
403918	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-23-2016	10-26-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
403964	PHONE CONTACT	COMMISSION POLICY	09-26-2016	09-26-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
404099	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-28-2016	09-28-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
404241	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2016	09-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404276	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2016	09-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404303	PHONE CONTACT	MISDIRECTED - UTILITY	09-29-2016	09-29-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404402	PHONE CONTACT	MISDIRECTED - UTILITY	10-03-2016	10-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404539	PHONE CONTACT	MISDIRECTED - UTILITY	10-04-2016	10-04-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404541	PHONE CONTACT	INQUIRY ANSWERED	10-04-2016	10-04-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
404624	PHONE CONTACT	MISDIRECTED - UTILITY	10-04-2016	10-04-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404625	PHONE CONTACT	MISDIRECTED - UTILITY	10-04-2016	10-04-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404662	PHONE CONTACT	MISDIRECTED - UTILITY	10-05-2016	10-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404677	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-05-2016	10-05-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
404681	PHONE CONTACT	REFERRED TO UTILITY	10-05-2016	10-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404779	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-05-2016	12-28-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
404802	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2016	10-06-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
404817	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2016	10-06-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
404846	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-06-2016	12-06-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
404867	PHONE CONTACT	MISDIRECTED - UTILITY	10-07-2016	10-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
404913	PHONE CONTACT	INQUIRY ANSWERED	10-07-2016	10-07-2016	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	Payment Arrangements
404923	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-07-2016	11-04-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
404953	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-07-2016	11-16-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
405015	PHONE CONTACT	MISDIRECTED - UTILITY	10-10-2016	10-10-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
405022	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-10-2016	10-10-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
405046	PHONE CONTACT	REFERRED TO UTILITY	10-10-2016	10-10-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
405099	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-11-2016	10-11-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
405149	PHONE CONTACT	MISDIRECTED - UTILITY	10-11-2016	10-11-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
405212	PHONE CONTACT	REFERRED TO UTILITY	10-12-2016	10-12-2016	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
405373	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-13-2016	10-13-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
405591	PHONE CONTACT	INQUIRY ANSWERED	10-17-2016	10-17-2016	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
405660	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-17-2016	12-20-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
405837	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-19-2016	10-19-2016	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
405910	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-20-2016	10-20-2016	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	NULL	NULL
406138	PHONE CONTACT	INQUIRY ANSWERED	10-21-2016	10-21-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
406248	PHONE CONTACT	MISDIRECTED - UTILITY	10-24-2016	10-24-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
406263	PHONE CONTACT	INQUIRY ANSWERED	10-24-2016	10-24-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
406277	PHONE CONTACT	MISDIRECTED - UTILITY	10-24-2016	10-24-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
406406	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-25-2016	11-04-2016	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
406407	PHONE CONTACT	INQUIRY ANSWERED	10-25-2016	10-25-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
406523	PHONE CONTACT	MISDIRECTED - UTILITY	10-26-2016	10-26-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
406657	PHONE CONTACT	MISDIRECTED - UTILITY	10-28-2016	10-28-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
406691	PHONE CONTACT	MISDIRECTED - UTILITY	10-28-2016	10-28-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
406829	PHONE CONTACT	MISDIRECTED - UTILITY	10-31-2016	10-31-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
406966	PHONE CONTACT	COMMISSION POLICY	11-01-2016	11-01-2016	WTA60	California Water Service Company	Rate Design	NULL	NULL
407105	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-02-2016	12-02-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
407107	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-02-2016	11-02-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
407128	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-03-2016	11-03-2016	WTA60	California Water Service Company	Bill Format	NULL	NULL
407137	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2016	11-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
407185	PHONE CONTACT	REFERRED TO UTILITY	11-03-2016	11-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
407186	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2016	11-03-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
407254	INFORMAL COMPLAINT	COMPROMISE	11-02-2016	01-31-2017	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
407389	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-07-2016	11-07-2016	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
407398	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-07-2016	11-07-2016	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
407446	PHONE CONTACT	MISDIRECTED - UTILITY	11-07-2016	11-07-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
407451	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-08-2016	11-08-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL

407503	PHONE CONTACT	MISDIRECTED - UTILITY	11-08-2016	11-08-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
407578	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-09-2016	11-09-2016	WTA60	California Water Service Company	NJ Property Restoration/Debris Removal	NJ Equipment	NULL
407703	PHONE CONTACT	MISDIRECTED - UTILITY	11-10-2016	11-10-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
407861	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2016	11-14-2016	WTA60	California Water Service Company	Payment Arrangements	Deposits	NULL
407872	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2016	11-14-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
407902	PHONE CONTACT	REFERRED TO UTILITY	11-14-2016	11-14-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
408122	PHONE CONTACT	MISDIRECTED - UTILITY	11-16-2016	11-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
408134	PHONE CONTACT	MISDIRECTED - UTILITY	11-16-2016	11-16-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
408463	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-21-2016	03-24-2017	WTA60	California Water Service Company	Other Charges	Refusal To Serve	NULL
408708	PHONE CONTACT	INQUIRY ANSWERED	11-29-2016	11-29-2016	WTA60	California Water Service Company	Health	Safety	NULL
408866	PHONE CONTACT	REFERRED TO UTILITY	11-30-2016	11-30-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
408904	PHONE CONTACT	REFERRED TO UTILITY	11-30-2016	11-30-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
408908	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-30-2016	11-30-2016	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
408913	PHONE CONTACT	MISDIRECTED - UTILITY	11-30-2016	11-30-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
408916	PHONE CONTACT	MISDIRECTED - UTILITY	11-30-2016	11-30-2016	WTA60	California Water Service Company	Unknown	NULL	NULL
408957	PHONE CONTACT	MISDIRECTED - UTILITY	12-01-2016	12-01-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
409168	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-05-2016	12-05-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
409233	PHONE CONTACT	MISDIRECTED - UTILITY	12-05-2016	12-05-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
409283	PHONE CONTACT	MISDIRECTED - UTILITY	12-06-2016	12-06-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
409284	PHONE CONTACT	MISDIRECTED - UTILITY	12-06-2016	12-06-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
409302	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	12-05-2016	01-10-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
409443	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-07-2016	12-07-2016	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
409594	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-09-2016	12-09-2016	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
409661	PHONE CONTACT	MISDIRECTED - UTILITY	12-09-2016	12-09-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
409699	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	12-09-2016	01-10-2017	WTA60	California Water Service Company	Safety	NJ Customer Service	NULL
409732	PHONE CONTACT	MISDIRECTED - UTILITY	12-12-2016	12-12-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
409845	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-13-2016	12-13-2016	WTA60	California Water Service Company	High Bill	NULL	NULL
410112	PHONE CONTACT	MISDIRECTED - UTILITY	12-15-2016	12-15-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
410252	MISDIRECTED	MISDIRECTED - UTILITY	12-15-2016	12-16-2016	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
410449	PHONE CONTACT	MISDIRECTED - UTILITY	12-19-2016	12-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
410487	PHONE CONTACT	MISDIRECTED - UTILITY	12-19-2016	12-19-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
410561	COMPLAINT	NON-JURISDICTIONAL	12-19-2016	12-20-2016	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
410886	PHONE CONTACT	MISDIRECTED - UTILITY	12-23-2016	12-23-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
411006	PHONE CONTACT	MISDIRECTED - UTILITY	12-27-2016	12-27-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
411043	PHONE CONTACT	MISDIRECTED - UTILITY	12-27-2016	12-27-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
411166	PHONE CONTACT	INQUIRY ANSWERED	12-28-2016	12-28-2016	WTA60	California Water Service Company	Payment Error	NULL	NULL
411402	PHONE CONTACT	MISDIRECTED - UTILITY	12-30-2016	12-30-2016	WTA60	California Water Service Company	Wrong Number	NULL	NULL
411529	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-03-2017	01-03-2017	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
411811	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-05-2017	01-05-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
411820	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-05-2017	01-05-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
412058	PHONE CONTACT	MISDIRECTED - UTILITY	01-09-2017	01-09-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
412112	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-09-2017	01-09-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
412153	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-10-2017	01-10-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
412170	PHONE CONTACT	MISDIRECTED - UTILITY	01-10-2017	01-10-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
412274	PHONE CONTACT	MISDIRECTED - UTILITY	01-10-2017	01-10-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
412275	PHONE CONTACT	MISDIRECTED - UTILITY	01-10-2017	01-10-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
412285	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-10-2017	01-10-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
412340	PHONE CONTACT	MISDIRECTED - UTILITY	01-11-2017	01-11-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
412352	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-11-2017	01-11-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
412467	PHONE CONTACT	MISDIRECTED - UTILITY	01-12-2017	01-12-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
412502	PHONE CONTACT	MISDIRECTED - UTILITY	01-12-2017	01-12-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
412512	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-12-2017	01-12-2017	WTA60	California Water Service Company	Payment Arrangements	Disconnected In Error	NULL
412551	PHONE CONTACT	INQUIRY ANSWERED	01-13-2017	01-13-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
412598	PHONE CONTACT	INQUIRY ANSWERED	01-13-2017	01-13-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
412670	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-13-2017	01-13-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
413141	PHONE CONTACT	MISDIRECTED - UTILITY	01-19-2017	01-19-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
413304	PHONE CONTACT	INQUIRY ANSWERED	01-20-2017	01-20-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
413401	PHONE CONTACT	MISDIRECTED - UTILITY	01-23-2017	01-23-2017	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
413464	PHONE CONTACT	ADVISE CONSUMER TO WRITE	01-23-2017	01-23-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
413606	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-24-2017	01-24-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
413610	PHONE CONTACT	MISDIRECTED - UTILITY	01-24-2017	01-24-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
413826	COMPLAINT	CC COMPLAINT	01-23-2017	02-08-2017	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
414011	PHONE CONTACT	COMMISSION POLICY	01-27-2017	01-27-2017	WTA60	California Water Service Company	Rate Design	NULL	NULL
414182	PHONE CONTACT	MISDIRECTED - UTILITY	01-30-2017	01-30-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
414192	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-30-2017	01-30-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
414260	PHONE CONTACT	MISDIRECTED - UTILITY	01-30-2017	01-30-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL

414308	PHONE CONTACT	MISDIRECTED - UTILITY	01-31-2017	01-31-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
414359	PHONE CONTACT	MISDIRECTED - UTILITY	01-31-2017	01-31-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
414582	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-01-2017	02-01-2017	WTA60	California Water Service Company	Health	NULL	NULL
414587	PHONE CONTACT	MISDIRECTED - UTILITY	02-01-2017	02-01-2017	WTA60	California Water Service Company	NJ Easements/Right of Way	NULL	NULL
414590	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-01-2017	02-01-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
414644	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-01-2017	02-01-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
414656	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-02-2017	02-02-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
414772	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-02-2017	06-02-2017	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
414794	PHONE CONTACT	INQUIRY ANSWERED	02-02-2017	02-02-2017	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
415098	PHONE CONTACT	MISDIRECTED - UTILITY	02-06-2017	02-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
415104	PHONE CONTACT	INQUIRY ANSWERED	02-06-2017	02-06-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
415115	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-06-2017	02-06-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
415134	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-06-2017	02-06-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
415135	PHONE CONTACT	MISDIRECTED - UTILITY	02-06-2017	02-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
415349	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-07-2017	02-07-2017	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
415407	PHONE CONTACT	MISDIRECTED - UTILITY	02-08-2017	02-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
415446	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2017	02-08-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
415449	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2017	02-08-2017	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
415603	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-09-2017	02-09-2017	WTA60	California Water Service Company	Payment Error	NULL	NULL
415736	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-10-2017	02-10-2017	WTA60	California Water Service Company	Safety	NULL	NULL
415796	PHONE CONTACT	INQUIRY ANSWERED	02-10-2017	02-10-2017	WTA60	California Water Service Company	NJ Company Practice	NJ Surcharges/Taxes	NULL
416034	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-13-2017	05-16-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
416071	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-14-2017	02-14-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
416218	PHONE CONTACT	MISDIRECTED - UTILITY	02-15-2017	02-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
416229	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-15-2017	02-15-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
416273	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2017	02-16-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
416276	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2017	02-16-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
416278	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-16-2017	02-16-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
416359	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2017	02-16-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
416399	PHONE CONTACT	MISDIRECTED - UTILITY	02-17-2017	02-17-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
416538	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-21-2017	02-21-2017	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
416658	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-21-2017	02-21-2017	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
416785	PHONE CONTACT	MISDIRECTED - UTILITY	02-22-2017	02-22-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
416981	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-23-2017	02-23-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
417008	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-23-2017	02-23-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
417024	PHONE CONTACT	INQUIRY ANSWERED	02-23-2017	02-23-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
417183	INFORMAL COMPLAINT	COMPROMISE	02-24-2017	03-23-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
417443	PHONE CONTACT	INQUIRY ANSWERED	02-28-2017	02-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
417675	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-01-2017	03-01-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
417911	PHONE CONTACT	MISDIRECTED - UTILITY	03-03-2017	03-03-2017	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
418055	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
418064	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418090	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	Bill Not Received	Wrong Number	NULL
418111	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	NJ Not Listed	Wrong Number	NULL
418118	PHONE CONTACT	REFERRED TO UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
418168	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418169	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2017	03-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418374	PHONE CONTACT	MISDIRECTED - UTILITY	03-08-2017	03-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418496	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-08-2017	04-06-2017	WTA60	California Water Service Company	Bill Not Received	Bill Adjustment	NULL
418504	PHONE CONTACT	MISDIRECTED - UTILITY	03-09-2017	03-09-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418513	PHONE CONTACT	MISDIRECTED - UTILITY	03-09-2017	03-09-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418614	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-10-2017	03-10-2017	WTA60	California Water Service Company	Disconnection Non Payment	Bill Not Received	NULL
418802	PHONE CONTACT	MISDIRECTED - UTILITY	03-13-2017	03-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
418826	PHONE CONTACT	MISDIRECTED - UTILITY	03-13-2017	03-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
419138	PHONE CONTACT	MISDIRECTED - UTILITY	03-15-2017	03-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
419269	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-16-2017	03-16-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
419393	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-17-2017	03-17-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
419645	PHONE CONTACT	MISDIRECTED - UTILITY	03-21-2017	03-21-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
419711	PHONE CONTACT	REFERRED TO UTILITY	03-21-2017	03-21-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
419719	PHONE CONTACT	INQUIRY ANSWERED	03-21-2017	03-21-2017	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
419782	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-22-2017	04-20-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
419986	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-23-2017	03-23-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
420040	PHONE CONTACT	MISDIRECTED - UTILITY	03-24-2017	03-24-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
420108	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-24-2017	03-24-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
420367	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-28-2017	03-28-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
420462	PHONE CONTACT	INQUIRY ANSWERED	03-29-2017	03-29-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL

420542	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-29-2017	03-29-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
420572	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-30-2017	03-30-2017	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Payment Arrangements
420573	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-30-2017	03-30-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
420635	PHONE CONTACT	MISDIRECTED - UTILITY	03-30-2017	03-30-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
420637	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-30-2017	03-30-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
420692	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-30-2017	05-02-2017	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
420733	PHONE CONTACT	MISDIRECTED - UTILITY	04-03-2017	04-03-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
420775	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-03-2017	04-03-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
420853	PHONE CONTACT	MISDIRECTED - UTILITY	04-03-2017	04-03-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
420854	COMPLAINT	REFERRED TO OTHER CPUC BRANCH	04-03-2017	04-11-2017	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
420900	PHONE CONTACT	MISDIRECTED - UTILITY	04-04-2017	04-04-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
420974	PHONE CONTACT	MISDIRECTED - UTILITY	04-04-2017	04-04-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421056	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-05-2017	04-05-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
421066	PHONE CONTACT	INQUIRY ANSWERED	04-05-2017	04-05-2017	WTA60	California Water Service Company	NJ Surcharges/Taxes	NULL	NULL
421311	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-07-2017	04-07-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
421415	PHONE CONTACT	MISDIRECTED - UTILITY	04-10-2017	04-10-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421431	PHONE CONTACT	MISDIRECTED - UTILITY	04-10-2017	04-10-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421540	PHONE CONTACT	MISDIRECTED - UTILITY	04-11-2017	04-11-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421572	PHONE CONTACT	MISDIRECTED - UTILITY	04-11-2017	04-11-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421636	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-11-2017	04-11-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
421775	PHONE CONTACT	MISDIRECTED - UTILITY	04-12-2017	04-12-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421786	PHONE CONTACT	REFERRED TO UTILITY	04-13-2017	04-13-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
421822	PHONE CONTACT	MISDIRECTED - UTILITY	04-13-2017	04-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421997	PHONE CONTACT	MISDIRECTED - UTILITY	04-17-2017	04-17-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
421998	PHONE CONTACT	MISDIRECTED - UTILITY	04-17-2017	04-17-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
422056	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-17-2017	04-17-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
422172	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-18-2017	04-18-2017	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
422175	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-18-2017	04-18-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
422223	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-18-2017	04-18-2017	WTA60	California Water Service Company	Payment Error	NULL	NULL
422307	PHONE CONTACT	REFERRED TO UTILITY	04-19-2017	04-19-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
422338	PHONE CONTACT	INQUIRY ANSWERED	04-20-2017	04-20-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
422530	PHONE CONTACT	MISDIRECTED - UTILITY	04-24-2017	04-24-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
422605	PHONE CONTACT	MISDIRECTED - UTILITY	04-24-2017	04-24-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
422645	PHONE CONTACT	MISDIRECTED - UTILITY	04-25-2017	04-25-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
422756	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-26-2017	04-26-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
422818	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-26-2017	04-26-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
422834	PHONE CONTACT	MISDIRECTED - UTILITY	04-26-2017	04-26-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
422931	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-27-2017	04-27-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
422952	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-27-2017	04-27-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
423020	PHONE CONTACT	MISDIRECTED - UTILITY	04-28-2017	04-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
423241	PHONE CONTACT	COMMISSION POLICY	05-01-2017	05-01-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
423390	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-02-2017	05-02-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
423393	PHONE CONTACT	MISDIRECTED - UTILITY	05-02-2017	05-02-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
423449	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-02-2017	06-26-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
423703	PHONE CONTACT	REFERRED TO UTILITY	05-05-2017	05-05-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
423800	PHONE CONTACT	REFERRED TO OTHER CPUC BRANCH	05-08-2017	05-08-2017	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
423861	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2017	05-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
423867	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2017	05-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
423869	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2017	05-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
423898	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2017	05-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
424106	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-10-2017	05-10-2017	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
424160	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-10-2017	05-10-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
424323	PHONE CONTACT	MISDIRECTED - UTILITY	05-12-2017	05-12-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
424572	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-16-2017	05-16-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
424607	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-16-2017	05-16-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
424618	PHONE CONTACT	MISDIRECTED - UTILITY	05-16-2017	05-16-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
424667	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-16-2017	05-16-2017	WTA60	California Water Service Company	Payment Arrangements	Bill Format	NULL
424713	PHONE CONTACT	REFERRED TO UTILITY	05-17-2017	05-17-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
424751	PHONE CONTACT	MISDIRECTED - UTILITY	05-17-2017	05-17-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
424851	PHONE CONTACT	INQUIRY ANSWERED	05-18-2017	05-18-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
424883	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-18-2017	05-18-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
424953	PHONE CONTACT	MISDIRECTED - UTILITY	05-19-2017	05-19-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
425241	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-23-2017	05-23-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
425479	PHONE CONTACT	MISDIRECTED - UTILITY	05-25-2017	05-25-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
425485	PHONE CONTACT	REFERRED TO UTILITY	05-25-2017	05-25-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
425486	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-25-2017	05-25-2017	WTA60	California Water Service Company	Bill Format	Payment Arrangements	NULL

425496	PHONE CONTACT	MISDIRECTED - UTILITY	05-25-2017	05-25-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
425563	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-26-2017	05-26-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
425624	PHONE CONTACT	MISDIRECTED - UTILITY	05-26-2017	05-26-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
425680	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-30-2017	05-30-2017	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
425701	PHONE CONTACT	REFERRED TO UTILITY	05-30-2017	05-30-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
425770	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-30-2017	05-30-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
425812	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-31-2017	05-31-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
426086	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-02-2017	06-02-2017	WTA60	California Water Service Company	Meter Reading Issue	NULL	NULL
426097	PHONE CONTACT	MISDIRECTED - UTILITY	06-02-2017	06-02-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426175	PHONE CONTACT	INQUIRY ANSWERED	06-02-2017	06-02-2017	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
426242	PHONE CONTACT	MISDIRECTED - UTILITY	06-05-2017	06-05-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426266	PHONE CONTACT	MISDIRECTED - UTILITY	06-05-2017	06-05-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426301	PHONE CONTACT	MISDIRECTED - UTILITY	06-05-2017	06-05-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426391	PHONE CONTACT	MISDIRECTED - UTILITY	06-06-2017	06-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426566	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-07-2017	07-25-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
426568	PHONE CONTACT	MISDIRECTED - UTILITY	06-08-2017	06-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426796	PHONE CONTACT	REFERRED TO UTILITY	06-12-2017	06-12-2017	WTA60	California Water Service Company	Safety	NULL	NULL
426900	PHONE CONTACT	MISDIRECTED - UTILITY	06-12-2017	06-12-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
426920	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-12-2017	06-12-2017	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
427166	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-14-2017	06-14-2017	WTA60	California Water Service Company	Deposits	NULL	NULL
427214	PHONE CONTACT	MISDIRECTED - UTILITY	06-15-2017	06-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
427222	PHONE CONTACT	MISDIRECTED - UTILITY	06-15-2017	06-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
427235	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-15-2017	06-15-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
427264	PHONE CONTACT	MISDIRECTED - UTILITY	06-15-2017	06-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
427313	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-16-2017	06-16-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
427345	PHONE CONTACT	REFERRED TO UTILITY	06-16-2017	06-16-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
427348	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-16-2017	06-16-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
427614	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-20-2017	06-20-2017	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NULL
427826	PHONE CONTACT	REFERRED TO UTILITY	06-22-2017	06-22-2017	WTA60	California Water Service Company	High Bill	Rate Protest	Energy Efficiency Programs
427941	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-23-2017	06-23-2017	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
427944	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-23-2017	06-23-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
427953	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-23-2017	06-23-2017	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
428100	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-26-2017	06-26-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
428202	PHONE CONTACT	MISDIRECTED - UTILITY	06-27-2017	06-27-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
428211	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	06-26-2017	07-27-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
428392	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-28-2017	06-28-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
428404	PHONE CONTACT	MISDIRECTED - UTILITY	06-28-2017	06-28-2017	WTA60	California Water Service Company	NJ Customer Service	NJ Company Practice	Wrong Number
428500	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-29-2017	06-29-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
428556	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-30-2017	06-30-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
428640	PHONE CONTACT	MISDIRECTED - UTILITY	06-30-2017	06-30-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
428850	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-05-2017	07-05-2017	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
428918	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-05-2017	08-16-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
428956	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2017	07-06-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
428957	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2017	07-06-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
429136	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-07-2017	07-07-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
429176	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-10-2017	07-10-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
429215	PHONE CONTACT	MISDIRECTED - UTILITY	07-10-2017	07-10-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
429316	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-11-2017	08-22-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
429337	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-11-2017	07-11-2017	WTA60	California Water Service Company	Other Charges	NULL	NULL
429351	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-11-2017	07-11-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
429392	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-11-2017	07-11-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
429487	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-12-2017	07-12-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
429497	PHONE CONTACT	REFERRED TO UTILITY	07-12-2017	07-12-2017	WTA60	California Water Service Company	Unknown	NULL	NULL
429500	PHONE CONTACT	INQUIRY ANSWERED	07-12-2017	07-12-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
429606	PHONE CONTACT	REFERRED TO UTILITY	07-13-2017	07-13-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
429607	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-13-2017	07-13-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
429793	PHONE CONTACT	INQUIRY ANSWERED	07-17-2017	07-17-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
429794	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-17-2017	07-17-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
429971	PHONE CONTACT	MISDIRECTED - UTILITY	07-18-2017	07-18-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
430020	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-18-2017	07-18-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
430100	PHONE CONTACT	MISDIRECTED - UTILITY	07-19-2017	07-19-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
430120	INFORMAL COMPLAINT	DISCRETION UTILITY	07-19-2017	10-19-2017	WTA60	California Water Service Company	Other Charges	NULL	NULL
430194	PHONE CONTACT	REFERRED TO UTILITY	07-20-2017	07-20-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
430476	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-24-2017	07-24-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
430687	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-26-2017	07-26-2017	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
430760	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2017	07-26-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL

430823	PHONE CONTACT	MISDIRECTED - UTILITY	07-27-2017	07-27-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
430921	PHONE CONTACT	MISDIRECTED - UTILITY	07-28-2017	07-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
430928	PHONE CONTACT	MISDIRECTED - UTILITY	07-28-2017	07-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
431029	PHONE CONTACT	INQUIRY ANSWERED	07-31-2017	07-31-2017	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	High Bill	NULL
431277	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-01-2017	08-01-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
431457	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-03-2017	08-03-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
431552	PHONE CONTACT	REFERRED TO UTILITY	08-04-2017	08-04-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
431757	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-07-2017	08-22-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
431758	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-07-2017	09-08-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
431818	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-08-2017	08-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Payment Arrangements
431824	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-08-2017	08-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
431825	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-08-2017	08-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
432177	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-10-2017	08-18-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
432258	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-11-2017	08-11-2017	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
432286	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-11-2017	08-11-2017	WTA60	California Water Service Company	High Bill	Bill Format	NULL
432424	PHONE CONTACT	NON-JURISDICTIONAL	08-14-2017	08-14-2017	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
432435	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-14-2017	09-13-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
432468	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-14-2017	09-07-2017	WTA60	California Water Service Company	Other Charges	NULL	NULL
432480	PHONE CONTACT	REFERRED TO UTILITY	08-15-2017	08-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
432508	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2017	08-15-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
432571	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-15-2017	09-22-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
432575	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-15-2017	09-22-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
432592	PHONE CONTACT	COMMISSION POLICY	08-16-2017	08-16-2017	WTA60	California Water Service Company	Rate Design	NULL	NULL
432635	COMPLAINT	FORWARDED TO PAO	08-15-2017	08-18-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
432725	PHONE CONTACT	REFERRED TO UTILITY	08-17-2017	08-17-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
432801	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-18-2017	08-18-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
432945	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-21-2017	08-21-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
433057	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-22-2017	08-22-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
433119	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-22-2017	08-22-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
433152	PHONE CONTACT	MISDIRECTED - UTILITY	08-23-2017	08-23-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
433208	PHONE CONTACT	MISDIRECTED - UTILITY	08-23-2017	08-23-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
433268	INFORMAL COMPLAINT	COMPROMISE	08-23-2017	09-22-2017	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
433435	PHONE CONTACT	MISDIRECTED - UTILITY	08-25-2017	08-25-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
433472	PHONE CONTACT	MISDIRECTED - UTILITY	08-25-2017	08-25-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
433513	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-28-2017	08-28-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
433547	INFORMAL COMPLAINT	DISCRETION UTILITY	08-25-2017	10-26-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
433786	PHONE CONTACT	MISDIRECTED - UTILITY	08-29-2017	08-29-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
433791	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-29-2017	08-29-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
433870	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-30-2017	08-30-2017	WTA60	California Water Service Company	NJ Customer Service	Payment Arrangements	NULL
433950	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-31-2017	08-31-2017	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
433951	PHONE CONTACT	MISDIRECTED - UTILITY	08-31-2017	08-31-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
434025	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-31-2017	09-27-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
434104	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-01-2017	09-12-2017	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
434115	MISDIRECTED	MISDIRECTED - UTILITY	09-01-2017	09-05-2017	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
434139	PHONE CONTACT	MISDIRECTED - UTILITY	09-01-2017	09-01-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
434161	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-05-2017	09-05-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
434278	PHONE CONTACT	INQUIRY ANSWERED	09-05-2017	09-05-2017	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
434387	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-06-2017	09-06-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
434392	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-06-2017	09-06-2017	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
434459	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-07-2017	09-07-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
434515	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-07-2017	09-07-2017	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
434524	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-07-2017	09-07-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
434549	PHONE CONTACT	REFERRED TO UTILITY	09-07-2017	09-07-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
434705	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-08-2017	09-08-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
434767	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-11-2017	09-11-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
434874	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-11-2017	10-18-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
434876	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-12-2017	09-12-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
434921	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-12-2017	10-06-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
434965	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-12-2017	09-12-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
435045	PHONE CONTACT	MISDIRECTED - UTILITY	09-13-2017	09-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
435048	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-13-2017	09-13-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
435172	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-14-2017	09-14-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
435274	PHONE CONTACT	MISDIRECTED - UTILITY	09-15-2017	09-15-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
435287	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-15-2017	09-15-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
435353	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-15-2017	09-15-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
435542	PHONE CONTACT	REFERRED TO UTILITY	09-19-2017	09-19-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL

435622	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-19-2017	10-23-2017	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
435663	PHONE CONTACT	MISDIRECTED - UTILITY	09-20-2017	09-20-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
435667	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-20-2017	09-20-2017	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
435710	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-20-2017	10-11-2017	WTA60	California Water Service Company	Bill Adjustment	NULL	NULL
435826	PHONE CONTACT	MISDIRECTED - UTILITY	09-21-2017	09-21-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
435836	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-22-2017	09-22-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
435849	COMPLAINT	COMMISSION POLICY	09-21-2017	10-05-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
435875	PHONE CONTACT	MISDIRECTED - UTILITY	09-22-2017	09-22-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
436033	PHONE CONTACT	MISDIRECTED - UTILITY	09-25-2017	09-25-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
436168	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-26-2017	09-26-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
436258	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-27-2017	09-27-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
436266	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-27-2017	09-27-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
436300	PHONE CONTACT	MISDIRECTED - UTILITY	09-27-2017	09-27-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
436327	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-27-2017	09-27-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
436508	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-29-2017	09-29-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
436525	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-02-2017	10-02-2017	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
436532	PHONE CONTACT	REFERRED TO UTILITY	10-02-2017	10-02-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
436613	INFORMAL COMPLAINT	COMPROMISE	10-01-2017	11-22-2017	WTA60	California Water Service Company	High Bill	NJ Company Practice	NULL
436618	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-30-2017	10-24-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
436657	INQUIRY	INQUIRY ANSWERED	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436658	INQUIRY	INQUIRY ANSWERED	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436659	INQUIRY	INQUIRY ANSWERED	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436660	INQUIRY	INQUIRY ANSWERED	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436661	INQUIRY	INQUIRY ANSWERED	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436662	INQUIRY	INQUIRY ANSWERED	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436663	COMPLAINT	COMMISSION POLICY	09-29-2017	10-04-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436728	COMPLAINT	CC COMPLAINT	10-02-2017	10-05-2017	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	NULL	NULL
436751	PHONE CONTACT	INQUIRY ANSWERED	10-03-2017	10-03-2017	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
436770	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-03-2017	10-03-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
436786	PHONE CONTACT	MISDIRECTED - UTILITY	10-03-2017	10-03-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
436821	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-04-2017	10-04-2017	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Payment Arrangements
436858	COMPLAINT	COMMISSION POLICY	10-04-2017	10-09-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
436897	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-04-2017	10-04-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
436992	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-05-2017	10-05-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
437001	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-05-2017	10-05-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
437024	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-06-2017	11-29-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
437039	COMPLAINT	COMMISSION POLICY	10-05-2017	10-09-2017	WTA60	California Water Service Company	Rate Protest	NULL	NULL
437053	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2017	10-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
437067	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2017	10-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
437087	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2017	10-06-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
437159	PHONE CONTACT	MISDIRECTED - UTILITY	10-09-2017	10-09-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
437192	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-09-2017	10-31-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
437290	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-10-2017	10-10-2017	WTA60	California Water Service Company	High Bill	Disconnection Non Payment	Payment Arrangements
437304	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-10-2017	10-10-2017	WTA60	California Water Service Company	Estimated Billing	High Bill	NULL
437338	INFORMAL COMPLAINT	DISCRETION UTILITY	10-10-2017	11-28-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
437342	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-10-2017	11-02-2017	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
437545	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-12-2017	10-12-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
438168	PHONE CONTACT	INQUIRY ANSWERED	10-19-2017	10-19-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
438192	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-20-2017	10-20-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
438418	PHONE CONTACT	MISDIRECTED - UTILITY	10-23-2017	10-23-2017	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
438487	PHONE CONTACT	INQUIRY ANSWERED	10-24-2017	10-24-2017	WTA60	California Water Service Company	Unknown	NULL	NULL
438647	PHONE CONTACT	MISDIRECTED - UTILITY	10-25-2017	10-25-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
438666	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-25-2017	10-25-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
438758	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-26-2017	10-26-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
438800	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-26-2017	10-26-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
438855	PHONE CONTACT	REFERRED TO UTILITY	10-27-2017	10-27-2017	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Payment Arrangements
438929	PHONE CONTACT	MISDIRECTED - UTILITY	10-30-2017	10-30-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
439070	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-31-2017	10-31-2017	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
439129	PHONE CONTACT	MISDIRECTED - UTILITY	10-31-2017	10-31-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
439215	PHONE CONTACT	REFERRED TO UTILITY	11-01-2017	11-01-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
439328	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-01-2017	11-01-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
439370	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-02-2017	11-02-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
439389	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-02-2017	11-02-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
439413	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-02-2017	11-02-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
439439	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2017	11-03-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
439494	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2017	11-03-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL

439543	PHONE CONTACT	REFERRED TO UTILITY	11-06-2017	11-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
439587	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-06-2017	11-06-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
439654	PHONE CONTACT	MISDIRECTED - UTILITY	11-06-2017	11-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
439685	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	11-06-2017	12-19-2017	WTA60	California Water Service Company	Meter Reading Issue	High Bill	NULL
439853	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-08-2017	12-14-2017	WTA60	California Water Service Company	Disputed Customer of Record	Backbilling	NULL
439863	INFORMAL COMPLAINT	DISCRETION UTILITY	11-07-2017	12-08-2017	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
439909	PHONE CONTACT	MISDIRECTED - UTILITY	11-08-2017	11-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
439910	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-08-2017	11-08-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
439923	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-08-2017	11-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
440012	PHONE CONTACT	REFERRED TO UTILITY	11-09-2017	11-09-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
440150	PHONE CONTACT	MISDIRECTED - UTILITY	11-13-2017	11-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
440155	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-13-2017	11-13-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
440157	PHONE CONTACT	REFERRED TO UTILITY	11-13-2017	11-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
440199	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-13-2017	11-13-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
440222	PHONE CONTACT	MISDIRECTED - UTILITY	11-13-2017	11-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
440251	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2017	11-14-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
440445	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-15-2017	11-15-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
440484	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-15-2017	11-15-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
440490	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-15-2017	11-15-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
440659	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-16-2017	01-08-2018	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
440732	PHONE CONTACT	REFERRED TO UTILITY	11-17-2017	11-17-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
440844	PHONE CONTACT	REFERRED TO UTILITY	11-20-2017	11-20-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
440846	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-20-2017	11-20-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
441215	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-27-2017	11-27-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
441248	PHONE CONTACT	INQUIRY ANSWERED	11-27-2017	11-27-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
441366	PHONE CONTACT	MISDIRECTED - UTILITY	11-28-2017	11-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
441377	PHONE CONTACT	MISDIRECTED - UTILITY	11-28-2017	11-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
441448	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-29-2017	11-29-2017	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
441462	PHONE CONTACT	REFERRED TO UTILITY	11-29-2017	11-29-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
441599	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-30-2017	11-30-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
441610	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-30-2017	11-30-2017	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
441613	PHONE CONTACT	INQUIRY ANSWERED	11-30-2017	11-30-2017	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
441683	PHONE CONTACT	MISDIRECTED - UTILITY	11-30-2017	11-30-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
441770	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-01-2017	12-01-2017	WTA60	California Water Service Company	High Bill	NULL	NULL
441774	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-01-2017	12-01-2017	WTA60	California Water Service Company	Bill Format	NULL	NULL
441823	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-03-2017	02-21-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
441940	PHONE CONTACT	MISDIRECTED - UTILITY	12-04-2017	12-04-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442072	PHONE CONTACT	MISDIRECTED - UTILITY	12-05-2017	12-05-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442148	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2017	12-06-2017	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
442170	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2017	12-06-2017	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
442191	PHONE CONTACT	MISDIRECTED - UTILITY	12-06-2017	12-06-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442244	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2017	12-06-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
442264	PHONE CONTACT	MISDIRECTED - UTILITY	12-07-2017	12-07-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442397	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2017	12-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
442420	PHONE CONTACT	MISDIRECTED - UTILITY	12-08-2017	12-08-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442477	PHONE CONTACT	INQUIRY ANSWERED	12-08-2017	12-08-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
442478	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2017	12-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
442479	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2017	12-08-2017	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
442515	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-11-2017	12-11-2017	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
442699	PHONE CONTACT	MISDIRECTED - UTILITY	12-12-2017	12-12-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442810	PHONE CONTACT	INQUIRY ANSWERED	12-13-2017	12-13-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
442836	PHONE CONTACT	MISDIRECTED - UTILITY	12-13-2017	12-13-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
442859	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-13-2017	12-13-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
442892	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-13-2017	12-29-2017	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
442986	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-14-2017	12-14-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
443158	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-18-2017	12-18-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
443222	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-18-2017	12-18-2017	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
443329	PHONE CONTACT	INQUIRY ANSWERED	12-19-2017	12-19-2017	WTA60	California Water Service Company	Master/Sub Meters (Mobile Homes)	NULL	NULL
443390	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-20-2017	12-20-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
443654	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-26-2017	12-26-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
443736	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-27-2017	12-27-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
443770	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-27-2017	12-27-2017	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
443774	PHONE CONTACT	REFERRED TO UTILITY	12-27-2017	12-27-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
443871	PHONE CONTACT	MISDIRECTED - UTILITY	12-28-2017	12-28-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
443881	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-28-2017	12-28-2017	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
443904	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-28-2017	12-28-2017	WTA60	California Water Service Company	High Bill	NULL	NULL

443965	PHONE CONTACT	MISDIRECTED - UTILITY	12-29-2017	12-29-2017	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444082	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-02-2018	01-02-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
444218	PHONE CONTACT	MISDIRECTED - UTILITY	01-03-2018	01-03-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444402	PHONE CONTACT	MISDIRECTED - UTILITY	01-05-2018	01-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444407	PHONE CONTACT	MISDIRECTED - UTILITY	01-05-2018	01-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444411	MISDIRECTED	MISDIRECTED - UTILITY	01-05-2018	01-18-2018	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
444448	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-08-2018	01-08-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
444478	PHONE CONTACT	MISDIRECTED - UTILITY	01-08-2018	01-08-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444523	PHONE CONTACT	MISDIRECTED - UTILITY	01-08-2018	01-08-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444544	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-08-2018	01-08-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
444591	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-08-2018	01-31-2018	WTA60	California Water Service Company	Payment Error	NULL	NULL
444709	PHONE CONTACT	MISDIRECTED - UTILITY	01-09-2018	01-09-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
444761	PHONE CONTACT	MISDIRECTED - UTILITY	01-10-2018	01-10-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444801	PHONE CONTACT	MISDIRECTED - UTILITY	01-10-2018	01-10-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444804	PHONE CONTACT	REFERRED TO UTILITY	01-10-2018	01-10-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
444864	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-10-2018	01-10-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
444893	PHONE CONTACT	REFERRED TO UTILITY	01-11-2018	01-11-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
445208	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-16-2018	01-16-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
445232	PHONE CONTACT	MISDIRECTED - UTILITY	01-16-2018	01-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
445272	PHONE CONTACT	MISDIRECTED - UTILITY	01-17-2018	01-17-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
445461	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-18-2018	01-18-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
445526	INFORMAL COMPLAINT	DISCRETION UTILITY	01-18-2018	03-16-2018	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
445647	PHONE CONTACT	MISDIRECTED - UTILITY	01-22-2018	01-22-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
445677	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-22-2018	01-22-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
445679	PHONE CONTACT	INQUIRY ANSWERED	01-22-2018	01-22-2018	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
445719	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-22-2018	01-22-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
445778	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-22-2018	02-15-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
445837	PHONE CONTACT	MISDIRECTED - UTILITY	01-23-2018	01-23-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
445857	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-23-2018	01-23-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
445859	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-23-2018	01-23-2018	WTA60	California Water Service Company	Low Income/Special Needs	Payment Arrangements	NULL
445951	PHONE CONTACT	MISDIRECTED - UTILITY	01-24-2018	01-24-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
445986	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-24-2018	01-24-2018	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
446060	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-25-2018	01-25-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
446206	COMPLAINT	NON-JURISDICTIONAL	01-26-2018	02-07-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
446231	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-26-2018	02-14-2018	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	Bill Adjustment	NULL
446241	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-26-2018	02-15-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
446321	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	01-29-2018	03-02-2018	WTA60	California Water Service Company	Unknown	NULL	NULL
446438	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-30-2018	01-30-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
446440	PHONE CONTACT	INQUIRY ANSWERED	01-30-2018	01-30-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
446572	PHONE CONTACT	MISDIRECTED - UTILITY	02-01-2018	02-01-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
446607	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-01-2018	02-01-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
446767	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-05-2018	02-05-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
446929	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-06-2018	02-06-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
446937	PHONE CONTACT	NON-JURISDICTIONAL	02-06-2018	02-06-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
446957	PHONE CONTACT	MISDIRECTED - UTILITY	02-06-2018	02-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
447010	PHONE CONTACT	MISDIRECTED - UTILITY	02-06-2018	02-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
447124	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-07-2018	02-07-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
447145	PHONE CONTACT	INQUIRY ANSWERED	02-08-2018	02-08-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
447160	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2018	02-08-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
447170	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2018	02-08-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
447255	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-06-2018	04-26-2018	WTA60	California Water Service Company	Safety	NULL	NULL
447328	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-09-2018	02-09-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
447513	PHONE CONTACT	MISDIRECTED - UTILITY	02-13-2018	02-13-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
447728	PHONE CONTACT	MISDIRECTED - UTILITY	02-15-2018	02-15-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
447743	PHONE CONTACT	MISDIRECTED - UTILITY	02-15-2018	02-15-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
447751	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-15-2018	03-16-2018	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
447752	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-15-2018	03-16-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
447894	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2018	02-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
447960	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-20-2018	02-20-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
448013	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-20-2018	02-20-2018	WTA60	California Water Service Company	Bill Format	NULL	NULL
448067	PHONE CONTACT	MISDIRECTED - UTILITY	02-21-2018	02-21-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
448118	PHONE CONTACT	MISDIRECTED - UTILITY	02-21-2018	02-21-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
448348	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-23-2018	05-30-2018	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Customer Service	NULL
448732	PHONE CONTACT	MISDIRECTED - UTILITY	03-01-2018	03-01-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
448859	PHONE CONTACT	MISDIRECTED - UTILITY	03-02-2018	03-02-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
449106	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2018	03-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL

449249	PHONE CONTACT	MISDIRECTED - UTILITY	03-07-2018	03-07-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
449273	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-07-2018	03-07-2018	WTA60	California Water Service Company	Disputed Customer of Record	High Bill	NULL
449359	PHONE CONTACT	MISDIRECTED - UTILITY	03-08-2018	03-08-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
449436	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-09-2018	03-09-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
449481	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-09-2018	03-09-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
449515	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-09-2018	03-09-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
449639	COMPLAINT	NON-JURISDICTIONAL	03-12-2018	03-13-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
449668	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-12-2018	03-12-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
450284	PHONE CONTACT	MISDIRECTED - UTILITY	03-20-2018	03-20-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
450424	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-21-2018	03-21-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
450452	PHONE CONTACT	MISDIRECTED - UTILITY	03-21-2018	03-21-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
450752	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-26-2018	03-26-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
450781	COMPLAINT	NON-JURISDICTIONAL	03-26-2018	04-04-2018	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
450877	PHONE CONTACT	NON-JURISDICTIONAL	03-27-2018	03-27-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
450947	PHONE CONTACT	MISDIRECTED - UTILITY	03-28-2018	03-28-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
450958	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-28-2018	03-28-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
451008	PHONE CONTACT	REFERRED TO UTILITY	03-29-2018	03-29-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451053	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-29-2018	03-29-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
451055	COMPLAINT	NON-JURISDICTIONAL	03-29-2018	03-30-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
451097	PHONE CONTACT	REFERRED TO UTILITY	03-29-2018	03-29-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451115	PHONE CONTACT	MISDIRECTED - UTILITY	03-30-2018	03-30-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451122	PHONE CONTACT	REFERRED TO UTILITY	03-30-2018	03-30-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451147	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-30-2018	03-30-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
451159	PHONE CONTACT	REFERRED TO UTILITY	03-30-2018	03-30-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
451196	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-02-2018	04-02-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
451395	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-04-2018	04-04-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
451460	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-04-2018	04-04-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
451464	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-04-2018	04-04-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
451600	PHONE CONTACT	MISDIRECTED - UTILITY	04-06-2018	04-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451607	PHONE CONTACT	MISDIRECTED - UTILITY	04-06-2018	04-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451670	PHONE CONTACT	MISDIRECTED - UTILITY	04-06-2018	04-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451723	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-09-2018	04-09-2018	WTA60	California Water Service Company	Unknown	NULL	NULL
451747	PHONE CONTACT	MISDIRECTED - UTILITY	04-09-2018	04-09-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451775	PHONE CONTACT	MISDIRECTED - UTILITY	04-09-2018	04-09-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
451798	PHONE CONTACT	INQUIRY ANSWERED	04-09-2018	04-09-2018	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
451857	INFORMAL COMPLAINT	COMPROMISE	04-09-2018	05-21-2018	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	Disconnection Non Payment	NJ Company Practice
452016	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-11-2018	04-11-2018	WTA60	California Water Service Company	Estimated Billing	NULL	NULL
452023	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-11-2018	04-11-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
452030	PHONE CONTACT	MISDIRECTED - UTILITY	04-11-2018	04-11-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452224	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-13-2018	04-13-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
452241	PHONE CONTACT	REFERRED TO UTILITY	04-13-2018	04-13-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452290	PHONE CONTACT	MISDIRECTED - UTILITY	04-16-2018	04-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452296	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-13-2018	05-03-2018	WTA60	California Water Service Company	Payment Error	Bill Adjustment	NULL
452313	PHONE CONTACT	MISDIRECTED - UTILITY	04-16-2018	04-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452318	PHONE CONTACT	MISDIRECTED - UTILITY	04-16-2018	04-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452320	PHONE CONTACT	MISDIRECTED - UTILITY	04-16-2018	04-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452323	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-16-2018	04-16-2018	WTA60	California Water Service Company	Bill Adjustment	Other Charges	NULL
452356	PHONE CONTACT	INQUIRY ANSWERED	04-16-2018	04-16-2018	WTA60	California Water Service Company	Master/Sub Meters	High Bill	NULL
452452	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-17-2018	04-17-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
452457	PHONE CONTACT	MISDIRECTED - UTILITY	04-17-2018	04-17-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452651	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-19-2018	04-19-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
452697	PHONE CONTACT	MISDIRECTED - UTILITY	04-19-2018	04-19-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
452698	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-19-2018	04-19-2018	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
452929	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-23-2018	04-23-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
452946	PHONE CONTACT	MISDIRECTED - UTILITY	04-23-2018	04-23-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
453229	PHONE CONTACT	MISDIRECTED - UTILITY	04-26-2018	04-26-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
453437	MISDIRECTED	MISDIRECTED - UTILITY	04-30-2018	05-01-2018	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
453463	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-01-2018	05-01-2018	WTA60	California Water Service Company	Payment Error	NULL	NULL
453663	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-02-2018	05-02-2018	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
453731	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-03-2018	05-03-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
453734	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-03-2018	05-03-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
453746	PHONE CONTACT	MISDIRECTED - UTILITY	05-03-2018	05-03-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
453786	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-04-2018	05-04-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
453949	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2018	05-07-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
453953	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-07-2018	05-07-2018	WTA60	California Water Service Company	Other Charges	NULL	NULL
453965	COMPLAINT	COMMISSION POLICY	05-07-2018	05-11-2018	WTA60	California Water Service Company	Rate Protest	NULL	NULL

454006	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2018	05-08-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
454024	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-08-2018	05-08-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
454030	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-08-2018	05-08-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
454044	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-08-2018	05-08-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
454067	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2018	05-08-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
454083	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-08-2018	05-08-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
454336	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2018	05-11-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
454369	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-11-2018	06-12-2018	WTA60	California Water Service Company	Disconnected In Error	Other Charges	NULL
454384	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2018	05-11-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
454513	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-14-2018	05-14-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
454610	PHONE CONTACT	MISDIRECTED - UTILITY	05-15-2018	05-15-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
454804	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-17-2018	05-17-2018	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	High Bill	NULL
455013	PHONE CONTACT	MISDIRECTED - UTILITY	05-21-2018	05-21-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
455197	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-23-2018	05-23-2018	WTA60	California Water Service Company	Disconnection Non Payment	Safety	NULL
455234	COMPLAINT	NON-JURISDICTIONAL	05-23-2018	07-06-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
455263	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-24-2018	05-24-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
455292	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-24-2018	05-24-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
455391	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-25-2018	05-25-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
455401	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-25-2018	05-25-2018	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
455629	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-30-2018	08-01-2018	WTA60	California Water Service Company	High Bill	Delayed Orders/Missed Appointments	Meter Inaccuracy/Reading Issues
455657	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-31-2018	08-02-2018	WTA60	California Water Service Company	Late Payment Charge - LPC	NJ Customer Service	NULL
455959	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-04-2018	06-04-2018	WTA60	California Water Service Company	Other Charges	NULL	NULL
456060	PHONE CONTACT	REFERRED TO UTILITY	06-05-2018	06-05-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
456080	PHONE CONTACT	MISDIRECTED - UTILITY	06-05-2018	06-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
456199	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-07-2018	06-07-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
456217	PHONE CONTACT	MISDIRECTED - UTILITY	06-07-2018	06-07-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
456258	PHONE CONTACT	MISDIRECTED - UTILITY	06-07-2018	06-07-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
456381	PHONE CONTACT	REFERRED TO UTILITY	06-11-2018	06-11-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
456475	PHONE CONTACT	MISDIRECTED - UTILITY	06-11-2018	06-11-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
456694	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-13-2018	07-20-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
456736	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-14-2018	06-14-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
456931	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-18-2018	06-18-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
456969	PHONE CONTACT	MISDIRECTED - UTILITY	06-18-2018	06-18-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
457049	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-19-2018	06-19-2018	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
457074	PHONE CONTACT	REFERRED TO UTILITY	06-19-2018	06-19-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
457150	PHONE CONTACT	MISDIRECTED - UTILITY	06-20-2018	06-20-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
457171	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-20-2018	06-20-2018	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
457286	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-21-2018	06-21-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
457302	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-21-2018	06-21-2018	WTA60	California Water Service Company	Estimated Billing	High Bill	NULL
457310	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-21-2018	06-21-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
457364	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-22-2018	06-22-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
457473	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-25-2018	06-25-2018	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
457569	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-26-2018	06-26-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
457611	PHONE CONTACT	INQUIRY ANSWERED	06-26-2018	06-26-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
457658	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-27-2018	06-27-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
457908	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-29-2018	06-29-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
457988	PHONE CONTACT	MISDIRECTED - NON-JURISDICTIONAL	07-02-2018	07-02-2018	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
458051	PHONE CONTACT	MISDIRECTED - UTILITY	07-02-2018	07-02-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
458052	PHONE CONTACT	MISDIRECTED - UTILITY	07-02-2018	07-02-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
458074	PHONE CONTACT	MISDIRECTED - UTILITY	07-03-2018	07-03-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
458237	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-03-2018	08-20-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
458265	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-05-2018	07-05-2018	WTA60	California Water Service Company	Refusal To Serve	Payment Arrangements	NULL
458326	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2018	07-06-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
458342	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2018	07-06-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
458382	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2018	07-06-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
458408	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-06-2018	07-06-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
458458	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-09-2018	07-09-2018	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
458570	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-10-2018	07-10-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
458604	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-10-2018	07-10-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
458818	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-12-2018	07-12-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
458824	PHONE CONTACT	MISDIRECTED - UTILITY	07-12-2018	07-12-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
458868	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-12-2018	07-12-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
459105	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-17-2018	07-17-2018	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
459285	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-18-2018	07-18-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
459330	PHONE CONTACT	MISDIRECTED - UTILITY	07-19-2018	07-19-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
459362	PHONE CONTACT	REFERRED TO UTILITY	07-19-2018	07-19-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL

459458	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-20-2018	07-20-2018	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
459540	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-23-2018	07-23-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
459622	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-24-2018	07-24-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
459776	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2018	07-25-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
459831	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2018	07-26-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
459845	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2018	07-26-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
459893	PHONE CONTACT	REFERRED TO UTILITY	07-26-2018	07-26-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
460053	PHONE CONTACT	REFERRED TO UTILITY	07-30-2018	07-30-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
460054	PHONE CONTACT	MISDIRECTED - UTILITY	07-30-2018	07-30-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
460055	PHONE CONTACT	REFERRED TO UTILITY	07-30-2018	07-30-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
460212	PHONE CONTACT	MISDIRECTED - UTILITY	07-31-2018	07-31-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
460226	PHONE CONTACT	REFERRED TO UTILITY	07-31-2018	07-31-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
460244	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-31-2018	09-10-2018	WTA60	California Water Service Company	Other Charges	NJ Customer Service	NULL
460246	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-31-2018	09-12-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
460310	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-01-2018	08-01-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
460332	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-01-2018	08-01-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
460386	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-02-2018	08-02-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
460479	PHONE CONTACT	MISDIRECTED - UTILITY	08-03-2018	08-03-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
460518	PHONE CONTACT	REFERRED TO UTILITY	08-03-2018	08-03-2018	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
460599	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-06-2018	08-06-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
460657	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-06-2018	08-06-2018	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
460658	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-06-2018	08-06-2018	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
460750	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-07-2018	08-07-2018	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
460853	PHONE CONTACT	MISDIRECTED - UTILITY	08-08-2018	08-08-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
460872	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-08-2018	09-21-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
460971	PHONE CONTACT	MISDIRECTED - UTILITY	08-09-2018	08-09-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
460994	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-09-2018	08-09-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
461039	PHONE CONTACT	INQUIRY ANSWERED	08-09-2018	08-09-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
461205	COMPLAINT	NON-JURISDICTIONAL	08-11-2018	08-14-2018	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
461252	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-13-2018	08-13-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
461380	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-13-2018	08-13-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
461417	PHONE CONTACT	REFERRED TO UTILITY	08-14-2018	08-14-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
461468	INFORMAL COMPLAINT	DISCRETION UTILITY	08-13-2018	10-01-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
461588	COMPLAINT	NON-JURISDICTIONAL	08-14-2018	08-16-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
461708	PHONE CONTACT	MISDIRECTED - UTILITY	08-15-2018	08-15-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
461827	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-16-2018	08-16-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
462360	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-21-2018	09-17-2018	WTA60	California Water Service Company	Water Rationing/Allocation	NJ Customer Service	NULL
462403	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-22-2018	08-22-2018	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
462626	PHONE CONTACT	REFERRED TO UTILITY	08-23-2018	08-23-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
462678	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-24-2018	08-24-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
462679	PHONE CONTACT	MISDIRECTED - UTILITY	08-24-2018	08-24-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
462695	PHONE CONTACT	MISDIRECTED - UTILITY	08-24-2018	08-24-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
462866	INFORMAL COMPLAINT	DISCRETION UTILITY	08-27-2018	10-30-2018	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
462949	PHONE CONTACT	MISDIRECTED - UTILITY	08-28-2018	08-28-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
462962	PHONE CONTACT	MISDIRECTED - UTILITY	08-28-2018	08-28-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
463211	INQUIRY	INQUIRY ANSWERED	08-29-2018	09-06-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
463488	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-04-2018	09-04-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
463492	INFORMAL COMPLAINT	COMPROMISE	08-31-2018	11-02-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
463680	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-05-2018	10-05-2018	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
463697	PHONE CONTACT	REFERRED TO UTILITY	09-05-2018	09-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
463701	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-05-2018	09-05-2018	WTA60	California Water Service Company	Health	NULL	NULL
463744	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-06-2018	10-15-2018	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
463760	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-06-2018	09-06-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
463774	PHONE CONTACT	MISDIRECTED - UTILITY	09-06-2018	09-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
463813	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-06-2018	09-06-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
463829	PHONE CONTACT	INQUIRY ANSWERED	09-06-2018	09-06-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
463929	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-07-2018	09-07-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
464100	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-10-2018	09-10-2018	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
464223	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-11-2018	09-11-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
464267	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-12-2018	09-12-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
464414	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-13-2018	09-13-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
464448	PHONE CONTACT	REFERRED TO UTILITY	09-13-2018	09-13-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
464508	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-14-2018	09-14-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
464663	MISDIRECTED	MISDIRECTED - UTILITY	09-14-2018	09-18-2018	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
464675	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-17-2018	09-17-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
464713	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-17-2018	09-17-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL

464827	PHONE CONTACT	MISDIRECTED - UTILITY	09-18-2018	09-18-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
464959	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-19-2018	09-19-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
464988	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-19-2018	09-19-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
465096	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	09-20-2018	10-26-2018	WTA60	California Water Service Company	Unknown	NULL	NULL
465196	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-21-2018	09-21-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
465202	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-21-2018	09-21-2018	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
465421	PHONE CONTACT	MISDIRECTED - UTILITY	09-25-2018	09-25-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
465527	PHONE CONTACT	REFERRED TO UTILITY	09-26-2018	09-26-2018	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
465561	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-26-2018	09-26-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
465569	INFORMAL COMPLAINT	DISCRETION UTILITY	09-26-2018	10-26-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
465627	PHONE CONTACT	REFERRED TO UTILITY	09-27-2018	09-27-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
465719	PHONE CONTACT	MISDIRECTED - UTILITY	09-28-2018	09-28-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
465769	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-28-2018	09-28-2018	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NULL
465946	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-02-2018	10-02-2018	WTA60	California Water Service Company	Bill Format	NULL	NULL
466121	PHONE CONTACT	MISDIRECTED - UTILITY	10-03-2018	10-03-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
466139	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-03-2018	10-03-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
466204	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-04-2018	10-04-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
466297	PHONE CONTACT	MISDIRECTED - UTILITY	10-05-2018	10-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
466327	PHONE CONTACT	INQUIRY ANSWERED	10-05-2018	10-05-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
466538	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-09-2018	10-09-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
466637	PHONE CONTACT	REFERRED TO UTILITY	10-10-2018	10-10-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
466668	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-10-2018	10-10-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
466687	COMPLAINT	REFERRED TO OTHER CPUC BRANCH	10-09-2018	10-18-2018	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
466714	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-10-2018	10-10-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
467075	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-15-2018	10-15-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
467192	PHONE CONTACT	MISDIRECTED - UTILITY	10-16-2018	10-16-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
467297	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-17-2018	10-17-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
467339	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-16-2018	11-13-2018	WTA60	California Water Service Company	Other Charges	NULL	NULL
467426	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-17-2018	12-31-2018	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
467463	PHONE CONTACT	INQUIRY ANSWERED	10-18-2018	10-18-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
467555	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-19-2018	10-19-2018	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
467558	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-19-2018	10-19-2018	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	High Bill	NULL
467600	INFORMAL COMPLAINT	DISCRETION UTILITY	10-19-2018	12-24-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	Bill Adjustment
467650	PHONE CONTACT	MISDIRECTED - UTILITY	10-22-2018	10-22-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
467777	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-23-2018	10-23-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
467824	PHONE CONTACT	MISDIRECTED - UTILITY	10-24-2018	10-24-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
467996	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-25-2018	10-25-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
468250	PHONE CONTACT	MISDIRECTED - UTILITY	10-29-2018	10-29-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
468396	PHONE CONTACT	MISDIRECTED - UTILITY	10-31-2018	10-31-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
468565	PHONE CONTACT	REFERRED TO UTILITY	11-02-2018	11-02-2018	WTA60	California Water Service Company	Safety	NULL	NULL
468678	COMPLAINT	NON-JURISDICTIONAL	11-03-2018	11-16-2018	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
468691	PHONE CONTACT	REFERRED TO UTILITY	11-05-2018	11-05-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
468695	PHONE CONTACT	MISDIRECTED - UTILITY	11-05-2018	11-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
468715	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-05-2018	11-05-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
468719	PHONE CONTACT	MISDIRECTED - UTILITY	11-05-2018	11-05-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
468844	PHONE CONTACT	REFERRED TO UTILITY	11-06-2018	11-06-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
468853	PHONE CONTACT	MISDIRECTED - UTILITY	11-06-2018	11-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
469159	PHONE CONTACT	MISDIRECTED - UTILITY	11-09-2018	11-09-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
469164	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-09-2018	11-09-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
469250	PHONE CONTACT	MISDIRECTED - UTILITY	11-13-2018	11-13-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
469352	PHONE CONTACT	MISDIRECTED - UTILITY	11-14-2018	11-14-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
469385	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2018	11-14-2018	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
469788	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-20-2018	11-20-2018	WTA60	California Water Service Company	Meter Reading Issue	NULL	NULL
469953	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-21-2018	11-21-2018	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
469998	PHONE CONTACT	MISDIRECTED - UTILITY	11-26-2018	11-26-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
470104	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-26-2018	11-26-2018	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
470421	PHONE CONTACT	MISDIRECTED - UTILITY	11-29-2018	11-29-2018	WTA60	California Water Service Company	High Bill	NULL	NULL
470724	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-04-2018	12-04-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
470730	PHONE CONTACT	INQUIRY ANSWERED	12-04-2018	12-04-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
470909	INFORMAL COMPLAINT	COMPROMISE	12-05-2018	01-03-2019	WTA60	California Water Service Company	High Bill	Other Charges	NULL
470927	PHONE CONTACT	MISDIRECTED - UTILITY	12-06-2018	12-06-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
471043	PHONE CONTACT	INQUIRY ANSWERED	12-07-2018	12-07-2018	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
471047	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-07-2018	12-07-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
471136	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-10-2018	12-10-2018	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
471331	PHONE CONTACT	REFERRED TO UTILITY	12-12-2018	12-12-2018	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NULL
471426	PHONE CONTACT	MISDIRECTED - UTILITY	12-12-2018	12-12-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL

471495	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-13-2018	12-13-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
471576	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-14-2018	12-14-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
471756	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-17-2018	12-17-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
471773	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-17-2018	12-17-2018	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
471835	PHONE CONTACT	MISDIRECTED - UTILITY	12-18-2018	12-18-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
472352	PHONE CONTACT	MISDIRECTED - UTILITY	12-26-2018	12-26-2018	WTA60	California Water Service Company	Wrong Number	NULL	NULL
472587	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-28-2018	12-28-2018	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
472604	INFORMAL COMPLAINT	COMPROMISE	12-28-2018	02-08-2019	WTA60	California Water Service Company	Disputed Customer of Record	Refusal To Serve	NULL
472700	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-31-2018	12-31-2018	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
472798	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-02-2019	01-02-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
472848	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-03-2019	01-03-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
472871	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-03-2019	01-03-2019	WTA60	California Water Service Company	Bill Format	NULL	NULL
473009	PHONE CONTACT	MISDIRECTED - UTILITY	01-04-2019	01-04-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
473098	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	01-06-2019	02-05-2019	WTA60	California Water Service Company	High Bill	Low Income/Special Needs	NULL
473101	COMPLAINT	FORWARDED TO PAO	01-05-2019	01-08-2019	WTA60	California Water Service Company	Rate Protest	NULL	NULL
473128	PHONE CONTACT	REFERRED TO UTILITY	01-07-2019	01-07-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
473130	PHONE CONTACT	REFERRED TO UTILITY	01-07-2019	01-07-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
473148	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-07-2019	01-07-2019	WTA60	California Water Service Company	Other Charges	NULL	NULL
473215	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-07-2019	01-30-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
473225	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-08-2019	01-08-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
473436	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-09-2019	01-09-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
473476	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-08-2019	01-29-2019	WTA60	California Water Service Company	High Bill	Estimated Billing	NULL
473746	PHONE CONTACT	MISDIRECTED - UTILITY	01-14-2019	01-14-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
473941	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-16-2019	01-16-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
474074	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-17-2019	01-17-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
474292	COMPLAINT	NON-JURISDICTIONAL	01-18-2019	02-22-2019	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
474308	PHONE CONTACT	MISDIRECTED - UTILITY	01-22-2019	01-22-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
474339	PHONE CONTACT	MISDIRECTED - UTILITY	01-22-2019	01-22-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
474377	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-22-2019	01-22-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
474381	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-22-2019	01-22-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
474460	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-23-2019	01-23-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
474487	PHONE CONTACT	MISDIRECTED - UTILITY	01-23-2019	01-23-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
474521	PHONE CONTACT	INQUIRY ANSWERED	01-23-2019	01-23-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
474554	PHONE CONTACT	MISDIRECTED - UTILITY	01-24-2019	01-24-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
474669	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-25-2019	01-25-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
475155	PHONE CONTACT	MISDIRECTED - UTILITY	01-31-2019	01-31-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
475255	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-01-2019	02-01-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
475396	PHONE CONTACT	MISDIRECTED - UTILITY	02-04-2019	02-04-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
475678	PHONE CONTACT	MISDIRECTED - UTILITY	02-06-2019	02-06-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
475911	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2019	02-08-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
475949	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2019	02-08-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
476083	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-11-2019	02-11-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
476159	INFORMAL COMPLAINT	COMPROMISE	02-12-2019	03-14-2019	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Company Practice	NJ Customer Service
476360	COMPLAINT	NON-JURISDICTIONAL	02-13-2019	02-14-2019	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
476837	MISDIRECTED	MISDIRECTED - UTILITY	02-20-2019	02-20-2019	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
476841	INFORMAL COMPLAINT	DISCRETION UTILITY	02-15-2019	03-15-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
477130	PHONE CONTACT	MISDIRECTED - UTILITY	02-22-2019	02-22-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
477598	MISDIRECTED	MISDIRECTED - UTILITY	02-28-2019	03-01-2019	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
477720	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-01-2019	03-01-2019	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
477840	PHONE CONTACT	MISDIRECTED - UTILITY	03-04-2019	03-04-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
478578	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-12-2019	03-12-2019	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
478677	PHONE CONTACT	MISDIRECTED - UTILITY	03-13-2019	03-13-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
478741	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-13-2019	03-13-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
478871	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-14-2019	03-14-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
479040	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-15-2019	04-25-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
479262	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-19-2019	03-19-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
479657	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-22-2019	03-22-2019	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
479756	PHONE CONTACT	MISDIRECTED - UTILITY	03-25-2019	03-25-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
479920	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-26-2019	03-26-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
480511	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-03-2019	04-03-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
480641	INFORMAL COMPLAINT	DISCRETION UTILITY	03-27-2019	05-15-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
480652	PHONE CONTACT	MISDIRECTED - UTILITY	04-04-2019	04-04-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
480802	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-05-2019	04-05-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
480928	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-09-2019	05-28-2019	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
481261	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-11-2019	04-11-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
481858	PHONE CONTACT	MISDIRECTED - UTILITY	04-18-2019	04-18-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL

482171	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-23-2019	04-23-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
482210	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-23-2019	05-10-2019	WTA60	California Water Service Company	Bill Adjustment	NJ Customer Service	NULL
482248	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-24-2019	04-24-2019	WTA60	California Water Service Company	High Bill	Energy Efficiency Programs	NULL
482258	PHONE CONTACT	MISDIRECTED - UTILITY	04-24-2019	04-24-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
482387	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-25-2019	06-03-2019	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
482534	PHONE CONTACT	MISDIRECTED - UTILITY	04-29-2019	04-29-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
482758	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-01-2019	05-01-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
482759	PHONE CONTACT	MISDIRECTED - UTILITY	05-01-2019	05-01-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
482786	COMPLAINT	REFERRED TO OTHER CPUC BRANCH	04-29-2019	05-17-2019	WTA60	California Water Service Company	Safety	NULL	NULL
482902	PHONE CONTACT	MISDIRECTED - UTILITY	05-02-2019	05-02-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
483443	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-10-2019	05-10-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
483790	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-15-2019	05-15-2019	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
483968	PHONE CONTACT	INQUIRY ANSWERED	05-17-2019	05-17-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
484095	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-20-2019	05-20-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
484277	PHONE CONTACT	INQUIRY ANSWERED	05-22-2019	05-22-2019	WTA60	California Water Service Company	Outage	NULL	NULL
484407	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-23-2019	05-23-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
484531	PHONE CONTACT	REFERRED TO UTILITY	05-24-2019	05-24-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
484566	INFORMAL COMPLAINT	DISCRETION UTILITY	05-25-2019	06-21-2019	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Payment Arrangements
484656	PHONE CONTACT	REFERRED TO UTILITY	05-28-2019	05-28-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
484766	PHONE CONTACT	REFERRED TO UTILITY	05-29-2019	05-29-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
485162	INFORMAL COMPLAINT	COMPROMISE	06-05-2019	06-28-2019	WTA60	California Water Service Company	Meter Reading Issue	NULL	NULL
485184	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-05-2019	06-05-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
485275	PHONE CONTACT	REFERRED TO UTILITY	06-06-2019	06-06-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
485484	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-10-2019	06-10-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
485609	PHONE CONTACT	MISDIRECTED - UTILITY	06-11-2019	06-11-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
485676	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-12-2019	06-12-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
485856	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-14-2019	06-14-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
485990	PHONE CONTACT	MISDIRECTED - UTILITY	06-17-2019	06-17-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
486103	PHONE CONTACT	MISDIRECTED - UTILITY	06-18-2019	06-18-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
486255	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-20-2019	06-20-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
486309	COMPLAINT	NON-JURISDICTIONAL	06-20-2019	06-21-2019	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
486359	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-21-2019	06-21-2019	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
486382	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-21-2019	06-21-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
486662	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-25-2019	07-09-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
487157	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-03-2019	07-03-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
487226	INFORMAL COMPLAINT	DISCRETION UTILITY	07-04-2019	08-13-2019	WTA60	California Water Service Company	Safety	Disconnection Non Payment	NJ Company Practice
487233	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-05-2019	07-05-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
487242	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-05-2019	07-05-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
487459	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-09-2019	07-09-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
487462	PHONE CONTACT	MISDIRECTED - UTILITY	07-09-2019	07-09-2019	WTA60	California Water Service Company	Unknown	NULL	NULL
487486	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-09-2019	07-09-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
487553	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-09-2019	09-05-2019	WTA60	California Water Service Company	High Bill	Low Income/Special Needs	NJ Customer Service
487703	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-11-2019	09-05-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
487778	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-12-2019	07-12-2019	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
487910	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-15-2019	07-15-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
487979	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-16-2019	07-16-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
488202	INFORMAL COMPLAINT	DISCRETION UTILITY	07-17-2019	09-19-2019	WTA60	California Water Service Company	Safety	Commission Policy/Rules	NULL
488264	MISDIRECTED	MISDIRECTED - UTILITY	07-18-2019	07-19-2019	WTA60	California Water Service Company	Unknown	NULL	NULL
488488	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-22-2019	07-22-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
488662	COMPLAINT	NON-JURISDICTIONAL	07-23-2019	07-25-2019	WTA60	California Water Service Company	NJ Easements/Right of Way	NULL	NULL
488696	PHONE CONTACT	MISDIRECTED - UTILITY	07-24-2019	07-24-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
488876	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-25-2019	09-26-2019	WTA60	California Water Service Company	High Bill	Commission Policy/Rules	NULL
488934	PHONE CONTACT	REFERRED TO UTILITY	07-26-2019	07-26-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
489910	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-06-2019	08-06-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
490222	PHONE CONTACT	REFERRED TO UTILITY	08-09-2019	08-09-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
490331	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-09-2019	08-09-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
490726	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-14-2019	08-14-2019	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
490935	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-15-2019	10-08-2019	WTA60	California Water Service Company	Safety	NJ Easements/Right of Way	NULL
491738	PHONE CONTACT	MISDIRECTED - UTILITY	08-23-2019	08-23-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
491877	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-24-2019	11-26-2019	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
491902	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-26-2019	08-26-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
492184	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-27-2019	08-27-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
492333	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-27-2019	08-27-2019	WTA60	California Water Service Company	Bill Format	NULL	NULL
492375	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-27-2019	09-27-2019	WTA60	California Water Service Company	Other Charges	NULL	NULL
492397	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-27-2019	09-17-2019	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	High Bill	Bill Adjustment
493030	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-03-2019	09-03-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL

493126	PHONE CONTACT	NON-JURISDICTIONAL	09-04-2019	09-09-2019	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
493368	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-05-2019	09-05-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
493454	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-06-2019	09-06-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
493486	PHONE CONTACT	REFERRED TO UTILITY	09-06-2019	09-06-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
493676	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2019	09-09-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
494532	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-17-2019	09-17-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
494591	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-17-2019	09-17-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
494605	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-17-2019	10-08-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
494619	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	09-17-2019	10-20-2019	WTA60	California Water Service Company	Unknown	NULL	NULL
494880	PHONE CONTACT	REFERRED TO OTHER CPUC BRANCH	09-20-2019	09-20-2019	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
495133	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-23-2019	09-23-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
495349	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-24-2019	10-10-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
495641	PHONE CONTACT	NON-JURISDICTIONAL	09-27-2019	09-27-2019	WTA60	California Water Service Company	NJ Out of State Consumer	NULL	NULL
495674	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-27-2019	12-18-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
495936	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-26-2019	12-11-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
495940	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-02-2019	12-18-2019	WTA60	California Water Service Company	High Bill	Safety	NULL
496017	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-03-2019	10-03-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
496187	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-04-2019	10-04-2019	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
496251	PHONE CONTACT	REFERRED TO UTILITY	10-07-2019	10-07-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
497074	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-14-2019	10-14-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
497110	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-14-2019	10-14-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
497111	PHONE CONTACT	REFERRED TO UTILITY	10-14-2019	10-14-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
497370	PHONE CONTACT	REFERRED TO UTILITY	10-17-2019	10-17-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
497404	PHONE CONTACT	REFERRED TO UTILITY	10-17-2019	10-17-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
497544	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-18-2019	10-18-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
497547	INFORMAL COMPLAINT	DISCRETION UTILITY	10-15-2019	12-16-2019	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
497692	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-21-2019	12-09-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
497935	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-23-2019	10-23-2019	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
498059	PHONE CONTACT	REFERRED TO UTILITY	10-24-2019	10-24-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
498183	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-21-2019	02-11-2020	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Customer Service	NULL
498335	PHONE CONTACT	INQUIRY ANSWERED	10-28-2019	10-28-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
498338	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-28-2019	10-28-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
498366	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-28-2019	12-23-2019	WTA60	California Water Service Company	Other Charges	NULL	NULL
498383	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-28-2019	10-28-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
498457	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-28-2019	10-28-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
499173	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-04-2019	11-04-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
499213	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-04-2019	11-04-2019	WTA60	California Water Service Company	Bill Adjustment	Payment Arrangements	NULL
499249	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-04-2019	11-04-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
499286	INFORMAL COMPLAINT	COMPROMISE	11-04-2019	12-18-2019	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
499738	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-08-2019	12-04-2019	WTA60	California Water Service Company	Bill Not Received	Late Payment Charge - LPC	NULL
499851	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-12-2019	11-12-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
500066	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2019	11-14-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
500382	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-21-2019	11-21-2019	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
500394	PHONE CONTACT	MISDIRECTED - UTILITY	11-21-2019	11-21-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
500487	PHONE CONTACT	MISDIRECTED - UTILITY	11-22-2019	11-22-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
500634	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-25-2019	11-25-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
500642	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-25-2019	11-25-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
500661	PHONE CONTACT	REFERRED TO UTILITY	11-25-2019	11-25-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
500679	PHONE CONTACT	MISDIRECTED - UTILITY	11-25-2019	11-25-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
500691	PHONE CONTACT	MISDIRECTED - UTILITY	11-25-2019	11-25-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
500868	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-27-2019	11-27-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
501078	INFORMAL COMPLAINT	DISCRETION UTILITY	12-02-2019	01-02-2020	WTA60	California Water Service Company	Disputed Customer of Record	High Bill	NULL
501132	PHONE CONTACT	INQUIRY ANSWERED	12-03-2019	12-03-2019	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
501282	PHONE CONTACT	MISDIRECTED - UTILITY	12-04-2019	12-04-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
501652	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-22-2019	02-11-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
501767	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-10-2019	12-10-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
501827	PHONE CONTACT	REFERRED TO UTILITY	12-10-2019	12-10-2019	WTA60	California Water Service Company	Wrong Number	NULL	NULL
501852	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-10-2019	12-27-2019	WTA60	California Water Service Company	High Bill	NULL	NULL
502192	COMPLAINT	REFERRED TO UTILITY	12-13-2019	02-11-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
502809	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-20-2019	12-20-2019	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
503350	PHONE CONTACT	REFERRED TO UTILITY	01-02-2020	01-02-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
503398	PHONE CONTACT	MISDIRECTED - UTILITY	01-02-2020	01-02-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
503574	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-03-2020	01-03-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
504304	PHONE CONTACT	MISDIRECTED - UTILITY	01-13-2020	01-13-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
504336	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-13-2020	02-13-2020	WTA60	California Water Service Company	Other Charges	NULL	NULL
504411	INFORMAL COMPLAINT	DISCRETION UTILITY	01-14-2020	02-21-2020	WTA60	California Water Service Company	Disputed Customer of Record	NJ Company Practice	Other Charges

504507	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-15-2020	01-15-2020	WTA60	California Water Service Company	NJ Easements/Right of Way	NULL	NULL
504512	PHONE CONTACT	MISDIRECTED - UTILITY	01-15-2020	01-15-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
504750	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-17-2020	01-17-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
504821	COMPLAINT	NON-JURISDICTIONAL	01-17-2020	02-05-2020	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
505396	PHONE CONTACT	MISDIRECTED - UTILITY	01-28-2020	01-28-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
505542	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-29-2020	01-29-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
505584	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-30-2020	01-30-2020	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
505658	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-30-2020	03-05-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
505762	INFORMAL COMPLAINT	DISCRETION UTILITY	02-01-2020	02-26-2020	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	Meter Reading Issue	High Bill
505784	PHONE CONTACT	MISDIRECTED - UTILITY	02-03-2020	02-03-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
505816	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-03-2020	02-03-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
505869	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-04-2020	02-04-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
506421	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-11-2020	02-11-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
506613	PHONE CONTACT	MISDIRECTED - UTILITY	02-12-2020	02-12-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
506645	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-13-2020	02-13-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
506750	PHONE CONTACT	REFERRED TO UTILITY	02-14-2020	02-14-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
506957	PHONE CONTACT	MISDIRECTED - UTILITY	02-18-2020	02-18-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
506968	PHONE CONTACT	FORWARDED TO PAO	02-19-2020	02-19-2020	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
507297	COMPLAINT	NON-JURISDICTIONAL	02-24-2020	03-27-2020	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
507377	PHONE CONTACT	MISDIRECTED - UTILITY	02-25-2020	02-25-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
507510	PHONE CONTACT	MISDIRECTED - UTILITY	02-26-2020	02-26-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
507735	PHONE CONTACT	MISDIRECTED - UTILITY	03-02-2020	03-02-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
508046	PHONE CONTACT	MISDIRECTED - UTILITY	03-05-2020	03-05-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
508051	PHONE CONTACT	REFERRED TO UTILITY	03-05-2020	03-05-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
508163	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-06-2020	03-06-2020	WTA60	California Water Service Company	Other Charges	NULL	NULL
508301	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-09-2020	03-09-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
508303	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	03-09-2020	06-08-2020	WTA60	California Water Service Company	Unknown	NJ Landlord/Tenant Issues	NJ Municipal Utility
508790	PHONE CONTACT	INQUIRY ANSWERED	03-16-2020	03-16-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
508893	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-17-2020	03-17-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
508894	PHONE CONTACT	MISDIRECTED - UTILITY	03-17-2020	03-17-2020	WTA60	California Water Service Company	Bill Format	NULL	NULL
509060	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-19-2020	03-19-2020	WTA60	California Water Service Company	Other Charges	NULL	NULL
509256	PHONE CONTACT	INQUIRY ANSWERED	03-23-2020	03-23-2020	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
509260	PHONE CONTACT	INQUIRY ANSWERED	03-23-2020	03-23-2020	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
509567	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-27-2020	03-27-2020	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
509582	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-29-2020	06-12-2020	WTA60	California Water Service Company	High Bill	NJ Landlord/Tenant Issues	Other Charges
509647	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-30-2020	03-30-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
509656	PHONE CONTACT	MISDIRECTED - UTILITY	03-30-2020	03-30-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
509921	PHONE CONTACT	MISDIRECTED - UTILITY	04-03-2020	04-03-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
509956	PHONE CONTACT	REFERRED TO UTILITY	04-03-2020	04-03-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
510024	PHONE CONTACT	MISDIRECTED - UTILITY	04-06-2020	04-06-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
510105	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-07-2020	04-07-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
510108	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-07-2020	04-07-2020	WTA60	California Water Service Company	High Bill	Fraud	NULL
510129	PHONE CONTACT	MISDIRECTED - UTILITY	04-07-2020	04-07-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
510483	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-13-2020	05-01-2020	WTA60	California Water Service Company	Bill Not Received	High Bill	NULL
510679	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-16-2020	04-16-2020	WTA60	California Water Service Company	Other Charges	NULL	NULL
510693	MISDIRECTED	MISDIRECTED - UTILITY	04-16-2020	04-17-2020	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
510760	PHONE CONTACT	REFERRED TO UTILITY	04-17-2020	04-17-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
511032	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-22-2020	04-22-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
511108	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-23-2020	04-23-2020	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
511268	PHONE CONTACT	MISDIRECTED - UTILITY	04-27-2020	04-27-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
511276	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-27-2020	04-27-2020	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
511308	INFORMAL COMPLAINT	IN CONSUMER FAVOR	04-27-2020	07-23-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
511567	PHONE CONTACT	REFERRED TO UTILITY	05-01-2020	05-01-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
511573	PHONE CONTACT	REFERRED TO UTILITY	05-01-2020	05-01-2020	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
511814	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2020	05-07-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
511840	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2020	05-07-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
511852	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2020	05-07-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
512028	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2020	05-11-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
512057	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-11-2020	06-24-2020	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
512073	INFORMAL COMPLAINT	DISCRETION UTILITY	05-11-2020	06-04-2020	WTA60	California Water Service Company	Payment Arrangements	High Bill	NJ Customer Service
512178	PHONE CONTACT	INQUIRY ANSWERED	05-13-2020	05-13-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
512392	PHONE CONTACT	REFERRED TO UTILITY	05-18-2020	05-18-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
512549	PHONE CONTACT	MISDIRECTED - UTILITY	05-20-2020	05-20-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
512612	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-21-2020	07-21-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
512869	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-27-2020	05-27-2020	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
512894	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-27-2020	08-13-2020	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL

512935	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-28-2020	05-28-2020	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
513184	COMPLAINT	REFERRED TO OTHER CPUC BRANCH	06-02-2020	07-22-2020	WTA60	California Water Service Company	Safety	NULL	NULL
513214	PHONE CONTACT	MISDIRECTED - UTILITY	06-03-2020	06-03-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
513270	PHONE CONTACT	REFERRED TO UTILITY	06-04-2020	06-04-2020	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
513307	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-04-2020	06-04-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
513496	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-08-2020	09-01-2020	WTA60	California Water Service Company	High Bill	Delayed Orders/Missed Appointments	NJ Customer Service
513528	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-09-2020	06-09-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
513603	PHONE CONTACT	MISDIRECTED - UTILITY	06-10-2020	06-10-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
514176	PHONE CONTACT	MISDIRECTED - UTILITY	06-22-2020	06-22-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
514184	PHONE CONTACT	REFERRED TO UTILITY	06-22-2020	06-22-2020	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
514660	PHONE CONTACT	REFERRED TO UTILITY	06-30-2020	06-30-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
514737	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-01-2020	07-01-2020	WTA60	California Water Service Company	Payment Error	NULL	NULL
515151	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-08-2020	07-08-2020	WTA60	California Water Service Company	Refusal To Serve	Other Charges	Payment Arrangements
515260	COMPLAINT	NON-JURISDICTIONAL	07-09-2020	07-10-2020	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
515300	PHONE CONTACT	MISDIRECTED - UTILITY	07-10-2020	07-10-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
515305	PHONE CONTACT	MISDIRECTED - UTILITY	07-10-2020	07-10-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
515584	PHONE CONTACT	MISDIRECTED - UTILITY	07-15-2020	07-15-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
515722	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-17-2020	07-17-2020	WTA60	California Water Service Company	NJ Easements/Right of Way	Safety	NULL
515779	PHONE CONTACT	MISDIRECTED - UTILITY	07-20-2020	07-20-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
515821	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-20-2020	07-20-2020	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
515901	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-21-2020	07-21-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
515939	COMPLAINT	NON-JURISDICTIONAL	07-21-2020	07-22-2020	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
516156	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-24-2020	09-17-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
516342	PHONE CONTACT	MISDIRECTED - UTILITY	07-28-2020	07-28-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
516792	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-04-2020	12-03-2020	WTA60	California Water Service Company	High Bill	Safety	NJ Customer Service
516842	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-05-2020	08-05-2020	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
516849	PHONE CONTACT	MISDIRECTED - UTILITY	08-05-2020	08-05-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
516883	PHONE CONTACT	MISDIRECTED - UTILITY	08-06-2020	08-06-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
517036	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-08-2020	09-11-2020	WTA60	California Water Service Company	Disputed Customer of Record	High Bill	NULL
517077	PHONE CONTACT	REFERRED TO UTILITY	08-10-2020	08-10-2020	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
517095	PHONE CONTACT	MISDIRECTED - UTILITY	08-10-2020	08-10-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
517099	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-10-2020	10-09-2020	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	Other Charges	NULL
517216	PHONE CONTACT	MISDIRECTED - UTILITY	08-12-2020	08-12-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
517513	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-17-2020	10-07-2020	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
517982	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-25-2020	08-25-2020	WTA60	California Water Service Company	Health	Safety	NULL
518302	PHONE CONTACT	MISDIRECTED - UTILITY	08-31-2020	08-31-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
518352	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-31-2020	08-31-2020	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
518458	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-02-2020	09-02-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
518800	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-04-2020	10-29-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
518850	PHONE CONTACT	MISDIRECTED - UTILITY	09-10-2020	09-10-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
519147	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-15-2020	11-25-2020	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
519227	PHONE CONTACT	MISDIRECTED - UTILITY	09-18-2020	09-18-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
519321	PHONE CONTACT	REFERRED TO UTILITY	09-21-2020	09-21-2020	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
519480	PHONE CONTACT	MISDIRECTED - UTILITY	09-23-2020	09-23-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
519636	PHONE CONTACT	MISDIRECTED - UTILITY	09-25-2020	09-25-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
519742	PHONE CONTACT	REFERRED TO UTILITY	09-28-2020	09-28-2020	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
519788	PHONE CONTACT	REFERRED TO UTILITY	09-29-2020	09-29-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
519971	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-01-2020	12-18-2020	WTA60	California Water Service Company	Other Charges	NJ Company Practice	NULL
520640	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-15-2020	11-18-2020	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Customer Service	NULL
520730	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-16-2020	11-24-2020	WTA60	California Water Service Company	High Bill	NULL	NULL
520763	PHONE CONTACT	REFERRED TO UTILITY	10-20-2020	10-20-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
521156	PHONE CONTACT	MISDIRECTED - UTILITY	10-27-2020	10-27-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
521238	PHONE CONTACT	MISDIRECTED - UTILITY	10-28-2020	10-28-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
521273	PHONE CONTACT	INQUIRY ANSWERED	10-28-2020	10-28-2020	WTA60	California Water Service Company	NJ Easements/Right of Way	NULL	NULL
521432	PHONE CONTACT	MISDIRECTED - UTILITY	10-30-2020	10-30-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
521728	PHONE CONTACT	MISDIRECTED - UTILITY	11-05-2020	11-05-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
522237	PHONE CONTACT	MISDIRECTED - UTILITY	11-16-2020	11-16-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
522604	PHONE CONTACT	REFERRED TO UTILITY	11-24-2020	11-24-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
523162	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-04-2020	12-04-2020	WTA60	California Water Service Company	Meter Reading Issue	High Bill	NULL
523669	PHONE CONTACT	MISDIRECTED - UTILITY	12-11-2020	12-11-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
523736	PHONE CONTACT	MISDIRECTED - UTILITY	12-14-2020	12-14-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
523881	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-16-2020	12-16-2020	WTA60	California Water Service Company	Unknown	NULL	NULL
523888	PHONE CONTACT	REFERRED TO UTILITY	12-17-2020	12-17-2020	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
523948	PHONE CONTACT	MISDIRECTED - UTILITY	12-17-2020	12-17-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
524115	PHONE CONTACT	MISDIRECTED - UTILITY	12-21-2020	12-21-2020	WTA60	California Water Service Company	Wrong Number	NULL	NULL
524728	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-03-2021	03-01-2021	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL

524828	MISDIRECTED	MISDIRECTED - UTILITY	01-04-2021	01-05-2021	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
525278	PHONE CONTACT	REFERRED TO UTILITY	01-12-2021	01-12-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
525412	PHONE CONTACT	MISDIRECTED - UTILITY	01-13-2021	01-13-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
526084	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-22-2021	04-15-2021	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
526102	PHONE CONTACT	REFERRED TO UTILITY	01-25-2021	01-25-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
526451	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-29-2021	01-29-2021	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
526977	PHONE CONTACT	MISDIRECTED - UTILITY	02-04-2021	02-04-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
527226	PHONE CONTACT	REFERRED TO UTILITY	02-09-2021	02-09-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
527250	COMPLAINT	COMMISSION POLICY	02-09-2021	02-18-2021	WTA60	California Water Service Company	Rate Design	High Bill	NULL
527252	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-09-2021	03-08-2021	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
527330	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-10-2021	05-11-2021	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
527564	COMPLAINT	FORWARDED TO PAO	02-16-2021	03-17-2021	WTA60	California Water Service Company	Commission Policy/Rules	Rate Protest	NULL
527570	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-16-2021	05-11-2021	WTA60	California Water Service Company	High Bill	NJ Customer Service	Rate Protest
527599	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2021	02-16-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
527608	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-16-2021	02-16-2021	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
527897	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-20-2021	05-18-2021	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
528637	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-03-2021	04-08-2021	WTA60	California Water Service Company	Payment Error	NULL	NULL
528724	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-04-2021	05-14-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
529101	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-11-2021	03-11-2021	WTA60	California Water Service Company	Rate Design	NULL	NULL
529142	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-11-2021	03-11-2021	WTA60	California Water Service Company	Bill Format	NULL	NULL
529234	PHONE CONTACT	MISDIRECTED - UTILITY	03-12-2021	03-12-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
529247	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-12-2021	03-12-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
529441	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-16-2021	03-16-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
529489	PHONE CONTACT	MISDIRECTED - UTILITY	03-16-2021	03-16-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
529537	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-17-2021	03-17-2021	WTA60	California Water Service Company	Payment Error	Fraud	NULL
530023	INFORMAL COMPLAINT	DISCRETION UTILITY	03-24-2021	06-22-2021	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
530071	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-19-2021	06-16-2021	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
530083	INFORMAL COMPLAINT	DISCRETION UTILITY	03-25-2021	05-12-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
530122	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-25-2021	05-03-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
530638	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-17-2021	03-17-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
530858	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-08-2021	04-08-2021	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
530895	PHONE CONTACT	REFERRED TO UTILITY	04-08-2021	04-08-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
531378	PHONE CONTACT	MISDIRECTED - UTILITY	04-15-2021	04-15-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
531583	PHONE CONTACT	NON-JURISDICTIONAL	04-19-2021	04-19-2021	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	Disconnection Non Payment	NULL
531785	PHONE CONTACT	REFERRED TO UTILITY	04-21-2021	04-21-2021	WTA60	California Water Service Company	Outage	NULL	NULL
531954	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-24-2021	06-15-2021	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
532265	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-29-2021	04-29-2021	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	High Bill	NULL
532609	PHONE CONTACT	MISDIRECTED - UTILITY	05-05-2021	05-05-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
533172	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-13-2021	07-27-2021	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
533207	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-10-2021	07-29-2021	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
533320	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-17-2021	05-17-2021	WTA60	California Water Service Company	High Bill	Bill Adjustment	NULL
533348	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-17-2021	05-17-2021	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
533418	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-18-2021	05-18-2021	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
533506	PHONE CONTACT	REFERRED TO UTILITY	05-19-2021	05-19-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
533587	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-20-2021	09-24-2021	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
533766	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-24-2021	07-28-2021	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
534100	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-28-2021	05-28-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
534187	PHONE CONTACT	REFERRED TO UTILITY	06-01-2021	06-01-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
534695	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-09-2021	06-09-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
534914	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-14-2021	06-14-2021	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
535030	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-15-2021	06-15-2021	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
535054	COMPLAINT	REFERRED TO UTILITY	06-14-2021	06-16-2021	WTA60	California Water Service Company	Unknown	NULL	NULL
535073	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-15-2021	06-15-2021	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
535409	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-21-2021	06-21-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
535886	PHONE CONTACT	REFERRED TO OTHER CPUC BRANCH	06-28-2021	06-28-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
535899	MISDIRECTED	MISDIRECTED - UTILITY	06-28-2021	06-29-2021	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
535980	PHONE CONTACT	MISDIRECTED - UTILITY	06-29-2021	06-29-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
536182	PHONE CONTACT	MISDIRECTED - UTILITY	07-01-2021	07-01-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
536236	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-02-2021	07-02-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
536500	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-07-2021	07-07-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
536640	PHONE CONTACT	INQUIRY ANSWERED	07-09-2021	07-09-2021	WTA60	California Water Service Company	High Bill	Bill Not Received	NULL
536697	INFORMAL COMPLAINT	COMPROMISE	07-11-2021	07-30-2021	WTA60	California Water Service Company	Safety	NULL	NULL
537056	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-13-2021	10-20-2021	WTA60	California Water Service Company	Payment Error	NULL	NULL
537307	PHONE CONTACT	REFERRED TO UTILITY	07-15-2021	07-15-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
537991	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-27-2021	08-31-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
538022	PHONE CONTACT	MISDIRECTED - UTILITY	07-28-2021	07-28-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL

539246	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-12-2021	12-10-2021	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
539276	COMPLAINT	FORWARDED TO PAO	08-12-2021	08-20-2021	WTA60	California Water Service Company	Rate Protest	NULL	NULL
539392	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-13-2021	12-13-2021	WTA60	California Water Service Company	Safety	High Bill	NULL
539419	PHONE CONTACT	MISDIRECTED - UTILITY	08-16-2021	08-16-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
539432	PHONE CONTACT	MISDIRECTED - UTILITY	08-16-2021	08-16-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
539593	PHONE CONTACT	MISDIRECTED - UTILITY	08-17-2021	08-17-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
539689	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-18-2021	08-18-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
539694	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-18-2021	08-18-2021	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
539698	PHONE CONTACT	REFERRED TO UTILITY	08-18-2021	08-18-2021	WTA60	California Water Service Company	High Bill	NJ Surcharges/Taxes	NULL
540533	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-30-2021	08-30-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
540558	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-30-2021	08-30-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
540624	PHONE CONTACT	MISDIRECTED - UTILITY	08-30-2021	08-30-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
541191	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-08-2021	09-08-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
541459	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-10-2021	09-10-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
541874	PHONE CONTACT	MISDIRECTED - UTILITY	09-14-2021	09-14-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
541902	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-14-2021	11-01-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
542122	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-17-2021	12-03-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
542304	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	09-20-2021	09-23-2021	WTA60	California Water Service Company	Outage	NULL	NULL
542337	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-21-2021	09-21-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
542377	PHONE CONTACT	REFERRED TO UTILITY	09-21-2021	09-21-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
542487	PHONE CONTACT	MISDIRECTED - UTILITY	09-22-2021	09-22-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
542587	PHONE CONTACT	MISDIRECTED - UTILITY	09-23-2021	09-23-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
542598	PHONE CONTACT	MISDIRECTED - UTILITY	09-23-2021	09-23-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
542612	INFORMAL COMPLAINT	COMPROMISE	09-23-2021	11-01-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
542671	PHONE CONTACT	INQUIRY ANSWERED	09-24-2021	09-24-2021	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
542803	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-27-2021	10-25-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
542826	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-27-2021	11-10-2021	WTA60	California Water Service Company	High Bill	Estimated Billing	Meter Reading Issue
542831	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-27-2021	11-10-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
543544	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-06-2021	02-16-2022	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
543837	PHONE CONTACT	MISDIRECTED - UTILITY	10-12-2021	10-12-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
543849	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-12-2021	12-09-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
543856	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-12-2021	12-10-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
543857	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-12-2021	01-12-2022	WTA60	California Water Service Company	High Bill	Water Rationing/Allocation	NULL
543937	PHONE CONTACT	MISDIRECTED - UTILITY	10-13-2021	10-13-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
544089	PHONE CONTACT	REFERRED TO UTILITY	10-15-2021	10-15-2021	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
544171	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-18-2021	10-18-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
544384	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-20-2021	10-20-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
544443	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-20-2021	11-23-2021	WTA60	California Water Service Company	Other Charges	NULL	NULL
544725	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-26-2021	10-26-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
544817	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-27-2021	10-27-2021	WTA60	California Water Service Company	Disputed Customer of Record	Payment Arrangements	NULL
544990	PHONE CONTACT	INQUIRY ANSWERED	10-31-2021	10-31-2021	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
545198	PHONE CONTACT	INQUIRY ANSWERED	10-07-2021	10-07-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
545213	PHONE CONTACT	ADVISE CONSUMER TO WRITE	11-02-2021	11-02-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
545297	PHONE CONTACT	INQUIRY ANSWERED	11-03-2021	11-03-2021	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
545602	PHONE CONTACT	ADVISE CONSUMER TO WRITE	11-08-2021	11-08-2021	WTA60	California Water Service Company	Other Charges	NJ Customer Service	NULL
545750	PHONE CONTACT	FORWARDED TO PAO	11-10-2021	11-10-2021	WTA60	California Water Service Company	Low Income/Special Needs	Rate Protest	NULL
545866	PHONE CONTACT	MISDIRECTED - UTILITY	11-12-2021	11-12-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
545975	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-15-2021	01-27-2022	WTA60	California Water Service Company	High Bill	NJ Customer Service	Delayed Orders/Missed Appointments
546006	PHONE CONTACT	NON-JURISDICTIONAL	11-15-2021	11-15-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
546116	PHONE CONTACT	ADVISE CONSUMER TO WRITE	11-17-2021	11-17-2021	WTA60	California Water Service Company	Commission Policy/Rules	NULL	NULL
546155	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-17-2021	11-17-2021	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
546215	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-18-2021	12-20-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
546291	PHONE CONTACT	INQUIRY ANSWERED	11-19-2021	11-19-2021	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
546392	MISDIRECTED	MISDIRECTED - UTILITY	11-22-2021	11-24-2021	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
546438	PHONE CONTACT	MISDIRECTED - UTILITY	11-23-2021	11-23-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
546459	PHONE CONTACT	ADVISE CONSUMER TO WRITE	11-23-2021	11-23-2021	WTA60	California Water Service Company	High Bill	NULL	NULL
546833	PHONE CONTACT	MISDIRECTED - UTILITY	12-01-2021	12-01-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
547109	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2021	12-06-2021	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
547124	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2021	12-06-2021	WTA60	California Water Service Company	Safety	NJ Customer Service	NULL
547350	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-09-2021	12-09-2021	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
547369	PHONE CONTACT	MISDIRECTED - UTILITY	12-09-2021	12-09-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
547598	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-14-2021	12-14-2021	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
547844	PHONE CONTACT	INQUIRY ANSWERED	12-01-2021	12-01-2021	WTA60	California Water Service Company	Refusal To Serve	NULL	NULL
548339	PHONE CONTACT	MISDIRECTED - UTILITY	12-28-2021	12-28-2021	WTA60	California Water Service Company	Wrong Number	NULL	NULL
548403	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-28-2021	03-25-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
549249	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	01-10-2022	04-18-2022	WTA60	California Water Service Company	High Bill	NULL	NULL

549901	PHONE CONTACT	MISDIRECTED - UTILITY	01-19-2022	01-19-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
549998	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	01-19-2022	04-01-2022	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
550239	PHONE CONTACT	MISDIRECTED - UTILITY	01-24-2022	01-24-2022	WTA60	California Water Service Company	Wrong Number	NJ Customer Service	NULL
550286	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-24-2022	01-24-2022	WTA60	California Water Service Company	Bill Format	NULL	NULL
551053	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-01-2022	02-01-2022	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
551169	PHONE CONTACT	MISDIRECTED - UTILITY	02-02-2022	02-02-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
551302	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-03-2022	03-25-2022	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
551462	PHONE CONTACT	MISDIRECTED - UTILITY	02-04-2022	02-04-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
552005	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-08-2022	03-30-2022	WTA60	California Water Service Company	Safety	NULL	NULL
552441	PHONE CONTACT	MISDIRECTED - UTILITY	02-14-2022	02-14-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
552684	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2022	02-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
552898	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-17-2022	05-18-2022	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Customer Service	NULL
552940	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-17-2022	03-29-2022	WTA60	California Water Service Company	High Bill	Payment Arrangements	Meter Inaccuracy/Reading Issues
553282	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-24-2022	02-24-2022	WTA60	California Water Service Company	Bill Not Received	Delayed Orders/Missed Appointments	NULL
553464	PHONE CONTACT	MISDIRECTED - UTILITY	02-28-2022	02-28-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
553474	PHONE CONTACT	MISDIRECTED - UTILITY	02-28-2022	02-28-2022	WTA60	California Water Service Company	Wrong Number	High Bill	Payment Arrangements
553488	INFORMAL COMPLAINT	COMPROMISE	02-25-2022	04-15-2022	WTA60	California Water Service Company	High Bill	NJ Claims for Damages	Safety
553860	PHONE CONTACT	MISDIRECTED - UTILITY	03-03-2022	03-03-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
554812	PHONE CONTACT	REFERRED TO UTILITY	03-16-2022	03-16-2022	WTA60	California Water Service Company	Payment Arrangements	NJ Company Practice	NULL
554981	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-18-2022	03-18-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
555478	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-23-2022	03-23-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
555493	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-25-2022	03-25-2022	WTA60	California Water Service Company	Safety	NULL	NULL
555501	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-25-2022	03-25-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
555566	PHONE CONTACT	MISDIRECTED - UTILITY	03-28-2022	03-28-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
555592	PHONE CONTACT	INQUIRY ANSWERED	03-28-2022	03-28-2022	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
555752	PHONE CONTACT	REFERRED TO UTILITY	03-30-2022	03-30-2022	WTA60	California Water Service Company	Payment Arrangements	Wrong Number	NULL
556000	PHONE CONTACT	REFERRED TO UTILITY	04-04-2022	04-04-2022	WTA60	California Water Service Company	Bill Not Received	Payment Arrangements	NULL
556110	COMPLAINT	NON-JURISDICTIONAL	03-28-2022	04-19-2022	WTA60	California Water Service Company	NJ Not Listed	Safety	NULL
556566	PHONE CONTACT	REFERRED TO UTILITY	04-11-2022	04-11-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
556705	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-12-2022	04-12-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
557230	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-19-2022	05-23-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
557438	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-22-2022	04-22-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
557741	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-27-2022	04-27-2022	WTA60	California Water Service Company	Other Charges	NULL	NULL
557868	COMPLAINT	COMMISSION POLICY	04-28-2022	05-06-2022	WTA60	California Water Service Company	Water Rationing/Allocation	NULL	NULL
557948	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-29-2022	04-29-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
558067	PHONE CONTACT	MISDIRECTED - UTILITY	05-02-2022	05-02-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
558573	PHONE CONTACT	MISDIRECTED - UTILITY	05-10-2022	05-10-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
558641	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-10-2022	06-13-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
559205	PHONE CONTACT	MISDIRECTED - UTILITY	05-19-2022	05-19-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
559340	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-22-2022	07-11-2022	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
559519	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-25-2022	05-25-2022	WTA60	California Water Service Company	Payment Error	Bill Adjustment	NULL
559533	PHONE CONTACT	MISDIRECTED - UTILITY	05-25-2022	05-25-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
559553	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-25-2022	06-29-2022	WTA60	California Water Service Company	High Bill	Rate Protest	Bill Adjustment
559810	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-31-2022	05-31-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
559886	PHONE CONTACT	REFERRED TO UTILITY	06-01-2022	06-01-2022	WTA60	California Water Service Company	NJ Not Listed	Wrong Number	NULL
560020	PHONE CONTACT	MISDIRECTED - UTILITY	06-02-2022	06-02-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
560305	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-07-2022	06-07-2022	WTA60	California Water Service Company	Disconnected In Error	Disputed Customer of Record	NJ Customer Service
560378	PHONE CONTACT	REFERRED TO UTILITY	06-08-2022	06-08-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
560499	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	06-09-2022	09-13-2022	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NJ Customer Service
560630	PHONE CONTACT	MISDIRECTED - UTILITY	06-13-2022	06-13-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
561039	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-17-2022	08-31-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
561312	PHONE CONTACT	MISDIRECTED - UTILITY	06-22-2022	06-22-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
561945	PHONE CONTACT	NON-JURISDICTIONAL	07-01-2022	07-01-2022	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
561983	PHONE CONTACT	MISDIRECTED - UTILITY	07-01-2022	07-01-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
562044	PHONE CONTACT	MISDIRECTED - UTILITY	07-05-2022	07-05-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
562431	PHONE CONTACT	REFERRED TO UTILITY	07-11-2022	07-11-2022	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NULL
562568	PHONE CONTACT	MISDIRECTED - UTILITY	07-12-2022	07-12-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
562778	PHONE CONTACT	REFERRED TO UTILITY	07-14-2022	07-14-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
562808	PHONE CONTACT	MISDIRECTED - UTILITY	07-14-2022	07-14-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
562945	COMPLAINT	NON-JURISDICTIONAL	07-17-2022	07-21-2022	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
562949	COMPLAINT	NON-JURISDICTIONAL	07-17-2022	07-22-2022	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
563043	PHONE CONTACT	MISDIRECTED - UTILITY	07-18-2022	07-18-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563125	MISDIRECTED	MISDIRECTED - UTILITY	07-15-2022	07-21-2022	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
563175	PHONE CONTACT	MISDIRECTED - UTILITY	07-19-2022	07-19-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
563252	PHONE CONTACT	REFERRED TO UTILITY	07-20-2022	07-20-2022	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
563338	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-21-2022	07-21-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL

563379	PHONE CONTACT	REFERRED TO UTILITY	07-21-2022	07-21-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563385	PHONE CONTACT	MISDIRECTED - UTILITY	07-21-2022	07-21-2022	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NULL
563390	PHONE CONTACT	REFERRED TO UTILITY	07-21-2022	07-21-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563395	PHONE CONTACT	MISDIRECTED - UTILITY	07-21-2022	07-21-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563426	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2022	07-22-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
563469	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-22-2022	07-22-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
563471	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2022	07-22-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563534	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2022	07-25-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563565	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2022	07-25-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563599	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2022	07-25-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563608	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2022	07-25-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563611	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-25-2022	07-25-2022	WTA60	California Water Service Company	Other Charges	Bill Adjustment	NULL
563663	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2022	07-26-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
563695	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-26-2022	07-26-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
563698	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2022	07-26-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
563726	PHONE CONTACT	REFERRED TO UTILITY	07-26-2022	07-26-2022	WTA60	California Water Service Company	High Bill	Wrong Number	NULL
563804	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-27-2022	07-27-2022	WTA60	California Water Service Company	Payment Arrangements	Wrong Number	NULL
563871	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-28-2022	07-28-2022	WTA60	California Water Service Company	High Bill	Payment Arrangements	NJ Customer Service
563932	PHONE CONTACT	MISDIRECTED - UTILITY	07-29-2022	07-29-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
564064	PHONE CONTACT	REFERRED TO UTILITY	08-01-2022	08-01-2022	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
564092	PHONE CONTACT	MISDIRECTED - UTILITY	08-01-2022	08-01-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
564196	PHONE CONTACT	MISDIRECTED - UTILITY	08-02-2022	08-02-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
564204	PHONE CONTACT	MISDIRECTED - UTILITY	08-02-2022	08-02-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
564211	PHONE CONTACT	REFERRED TO UTILITY	08-02-2022	08-02-2022	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
564229	PHONE CONTACT	REFERRED TO UTILITY	08-02-2022	08-02-2022	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
564284	PHONE CONTACT	MISDIRECTED - UTILITY	08-03-2022	08-03-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
564599	PHONE CONTACT	REFERRED TO UTILITY	08-08-2022	08-08-2022	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
564617	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-08-2022	08-08-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
564624	PHONE CONTACT	REFERRED TO UTILITY	08-08-2022	08-08-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
564715	PHONE CONTACT	REFERRED TO UTILITY	08-09-2022	08-09-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
564863	PHONE CONTACT	MISDIRECTED - UTILITY	08-10-2022	08-10-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
564867	PHONE CONTACT	REFERRED TO UTILITY	08-10-2022	08-10-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
565141	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-15-2022	08-15-2022	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
565229	PHONE CONTACT	MISDIRECTED - UTILITY	08-16-2022	08-16-2022	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
565326	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-17-2022	08-17-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
565347	PHONE CONTACT	MISDIRECTED - UTILITY	08-17-2022	08-17-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
565428	PHONE CONTACT	MISDIRECTED - UTILITY	08-18-2022	08-18-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
565430	PHONE CONTACT	ADVISE CONSUMER TO WRITE	08-18-2022	08-18-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
565517	PHONE CONTACT	REFERRED TO UTILITY	08-19-2022	08-19-2022	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
565529	PHONE CONTACT	INQUIRY ANSWERED	08-19-2022	08-19-2022	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
565532	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-19-2022	08-19-2022	WTA60	California Water Service Company	Disconnected In Error	Disconnection Non Payment	Payment Arrangements
565539	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2022	08-19-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
565547	PHONE CONTACT	MISDIRECTED - UTILITY	08-19-2022	08-19-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
565665	PHONE CONTACT	MISDIRECTED - UTILITY	08-22-2022	08-22-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
565732	COMPLAINT	NON-JURISDICTIONAL	08-23-2022	10-24-2022	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
565842	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-23-2022	12-13-2022	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Claims for Damages	NULL
566008	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-25-2022	08-25-2022	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
566041	PHONE CONTACT	MISDIRECTED - UTILITY	08-26-2022	08-26-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
566172	PHONE CONTACT	MISDIRECTED - UTILITY	08-29-2022	08-29-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
566204	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-29-2022	12-20-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
566306	PHONE CONTACT	NON-JURISDICTIONAL	08-30-2022	08-30-2022	WTA60	California Water Service Company	Outage	NULL	NULL
566408	MISDIRECTED	MISDIRECTED - UTILITY	08-31-2022	09-02-2022	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
566412	PHONE CONTACT	INQUIRY ANSWERED	08-31-2022	08-31-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
566430	PHONE CONTACT	REFERRED TO UTILITY	08-31-2022	08-31-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
566568	PHONE CONTACT	REFERRED TO UTILITY	09-02-2022	09-02-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
566572	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2022	09-02-2022	WTA60	California Water Service Company	Meter Reading Issue	High Bill	NULL
566574	PHONE CONTACT	REFERRED TO UTILITY	09-02-2022	09-02-2022	WTA60	California Water Service Company	High Bill	Fraud	NULL
566618	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-02-2022	09-02-2022	WTA60	California Water Service Company	Payment Error	NULL	NULL
567129	PHONE CONTACT	MISDIRECTED - UTILITY	09-09-2022	09-09-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
567505	PHONE CONTACT	REFERRED TO UTILITY	09-14-2022	09-14-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
567518	PHONE CONTACT	MISDIRECTED - UTILITY	09-14-2022	09-14-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
567671	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-15-2022	10-11-2022	WTA60	California Water Service Company	High Bill	NJ Company Practice	NULL
567680	PHONE CONTACT	MISDIRECTED - UTILITY	09-16-2022	09-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
567701	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-14-2022	10-04-2022	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
567709	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-15-2022	10-24-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
567740	PHONE CONTACT	MISDIRECTED - UTILITY	09-16-2022	09-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL

568001	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-20-2022	09-20-2022	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
568140	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-22-2022	09-22-2022	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
568231	PHONE CONTACT	REFERRED TO UTILITY	09-23-2022	09-23-2022	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
568445	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-26-2022	10-31-2022	WTA60	California Water Service Company	Other Charges	NULL	NULL
568465	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-26-2022	11-30-2022	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
568604	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-28-2022	09-28-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
568998	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-03-2022	10-03-2022	WTA60	California Water Service Company	Payment Error	High Bill	NULL
569164	PHONE CONTACT	MISDIRECTED - UTILITY	10-04-2022	10-04-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
569187	PHONE CONTACT	MISDIRECTED - UTILITY	10-04-2022	10-04-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
569189	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-04-2022	10-04-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
569291	PHONE CONTACT	REFERRED TO UTILITY	10-05-2022	10-05-2022	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
569353	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-06-2022	10-06-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
569440	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-06-2022	11-14-2022	WTA60	California Water Service Company	Bill Not Received	High Bill	NULL
569549	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-07-2022	10-07-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
569551	INFORMAL COMPLAINT	COMPROMISE	10-07-2022	11-29-2022	WTA60	California Water Service Company	High Bill	Other Charges	Rate Protest
569667	PHONE CONTACT	INQUIRY ANSWERED	10-10-2022	10-10-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
569686	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-10-2022	10-10-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
569734	PHONE CONTACT	MISDIRECTED - UTILITY	10-11-2022	10-11-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
569791	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-11-2022	10-11-2022	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
569851	PHONE CONTACT	MISDIRECTED - UTILITY	10-12-2022	10-12-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
569872	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-12-2022	10-12-2022	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
569888	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-13-2022	11-21-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
569981	PHONE CONTACT	MISDIRECTED - UTILITY	10-13-2022	10-13-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
570040	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-14-2022	10-14-2022	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
570056	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-14-2022	10-14-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
570107	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-14-2022	10-14-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
570144	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-14-2022	11-15-2022	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
570172	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-14-2022	11-16-2022	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NJ Customer Service
570209	MISDIRECTED	MISDIRECTED - UTILITY	10-17-2022	10-19-2022	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
570390	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-19-2022	11-29-2022	WTA60	California Water Service Company	Meter Inaccuracy/Reading Issues	High Bill	NJ Customer Service
570569	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-20-2022	11-23-2022	WTA60	California Water Service Company	Bill Not Received	NJ Customer Service	NULL
570602	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-21-2022	10-21-2022	WTA60	California Water Service Company	Payment Error	NULL	NULL
570843	PHONE CONTACT	REFERRED TO UTILITY	10-25-2022	10-25-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
570882	PHONE CONTACT	MISDIRECTED - UTILITY	10-25-2022	10-25-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
571020	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-27-2022	10-27-2022	WTA60	California Water Service Company	Payment Error	NULL	NULL
571044	PHONE CONTACT	MISDIRECTED - UTILITY	10-27-2022	10-27-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
571311	PHONE CONTACT	MISDIRECTED - UTILITY	11-01-2022	11-01-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
571515	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-03-2022	11-03-2022	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
571517	PHONE CONTACT	MISDIRECTED - UTILITY	11-03-2022	11-03-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
571674	PHONE CONTACT	MISDIRECTED - UTILITY	11-04-2022	11-04-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
571772	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-07-2022	11-07-2022	WTA60	California Water Service Company	Payment Error	NULL	NULL
571975	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-08-2022	11-23-2022	WTA60	California Water Service Company	High Bill	Bill Adjustment	NJ Customer Service
572193	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2022	11-14-2022	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
572205	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-14-2022	11-14-2022	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
572405	PHONE CONTACT	MISDIRECTED - UTILITY	11-15-2022	11-15-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
572406	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-15-2022	11-15-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
572533	PHONE CONTACT	MISDIRECTED - UTILITY	11-16-2022	11-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
572628	PHONE CONTACT	REFERRED TO UTILITY	11-17-2022	11-17-2022	WTA60	California Water Service Company	Wrong Number	Low Income/Special Needs	Payment Arrangements
572629	PHONE CONTACT	MISDIRECTED - UTILITY	11-17-2022	11-17-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
572677	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-18-2022	11-18-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
572698	PHONE CONTACT	MISDIRECTED - UTILITY	11-18-2022	11-18-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
573107	PHONE CONTACT	MISDIRECTED - UTILITY	11-28-2022	11-28-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
573117	INFORMAL COMPLAINT	IN CONSUMER FAVOR	11-22-2022	02-09-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
573136	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-28-2022	11-28-2022	WTA60	California Water Service Company	Payment Error	High Bill	NULL
573144	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-28-2022	11-28-2022	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
573209	PHONE CONTACT	MISDIRECTED - UTILITY	11-29-2022	11-29-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
573213	PHONE CONTACT	MISDIRECTED - UTILITY	11-29-2022	11-29-2022	WTA60	California Water Service Company	Wrong Number	Bill Not Received	NULL
573324	PHONE CONTACT	REFERRED TO UTILITY	11-30-2022	11-30-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
573459	PHONE CONTACT	MISDIRECTED - UTILITY	12-01-2022	12-01-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
573658	PHONE CONTACT	MISDIRECTED - UTILITY	12-05-2022	12-05-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
573708	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-05-2022	12-05-2022	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
573721	PHONE CONTACT	MISDIRECTED - UTILITY	12-05-2022	12-05-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
573734	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-05-2022	12-05-2022	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
573850	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2022	12-06-2022	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NULL
573852	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-06-2022	12-06-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
573922	PHONE CONTACT	MISDIRECTED - UTILITY	12-07-2022	12-07-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL

573925	PHONE CONTACT	MISDIRECTED - UTILITY	12-07-2022	12-07-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574015	PHONE CONTACT	MISDIRECTED - UTILITY	12-08-2022	12-08-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574028	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2022	12-08-2022	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NULL
574029	PHONE CONTACT	MISDIRECTED - UTILITY	12-08-2022	12-08-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574059	PHONE CONTACT	MISDIRECTED - UTILITY	12-08-2022	12-08-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574107	PHONE CONTACT	MISDIRECTED - UTILITY	12-09-2022	12-09-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574112	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-09-2022	12-09-2022	WTA60	California Water Service Company	High Bill	NULL	NULL
574120	PHONE CONTACT	MISDIRECTED - UTILITY	12-09-2022	12-09-2022	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
574349	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-12-2022	12-12-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
574516	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-14-2022	12-14-2022	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
574604	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-14-2022	12-14-2022	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
574661	PHONE CONTACT	REFERRED TO UTILITY	12-15-2022	12-15-2022	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
574684	PHONE CONTACT	MISDIRECTED - UTILITY	12-15-2022	12-15-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574775	PHONE CONTACT	MISDIRECTED - UTILITY	12-16-2022	12-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574801	PHONE CONTACT	MISDIRECTED - UTILITY	12-16-2022	12-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574805	PHONE CONTACT	MISDIRECTED - UTILITY	12-16-2022	12-16-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
574815	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-16-2022	12-16-2022	WTA60	California Water Service Company	NJ Property Restoration/Debris Removal	NJ Customer Service	NULL
574914	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-19-2022	12-19-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
574987	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-19-2022	12-19-2022	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
575019	INFORMAL COMPLAINT	IN CONSUMER FAVOR	12-19-2022	02-09-2023	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Rebates/Promotions	NULL
575161	PHONE CONTACT	MISDIRECTED - UTILITY	12-21-2022	12-21-2022	WTA60	California Water Service Company	Other Charges	NULL	NULL
575359	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-23-2022	12-23-2022	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
575485	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-27-2022	12-27-2022	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NULL
575563	PHONE CONTACT	REFERRED TO UTILITY	12-28-2022	12-28-2022	WTA60	California Water Service Company	Wrong Number	NJ Not Listed	NULL
575576	PHONE CONTACT	MISDIRECTED - UTILITY	12-28-2022	12-28-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
575584	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-28-2022	12-28-2022	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
575655	PHONE CONTACT	INQUIRY ANSWERED	12-29-2022	12-29-2022	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
575669	PHONE CONTACT	REFERRED TO UTILITY	12-29-2022	12-29-2022	WTA60	California Water Service Company	Master/Sub Meters	NJ Landlord/Tenant Issues	NULL
575712	PHONE CONTACT	MISDIRECTED - UTILITY	12-29-2022	12-29-2022	WTA60	California Water Service Company	Wrong Number	NULL	NULL
575854	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	12-30-2022	04-11-2023	WTA60	California Water Service Company	High Bill	Delayed Orders/Missed Appointments	NJ Customer Service
576238	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-05-2023	01-05-2023	WTA60	California Water Service Company	Meter Reading Issue	NULL	NULL
576685	PHONE CONTACT	REFERRED TO UTILITY	01-09-2023	01-09-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
576805	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	01-10-2023	03-21-2023	WTA60	California Water Service Company	Outage	Bill Adjustment	NJ Claims for Damages
576812	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-10-2023	01-10-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
576991	PHONE CONTACT	REFERRED TO UTILITY	01-11-2023	01-11-2023	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
577145	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-12-2023	01-12-2023	WTA60	California Water Service Company	Outage	NJ Customer Service	NULL
577147	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-12-2023	01-12-2023	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	Health
577258	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-12-2023	01-12-2023	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NJ Customer Service
577411	PHONE CONTACT	MISDIRECTED - UTILITY	01-13-2023	01-13-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
577458	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-17-2023	01-17-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
577464	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-17-2023	01-17-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
577600	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-13-2023	03-13-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
577845	PHONE CONTACT	REFERRED TO UTILITY	01-18-2023	01-18-2023	WTA60	California Water Service Company	Payment Arrangements	Wrong Number	High Bill
577891	PHONE CONTACT	REFERRED TO UTILITY	01-18-2023	01-18-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
577933	PHONE CONTACT	MISDIRECTED - UTILITY	01-18-2023	01-18-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
578151	PHONE CONTACT	REFERRED TO UTILITY	01-19-2023	01-19-2023	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
578189	PHONE CONTACT	MISDIRECTED - UTILITY	01-20-2023	01-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
578293	PHONE CONTACT	REFERRED TO UTILITY	01-20-2023	01-20-2023	WTA60	California Water Service Company	Payment Arrangements	Disconnection Non Payment	NULL
578296	PHONE CONTACT	MISDIRECTED - UTILITY	01-20-2023	01-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
578322	PHONE CONTACT	REFERRED TO UTILITY	01-20-2023	01-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
578816	PHONE CONTACT	REFERRED TO UTILITY	01-24-2023	01-24-2023	SWR60	California Water Service Company	Wrong Number	NULL	NULL
579484	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-27-2023	01-27-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
579627	PHONE CONTACT	ADVISE CONSUMER TO WRITE	01-27-2023	01-27-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
579630	PHONE CONTACT	MISDIRECTED - UTILITY	01-27-2023	01-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
579632	PHONE CONTACT	REFERRED TO UTILITY	01-27-2023	01-27-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
579640	PHONE CONTACT	REFERRED TO UTILITY	01-27-2023	01-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
580221	PHONE CONTACT	MISDIRECTED - UTILITY	01-30-2023	01-30-2023	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
580569	PHONE CONTACT	MISDIRECTED - UTILITY	01-31-2023	01-31-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
580610	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	01-31-2023	03-21-2023	WTA60	California Water Service Company	Other Charges	NULL	NULL
581796	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-31-2023	03-17-2023	WTA60	California Water Service Company	Meter Reading Issue	NULL	NULL
581821	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-06-2023	02-06-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
582197	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-07-2023	02-07-2023	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
582214	MISDIRECTED	MISDIRECTED - UTILITY	02-06-2023	02-22-2023	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
582216	MISDIRECTED	MISDIRECTED - UTILITY	02-06-2023	02-08-2023	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
582889	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-10-2023	02-10-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
582927	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-10-2023	02-10-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL

583237	PHONE CONTACT	REFERRED TO UTILITY	02-13-2023	02-13-2023	WTA60	California Water Service Company	High Bill	Low Income/Special Needs	NULL
583794	PHONE CONTACT	REFERRED TO UTILITY	02-15-2023	02-15-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
583806	PHONE CONTACT	REFERRED TO UTILITY	02-16-2023	02-16-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
583808	PHONE CONTACT	MISDIRECTED - UTILITY	02-16-2023	02-16-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
583851	COMPLAINT	NON-JURISDICTIONAL	02-15-2023	03-06-2023	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
583889	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-16-2023	02-16-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
584107	PHONE CONTACT	MISDIRECTED - UTILITY	02-17-2023	02-17-2023	SWR60	California Water Service Company	Wrong Number	NULL	NULL
584345	PHONE CONTACT	MISDIRECTED - UTILITY	02-21-2023	02-21-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
584396	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-21-2023	02-21-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
584420	PHONE CONTACT	REFERRED TO UTILITY	02-21-2023	02-21-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
584423	PHONE CONTACT	REFERRED TO UTILITY	02-21-2023	02-21-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
584563	PHONE CONTACT	REFERRED TO UTILITY	02-22-2023	02-22-2023	WTA60	California Water Service Company	Disconnection Non Payment	Wrong Number	NULL
584573	PHONE CONTACT	MISDIRECTED - UTILITY	02-22-2023	02-22-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
584811	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-23-2023	05-12-2023	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
584848	PHONE CONTACT	MISDIRECTED - UTILITY	02-23-2023	02-23-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
584871	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-23-2023	02-23-2023	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
584952	PHONE CONTACT	MISDIRECTED - UTILITY	02-24-2023	02-24-2023	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
585101	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-26-2023	03-27-2023	WTA60	California Water Service Company	Payment Error	NULL	NULL
585368	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-27-2023	03-27-2023	WTA60	California Water Service Company	Payment Error	NULL	NULL
585840	PHONE CONTACT	INQUIRY ANSWERED	03-02-2023	03-02-2023	WTA60	California Water Service Company	Other Charges	NULL	NULL
586149	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2023	03-06-2023	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	NJ Landlord/Tenant Issues
586152	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2023	03-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
587056	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-13-2023	03-13-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
587803	PHONE CONTACT	REFERRED TO UTILITY	03-17-2023	03-17-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
587957	PHONE CONTACT	MISDIRECTED - UTILITY	03-20-2023	03-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
588326	PHONE CONTACT	MISDIRECTED - UTILITY	03-22-2023	03-22-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
588527	INFORMAL COMPLAINT	COMPROMISE	03-23-2023	04-26-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
588602	PHONE CONTACT	NON-JURISDICTIONAL	03-24-2023	03-24-2023	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
588908	PHONE CONTACT	MISDIRECTED - UTILITY	03-28-2023	03-28-2023	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	NULL
589576	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-04-2023	04-04-2023	SWR60	California Water Service Company	High Bill	NULL	NULL
589690	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-05-2023	04-05-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
590259	PHONE CONTACT	REFERRED TO UTILITY	04-11-2023	04-11-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
590478	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-13-2023	04-13-2023	WTA60	California Water Service Company	Bill Not Received	Disconnection Non Payment	NJ Customer Service
590483	PHONE CONTACT	MISDIRECTED - UTILITY	04-13-2023	04-13-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
590612	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-14-2023	04-14-2023	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
590646	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-14-2023	04-14-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
590934	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-18-2023	04-18-2023	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
590998	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-19-2023	04-19-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
591024	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-19-2023	04-19-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
591031	PHONE CONTACT	REFERRED TO UTILITY	04-19-2023	04-19-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
591358	PHONE CONTACT	MISDIRECTED - UTILITY	04-24-2023	04-24-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
591394	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-24-2023	04-24-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
591709	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-27-2023	04-27-2023	WTA60	California Water Service Company	High Bill	Meter Reading Issue	NULL
591753	PHONE CONTACT	MISDIRECTED - UTILITY	04-27-2023	04-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
591777	PHONE CONTACT	MISDIRECTED - UTILITY	04-27-2023	04-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
591867	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-28-2023	04-28-2023	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
591908	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-30-2023	07-28-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	Crossed Meter Billing
592062	PHONE CONTACT	REFERRED TO UTILITY	05-01-2023	05-01-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
592153	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-02-2023	05-02-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
592156	PHONE CONTACT	MISDIRECTED - UTILITY	05-02-2023	05-02-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
592329	PHONE CONTACT	MISDIRECTED - UTILITY	05-03-2023	05-03-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
592548	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-05-2023	05-05-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
592594	PHONE CONTACT	MISDIRECTED - UTILITY	05-05-2023	05-05-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
592808	PHONE CONTACT	MISDIRECTED - UTILITY	05-08-2023	05-08-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
592819	PHONE CONTACT	NON-JURISDICTIONAL	05-08-2023	05-08-2023	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
592951	PHONE CONTACT	MISDIRECTED - UTILITY	05-09-2023	05-09-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
593086	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-10-2023	06-05-2023	WTA60	California Water Service Company	Disconnected In Error	Other Charges	NJ Customer Service
593123	PHONE CONTACT	MISDIRECTED - UTILITY	05-11-2023	05-11-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
593356	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-13-2023	06-21-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
593479	PHONE CONTACT	REFERRED TO UTILITY	05-15-2023	05-15-2023	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
593938	PHONE CONTACT	MISDIRECTED - UTILITY	05-18-2023	05-18-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
594028	PHONE CONTACT	REFERRED TO UTILITY	05-19-2023	05-19-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
594051	PHONE CONTACT	MISDIRECTED - UTILITY	05-19-2023	05-19-2023	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
594134	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-22-2023	05-22-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
594212	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-22-2023	05-22-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
594295	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-23-2023	05-23-2023	WTA60	California Water Service Company	Disconnected In Error	Delayed Orders/Missed Appointments	NULL

594449	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-24-2023	05-24-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
594712	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-26-2023	05-26-2023	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
594787	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-26-2023	06-20-2023	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
594963	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-30-2023	05-30-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
595195	PHONE CONTACT	MISDIRECTED - UTILITY	06-01-2023	06-01-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
595994	PHONE CONTACT	MISDIRECTED - UTILITY	06-09-2023	06-09-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
596011	PHONE CONTACT	MISDIRECTED - UTILITY	06-09-2023	06-09-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
596102	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-10-2023	10-19-2023	WTA60	California Water Service Company	Disputed Customer of Record	Other Charges	NULL
596109	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-11-2023	07-11-2023	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	Disputed Customer of Record
596185	PHONE CONTACT	MISDIRECTED - UTILITY	06-12-2023	06-12-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
596581	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-15-2023	07-14-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
596608	PHONE CONTACT	MISDIRECTED - UTILITY	06-15-2023	06-15-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
596643	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	06-15-2023	08-09-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
596684	PHONE CONTACT	MISDIRECTED - UTILITY	06-16-2023	06-16-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
596690	PHONE CONTACT	MISDIRECTED - UTILITY	06-16-2023	06-16-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
596964	PHONE CONTACT	MISDIRECTED - UTILITY	06-20-2023	06-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
597031	PHONE CONTACT	MISDIRECTED - UTILITY	06-21-2023	06-21-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
597325	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-23-2023	06-23-2023	WTA60	California Water Service Company	High Bill	Payment Arrangements	Disconnection Non Payment
597348	PHONE CONTACT	MISDIRECTED - UTILITY	06-23-2023	06-23-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
597448	PHONE CONTACT	REFERRED TO UTILITY	06-26-2023	06-26-2023	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NULL
597866	PHONE CONTACT	MISDIRECTED - UTILITY	06-29-2023	06-29-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
597896	PHONE CONTACT	MISDIRECTED - UTILITY	06-29-2023	06-29-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
597917	PHONE CONTACT	INQUIRY ANSWERED	06-30-2023	06-30-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
598018	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-30-2023	06-30-2023	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
598164	PHONE CONTACT	MISDIRECTED - UTILITY	07-03-2023	07-03-2023	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
598363	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-05-2023	08-22-2023	WTA60	California Water Service Company	High Bill	Health	NJ Customer Service
598411	PHONE CONTACT	MISDIRECTED - UTILITY	07-06-2023	07-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
598722	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-10-2023	07-10-2023	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NJ Customer Service
598799	PHONE CONTACT	MISDIRECTED - UTILITY	07-11-2023	07-11-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
598913	PHONE CONTACT	INQUIRY ANSWERED	07-12-2023	07-12-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
598930	PHONE CONTACT	REFERRED TO UTILITY	07-12-2023	07-12-2023	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
599003	PHONE CONTACT	REFERRED TO UTILITY	07-13-2023	07-13-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
599040	PHONE CONTACT	REFERRED TO UTILITY	07-13-2023	07-13-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
599298	PHONE CONTACT	MISDIRECTED - UTILITY	07-17-2023	07-17-2023	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
599428	PHONE CONTACT	REFERRED TO UTILITY	07-18-2023	07-18-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
599774	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-20-2023	09-05-2023	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL
599918	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-23-2023	11-01-2023	WTA60	California Water Service Company	Safety	High Bill	NJ Customer Service
600242	PHONE CONTACT	NON-JURISDICTIONAL	07-26-2023	07-26-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
600445	PHONE CONTACT	REFERRED TO UTILITY	07-27-2023	07-27-2023	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
600655	INFORMAL COMPLAINT	IN CONSUMER FAVOR	07-29-2023	09-12-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
601139	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-01-2023	09-11-2023	WTA60	California Water Service Company	Outage	NULL	NULL
601313	PHONE CONTACT	MISDIRECTED - UTILITY	08-04-2023	08-04-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
601491	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-07-2023	08-07-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
601806	PHONE CONTACT	MISDIRECTED - UTILITY	08-09-2023	08-09-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
602071	PHONE CONTACT	REFERRED TO UTILITY	08-11-2023	08-11-2023	WTA60	California Water Service Company	Unknown	NULL	NULL
602085	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-10-2023	09-15-2023	WTA60	California Water Service Company	Disputed Customer of Record	Delayed Orders/Missed Appointments	Bill Adjustment
602266	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-14-2023	08-23-2023	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NJ Customer Service	NULL
602352	PHONE CONTACT	MISDIRECTED - UTILITY	08-14-2023	08-14-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
602383	PHONE CONTACT	MISDIRECTED - UTILITY	08-14-2023	08-14-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
602632	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-15-2023	10-03-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
602635	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-15-2023	12-15-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
602874	PHONE CONTACT	MISDIRECTED - UTILITY	08-17-2023	08-17-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
602879	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-17-2023	08-17-2023	WTA60	California Water Service Company	Other Charges	High Bill	NJ Customer Service
602982	PHONE CONTACT	MISDIRECTED - UTILITY	08-18-2023	08-18-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
603092	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-18-2023	09-22-2023	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
603150	PHONE CONTACT	MISDIRECTED - UTILITY	08-21-2023	08-21-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
603798	PHONE CONTACT	MISDIRECTED - UTILITY	08-25-2023	08-25-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
603822	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-25-2023	08-25-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
603824	PHONE CONTACT	REFERRED TO UTILITY	08-25-2023	08-25-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
603826	PHONE CONTACT	INQUIRY ANSWERED	08-25-2023	08-25-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
604246	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-29-2023	08-29-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
604474	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-30-2023	11-03-2023	WTA60	California Water Service Company	Disconnected In Error	NULL	NULL
604493	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	08-30-2023	10-02-2023	WTA60	California Water Service Company	Unknown	NULL	NULL
604550	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	08-31-2023	08-31-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
604551	INFORMAL COMPLAINT	IN CONSUMER FAVOR	08-31-2023	10-23-2023	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NJ Customer Service
604590	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	08-31-2023	11-02-2023	WTA60	California Water Service Company	Delayed Orders/Missed Appointments	NULL	NULL

605049	PHONE CONTACT	MISDIRECTED - UTILITY	09-06-2023	09-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
605066	PHONE CONTACT	MISDIRECTED - UTILITY	09-06-2023	09-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
605086	PHONE CONTACT	MISDIRECTED - UTILITY	09-06-2023	09-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
605578	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-08-2023	09-08-2023	WTA60	California Water Service Company	Meter Reading Issue	Meter Inaccuracy/Reading Issues	High Bill
605711	COMPLAINT	UNRESPONSIVE CONSUMER - MORE INFO	09-08-2023	10-19-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
605836	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	09-11-2023	11-17-2023	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
606149	PHONE CONTACT	MISDIRECTED - UTILITY	09-13-2023	09-13-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
606232	PHONE CONTACT	FORWARDED TO PAO	09-14-2023	09-14-2023	WTA60	California Water Service Company	Rate Protest	NULL	NULL
606321	PHONE CONTACT	MISDIRECTED - UTILITY	09-14-2023	09-14-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
606542	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-15-2023	09-15-2023	WTA60	California Water Service Company	Estimated Billing	High Bill	NULL
606852	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-18-2023	09-18-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
607083	PHONE CONTACT	REFERRED TO UTILITY	09-20-2023	09-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
607301	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-21-2023	09-21-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
607445	PHONE CONTACT	ADVISE CONSUMER TO WRITE	09-22-2023	09-22-2023	WTA60	California Water Service Company	Safety	NJ Landlord/Tenant Issues	NULL
607502	COMPLAINT	NON-JURISDICTIONAL	09-22-2023	10-03-2023	WTA60	California Water Service Company	NJ Claims for Damages	Safety	NULL
607579	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-25-2023	09-25-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
607824	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	09-27-2023	09-27-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
607949	COMPLAINT	FORWARDED TO PAO	09-27-2023	10-03-2023	WTA60	California Water Service Company	Rate Protest	NULL	NULL
607977	PHONE CONTACT	REFERRED TO UTILITY	09-28-2023	09-28-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
608116	INFORMAL COMPLAINT	IN CONSUMER FAVOR	09-28-2023	10-26-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
608561	PHONE CONTACT	MISDIRECTED - UTILITY	10-03-2023	10-03-2023	WTA60	California Water Service Company	Wrong Number	NJ Company Practice	NULL
608598	PHONE CONTACT	MISDIRECTED - UTILITY	10-03-2023	10-03-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
608656	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-03-2023	10-03-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
608774	PHONE CONTACT	REFERRED TO UTILITY	10-04-2023	10-04-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
609043	PHONE CONTACT	MISDIRECTED - UTILITY	10-06-2023	10-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
609059	PHONE CONTACT	MISDIRECTED - UTILITY	10-06-2023	10-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
609706	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-12-2023	10-12-2023	WTA60	California Water Service Company	Payment Arrangements	High Bill	NULL
609806	PHONE CONTACT	REFERRED TO UTILITY	10-13-2023	10-13-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
609939	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-16-2023	10-16-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
610076	PHONE CONTACT	MISDIRECTED - UTILITY	10-17-2023	10-17-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
610134	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-17-2023	10-17-2023	WTA60	California Water Service Company	NJ Not Listed	NULL	NULL
610246	PHONE CONTACT	MISDIRECTED - UTILITY	10-18-2023	10-18-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
610432	PHONE CONTACT	MISDIRECTED - UTILITY	10-19-2023	10-19-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
610475	PHONE CONTACT	REFERRED TO UTILITY	10-19-2023	10-19-2023	WTA60	California Water Service Company	Payment Arrangements	Wrong Number	NULL
610531	COMPLAINT	NON-JURISDICTIONAL	10-19-2023	10-24-2023	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
610623	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	10-20-2023	10-20-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
610763	PHONE CONTACT	MISDIRECTED - UTILITY	10-23-2023	10-23-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
611040	PHONE CONTACT	MISDIRECTED - UTILITY	10-25-2023	10-25-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
611269	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	10-26-2023	11-16-2023	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
611310	PHONE CONTACT	MISDIRECTED - UTILITY	10-27-2023	10-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
611369	PHONE CONTACT	MISDIRECTED - UTILITY	10-27-2023	10-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
611591	INFORMAL COMPLAINT	IN CONSUMER FAVOR	10-30-2023	12-14-2023	WTA60	California Water Service Company	Other Charges	NULL	NULL
611704	PHONE CONTACT	ADVISE CONSUMER TO WRITE	10-31-2023	10-31-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
611767	PHONE CONTACT	MISDIRECTED - UTILITY	11-01-2023	11-01-2023	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	NULL
611950	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-02-2023	11-02-2023	WTA60	California Water Service Company	Low Income/Special Needs	NULL	NULL
612314	PHONE CONTACT	MISDIRECTED - UTILITY	11-06-2023	11-06-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
612489	PHONE CONTACT	REFERRED TO UTILITY	11-07-2023	11-07-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
612758	PHONE CONTACT	INQUIRY ANSWERED	11-09-2023	11-09-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
612832	PHONE CONTACT	MISDIRECTED - UTILITY	11-09-2023	11-09-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
612896	PHONE CONTACT	REFERRED TO UTILITY	11-09-2023	11-09-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
613083	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-13-2023	11-13-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
613276	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	11-14-2023	12-14-2023	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
613542	PHONE CONTACT	MISDIRECTED - UTILITY	11-16-2023	11-16-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
613610	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-16-2023	11-16-2023	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NULL
613894	PHONE CONTACT	MISDIRECTED - UTILITY	11-20-2023	11-20-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Landlord/Tenant Issues	NULL
613895	PHONE CONTACT	MISDIRECTED - UTILITY	11-20-2023	11-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
613936	PHONE CONTACT	MISDIRECTED - UTILITY	11-20-2023	11-20-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
614062	PHONE CONTACT	REFERRED TO UTILITY	11-21-2023	11-21-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
614078	COMPLAINT	NON-JURISDICTIONAL	11-21-2023	11-28-2023	WTA60	California Water Service Company	NJ Company Practice	NULL	NULL
614153	PHONE CONTACT	MISDIRECTED - UTILITY	11-22-2023	11-22-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
614158	PHONE CONTACT	MISDIRECTED - UTILITY	11-22-2023	11-22-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
614168	PHONE CONTACT	REFERRED TO UTILITY	11-22-2023	11-22-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
614297	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-27-2023	11-27-2023	WTA60	California Water Service Company	Wrong Number	NJ Customer Service	NULL
614313	PHONE CONTACT	MISDIRECTED - UTILITY	11-27-2023	11-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
614394	PHONE CONTACT	REFERRED TO UTILITY	11-27-2023	11-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
614395	PHONE CONTACT	MISDIRECTED - UTILITY	11-27-2023	11-27-2023	WTA60	California Water Service Company	NJ Customer Service	High Bill	NULL

614534	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-28-2023	11-28-2023	WTA60	California Water Service Company	High Bill	NULL	NULL
614642	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-29-2023	11-29-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
614657	PHONE CONTACT	INQUIRY ANSWERED	11-29-2023	11-29-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
614668	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	11-29-2023	11-29-2023	WTA60	California Water Service Company	High Bill	Payment Arrangements	NJ Customer Service
614743	PHONE CONTACT	MISDIRECTED - UTILITY	11-30-2023	11-30-2023	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	NULL
614777	PHONE CONTACT	MISDIRECTED - UTILITY	11-30-2023	11-30-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
615108	PHONE CONTACT	MISDIRECTED - UTILITY	12-04-2023	12-04-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
615715	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2023	12-08-2023	WTA60	California Water Service Company	Other Charges	NJ Customer Service	NULL
615734	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-08-2023	12-08-2023	WTA60	California Water Service Company	Disconnected In Error	Payment Arrangements	NULL
615764	PHONE CONTACT	INQUIRY ANSWERED	12-08-2023	12-08-2023	WTA60	California Water Service Company	NJ Landlord/Tenant Issues	NULL	NULL
615885	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-11-2023	12-11-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
615906	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-11-2023	12-11-2023	WTA60	California Water Service Company	High Bill	Disputed Customer of Record	NULL
615925	PHONE CONTACT	REFERRED TO UTILITY	12-11-2023	12-11-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
616250	PHONE CONTACT	REFERRED TO UTILITY	12-13-2023	12-13-2023	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
616259	PHONE CONTACT	MISDIRECTED - UTILITY	12-13-2023	12-13-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
616360	PHONE CONTACT	MISDIRECTED - UTILITY	12-14-2023	12-14-2023	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
616514	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	12-14-2023	01-08-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
616628	PHONE CONTACT	MISDIRECTED - UTILITY	12-15-2023	12-15-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
616646	INFORMAL COMPLAINT	DISCRETION UTILITY	12-15-2023	01-31-2024	WTA60	California Water Service Company	Other Charges	NULL	NULL
616729	PHONE CONTACT	MISDIRECTED - UTILITY	12-18-2023	12-18-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
616743	PHONE CONTACT	MISDIRECTED - UTILITY	12-18-2023	12-18-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
616749	PHONE CONTACT	MISDIRECTED - UTILITY	12-18-2023	12-18-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
617159	PHONE CONTACT	MISDIRECTED - UTILITY	12-21-2023	12-21-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
617202	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-21-2023	12-21-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
617353	PHONE CONTACT	MISDIRECTED - UTILITY	12-22-2023	12-22-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
617409	PHONE CONTACT	ADVISE CONSUMER TO WRITE	12-26-2023	12-26-2023	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
617572	PHONE CONTACT	REFERRED TO UTILITY	12-27-2023	12-27-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
617699	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	12-28-2023	12-28-2023	WTA60	California Water Service Company	Disconnection Non Payment	NJ Customer Service	NULL
617872	PHONE CONTACT	MISDIRECTED - UTILITY	12-29-2023	12-29-2023	WTA60	California Water Service Company	Wrong Number	NULL	NULL
618406	PHONE CONTACT	MISDIRECTED - UTILITY	01-04-2024	01-04-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
618427	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-04-2024	01-04-2024	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
618492	MISDIRECTED	MISDIRECTED - UTILITY	01-03-2024	01-08-2024	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
618518	PHONE CONTACT	MISDIRECTED - UTILITY	01-05-2024	01-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
618558	PHONE CONTACT	ADVISE CONSUMER TO WRITE	01-05-2024	01-05-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
618657	PHONE CONTACT	MISDIRECTED - UTILITY	01-08-2024	01-08-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
618782	PHONE CONTACT	MISDIRECTED - UTILITY	01-08-2024	01-08-2024	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	NULL
618863	PHONE CONTACT	MISDIRECTED - UTILITY	01-09-2024	01-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
619693	PHONE CONTACT	MISDIRECTED - UTILITY	01-16-2024	01-16-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
620024	PHONE CONTACT	MISDIRECTED - UTILITY	01-18-2024	01-18-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
620081	PHONE CONTACT	ADVISE CONSUMER TO WRITE	01-18-2024	01-18-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
620097	PHONE CONTACT	MISDIRECTED - UTILITY	01-18-2024	01-18-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
620431	PHONE CONTACT	MISDIRECTED - UTILITY	01-22-2024	01-22-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
620640	PHONE CONTACT	MISDIRECTED - UTILITY	01-23-2024	01-23-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
620767	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	01-24-2024	03-07-2024	WTA60	California Water Service Company	Other Charges	NJ Surcharges/Taxes	NULL
620865	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	01-24-2024	01-24-2024	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
620959	PHONE CONTACT	MISDIRECTED - UTILITY	01-25-2024	01-25-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
621256	INFORMAL COMPLAINT	IN CONSUMER FAVOR	01-28-2024	02-23-2024	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	Payment Arrangements
621337	MISDIRECTED	MISDIRECTED - UTILITY	01-26-2024	01-30-2024	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
621349	PHONE CONTACT	REFERRED TO UTILITY	01-29-2024	01-29-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
621460	PHONE CONTACT	MISDIRECTED - UTILITY	01-29-2024	01-29-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
621552	PHONE CONTACT	MISDIRECTED - UTILITY	01-30-2024	01-30-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
621809	PHONE CONTACT	MISDIRECTED - UTILITY	01-31-2024	01-31-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
622117	PHONE CONTACT	MISDIRECTED - UTILITY	02-02-2024	02-02-2024	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
622136	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-02-2024	02-02-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
622160	PHONE CONTACT	MISDIRECTED - UTILITY	02-02-2024	02-02-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
622309	PHONE CONTACT	MISDIRECTED - UTILITY	02-05-2024	02-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
622405	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-05-2024	02-05-2024	WTA60	California Water Service Company	Payment Arrangements	High Bill	NJ Customer Service
622594	PHONE CONTACT	MISDIRECTED - UTILITY	02-06-2024	02-06-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
622739	PHONE CONTACT	MISDIRECTED - UTILITY	02-07-2024	02-07-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
622944	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	02-08-2024	02-08-2024	WTA60	California Water Service Company	Other Charges	High Bill	NJ Customer Service
622958	PHONE CONTACT	MISDIRECTED - UTILITY	02-08-2024	02-08-2024	WTA60	California Water Service Company	Wrong Number	Disconnection Non Payment	NULL
623181	PHONE CONTACT	MISDIRECTED - UTILITY	02-09-2024	02-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
623756	PHONE CONTACT	ADVISE CONSUMER TO WRITE	02-14-2024	02-14-2024	WTA60	California Water Service Company	Other Charges	Backbilling	NULL
623792	PHONE CONTACT	MISDIRECTED - UTILITY	02-14-2024	02-14-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
624066	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-15-2024	03-27-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
624433	PHONE CONTACT	MISDIRECTED - UTILITY	02-20-2024	02-20-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL

624799	PHONE CONTACT	MISDIRECTED - UTILITY	02-22-2024	02-22-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
625355	PHONE CONTACT	MISDIRECTED - UTILITY	02-27-2024	02-27-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
625485	PHONE CONTACT	MISDIRECTED - UTILITY	02-28-2024	02-28-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
625618	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-28-2024	03-22-2024	WTA60	California Water Service Company	Refusal To Serve	High Bill	NJ Customer Service
625723	PHONE CONTACT	MISDIRECTED - UTILITY	02-29-2024	02-29-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
625754	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	02-29-2024	04-22-2024	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
625769	INFORMAL COMPLAINT	IN CONSUMER FAVOR	02-29-2024	04-03-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
625807	PHONE CONTACT	MISDIRECTED - UTILITY	03-01-2024	03-01-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
625825	PHONE CONTACT	MISDIRECTED - UTILITY	03-01-2024	03-01-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
625955	PHONE CONTACT	MISDIRECTED - UTILITY	03-04-2024	03-04-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
626246	PHONE CONTACT	REFERRED TO UTILITY	03-05-2024	03-05-2024	WTA60	California Water Service Company	Disconnection Non Payment	NULL	NULL
626302	PHONE CONTACT	MISDIRECTED - UTILITY	03-05-2024	03-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
626406	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2024	03-06-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
626415	PHONE CONTACT	MISDIRECTED - UTILITY	03-06-2024	03-06-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
626542	PHONE CONTACT	MISDIRECTED - UTILITY	03-07-2024	03-07-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
626756	PHONE CONTACT	MISDIRECTED - UTILITY	03-08-2024	03-08-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
627140	PHONE CONTACT	REFERRED TO UTILITY	03-12-2024	03-12-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
627244	PHONE CONTACT	MISDIRECTED - UTILITY	03-13-2024	03-13-2024	WTA60	California Water Service Company	High Bill	Bill Adjustment	Bill Not Received
627411	PHONE CONTACT	MISDIRECTED - UTILITY	03-14-2024	03-14-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
627477	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	03-14-2024	04-15-2024	WTA60	California Water Service Company	Meter Reading Issue	High Bill	NJ Customer Service
627524	PHONE CONTACT	REFERRED TO UTILITY	03-15-2024	03-15-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
627715	PHONE CONTACT	ADVISE CONSUMER TO WRITE	03-18-2024	03-18-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
627772	PHONE CONTACT	MISDIRECTED - UTILITY	03-18-2024	03-18-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
627870	PHONE CONTACT	REFERRED TO UTILITY	03-19-2024	03-19-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
627957	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	03-19-2024	04-17-2024	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NULL
628092	PHONE CONTACT	MISDIRECTED - UTILITY	03-20-2024	03-20-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
628139	INFORMAL COMPLAINT	IN CONSUMER FAVOR	03-20-2024	05-03-2024	WTA60	California Water Service Company	High Bill	Delayed Orders/Missed Appointments	NULL
628618	PHONE CONTACT	REFERRED TO UTILITY	03-25-2024	03-25-2024	WTA60	California Water Service Company	Other Charges	Wrong Number	NULL
628842	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	03-26-2024	05-09-2024	WTA60	California Water Service Company	Safety	NULL	NULL
629029	PHONE CONTACT	MISDIRECTED - UTILITY	03-28-2024	03-28-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
629145	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	03-29-2024	03-29-2024	WTA60	California Water Service Company	Disconnected In Error	NJ Customer Service	NULL
629385	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	04-02-2024	04-02-2024	WTA60	California Water Service Company	Disconnection Non Payment	Payment Arrangements	NJ Customer Service
629682	PHONE CONTACT	MISDIRECTED - UTILITY	04-04-2024	04-04-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
629791	PHONE CONTACT	MISDIRECTED - UTILITY	04-05-2024	04-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
630158	COMPLAINT	NON-JURISDICTIONAL	04-09-2024	04-11-2024	WTA60	California Water Service Company	NJ Rebates/Promotions	NJ Customer Service	NULL
630372	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-10-2024	04-10-2024	WTA60	California Water Service Company	Payment Arrangements	NULL	NULL
630379	PHONE CONTACT	REFERRED TO UTILITY	04-10-2024	04-10-2024	WTA60	California Water Service Company	Bill Format	NULL	NULL
630470	PHONE CONTACT	MISDIRECTED - UTILITY	04-11-2024	04-11-2024	WTA60	California Water Service Company	Wrong Number	NJ Customer Service	Disconnection Non Payment
630607	PHONE CONTACT	ADVISE CONSUMER TO WRITE	04-12-2024	04-12-2024	WTA60	California Water Service Company	Other Charges	NULL	NULL
630873	MISDIRECTED	MISDIRECTED - UTILITY	04-15-2024	04-17-2024	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
630874	MISDIRECTED	MISDIRECTED - UTILITY	04-15-2024	04-17-2024	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
630875	MISDIRECTED	MISDIRECTED - UTILITY	04-15-2024	04-17-2024	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
630890	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-16-2024	04-19-2024	WTA60	California Water Service Company	High Bill	Bill Not Received	NJ Customer Service
631096	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	04-18-2024	06-26-2024	WTA60	California Water Service Company	Other Charges	NJ Customer Service	NULL
631700	PHONE CONTACT	MISDIRECTED - UTILITY	04-24-2024	04-24-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
632636	PHONE CONTACT	MISDIRECTED - UTILITY	05-01-2024	05-01-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
632642	PHONE CONTACT	MISDIRECTED - UTILITY	05-01-2024	05-01-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
632766	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-02-2024	05-02-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
633282	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2024	05-07-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
633288	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2024	05-07-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
633368	PHONE CONTACT	MISDIRECTED - UTILITY	05-07-2024	05-07-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
633603	PHONE CONTACT	MISDIRECTED - UTILITY	05-09-2024	05-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
633659	PHONE CONTACT	MISDIRECTED - UTILITY	05-09-2024	05-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
633709	PHONE CONTACT	MISDIRECTED - UTILITY	05-09-2024	05-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
633812	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-10-2024	05-10-2024	WTA60	California Water Service Company	Other Charges	NULL	NULL
633815	PHONE CONTACT	MISDIRECTED - UTILITY	05-10-2024	05-10-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
634395	PHONE CONTACT	MISDIRECTED - UTILITY	05-16-2024	05-16-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
634458	PHONE CONTACT	MISDIRECTED - UTILITY	05-16-2024	05-16-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
634555	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	05-17-2024	05-17-2024	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
634575	PHONE CONTACT	MISDIRECTED - UTILITY	05-17-2024	05-17-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
634613	PHONE CONTACT	MISDIRECTED - UTILITY	05-17-2024	05-17-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
634822	PHONE CONTACT	MISDIRECTED - UTILITY	05-20-2024	05-20-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
634858	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-20-2024	05-20-2024	WTA60	California Water Service Company	Other Charges	NULL	NULL
635158	PHONE CONTACT	MISDIRECTED - UTILITY	05-22-2024	05-22-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
635606	PHONE CONTACT	MISDIRECTED - UTILITY	05-28-2024	05-28-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
635677	PHONE CONTACT	MISDIRECTED - UTILITY	05-28-2024	05-28-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL

635792	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	05-28-2024	07-26-2024	WTA60	California Water Service Company	High Bill	NJ Customer Service	NULL
635807	PHONE CONTACT	ADVISE CONSUMER TO WRITE	05-29-2024	05-29-2024	WTA60	California Water Service Company	High Bill	NJ Claims for Damages	NULL
635815	PHONE CONTACT	MISDIRECTED - UTILITY	05-29-2024	05-29-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
635824	PHONE CONTACT	MISDIRECTED - UTILITY	05-29-2024	05-29-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
636011	PHONE CONTACT	MISDIRECTED - UTILITY	05-30-2024	05-30-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
636126	PHONE CONTACT	MISDIRECTED - UTILITY	05-31-2024	05-31-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
636181	INFORMAL COMPLAINT	IN CONSUMER FAVOR	05-31-2024	07-02-2024	WTA60	California Water Service Company	Outage	Delayed Orders/Missed Appointments	NJ Customer Service
636374	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-03-2024	06-03-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
636449	PHONE CONTACT	MISDIRECTED - UTILITY	06-04-2024	06-04-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
636465	PHONE CONTACT	REFERRED TO UTILITY	06-04-2024	06-04-2024	WTA60	California Water Service Company	Low Income/Special Needs	Payment Arrangements	NULL
636507	PHONE CONTACT	MISDIRECTED - UTILITY	06-04-2024	06-04-2024	WTA60	California Water Service Company	NJ Customer Service	High Bill	NULL
636622	PHONE CONTACT	REFERRED TO UTILITY	06-05-2024	06-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
636651	PHONE CONTACT	MISDIRECTED - UTILITY	06-05-2024	06-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
636908	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	06-07-2024	06-07-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
636913	PHONE CONTACT	MISDIRECTED - UTILITY	06-07-2024	06-07-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
637045	PHONE CONTACT	MISDIRECTED - UTILITY	06-10-2024	06-10-2024	WTA60	California Water Service Company	Payment Arrangements	NJ Customer Service	NULL
637118	PHONE CONTACT	REFERRED TO UTILITY	06-10-2024	06-10-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
637274	PHONE CONTACT	MISDIRECTED - UTILITY	06-11-2024	06-11-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
637289	PHONE CONTACT	MISDIRECTED - UTILITY	06-11-2024	06-11-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
637513	PHONE CONTACT	MISDIRECTED - UTILITY	06-12-2024	06-12-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
637855	PHONE CONTACT	NON-JURISDICTIONAL	06-17-2024	06-17-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
638171	PHONE CONTACT	MISDIRECTED - UTILITY	06-19-2024	06-19-2024	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
638224	INFORMAL COMPLAINT	NULL	06-19-2024	NULL	WTA60	California Water Service Company	Disputed Customer of Record	NULL	NULL
638264	PHONE CONTACT	REFERRED TO UTILITY	06-19-2024	06-19-2024	WTA60	California Water Service Company	Bill Not Received	NULL	NULL
638307	PHONE CONTACT	MISDIRECTED - UTILITY	06-20-2024	06-20-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638372	PHONE CONTACT	MISDIRECTED - UTILITY	06-20-2024	06-20-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638490	PHONE CONTACT	MISDIRECTED - UTILITY	06-21-2024	06-21-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638493	PHONE CONTACT	REFERRED TO UTILITY	06-21-2024	06-21-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638521	PHONE CONTACT	MISDIRECTED - UTILITY	06-21-2024	06-21-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638660	PHONE CONTACT	MISDIRECTED - UTILITY	06-24-2024	06-24-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638693	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-24-2024	06-24-2024	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
638714	PHONE CONTACT	REFERRED TO UTILITY	06-24-2024	06-24-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
638725	INFORMAL COMPLAINT	IN CONSUMER FAVOR	06-24-2024	07-26-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
638750	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-24-2024	06-24-2024	WTA60	California Water Service Company	High Bill	Estimated Billing	How to File a Complaint
638783	PHONE CONTACT	MISDIRECTED - UTILITY	06-24-2024	06-24-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
638818	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	06-24-2024	07-24-2024	WTA60	California Water Service Company	High Bill	Rate Protest	NJ Customer Service
638828	PHONE CONTACT	MISDIRECTED - UTILITY	06-25-2024	06-25-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639146	PHONE CONTACT	MISDIRECTED - UTILITY	06-27-2024	06-27-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639162	PHONE CONTACT	ADVISE CONSUMER TO WRITE	06-27-2024	06-27-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
639293	PHONE CONTACT	MISDIRECTED - UTILITY	06-28-2024	06-28-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639350	PHONE CONTACT	MISDIRECTED - UTILITY	06-28-2024	06-28-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639359	PHONE CONTACT	REFERRED TO UTILITY	06-28-2024	06-28-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
639530	PHONE CONTACT	MISDIRECTED - UTILITY	07-01-2024	07-01-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639714	PHONE CONTACT	MISDIRECTED - UTILITY	07-02-2024	07-02-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639755	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-02-2024	07-26-2024	WTA60	California Water Service Company	High Bill	Rate Protest	NULL
639854	PHONE CONTACT	REFERRED TO UTILITY	07-03-2024	07-03-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
639871	PHONE CONTACT	MISDIRECTED - UTILITY	07-03-2024	07-03-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
640031	PHONE CONTACT	REFERRED TO UTILITY	07-05-2024	07-05-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
640131	INFORMAL COMPLAINT	NULL	07-08-2024	NULL	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NJ Customer Service
640189	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-08-2024	07-08-2024	WTA60	California Water Service Company	Other Charges	Payment Error	NJ Customer Service
640282	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-08-2024	07-08-2024	WTA60	California Water Service Company	Wrong Number	Meter Inaccuracy/Reading Issues	High Bill
640436	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-09-2024	07-09-2024	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
640440	PHONE CONTACT	REFERRED TO UTILITY	07-09-2024	07-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
640458	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-09-2024	07-09-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
640460	PHONE CONTACT	MISDIRECTED - UTILITY	07-09-2024	07-09-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
640506	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-09-2024	08-08-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
640563	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-10-2024	07-10-2024	WTA60	California Water Service Company	Other Charges	NULL	NULL
640796	PHONE CONTACT	REFERRED TO UTILITY	07-11-2024	07-11-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
641082	PHONE CONTACT	MISDIRECTED - UTILITY	07-15-2024	07-15-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
641299	PHONE CONTACT	REFERRED TO UTILITY	07-16-2024	07-16-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
641452	PHONE CONTACT	REFERRED TO UTILITY	07-17-2024	07-17-2024	WTA60	California Water Service Company	Wrong Number	High Bill	NULL
641554	PHONE CONTACT	MISDIRECTED - UTILITY	07-18-2024	07-18-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
641675	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-19-2024	07-19-2024	WTA60	California Water Service Company	NJ Claims for Damages	NULL	NULL
641677	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-19-2024	07-19-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
641734	INFORMAL COMPLAINT	NULL	07-19-2024	NULL	WTA60	California Water Service Company	High Bill	NULL	NULL
641744	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-19-2024	07-19-2024	WTA60	California Water Service Company	High Bill	NULL	NULL

641802	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2024	07-22-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
641947	PHONE CONTACT	MISDIRECTED - UTILITY	07-22-2024	07-22-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642067	PHONE CONTACT	MISDIRECTED - UTILITY	07-23-2024	07-23-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642170	COMPLAINT	FORWARDED TO PAO	07-22-2024	07-25-2024	WTA60	California Water Service Company	Commission Policy/Rules	Rate Protest	NULL
642272	PHONE CONTACT	MISDIRECTED - UTILITY	07-24-2024	07-24-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642350	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-24-2024	07-24-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
642361	MISDIRECTED	MISDIRECTED - UTILITY	07-24-2024	07-25-2024	WTA60	California Water Service Company	Misdirected Correspondence	NULL	NULL
642485	PHONE CONTACT	REFERRED TO UTILITY	07-25-2024	07-25-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642518	PHONE CONTACT	ADVISE CONSUMER TO WRITE	07-25-2024	07-25-2024	WTA60	California Water Service Company	High Bill	Fraud	NULL
642549	PHONE CONTACT	MISDIRECTED - UTILITY	07-25-2024	07-25-2024	WTA60	California Water Service Company	NJ Customer Service	NULL	NULL
642561	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-25-2024	07-25-2024	WTA60	California Water Service Company	High Bill	Payment Arrangements	NULL
642562	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-25-2024	07-25-2024	WTA60	California Water Service Company	High Bill	NULL	NULL
642605	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2024	07-26-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642626	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2024	07-26-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642715	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2024	07-26-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642720	PHONE CONTACT	MISDIRECTED - UTILITY	07-26-2024	07-26-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
642799	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-26-2024	08-16-2024	WTA60	California Water Service Company	High Bill	NJ Not Listed	NULL
642802	INFORMAL COMPLAINT	IN FAVOR OF UTILITY	07-26-2024	08-21-2024	WTA60	California Water Service Company	High Bill	Rate Design	NULL
642861	PHONE CONTACT	REFERRED TO UTILITY	07-29-2024	07-29-2024	WTA60	California Water Service Company	Wrong Number	Payment Arrangements	NULL
642969	PHONE CONTACT	MISDIRECTED - UTILITY	07-29-2024	07-29-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
643003	COMPLAINT	FORWARDED TO PAO	07-29-2024	07-30-2024	WTA60	California Water Service Company	Rate Design	Commission Policy/Rules	NULL
643070	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-30-2024	07-30-2024	WTA60	California Water Service Company	High Bill	Meter Inaccuracy/Reading Issues	NULL
643252	PHONE CONTACT	MISDIRECTED - UTILITY	07-31-2024	07-31-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
643263	PHONE CONTACT	REFERRED TO EXECUTIVE OFFICE	07-31-2024	07-31-2024	WTA60	California Water Service Company	Disconnection Non Payment	High Bill	NJ Customer Service
643323	PHONE CONTACT	MISDIRECTED - UTILITY	07-31-2024	07-31-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL
643345	PHONE CONTACT	REFERRED TO UTILITY	07-31-2024	07-31-2024	WTA60	California Water Service Company	Wrong Number	NULL	NULL

LIST OF ATTACHMENTS FOR CHAPTER 2

	Attachment #	Description
1	Attachment 2-1	CWS Response to DR KN3-001

Attachment 2-1:
CWS's Response to DR KN3-001

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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From: **California Water Service**

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Patrick Alexander (408) 367-8230
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Melody Singh (916) 329-1856
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Date: **Aug 20, 2024**	Request Received from CPUC: **August 19, 2024**
Re: **KN3-001**	Requested Due Date: **August 26, 2024**
Subj: **Environmental and Social Justice**	Extension for Q1.c: **September 3, 2024**

Comments:

- **Partial Response #1 attached. Cal Water requested an extension for Q1.c. to 9/03/20204**
- **Response provided by Engineering.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-001 Attachment 1 – Projects Supporting ESJ Goals.**
  - **Attachment #2 - KN3-001 Attachment 2 - Q1.d.**

Data Requests and Responses

1. In order to review Cal Water's Conservation Efforts, Plant Projects, and other efforts in relation to the Commission's Environmental and Social Justice (ESJ) Action Plan Goals, please provide the following:

b. Please provide, in Microsoft Excel Format, a list of all projects and measures Cal Water is proposing in A2407003 that meets the ESJ Goals in relation to the goals set by the CPUC.

Response: Cal Water is committed to supporting environmental and social justice (ESJ) efforts throughout its service areas. Chapter 5 of Testimony Book #3 provides a robust summary of programs and activities related to ESJ goals. Additionally, Cal Water's recent 2023 Environmental, Social, and Governance Report was provided in Attachment C to Testimony Book #3, outlining the company's extensive ESJ related efforts. It's worth noting that the purpose of the Commission's Environmental & Social Justice Action Plan (ESJ Action Plan) is to lay out the goals, objectives, vision, and steps ***the CPUC will take*** to ensure equity in its programs and services.

While the CPUC expects utilities to conform to the goals and principles included in the ESJ Action Plan, the goals and objectives outlined in the plan are not designed as specific requirements for water utilities to meet. For example, only a single goal and objective of the ESJ Action Plan specifically mentions water.[1] That said, Cal Water's projects and programs often cross multiple goal areas, including those not directly related to water, and aren't intended to explicitly link to the ESJ Action Plan. However, to facilitate organizing Cal Water's proposed capital investments in the 2024 GRC for ESJ review purposes, projects have been grouped in the following categories:

1. Water Quality and Compliance
2. Service Quality, Reliability, and Resiliency
3. Clean Energy and Emissions Reduction
4. Climate Adaptation and Readiness
5. Safety and Security

The list of capital projects, organized by ESJ category are included in the attached Excel file, titled "KN3-001 Attachment 1 – Projects Supporting ESJ Goals."

c. Please provide a shapefile (.shp), KML/KMZ (.kml, .kmz), or geodatabase (.gdb) containing the point locations of CWS's 2024 GRC proposed "Plant Projects" and other ESJ measures in all districts. You may also provide the locations by submitting a table (.csv or .xlsx) with a list of the projects and their corresponding latitude and longitude coordinates in decimal degrees.

Response:
Cal Water has requested an extension to September 3, 2024, to respond to the above question.

[1] ESJ Action Plan Goal 3 is to "Strive to improve access to high-quality water, communications, and transportation services for ESJ communities" with Objective 3.2 listed as "Ensure Water Customer Resilience."

d. Please provide a shapefile (.shp), KML/KMZ (.kml, .kmz), or geodatabase (.gdb) containing the line segments representing CWS's 2024 GRC proposed "Pipeline Replacement Projects" in all districts.

Response:

Please reference KN3-001 Attachment 2 – Q1.d.

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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From: **California Water Service**

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Director, Rates nwales@calwater.com

Patrick Alexander (408) 367-8230
General Rate Case Manager palexander@calwater.com

Melody Singh (916) 329-1856
Manager, Revenue msingh@calwater.com

Date: **Aug 20, 2024**	Request Received from CPUC: **August 19, 2024**
Re: **KN3-001**	Requested Due Date: **August 26, 2024**
Subj: **Environmental and Social Justice**	Extension for Q1.c: **September 4, 2024**

Comments:

- **Partial Response #2 (LAST) attached. Cal Water requested an extension for Q1.c. to 9/04/20204. Changes noted in blue font**
- **Response provided by Engineering.**
- **Attachment #3 contains confidential (category 4) information.**
- **This response refers to the following attachments included separately:**
- **Attachment #1 – KN3-001 Attachment 1 – Projects Supporting ESJ Goals.**
- **Attachment #2 - KN3-001 Attachment 2 - Q1.d.**
- **Attachment #3 – CONFIDENTIAL KN3-001 Attachment 3 – Project Coordinates**

Data Requests and Responses

1. In order to review Cal Water's Conservation Efforts, Plant Projects, and other efforts in relation to the Commission's Environmental and Social Justice (ESJ) Action Plan Goals, please provide the following:

b. Please provide, in Microsoft Excel Format, a list of all projects and measures Cal Water is proposing in A2407003 that meets the ESJ Goals in relation to the goals set by the CPUC.

Response: Cal Water is committed to supporting environmental and social justice (ESJ) efforts throughout its service areas. Chapter 5 of Testimony Book #3 provides a robust summary of programs and activities related to ESJ goals. Additionally, Cal Water's recent 2023 Environmental, Social, and Governance Report was provided in Attachment C to Testimony Book #3, outlining the company's extensive ESJ related efforts. It's worth noting that the purpose of the Commission's Environmental & Social Justice Action Plan (ESJ Action Plan) is to lay out the goals, objectives, vision, and steps ***the CPUC will take*** to ensure equity in its programs and services.

While the CPUC expects utilities to conform to the goals and principles included in the ESJ Action Plan, the goals and objectives outlined in the plan are not designed as specific requirements for water utilities to meet. For example, only a single goal and objective of the ESJ Action Plan specifically mentions water.[1] That said, Cal Water's projects and programs often cross multiple goal areas, including those not directly related to water, and aren't intended to explicitly link to the ESJ Action Plan. However, to facilitate organizing Cal Water's proposed capital investments in the 2024 GRC for ESJ review purposes, projects have been grouped in the following categories:

1. Water Quality and Compliance
2. Service Quality, Reliability, and Resiliency
3. Clean Energy and Emissions Reduction
4. Climate Adaptation and Readiness
5. Safety and Security

The list of capital projects, organized by ESJ category are included in the attached Excel file, titled "KN3-001 Attachment 1 – Projects Supporting ESJ Goals."

c. Please provide a shapefile (.shp), KML/KMZ (.kml, .kmz), or geodatabase (.gdb) containing the point locations of CWS's 2024 GRC proposed "Plant Projects" and other ESJ measures in all districts. You may also provide the locations by submitting a table (.csv or .xlsx) with a list of the projects and their corresponding latitude and longitude coordinates in decimal degrees.

Response:
Please reference "CONFIDENTIAL KN3-001 Attachment 3 – Project Coordinates" for a list of projects and their corresponding latitude and longitude coordinates. Please note that some of the coordinates are the best approximate from the location of the projects. Also, two types of projects without any specific location

[1] ESJ Action Plan Goal 3 is to "Strive to improve access to high-quality water, communications, and transportation services for ESJ communities" with Objective 3.2 listed as "Ensure Water Customer Resilience."

are flagged with "N" in column "D" in the attached Excel file. Projects in this category include portable projects/assets, such as vehicles and software, and those that don't have specific locations and will be defined as needed, such as non-specific projects. We have assigned Cal Water office locations for these projects in each district.

d. Please provide a shapefile (.shp), KML/KMZ (.kml, .kmz), or geodatabase (.gdb) containing the line segments representing CWS's 2024 GRC proposed "Pipeline Replacement Projects" in all districts.

Response:

Please reference KN3-001 Attachment 2 – Q1.d.

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
WELLHEAD TREATMENT STA 219-02	12047	3	Water Quality and Compliance	South Bay Region	Dominguez
Well 301 (long Beach)	20775	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
Construct/Equip Well 216-02	20838	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
TREAMENT WELL 219-02	21521	3	Water Quality and Compliance	South Bay Region	Dominguez
STK 77-01 Replace Pump & Col	61732	2	Clean Energy and Emissions Reduction	Stockton	
Purchase Land for SM Well	61972	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Sta 33 STA Rebuild	65389	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 42 0.25MG Welded Steel Tank	97302	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 5 3MG Welded Steel Tank	97310	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Cherokee Res: Conceptual Design	97517	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
Raw Water Line	97628	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 3 Reduce Sediment Intake	97637	3	Service Quality, Reliability and Resiliency	Bear Gulch	
HR Sta 24 rebuild design	97756	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
Purchase Land for New Well Site	97980	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
Upper Diversion Slope Stabilization	98018	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG Skeggs Tanks (Design)	98036	3	Service Quality, Reliability and Resiliency	Bear Gulch	
PV Storage Study	98227	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
Upper Low Zone Mitigation	98236	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 300 New Well 01	98334	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
Video Surveillance at Reservoir	98428	6	Safety and Security	Bear Gulch	
ARMV 002-T1-Overflow Airgap Retrof.	98466	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
Partial Rebuild SC 106	98596	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Replace chemical feed pumps	99154	3	Water Quality and Compliance	Bakersfield	
IX Treatment DOM 297	99341	3	Water Quality and Compliance	South Bay Region	Dominguez
Nitrification Mitigation	99381	3	Water Quality and Compliance	South Bay Region	Dominguez
New Well Property North Garden #1	103497	3	Service Quality, Reliability and Resiliency	Bakersfield	
LAS 9 Tank Mixing	114151	3	Water Quality and Compliance	Los Altos	
BK-100 Station Re-Build	114159	3	Service Quality, Reliability and Resiliency	Bakersfield	
STK-35 Station Rebuild	114288	3	Service Quality, Reliability and Resiliency	Stockton	
Sta 18 Station Rebuild	114325	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Portola Road Pipeline	114328	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Chico Station 11 Rebuild	114342	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
Harris Res. - Install PAX Mixer	114361	3	Water Quality and Compliance	Westlake	
HR Sta 23 Seismic Retrofit	114364	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR Sta 24 Rebuild-Construction	114459	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
Sta 215 Treatment Plant Design	114503	3	Water Quality and Compliance	South Bay Region	Dominguez
Sta 203 Booster System Design	114504	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
Sta 215 Treatment Plant Construct	114507	3	Water Quality and Compliance	South Bay Region	Dominguez
Sta 219 Treatment Plant Design	114508	3	Water Quality and Compliance	South Bay Region	Dominguez
Sta 14 Partial Rebuild	114641	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 21 Partial Rebuild	114642	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 17 Partial Rebuild	114643	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Sta 30 Chem Addition	114646	3	Water Quality and Compliance	Bear Gulch	
Lake Hughes 003-T1 Seismic Retrofit	114791	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LAN 001-T2 Seismic Retrofit	114792	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LAN 001-T3 Seismic Retrofit	114793	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
DOM 277-A: Pump and Motor Replace	114865	2	Clean Energy and Emissions Reduction	South Bay Region	Dominguez
BK 140-1W: Pump & Motor Replace	114875	2	Clean Energy and Emissions Reduction	Bakersfield	
ARMV 002-T1 - New CP Install	114882	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
Station Rebuild CH STA 12	114889	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
Sta 005 Rebuild	114949	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
WQ-VOC GC/MS	114960	3	Water Quality and Compliance	CSS	
WLK Emergency Fuel Supply	114982	3	Service Quality, Reliability and Resiliency	Westlake	
MPS 116-A: Pump & Motor Replacement	114994	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
BG 036-A: Pump & Motor Replacement	115002	2	Clean Energy and Emissions Reduction	Bear Gulch	
Install new station piping SM116	115010	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BG 043-A:Pump & Motor Replacement	115017	2	Clean Energy and Emissions Reduction	Bear Gulch	
BG 43-B:Pump & Motor Replacement	115020	2	Clean Energy and Emissions Reduction	Bear Gulch	
New Tank Install	115059	3	Service Quality, Reliability and Resiliency	Visalia	
Sepulveda Line Reliability Study	115087	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
Replace 5 CL2 Tanks 2021	115097	3	Water Quality and Compliance	Bakersfield	
Marysville 12 Panel & Generator	115109	3	Service Quality, Reliability and Resiliency	Marysville	
LAS 013-C Replace Pump and Motor	115162	2	Clean Energy and Emissions Reduction	Los Altos	
SGMA support & review	115207	3	Service Quality, Reliability and Resiliency	CSS	
12" Cherokee Rd. Pipeline	115212	3	Service Quality, Reliability and Resiliency	Stockton	
LUC 01 - Acid Feed Installation	115214	3	Water Quality and Compliance	Bay Area Region	RDV Lucerne
HR 004-E: Pump & Motor Replace	115218	2	Clean Energy and Emissions Reduction	South Bay Region	Hermosa Redondo
HR 009-C: Pump & Motor Replace	115223	2	Clean Energy and Emissions Reduction	South Bay Region	Hermosa Redondo
HR 023-C: Pump & Motor Replace	115226	2	Clean Energy and Emissions Reduction	South Bay Region	Hermosa Redondo
HR 005-A: Pump & Motor Replace	115230	2	Clean Energy and Emissions Reduction	South Bay Region	Hermosa Redondo
STK-61 Blow Off	115263	3	Water Quality and Compliance	Stockton	
SEL 018-01:Pump & Motor Replacement	115272	2	Clean Energy and Emissions Reduction	Selma	
BK 005-05 Pump & Motor Replace	115307	2	Clean Energy and Emissions Reduction	Bakersfield	
STK-68 Blow Off	115323	3	Water Quality and Compliance	Stockton	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
STK-71 Blow Off	115326	3	Water Quality and Compliance	Stockton	
STK-77 Blow Off	115329	3	Water Quality and Compliance	Stockton	
BG 23-A Pump & Motor Replacement	115337	2	Clean Energy and Emissions Reduction	Bear Gulch	
Replace F.H. & Valves	115340	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
Replace Blow-offs	115379	3	Water Quality and Compliance	South Bay Region	Dominguez
Replace Blow-offs	115380	3	Water Quality and Compliance	South Bay Region	Dominguez
LIV 019-A Replace Pump and Motor	115382	2	Clean Energy and Emissions Reduction	Livermore	
LIV 015-01 Replace Pump and Motor	115386	2	Clean Energy and Emissions Reduction	Livermore	
SLN 016-02 Replace Pump and Motor	115409	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
BK 216 D Pump & Motor Replace	115417	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 216 MFS1 Pump & Motor Replace	115440	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 216 MFS3 Pump & Motor Replace	115540	2	Clean Energy and Emissions Reduction	Bakersfield	
STK 75-01 Pump & Motor Replacement	115584	2	Clean Energy and Emissions Reduction	Stockton	
Algal Treatment Study - BG	115586	3	Water Quality and Compliance	Bear Gulch	
SSF 014-T1: Repl Interior Ladder	115635	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 031-T1 - Tank Struct Retrofit	115716	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Lakeland WTP Upgrades	115830	3	Water Quality and Compliance	Kern River Valley	
MPS 118- T1- Tank Struct Retrofit	115844	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
New well at Salinas Oak Hills	115845	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
Proposed 250K Storage Tank LL 302	115854	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
Replace Gen-set at Station BK 116	115863	3	Service Quality, Reliability and Resiliency	Bakersfield	
MPS 027-PT2 - Replace Pressure Tank	115868	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
ELA 059-PT1 - Replace Pressure Tank	115873	3	Service Quality, Reliability and Resiliency	East Los Angeles	
New well at Salinas - Las Lomas	115959	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
BG 005-T9 - New 30" Manway	115970	3	Service Quality, Reliability and Resiliency	Bear Gulch	
ARM_STA_02_T1_Seismic_Upgrad	115989	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
MPS 118-T2 - Tank Struct Retrofits	115992	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Portable Booster Pump	116003	3	Service Quality, Reliability and Resiliency	CSS	
LIV 023-T1 - Tank Retrofits	116006	3	Service Quality, Reliability and Resiliency	Livermore	
LAN 001-PT1: Replace Pressure Tank	116013	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
SSF 005-T1 - Roof Retrofit	116014	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
New well replacement at station 20	116020	3	Service Quality, Reliability and Resiliency	Los Altos	
MPS 114-PT1 - Replace Pressure Tank	116051	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 116-PT1 - Replace Pressure Tank	116058	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BOD 011-T1: Tank Retrofits	116059	3	Service Quality, Reliability and Resiliency	Kern River Valley	
MPS 120-PT1: Replace Pressure Tank	116064	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
LEO 001-T1: Seismic Retrofit	116071	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
SSF 011-T1: Seismic Retrofit	116139	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Acid feed system - NW WTP	116211	3	Water Quality and Compliance	Bakersfield	
ENERGY EFFICIENCY IMPROVEMENTS	116215	2	Clean Energy and Emissions Reduction	CSS	
Replace potassium permang - NEWTP	116231	3	Water Quality and Compliance	Bakersfield	
Replace 4 bulk chem tanks - NE WTP	116237	3	Water Quality and Compliance	Bakersfield	
RDP_102_Replace_Pump_Bldg	116271	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
Replace membrane feed pumps - NWTP	116386	3	Water Quality and Compliance	Bakersfield	
BG Skeggs Tanks Construction	116413	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Visalia Reliability Study	116494	3	Service Quality, Reliability and Resiliency	Visalia	
Bakersfield Reliability Study	116497	3	Service Quality, Reliability and Resiliency	Bakersfield	
Selma Reliability Study	116509	3	Service Quality, Reliability and Resiliency	Selma	
Mid Penninsula Reliability Study	116516	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Bear Gulch Reliability Study	116517	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Person Down Radio Solution	116566	6	Safety and Security	CSS	
King City WSFMP	116581	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
Selma WSFMP	116582	3	Service Quality, Reliability and Resiliency	Selma	
Bakersfield WSFMP	116584	3	Service Quality, Reliability and Resiliency	Bakersfield	
Structural Improvements - NE WTP	116631	3	Water Quality and Compliance	Bakersfield	
Upgrade Sample Stations	116761	3	Water Quality and Compliance	Los Altos	
Upgrade Sample Stations Phase 2	116799	3	Water Quality and Compliance	Los Altos	
SSF Reliability Study	116850	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Groundwater Banking Study	116883	3	Service Quality, Reliability and Resiliency	CSS	
SLN-LL new Chromium treatment	116899	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN-OH new chromium 6 treatment	116901	3	Water Quality and Compliance	Salinas Valley Region	Salinas
COS_07 Free Chlorine Conversion	116923	3	Water Quality and Compliance	Bay Area Region	RDV Coast Springs
CSPR Sta 8 - Spray Aeration Sys	116925	3	Water Quality and Compliance	Bay Area Region	RDV Coast Springs
STK 2020 Physical Security Upgrades	117176	6	Safety and Security	Stockton	
HR 2020 Physical Security Upgrades	117187	6	Safety and Security	South Bay Region	Hermosa Redondo
PV 2019 Physical Security Upgrades	117192	6	Safety and Security	LA County Region	Palos Verdes
STK 2021 Physical Security Upgrades	117195	6	Safety and Security	Stockton	
BG 2021 Physical Security Upgrades	117237	6	Safety and Security	Bear Gulch	
LIV 28 Generator & VFD	117363	3	Service Quality, Reliability and Resiliency	Livermore	
Install Genset - LAS 9	117411	3	Service Quality, Reliability and Resiliency	Los Altos	
VIS 79 Install Generator	117412	3	Service Quality, Reliability and Resiliency	Visalia	
Generator STA 10	117416	3	Service Quality, Reliability and Resiliency	Westlake	
NOH_201_Trmt_Mods	117538	3	Water Quality and Compliance	Bay Area Region	RDV Unified
Install generator at CSC	117904	3	Service Quality, Reliability and Resiliency	East Los Angeles	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
Replace Genset - Sta 33	118028	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Backflow Devices isdc 6	118053	3	Water Quality and Compliance	Travis	
Sta.275 4-Log Disinfection	118107	3	Water Quality and Compliance	South Bay Region	Dominguez
Instrumentation Energy Optimization	118116	2	Clean Energy and Emissions Reduction	Salinas Valley Region	King City
SLN 205-01 CR(VI) Treatment Plant	118492	3	Water Quality and Compliance	Salinas Valley Region	Salinas
HR-024 Stationary Generator (PSPS)	121170	4	Climate Adaptation and Readiness	South Bay Region	Hermosa Redondo
SLN-049 PSPS Genset	121171	4	Climate Adaptation and Readiness	Salinas Valley Region	Salinas
SC-118 PSPS Genset	121261	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
BG-025 PSPS Genset	121345	4	Climate Adaptation and Readiness	Bear Gulch	
BG-026 PSPS Genset	121347	4	Climate Adaptation and Readiness	Bear Gulch	
PV-22 PSPS Electrical Modifications	121426	4	Climate Adaptation and Readiness	LA County Region	Palos Verdes
CH FH/PB Connections (PSPS)	121485	4	Climate Adaptation and Readiness	North Valley Region	Chico
PSPS LAS-33 Genset	121487	4	Climate Adaptation and Readiness	Los Altos	
Olmsted Creek Pipe Crossing	121589	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
Land for New Well and Tank	121845	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
VIS 77 installing Generator	122819	3	Service Quality, Reliability and Resiliency	Visalia	
Install Backup Generator BK 212	122824	3	Service Quality, Reliability and Resiliency	Bakersfield	
Install Backup Generator WLK 006	122859	3	Service Quality, Reliability and Resiliency	Westlake	
Install Backup Generator BG 017	122876	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Install Backup Generator WLK Office	122933	3	Service Quality, Reliability and Resiliency	Westlake	
TAB Phys Security & Instrument Inst	122940	6	Safety and Security	Travis	
SSF Hillside Blvd PRV	122976	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF-007 Control Valve	122978	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
PV Narcissa Drive New Main	123008	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 4" Main Replacement	123009	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
ARD 011-T1 - CP Upgrade	123105	3	Service Quality, Reliability and Resiliency	Kern River Valley	
Purchase Land for Well in Zone 610	123106	3	Service Quality, Reliability and Resiliency	Livermore	
BK 2022 CP Upgrades	123130	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 116-T1 - Tank Retrofits	123132	3	Service Quality, Reliability and Resiliency	Bakersfield	
BG Tank Exterior Ladder Lifelines	123141	6	Safety and Security	Bear Gulch	
BK 116-T1 - Seismic Retrofit	123142	3	Service Quality, Reliability and Resiliency	Bakersfield	
New Well-Livermore	123160	3	Service Quality, Reliability and Resiliency	Livermore	
BK New Tank & Booster Facility	123165	3	Service Quality, Reliability and Resiliency	Bakersfield	
BG 022-T1 - Tank Retrofits	123168	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BK 675 Rezone	123170	3	Service Quality, Reliability and Resiliency	Bakersfield	
HR 027-T1 - Tank Retrofits	123178	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
BK 150 Surge Tank	123180	3	Service Quality, Reliability and Resiliency	Bakersfield	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
BKNG 219 Surge Tank	123181	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 186 Corner Tank BFV Controls	123183	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 87 Station Rebuild - Design	123185	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 116 PB & Building Replacement	123190	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 148 PB & Building Replacement	123193	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 23 Building Replacement	123194	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 36-02 Piping Replacement	123200	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 82 Piping Replacement	123201	3	Service Quality, Reliability and Resiliency	Bakersfield	
LIV 013-T2 - Tank Retrofits	123204	3	Service Quality, Reliability and Resiliency	Livermore	
BG 036-T1 - Tank Retrofits	123211	3	Service Quality, Reliability and Resiliency	Bear Gulch	
SEL 011-01 - Replace Pump & Motor	123214	2	Clean Energy and Emissions Reduction	Selma	
DIX 010-T1 - Ext Ladder Lifeline	123217	6	Safety and Security	Dixon	
WIL 011-T1 - Ext Ladder Lifeline	123219	6	Safety and Security	Willows	
VIS 070-01 - Replace Pump and Motor	123232	2	Clean Energy and Emissions Reduction	Visalia	
VIS 072-01 - Replace Pump & Motor	123233	2	Clean Energy and Emissions Reduction	Visalia	
VIS 012-A - Replace Pump & Motor	123239	2	Clean Energy and Emissions Reduction	Visalia	
KC Tank Exterior Ladder Lifelines	123245	6	Safety and Security	Salinas Valley Region	King City
COS 008-T1 - CP Upgrade	123246	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs
ORO Tank Exterior Ladder Lifelines	123248	6	Safety and Security	North Valley Region	Oroville
LUC 002-T1 - Tank Retrofits	123251	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
BK 213-T3 - Tank Retrofits	123255	3	Service Quality, Reliability and Resiliency	Bakersfield	
STK STA 66-02 Roof Replacement	123260	3	Service Quality, Reliability and Resiliency	Stockton	
HR 005-T1 - Tank Retrofits	123262	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
STK 12" Cherokee Rd Pipeline	123265	3	Service Quality, Reliability and Resiliency	Stockton	
STK Main Tie-ins at Army & Charte	123266	3	Service Quality, Reliability and Resiliency	Stockton	
STK Mainline Flushing	123268	3	Water Quality and Compliance	Stockton	
VIS 032-01 - Replace Pump & Motor	123270	2	Clean Energy and Emissions Reduction	Visalia	
DOM 203-T2 - Tank Retrofits	123271	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 203-T4 - Tank Retrofits	123273	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
VIS 079-01 - Replace Pump & Motor	123276	2	Clean Energy and Emissions Reduction	Visalia	
ELA 055-A Replace Pump & Motor	123282	2	Clean Energy and Emissions Reduction	East Los Angeles	
MPS 112-T1 - Tank Retrofits	123283	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
LAS 121-T3 - Tank Retrofits	123286	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 042-T2 - Tank Retrofits	123290	3	Service Quality, Reliability and Resiliency	Los Altos	
MPS 032-T2 - Tank Retrofits	123293	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
HR 2023 CP Upgrades	123294	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
MPS 123-T3 - Tank Retrofits	123296	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
MPS 2022 Control Valve Replacement	123297	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SLN 2023 CP Upgrades	123299	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2024 CP Upgrades	123305	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
MPS 029-T1 - Tank Retrofits	123306	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
VIS 38 - PFAS Treatment	123309	3	Water Quality and Compliance	Visalia	
VIS 55 - PFAS Treatment	123313	3	Water Quality and Compliance	Visalia	
MPS 112-T3 - Tank Retrofits	123315	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 001-T1 - Tank Retrofits	123316	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 001-T2 - Tank Retrofits	123318	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 030-T1 - Tank Retrofits	123321	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 115-T1 - Tank Retrofits	123324	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
LIV 018-T2 - Tank Retrofits	123330	3	Service Quality, Reliability and Resiliency	Livermore	
KRV 006-T1 - CP Upgrade	123333	3	Service Quality, Reliability and Resiliency	Kern River Valley	
BG 030-T1 - Tank Retrofits	123338	3	Service Quality, Reliability and Resiliency	Bear Gulch	
LAS 114-T1 - Tank Retrofits	123344	3	Service Quality, Reliability and Resiliency	Los Altos	
BK 096-T2 - Tank Retrofits	123345	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 096-T3 - Tank Retrofits	123347	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 096-T4 - Tank Retrofits	123352	3	Service Quality, Reliability and Resiliency	Bakersfield	
VIS 97 - New Storage Tank	123354	3	Service Quality, Reliability and Resiliency	Visalia	
SSF 014-T1 - Tank Retrofits	123358	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
VIS 200 - New Storage Tank	123359	3	Service Quality, Reliability and Resiliency	Visalia	
BG 041-T2 - Tank Retrofits	123365	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BK 116-T3 - Tank Retrofits	123371	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 087-T5 - Tank Retrofits	123376	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2023 Control Valve Overhaul	123377	3	Service Quality, Reliability and Resiliency	Bakersfield	
HR 026-T2 - Tank Retrofits	123387	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
PV 023-T1 - CP Upgrade	123389	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
DOM New Property Purchase	123393	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
VIS 99 - New Well Station	123396	3	Service Quality, Reliability and Resiliency	Visalia	
LAS Tank Exterior Ladder Lifelines	123397	6	Safety and Security	Los Altos	
BK 2024 Control Valve Overhaul	123399	3	Service Quality, Reliability and Resiliency	Bakersfield	
LIV Tank Exterior Ladder Lifelines	123400	6	Safety and Security	Livermore	
DOM Sta 219 Treatment Construction	123403	3	Water Quality and Compliance	South Bay Region	Dominguez
DOM 232 to Zone 1 Main Reliability	123405	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
BK 003-04 Replace Pump & Motor	123409	2	Clean Energy and Emissions Reduction	Bakersfield	
DOM Sta 279 Sta Rebuild - Design	123411	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
MPS Tank Exterior Ladder Lifelines	123413	6	Safety and Security	Bay Area Region	Bayshore

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
DOM Sta 298 Sta Rebuild - Design	123415	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM From Sta 232 N to Zone I	123419	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
RDV Tank Exterior Ladder Lifelines	123423	6	Safety and Security	Bay Area Region	RDV
SLN Tank Exterior Ladder Lifelines	123424	6	Safety and Security	Salinas Valley Region	Salinas
BK 2024 Control Valve Replacement	123425	3	Service Quality, Reliability and Resiliency	Bakersfield	
SSF Tank Exterior Ladder Lifelines	123426	6	Safety and Security	Bay Area Region	Bayshore
STK Tank Exterior Ladder Lifelines	123428	6	Safety and Security	Stockton	
BG 038-T1 - Tank Retrofits	123429	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BK 087-E Replace Pump & Motor	123430	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 091-C Replace Pump & Motor	123437	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 097-B Replace Pump & Motor	123440	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 2023 Control Valve Replacements	123441	3	Service Quality, Reliability and Resiliency	Bakersfield	
SQUM 007-T1 - CP Upgrade	123442	3	Service Quality, Reliability and Resiliency	Kern River Valley	
LEO 004-T1 - CP Upgrade	123446	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LHUG 003-T1 - CP Upgrade	123447	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
STK 080-T1 - CP Upgrade	123448	3	Service Quality, Reliability and Resiliency	Stockton	
MPS 024-T1 - Tank Retrofits	123451	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
LAS 113-T1 - Tank Retrofits	123452	3	Service Quality, Reliability and Resiliency	Los Altos	
DIX 001-T1 - Tank Retrofits	123453	3	Service Quality, Reliability and Resiliency	Dixon	
BK 100-T3 - Tank Retrofits	123454	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 100-T1 - Tank Retrofits	123456	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 073-T3 - Tank Retrofits	123459	3	Service Quality, Reliability and Resiliency	Bakersfield	
BG 019-T1 - Tank Retrofits	123461	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BK 097-C Replace Pump & Motor	123462	2	Clean Energy and Emissions Reduction	Bakersfield	
ORO 016-T1 - Tank Retrofits	123464	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2023 Control Valve Replacement	123466	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
LIV 022-T2 - Tank Retrofits	123467	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 022-T1 - Tank Retrofits	123468	3	Service Quality, Reliability and Resiliency	Livermore	
ORO 2024 Control Valve Replacement	123469	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
BK 100-E Replace Pump & Motor	123471	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 144-01 Replace Pump & Motor	123473	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 195-01 Replace Pump & Motor	123475	2	Clean Energy and Emissions Reduction	Bakersfield	
LIV 2022 Control Valve Replacement	123478	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2023 Control Valve Replacement	123479	3	Service Quality, Reliability and Resiliency	Livermore	
LAN 001-T2 - CP Upgrade	123480	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LIV 2024 Control Valve Replacement	123481	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2022 Control Valve Overhaul	123490	3	Service Quality, Reliability and Resiliency	Livermore	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LIV 2023 Control Valve Overhaul	123492	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2024 Control Valve Overhaul	123496	3	Service Quality, Reliability and Resiliency	Livermore	
WLK 007-T1 - CP Upgrade	123498	3	Service Quality, Reliability and Resiliency	Westlake	
LAN 001-T1 - CP Upgrade	123499	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LIV Land Purchase for New Well	123500	3	Service Quality, Reliability and Resiliency	Livermore	
LIV New Well	123501	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 34 New 2,000 gal. Press. Tank	123503	3	Service Quality, Reliability and Resiliency	Livermore	
LIV Sta 8 New Booster Sta - Design	123506	3	Service Quality, Reliability and Resiliency	Livermore	
AV Tank Exterior Ladder Lifelines	123509	6	Safety and Security	LA County Region	Antelope Valley
BK Tank Exterior Ladder Lifelines	123510	6	Safety and Security	Bakersfield	
DOM Tank Exterior Ladder Lifelines	123514	6	Safety and Security	South Bay Region	Dominguez
ELA Tank Exterior Ladder Lifelines	123518	6	Safety and Security	East Los Angeles	
KRV 2024 Control Valve Overhaul	123520	3	Service Quality, Reliability and Resiliency	Kern River Valley	
HR Tank Exterior Ladder Lifelines	123522	6	Safety and Security	South Bay Region	Hermosa Redondo
KRV Tank Exterior Ladder Lifelines	123526	6	Safety and Security	Kern River Valley	
LAS 118-PT1 - Pressure Vessel Rplcm	123528	3	Service Quality, Reliability and Resiliency	Los Altos	
ELA 2023 Control Valve Replacement	123529	3	Service Quality, Reliability and Resiliency	East Los Angeles	
PV Tank Exterior Ladder Lifelines	123530	6	Safety and Security	LA County Region	Palos Verdes
WLK Tank Exterior Ladder Lifelines	123531	6	Safety and Security	Westlake	
CH 064-PT1 - Pressure Vessel Rehab	123541	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
LAS 2022 CP Upgrades	123553	3	Service Quality, Reliability and Resiliency	Los Altos	
MPS 2023 Control Valve Replacement	123564	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BG 2022 Control Valve Replacement	123574	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2023 Control Valve Replacement	123578	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2024 Control Valve Replacement	123580	3	Service Quality, Reliability and Resiliency	Bear Gulch	
DOM 2023 Control Valve Replacement	123597	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2024 Control Valve Replacement	123598	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2022 Control Valve Overhaul	123599	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2023 Control Valve Overhaul	123600	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2024 Control Valve Overhaul	123601	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
SSF 2024 CP Upgrades	123606	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
KRV 2022 Control Valve Replacement	123608	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KRV 2023 Control Valve Replacement	123610	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KRV 2024 Control Valve Replacement	123611	3	Service Quality, Reliability and Resiliency	Kern River Valley	
LAS 2022 Control Valve Replacements	123614	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2023 Control Valve Replacement	123616	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2024 Control Valve Replacement	123617	3	Service Quality, Reliability and Resiliency	Los Altos	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LAS Sta. 39 and 104 Well Chloram	123618	3	Water Quality and Compliance	Los Altos	
RDV HKN Sta 1 - Upgrade - Design	123623	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
BG 041-T1 - Tank Retrofits	123624	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BK 073-T5 Tank Retrofits	123625	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 188-T1 - Seismic Retrofit	123626	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 188-T2 - Seismic Retrofit	123628	3	Service Quality, Reliability and Resiliency	Bakersfield	
AV LV Sta 4 New 0.22MG Storage Tank	123629	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
DOM 277-T1 - Seismic Retrofit	123630	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
LAN 001-T2 - Seismic Retrofit	123632	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
AV Wrigely Well Property Purch.	123634	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LAN 001-T3 - Seismic Retrofit	123636	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
MRL Tank Exterior Ladder Lifelines	123638	6	Safety and Security	Marysville	
MPS Station 29 Replace Generator	123641	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BK 212-D Replace Pump & Motor	123643	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 116-F Replace Pump & Motor	123645	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 162-A Replace Pump & Motor	123654	2	Clean Energy and Emissions Reduction	Bakersfield	
BK 148-T1 - Tank Retrofit	123655	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 162-B - Replace Pump & Motor	123658	2	Clean Energy and Emissions Reduction	Bakersfield	
HR 029-T2 - Seismic Retrofit	123660	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
BK 176-T2 - Seismic Retrofit	123662	3	Service Quality, Reliability and Resiliency	Bakersfield	
LIV 025-T3 - Tank Retrofit	123663	3	Service Quality, Reliability and Resiliency	Livermore	
MPS 023-T1 - Tank Retrofit	123673	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BK 100-T4 - Tank Retrofit	123675	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 176-T2 - Tank Retrofit	123676	3	Service Quality, Reliability and Resiliency	Bakersfield	
SLN 058-A - Replace Pump & Motor	123678	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN 020-01 - Replace Pump & Motor	123682	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
CH 065-PT1 - Pressure Vessel Rplcmn	123683	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
BK Sta 146-04 Wildfire Generator	123684	4	Climate Adaptation and Readiness	Bakersfield	
LIV028-PT2 Pressure Vessel Rplcmt	123695	3	Service Quality, Reliability and Resiliency	Livermore	
DOM 215-A Replace Pump & Motor	123697	2	Clean Energy and Emissions Reduction	South Bay Region	Dominguez
SLN 072-PT1 - Pressure Vessel Rehab	123699	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
VIS 052-PT1 - Pressure Vessel Rehab	123703	3	Service Quality, Reliability and Resiliency	Visalia	
CH 066-PT1 - Pressure Vessel Rehab	123704	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
SLN 040-PT1 - Pressure Vessel Rplcm	123706	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 303-PT1 - Pressure Vessel Rplcm	123707	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 304-PT1 - Pressure Vessel Rplcm	123708	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
RDV COS 7 New Generator	123711	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
RDV COS- Design and Permit New Well	123714	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs
BK 148 Generator Replacement	123721	3	Service Quality, Reliability and Resiliency	Bakersfield	
STK 007-02 Replace Pump & Motor	123736	2	Clean Energy and Emissions Reduction	Stockton	
DOM 275-01 Replace Pump & Motor	123738	2	Clean Energy and Emissions Reduction	South Bay Region	Dominguez
DOM 298-01 Replace Pump & Motor	123743	2	Clean Energy and Emissions Reduction	South Bay Region	Dominguez
STK 069-A Replace Pump & Motor	123751	2	Clean Energy and Emissions Reduction	Stockton	
PV 014-A Replace Pump & Motor	123752	2	Clean Energy and Emissions Reduction	LA County Region	Palos Verdes
PV 015-D Replace Pump & Motor	123758	2	Clean Energy and Emissions Reduction	LA County Region	Palos Verdes
BOD 104-B - Replace Pump & Motor	123767	2	Clean Energy and Emissions Reduction	Kern River Valley	
SSF STA 101 Wildfire Generator	123796	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
VIS 077-PT1 - Pressure Vessel Rplcm	123797	3	Service Quality, Reliability and Resiliency	Visalia	
CH 2022 Conrol Valve Overhauls	123803	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2023 Control Valve Overhauls	123808	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
2024 Control Valve Overhaul CH	123809	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
SLN Las Lomas Intertie Design	123811	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
ELA 2024 Control Valve Overhaul	123817	3	Service Quality, Reliability and Resiliency	East Los Angeles	
HR 2023 Control Valve Overhaul	123821	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2024 Control Valve Overhaul	123822	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2023 Control Valve Replacement	123824	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2024 Control Valve Replacement	123825	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
FREM 001-01 - Replace Pump & Moto	123827	2	Clean Energy and Emissions Reduction	LA County Region	Antelope Valley
MPS 027-T1 - Tank Retrofits	123828	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
LHUG 001-01 - Replace Pump & Motor	123829	2	Clean Energy and Emissions Reduction	LA County Region	Antelope Valley
LHUG 001-02 - Replace Pump & Motor	123831	2	Clean Energy and Emissions Reduction	LA County Region	Antelope Valley
LHUG 002-02 - Replace Pump & Motor	123834	2	Clean Energy and Emissions Reduction	LA County Region	Antelope Valley
KC 2023 Control Valve Replacement	123835	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
SLN 2024 Control Valve Replacement	123837	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 071: Sta Rebuild - Design	123839	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
LAS 019-T1 - Tank Retrofits	123842	3	Service Quality, Reliability and Resiliency	Los Altos	
SLN 2023 Control Valve Overhaul	123845	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2024 Control Valve Overhaul	123846	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
BAY SM STA 012 Wildfire Generator	123848	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
BK 156 Generator Replacement	123850	3	Service Quality, Reliability and Resiliency	Bakersfield	
SLN 016-T1 - Tank Retrofits	123851	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SSF 006-F Replace Pump & Motor	123852	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
SSF 013-A Replace Pump & Motor	123854	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
SSF 101-A Replace Pump & Motor	123856	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LIV 009-T4 - Tank Retrofits	123857	3	Service Quality, Reliability and Resiliency	Livermore	
SSF 101-B Replace Pump & Motor	123858	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
STK 065-T1&T2 - Tank Retrofits	123860	3	Service Quality, Reliability and Resiliency	Stockton	
LAS 001-02 Replace Pump & Motor	123862	2	Clean Energy and Emissions Reduction	Los Altos	
LAS 001-E Replace Pump & Motor	123865	2	Clean Energy and Emissions Reduction	Los Altos	
LAS 009-D Replace Pump & Motor	123867	2	Clean Energy and Emissions Reduction	Los Altos	
LAS 009-E Replace Pump & Motor	123870	2	Clean Energy and Emissions Reduction	Los Altos	
SLN 039: As Treatmnt Plant - Design	123881	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN Wildfire Oak Hills Grid Imprv	123884	4	Climate Adaptation and Readiness	Salinas Valley Region	Salinas
SLN 076: New Well	123887	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
LAS Sta. 41 New Booster Pump	123895	2	Clean Energy and Emissions Reduction	Los Altos	
LAS Wildfire Control Valves 2023	123898	4	Climate Adaptation and Readiness	Los Altos	
CH 7 Install GAC Treatment	123900	3	Water Quality and Compliance	North Valley Region	Chico
LAS Sta. 117 Rebuild - Design	123913	3	Service Quality, Reliability and Resiliency	Los Altos	
VIS 62 Generator Installation	123916	3	Service Quality, Reliability and Resiliency	Visalia	
LAS 011-D - Replace Pump & Motor	123917	2	Clean Energy and Emissions Reduction	Los Altos	
LAS 023-D - Replace Pump & Motor	123923	2	Clean Energy and Emissions Reduction	Los Altos	
VIS 72 Generator Installation	123924	3	Service Quality, Reliability and Resiliency	Visalia	
ELA 12 Pressure Tank	123926	3	Service Quality, Reliability and Resiliency	East Los Angeles	
CH 41 Install GAC Treatment	123928	3	Water Quality and Compliance	North Valley Region	Chico
FMT 001-PT1 - Pressure Vessel Rplcm	123929	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
VIS 81 Generator Installation	123930	3	Service Quality, Reliability and Resiliency	Visalia	
SLN Sta 47 Genset Installation	123932	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
BK 116-PT1 Pressure Vessel Replace	123936	3	Service Quality, Reliability and Resiliency	Bakersfield	
CH 51 Install GAC Treatment	123938	3	Water Quality and Compliance	North Valley Region	Chico
VIS 23 Panelboard & Gen Set	123954	3	Service Quality, Reliability and Resiliency	Visalia	
CH 050 Station Rebuild - Design	123979	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
LAS 032-01 - Replace Pump & Motor	123981	2	Clean Energy and Emissions Reduction	Los Altos	
SLN STA 058 Wildfire New Generator	123982	4	Climate Adaptation and Readiness	Salinas Valley Region	Salinas
LAS 039-01 - Replace Pump & Motor	123984	2	Clean Energy and Emissions Reduction	Los Altos	
AV-LEO Sta 04 Tank-1 Aeration	123986	3	Water Quality and Compliance	LA County Region	Antelope Valley
LIV Turnout 5 RTU Install	123999	3	Service Quality, Reliability and Resiliency	Livermore	
MPS 106-B - Replace Pump & Motor	124001	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
LAS 033-A - Replace Pump & Motor	124003	2	Clean Energy and Emissions Reduction	Los Altos	
LAS 104-A - Replace Pump & Motor	124019	2	Clean Energy and Emissions Reduction	Los Altos	
SLN STA 205 Wildfire New Generator	124026	4	Climate Adaptation and Readiness	Salinas Valley Region	Salinas
LIV Turnout 6 RTU Install	124033	3	Service Quality, Reliability and Resiliency	Livermore	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
VIS 30 Install ATS	124047	3	Service Quality, Reliability and Resiliency	Visalia	
CH 027-01 Replace Pump & Motor	124055	2	Clean Energy and Emissions Reduction	North Valley Region	Chico
ELA Relocate Existing Control Valve	124056	3	Service Quality, Reliability and Resiliency	East Los Angeles	
CH 029-01 Replace Pump & Motor	124057	2	Clean Energy and Emissions Reduction	North Valley Region	Chico
DIX 04 CrVI Treatment	124058	3	Water Quality and Compliance	Dixon	
CH 081-C Replace Pump & Motor	124060	2	Clean Energy and Emissions Reduction	North Valley Region	Chico
CH 064-01 - Replace Pump & Motor	124061	2	Clean Energy and Emissions Reduction	North Valley Region	Chico
LIV 016-A Replace Pump & Motor	124072	2	Clean Energy and Emissions Reduction	Livermore	
LIV 023-G Replace Pump & Motor	124074	2	Clean Energy and Emissions Reduction	Livermore	
MPS 112-A Replace Pump & Motor	124075	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
LIV Crane Ridge 001 New Generator	124076	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 025-B - Replace Pump & Motor	124078	2	Clean Energy and Emissions Reduction	Livermore	
ELA Main Replcmnt Fwy Crossing-Dsgn	124079	3	Service Quality, Reliability and Resiliency	East Los Angeles	
MPS 114-B Replace Pump & Motor	124081	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
LIV 026-B - Replace Pump & Motor	124084	2	Clean Energy and Emissions Reduction	Livermore	
MPS 118-A Replace Pump & Motor	124085	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
LAS Grant Rd. Rezone	124086	3	Service Quality, Reliability and Resiliency	Los Altos	
MPS 120-B Replace Pump & Motor	124090	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
HR 005 Sta Rebuild - Design	124092	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
LAS STA 008 Wildfire New Generator	124093	4	Climate Adaptation and Readiness	Los Altos	
ELA 012-T2 Install Tank Mixer	124097	3	Water Quality and Compliance	East Los Angeles	
ELA 040-T1 Install Tank Mixer	124103	3	Water Quality and Compliance	East Los Angeles	
ELA 055-T1 Install Tank Mixer	124104	3	Water Quality and Compliance	East Los Angeles	
ELA 060-T1 Install Tank Mixer	124105	3	Water Quality and Compliance	East Los Angeles	
ELA - Land Purchase	124112	3	Service Quality, Reliability and Resiliency	East Los Angeles	
VIS 026-01 Replace Pump & Motor	124119	2	Clean Energy and Emissions Reduction	Visalia	
KC STA 14 Generator Installation	124120	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
VIS 042-01 Replace Pump & Motor	124124	2	Clean Energy and Emissions Reduction	Visalia	
LAS Wildfire Control Valves 2024	124140	4	Climate Adaptation and Readiness	Los Altos	
VIS 083-01 - Replace Pump & Motor	124143	2	Clean Energy and Emissions Reduction	Visalia	
VIS 300-01 - Replace Pump & Motor	124145	2	Clean Energy and Emissions Reduction	Visalia	
WLK Sta. 6 Tank Mixing	124150	3	Water Quality and Compliance	Westlake	
WLK Sta. 7 Tank Mixing	124151	3	Water Quality and Compliance	Westlake	
MPS 2023 Control Valve Overhaul	124170	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2024 Control Valve Overhaul	124171	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
PV 2023 Control Valve Overhaul	124177	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2024 Control Valve Overhaul	124181	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
ORO 011-A - Replace Pump & Motor	124182	2	Clean Energy and Emissions Reduction	North Valley Region	Oroville
WLK 2024 Control Valve Overhaul	124187	3	Service Quality, Reliability and Resiliency	Westlake	
STK 016 ATS Panel Installation	124188	3	Service Quality, Reliability and Resiliency	Stockton	
STK 018-01 - Replace Pump & Motor	124189	2	Clean Energy and Emissions Reduction	Stockton	
STK 60-01 - Replace Pump & Motor	124191	2	Clean Energy and Emissions Reduction	Stockton	
SSF 2023 Control Valve Overhaul	124194	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
STK STA 076 ATS Panel Installation	124196	3	Service Quality, Reliability and Resiliency	Stockton	
SSF 2024 Control Valve Overhaul	124199	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BG 2023 Control Valve Overhaul	124204	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2024 Control Valve Overhaul	124205	3	Service Quality, Reliability and Resiliency	Bear Gulch	
STK STA 21-01 Well Study	124206	3	Service Quality, Reliability and Resiliency	Stockton	
LAS Transm. Main Isolation Valves	124208	3	Service Quality, Reliability and Resiliency	Los Altos	
STK DIST OFC Genset Installation	124209	3	Service Quality, Reliability and Resiliency	Stockton	
CH 54 New Generator and ATS	124211	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
LAS 2023 Control Valve Overhaul	124217	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2024 Control Valve Overhaul	124218	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS STA 14 Wildfire New Pump & Main	124221	4	Climate Adaptation and Readiness	Los Altos	
CH 2024 Hydrants for City	124222	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
PV D-500 Main Replacement PDR	124230	3	Service Quality, Reliability and Resiliency	Palos Verdes Pipeline	
PV Sta 014 Rebuild - Design	124232	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV Sta 015 Rebuild Design	124233	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
CH GAC Changeouts 2023-Sta 21&46	124234	3	Water Quality and Compliance	North Valley Region	Chico
CH Routine GAC Changeouts 2024	124237	3	Water Quality and Compliance	North Valley Region	Chico
LAS New Well For Zone 375	124239	3	Service Quality, Reliability and Resiliency	Los Altos	
CH New gas monitors	124241	6	Safety and Security	North Valley Region	Chico
PV Sta 023 Rebuild Design	124243	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
MPS 123-T4 - Tank Retrofits	124248	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 027-T2 - Tank Retrofits	124249	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Antelope Valley WSFMP	124250	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
Chico WSFMP	124251	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
Dixon WSFMP	124253	3	Service Quality, Reliability and Resiliency	Dixon	
LAS Station 17 New Generator	124254	3	Service Quality, Reliability and Resiliency	Los Altos	
Dominguez WSFMP	124255	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
East Los Angeles WSFMP	124256	3	Service Quality, Reliability and Resiliency	East Los Angeles	
Hermosa Redondo WSFMP	124257	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
Kern River Valley WSFMP	124258	3	Service Quality, Reliability and Resiliency	Kern River Valley	
MRL 010-T2 - Seismic Retrofits	124259	3	Service Quality, Reliability and Resiliency	Marysville	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
Livermore WSFMP	124261	3	Service Quality, Reliability and Resiliency	Livermore	
BK 047-02 Well Liner Installation	124262	3	Service Quality, Reliability and Resiliency	Bakersfield	
Marysville WSFMP	124263	3	Service Quality, Reliability and Resiliency	Marysville	
Oroville WSFMP	124264	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
Palos Verdes WSFMP	124265	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
Redwood Valley WSFMP	124266	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
Stockton WSFMP	124267	3	Service Quality, Reliability and Resiliency	Stockton	
Visalia WSFMP	124268	3	Service Quality, Reliability and Resiliency	Visalia	
LAS Station 119 New Generator	124269	3	Service Quality, Reliability and Resiliency	Los Altos	
PV 2023 Control Valve Replacement	124274	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
LAS Sta 38 Wildfire New Main & PRV	124279	4	Climate Adaptation and Readiness	Los Altos	
BKD 2022 chemical pump replacements	124280	3	Water Quality and Compliance	Bakersfield	
PVD 2024 Control Valve Replacem.	124281	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
LAS 039-01: Well Renewal	124283	3	Service Quality, Reliability and Resiliency	Los Altos	
BK 2023 Chemical Pump Replace	124286	3	Water Quality and Compliance	Bakersfield	
LAS 104-02: Well Renewal	124288	3	Service Quality, Reliability and Resiliency	Los Altos	
BK 2024 chemical pump replace	124290	3	Water Quality and Compliance	Bakersfield	
BK 040-02 - Replace Pump & Motor	124291	2	Clean Energy and Emissions Reduction	Bakersfield	
LIV 020-01: Well Renewal	124293	3	Service Quality, Reliability and Resiliency	Livermore	
ORO 010-01 Well Renewal	124294	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
BK 134-01 - Replace Pump & Motor	124295	2	Clean Energy and Emissions Reduction	Bakersfield	
SEL 011-01 Well Renewal	124296	3	Service Quality, Reliability and Resiliency	Selma	
BK 042-02 - Replace Pump & Motor	124297	2	Clean Energy and Emissions Reduction	Bakersfield	
VIS 012-01 Well Renewal	124298	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 014-01 Well Renewal	124299	3	Service Quality, Reliability and Resiliency	Visalia	
WIL 007-01 Well Renewal	124300	3	Service Quality, Reliability and Resiliency	Willows	
Leona Valley Portable Generator	124301	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
BK 079-01 Well Renewal	124302	3	Service Quality, Reliability and Resiliency	Bakersfield	
MRL 009-01 Well Renewal	124304	3	Service Quality, Reliability and Resiliency	Marysville	
BK 042-02 Well Renewal	124306	3	Service Quality, Reliability and Resiliency	Bakersfield	
SSF 2023 Control Valve Replacement	124308	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
STK STA 71 Panel and Genset Install	124311	3	Service Quality, Reliability and Resiliency	Stockton	
SC Wildfire New Main 460 Zone	124313	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
LAS 27 New Generator	124314	3	Service Quality, Reliability and Resiliency	Los Altos	
BK Sta 96 Isolation Valve install	124325	3	Service Quality, Reliability and Resiliency	Bakersfield	
LAS Station 30 New Generator	124330	3	Service Quality, Reliability and Resiliency	Los Altos	
ARM 001 New Genset	124333	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LAS Land for New Well	124334	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS Station 31 New Generator	124336	3	Service Quality, Reliability and Resiliency	Los Altos	
HR 026 Sta Rebuild - Design	124339	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
LAS STA 42 Wildfire Bstr Pmps-Dsgn	124342	4	Climate Adaptation and Readiness	Los Altos	
Antelope Valley Reliability Study	124343	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
Chico Reliability Study	124344	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
Dixon Reliability Study	124345	3	Service Quality, Reliability and Resiliency	Dixon	
Dominguez Reliability Study	124346	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
East Los Angeles Reliability Study	124347	3	Service Quality, Reliability and Resiliency	East Los Angeles	
Hermosa Redondo Reliability Study	124348	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
Kern River Valley Reliability Study	124350	3	Service Quality, Reliability and Resiliency	Kern River Valley	
Livermore Reliability Study	124351	3	Service Quality, Reliability and Resiliency	Livermore	
Marysville Reliability Study	124352	3	Service Quality, Reliability and Resiliency	Marysville	
Oroville Reliability Study	124353	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
Palos Verdes Reliability Study	124354	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
Stockton Reliability Study	124356	3	Service Quality, Reliability and Resiliency	Stockton	
Westlake Reliability Study	124357	3	Service Quality, Reliability and Resiliency	Westlake	
BK 2022 GAC Media Replacement	124358	3	Water Quality and Compliance	Bakersfield	
SC Wildfire New Main 600 Zone	124360	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
BK 2023 GAC Media Replacement	124364	3	Water Quality and Compliance	Bakersfield	
BK 2024 GAC Media Replacement	124365	3	Water Quality and Compliance	Bakersfield	
SC Wildfire New Main 345 Zone	124372	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
VIS 2022 - GAC Media Replacement	124373	3	Water Quality and Compliance	Visalia	
VIS 2024 GAC Media Replacement	124378	3	Water Quality and Compliance	Visalia	
BG Wildfire New Main Tynan Way	124381	4	Climate Adaptation and Readiness	Bear Gulch	
MPS El Camino Real Main Connection	124383	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Willows Reliability Study	124390	3	Service Quality, Reliability and Resiliency	Willows	
SM Wildfire New Main 465 Zone	124396	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
BG Wildfire Pmp Sta Kngs Mt-Design	124399	4	Climate Adaptation and Readiness	Bear Gulch	
DOM 290 Asphalt Replacement	124408	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
SSF Wildfire New Main 555 Zone	124410	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
DOM 272 Asphalt Replacement	124415	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
SSF Wildfire New Main 390 Zone	124417	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
SSF New Main	124418	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SC-117 Sta Rebuild - Design	124424	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY Zone Interie at Polhemus Rd	124426	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS SM-17 Sta Rebuild - Design	124427	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
KRV Kernville 001 Repl AP6 Filters	124428	3	Water Quality and Compliance	Kern River Valley	
HR 027 Sta Rebuild - Design	124429	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
KRV 001 Replace AP4 Filters	124431	3	Water Quality and Compliance	Kern River Valley	
Arden 007 Partial Rebuild	124432	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KRV Arden 009 Sta Rebuild - Design	124433	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KRV Arden 012 Station Rebuild	124434	3	Service Quality, Reliability and Resiliency	Kern River Valley	
BG Land For New Booster Station	124437	3	Service Quality, Reliability and Resiliency	Bear Gulch	
LIV Pressure Vessels Ladder/Plat	124440	3	Service Quality, Reliability and Resiliency	Livermore	
SSF Wildfire 380 Zone SFPUC Conn.	124442	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
HR 029 Chemical Building	124449	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
SSF STA 1 Wildfire Booster Pump	124452	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
BAY Extend 345 Zone at Nevada Ave	124455	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Wildfire SC-121 Station Rebuild	124462	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
DOM WB 10 connection overhaul	124465	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
HR Via Colusa PBC	124478	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
ELA Sta. 12 Genset Replacement	124479	3	Service Quality, Reliability and Resiliency	East Los Angeles	
DOM WB 21 connection overhaul	124482	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
HR Sta 30 Manual Transfer Switch	124487	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
KC 2023 Hydrant Replacements	124498	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2024 Hydrant Replacements	124499	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
DOM WB 14 connection overhaul	124500	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM WB 35 connection overhaul	124501	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM WB 36 connection overhaul	124502	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM WB 39 connection overhaul	124503	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
KRV SM 005 Sta Rebuild - Design	124508	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KRV 005-T1 Tank Mixing	124509	3	Water Quality and Compliance	Kern River Valley	
Kernville 006-T1 Tank Mixing	124510	3	Water Quality and Compliance	Kern River Valley	
Bodfish 013 Vessel Replacement	124512	3	Water Quality and Compliance	Kern River Valley	
Bodfish 104 Vessel Replacement	124513	3	Water Quality and Compliance	Kern River Valley	
KRV Arden 001 Backwash Retrofit	124514	3	Water Quality and Compliance	Kern River Valley	
LUC 003-T1 - CP Upgrade	124546	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
LAS Sta. 31 Redwood Tank Replace	124598	3	Service Quality, Reliability and Resiliency	Los Altos	
WIL 002-T1 - Seismic/Geotech Study	124599	3	Service Quality, Reliability and Resiliency	Willows	
LAS Sta. 15 Redwood Tank Replace	124619	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS-115 Redwood Tank Replacement	124621	3	Service Quality, Reliability and Resiliency	Los Altos	
MPS 109-T2 - Tank Retrofits	124622	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 101-T1 - Tank Retrofits	124624	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
DIX 001-T1 - Seismic/Geotech Study	124632	3	Service Quality, Reliability and Resiliency	Dixon	
CSS Portable Booster Pumps	124633	3	Service Quality, Reliability and Resiliency	CSS	
MRL 010-T2 - Seismic/Geotech Study	124634	3	Service Quality, Reliability and Resiliency	Marysville	
VIS Elev Tanks Seismic/Geotech Stud	124636	3	Service Quality, Reliability and Resiliency	Visalia	
STK 082-T7 - Seismic/Geotech Study	124639	3	Service Quality, Reliability and Resiliency	Stockton	
MPS 032-T1 - Tank Retrofits	124688	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
VIS 201-PT1 - Pressure Vessel Rplcm	124689	3	Service Quality, Reliability and Resiliency	Visalia	
LIV 2022 Physical Security Upgrades	124690	6	Safety and Security	Livermore	
CSS LIMS Software Enhancements	124703	3	Water Quality and Compliance	CSS	
LIV 2023 Physical Security Upgrades	124725	6	Safety and Security	Livermore	
BK 045-T1 - Tank Roof Replacement	124729	3	Service Quality, Reliability and Resiliency	Bakersfield	
LAS Covington Ph2 New 16" Main	124735	3	Service Quality, Reliability and Resiliency	Los Altos	
VIS Property Purchase	124743	3	Service Quality, Reliability and Resiliency	Visalia	
BKD 147 Storage Tank Replacement	124745	3	Service Quality, Reliability and Resiliency	Bakersfield	
SSF-1 Treatment Plant Automation	124748	3	Water Quality and Compliance	Bay Area Region	Bayshore
STK STA 75 GAC Media Replacment	124751	3	Water Quality and Compliance	Stockton	
CSS Recycled Water Strategic Plan	124754	3	Service Quality, Reliability and Resiliency	CSS	
LIV 2024 Physical Security Upgrades	124768	6	Safety and Security	Livermore	
SLN 057-PT1 - Pressure Vessel Rplcm	124771	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 060-PT1 - Pressure Vessel Rplcm	124774	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 033-PT1 Pressure Vessel Rplcmnt	124775	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
HR 029 AMMONIA INJECTION	124776	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
PV Station 37 Mixing and Dosing	124813	3	Water Quality and Compliance	LA County Region	Palos Verdes
PV Station 49 Mixing and Dosing T-2	124814	3	Water Quality and Compliance	LA County Region	Palos Verdes
CSS ADDITIONAL EV CHARGERS	124817	2	Clean Energy and Emissions Reduction	CSS	
BK 2023 NEWTP Filter Modules	124819	3	Water Quality and Compliance	Bakersfield	
BK 2024 NEWTP Filter Modules	124820	3	Water Quality and Compliance	Bakersfield	
BK NEWTP Traveling Screen Rebuild	124822	3	Water Quality and Compliance	Bakersfield	
BK NWWTP Traveling Screen Rebuild	124823	3	Water Quality and Compliance	Bakersfield	
BK NEWTP CIP Neutralization Tank	124824	3	Water Quality and Compliance	Bakersfield	
BK NWWTP Algal Toxin Study	124826	3	Water Quality and Compliance	Bakersfield	
BK NEWTP Algal Toxin Study	124828	3	Water Quality and Compliance	Bakersfield	
DOM Sta 203 Tank Mixing & Dosing	124830	3	Water Quality and Compliance	South Bay Region	Dominguez
HR 005 Tank Mix & Boost	124843	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
HR Sta 026 Tank Mix & Boost	124844	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
CSS Energy Efficiency - HVAC	124853	2	Clean Energy and Emissions Reduction	CSS	
CSS Access Control System	124857	6	Safety and Security	CSS	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
RDV-COS PALL unit expansion	124862	3	Water Quality and Compliance	Bay Area Region	RDV Coast Springs
LIV 028-A Replace Pump & Motor	124885	2	Clean Energy and Emissions Reduction	Livermore	
LIV 028-B Replace Pump & Motor	124887	2	Clean Energy and Emissions Reduction	Livermore	
LIV Portable Booster Pump	124888	2	Clean Energy and Emissions Reduction	CSS	
STK Sta 85 Treatment Design	124896	3	Water Quality and Compliance	Stockton	
PV 27in Pipe CP System Upgrade	124904	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
CSS-WATER QUALITY SATELLITE LAB	124910	3	Water Quality and Compliance	CSS	
AV 2022 Analyzer Replacements	124925	3	Water Quality and Compliance	LA County Region	Antelope Valley
SC and SM Nitrification Evaluation	124949	3	Water Quality and Compliance	Bay Area Region	Bayshore
HR 023 Tank Mixing & Boosting	124960	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
MPS-027 T1,T2,T3 Nitrification Cont	124965	3	Water Quality and Compliance	Bay Area Region	Bayshore
MPS-029 T1 Nitrification Control	124970	3	Water Quality and Compliance	Bay Area Region	Bayshore
BG 2024 Analyzers Replacement	124975	3	Water Quality and Compliance	Bear Gulch	
CSS Energy Management System	124978	2	Clean Energy and Emissions Reduction	CSS	
BK 2022 Analyzer Replacements	124979	3	Water Quality and Compliance	Bakersfield	
BK 2023 Analyzers Replacement	124983	3	Water Quality and Compliance	Bakersfield	
BK 2024 Analyzers Replacement	124986	3	Water Quality and Compliance	Bakersfield	
SC 106 Nitrification Control	124989	3	Water Quality and Compliance	Bay Area Region	Bayshore
SC 123 Nitrification Control	124991	3	Water Quality and Compliance	Bay Area Region	Bayshore
CH 2023 Analyzers Replacement	124992	3	Water Quality and Compliance	North Valley Region	Chico
SSF-14 Res 11 Nitrification Control	124993	3	Water Quality and Compliance	Bay Area Region	Bayshore
CH 2024 Analyzers Replacement	124997	3	Water Quality and Compliance	North Valley Region	Chico
LAS Sta. 30 Redwood Tank Replace	125008	3	Service Quality, Reliability and Resiliency	Los Altos	
LIV 2022 SB1398 Service Replacement	125014	3	Water Quality and Compliance	Livermore	
LIV 2023 SB1398 Service Replacement	125015	3	Water Quality and Compliance	Livermore	
MRL 2023 SB1398 Service Replacement	125018	3	Water Quality and Compliance	Marysville	
STK 2022 SB1398 Service Replacement	125020	3	Water Quality and Compliance	Stockton	
STK 2023 SB1398 Service Replacement	125022	3	Water Quality and Compliance	Stockton	
BAY SM STA 028 Wildfire Generator	125025	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
DOM 2022 Analyzer Replacement	125026	3	Water Quality and Compliance	South Bay Region	Dominguez
DOM 2023 Analyzer Replacement	125028	3	Water Quality and Compliance	South Bay Region	Dominguez
DOM 2024 Analyzer Replacement	125033	3	Water Quality and Compliance	South Bay Region	Dominguez
ELA 2022 Analyzer Replacement	125035	3	Water Quality and Compliance	East Los Angeles	
ELA 2023 Analyzer Replacements	125038	3	Water Quality and Compliance	East Los Angeles	
LEO 0004-T1: Tank Mixer	125040	3	Water Quality and Compliance	LA County Region	Antelope Valley
ELA 2024 Analyzer Replacements	125042	3	Water Quality and Compliance	East Los Angeles	
LAN 001: New Production Meter	125047	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
KRV 2022 Analyzer Replacements	125048	3	Water Quality and Compliance	Kern River Valley	
LAS 28 Tank Mixing and Dosing	125051	3	Water Quality and Compliance	Los Altos	
SLN Wharfhead Replacements	125052	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
KRV 2023 Analyzer Replacements	125056	3	Water Quality and Compliance	Kern River Valley	
KRV 2024 Analyzer Replacements	125058	3	Water Quality and Compliance	Kern River Valley	
SLN 155 Zone: New Well - Design	125060	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 045 Wildfire Station Upgrade	125061	4	Climate Adaptation and Readiness	Salinas Valley Region	Salinas
LIV 14 Analyzer Replacment	125077	3	Water Quality and Compliance	Livermore	
LIV 2023 Analyzer Replacements	125080	3	Water Quality and Compliance	Livermore	
MRL 2022 Analyzer Replacements	125081	3	Water Quality and Compliance	Marysville	
ORO 2024 Analyzer Replacement	125082	3	Water Quality and Compliance	North Valley Region	Oroville
RDV-LUC 2022 Analyzer Replacements	125086	3	Water Quality and Compliance	Bay Area Region	RDV Lucerne
RDV-LUC 2023 Analyzer Replacements	125090	3	Water Quality and Compliance	Bay Area Region	RDV Lucerne
RDV-LUC 2024 Analyzer Replacements	125093	3	Water Quality and Compliance	Bay Area Region	RDV Lucerne
LAS Sta. 111 Tank Mixing and Dosing	125094	3	Water Quality and Compliance	Los Altos	
STK 2022 Analyzer Replacement	125106	3	Water Quality and Compliance	Stockton	
STK 2023 Analyzer Replacement	125107	3	Water Quality and Compliance	Stockton	
STK 2024 Analyzer Replacement	125108	3	Water Quality and Compliance	Stockton	
WIL 2022 Analyzer Replacement	125110	3	Water Quality and Compliance	Willows	
LAS Sta. 42 Tank Mixing and Dosing	125120	3	Water Quality and Compliance	Los Altos	
LIV 13-E Replace Pump & Motor	125124	2	Clean Energy and Emissions Reduction	Livermore	
LIV 19-01 Replace Pump & Motor	125126	2	Clean Energy and Emissions Reduction	Livermore	
LAS Sta. 41 Tank Mixing and Dosing	125128	3	Water Quality and Compliance	Los Altos	
BG 2022 Sample Sites	125130	3	Water Quality and Compliance	Bear Gulch	
BG 2023 Sample Sites	125132	3	Water Quality and Compliance	Bear Gulch	
LAS 2023 Sample Sites	125134	3	Water Quality and Compliance	Los Altos	
LIV 2022 Sample Site	125141	3	Water Quality and Compliance	Livermore	
SSF 2022 Sample Sites	125152	3	Water Quality and Compliance	Bay Area Region	Bayshore
SSF 2023 Sample Sites	125153	3	Water Quality and Compliance	Bay Area Region	Bayshore
HR 2022 Sample Site	125155	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
SLN- SLNH 2022 Sample Site	125173	3	Water Quality and Compliance	Salinas Valley Region	Salinas
KRV-SOLA 2022 Sample Sites	125176	3	Water Quality and Compliance	Kern River Valley	
KRV-LBOD 2022 Sample Sites	125177	3	Water Quality and Compliance	Kern River Valley	
LAS 32, 1, 121 Well Chloramination	125187	3	Water Quality and Compliance	Los Altos	
BAY-SC 2022 Sample Site	125189	3	Water Quality and Compliance	Bay Area Region	Bayshore
BAY-SM 2022 Sample Site	125190	3	Water Quality and Compliance	Bay Area Region	Bayshore
HR 28: Building Rebuild - Design	125246	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
HR 008: Roof Replacement	125247	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
BK 49-03 GAC Treatment	125251	3	Water Quality and Compliance	Bakersfield	
HR 023-T2 Tank Retrofits	125257	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
KC 2024 Replace Mainline Valves	125261	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2023 Valve Casings/Covers	125263	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2024 Valve casings/covers	125264	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
VIS Chemical Shelter Replacement	125328	3	Service Quality, Reliability and Resiliency	Visalia	
BG 2022 Physical Security Upgrades	125414	6	Safety and Security	Bear Gulch	
BG 2023 Physical Security Upgrades	125415	6	Safety and Security	Bear Gulch	
BK 2022 Physical Security Upgrades	125421	6	Safety and Security	Bakersfield	
BK 2023 Physical Security Upgrades	125422	6	Safety and Security	Bakersfield	
BK 2024 Physical Security Upgrades	125423	6	Safety and Security	Bakersfield	
CH 2022 Physical Security Upgrades	125424	6	Safety and Security	North Valley Region	Chico
CH 2023 Physical Security Upgrades	125425	6	Safety and Security	North Valley Region	Chico
CH 2024 Physical Security Upgrades	125426	6	Safety and Security	North Valley Region	Chico
CH-HC 2024 Analyzer Replacement	125431	3	Water Quality and Compliance	North Valley Region	Chico
RDV-HWK 2023 Analyzer Replacement	125434	3	Water Quality and Compliance	Bay Area Region	RDV Unified
DIX 2022 Physical Security Upgrades	125436	6	Safety and Security	Dixon	
DIX 2023 Physical Security Upgrades	125439	6	Safety and Security	Dixon	
DOM 2022 Physical Security Upgrades	125440	6	Safety and Security	South Bay Region	Dominguez
DOM 2023 Physical Security Upgrades	125441	6	Safety and Security	South Bay Region	Dominguez
DOM 2024 Physical Security Upgrades	125444	6	Safety and Security	South Bay Region	Dominguez
ELA 2023 Physical Security Upgrades	125446	6	Safety and Security	East Los Angeles	
ELA 2024 Physical Security Upgrades	125448	6	Safety and Security	East Los Angeles	
HR 2022 Physical Security Upgrades	125451	6	Safety and Security	South Bay Region	Hermosa Redondo
HR 2023 Physical Security Upgrades	125453	6	Safety and Security	South Bay Region	Hermosa Redondo
HR 2024 Physical Security Upgrades	125458	6	Safety and Security	South Bay Region	Hermosa Redondo
KC 2023 Physical Security Upgrades	125462	6	Safety and Security	Salinas Valley Region	King City
KC 2024 Physical Security Upgrades	125463	6	Safety and Security	Salinas Valley Region	King City
LAS 2022 Physical Security Upgrades	125465	6	Safety and Security	Los Altos	
LAS 2023 Physical Security Upgrades	125466	6	Safety and Security	Los Altos	
SLN 2022 Toro Hydrant Repacement	125472	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
MRL 2023 Physical Security Upgrades	125473	6	Safety and Security	Marysville	
MRL 2024 Physical Security Upgrades	125474	6	Safety and Security	Marysville	
ORO 2022 Physical Security Upgrades	125477	6	Safety and Security	North Valley Region	Oroville
WLK 2022 Physical Security Upgrades	125478	6	Safety and Security	Westlake	
WLK 2023 Physical Security Upgrades	125479	6	Safety and Security	Westlake	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
WLK 2024 Physical Security Upgrades	125480	6	Safety and Security	Westlake	
PV 2022 Physical Security Upgrades	125481	6	Safety and Security	LA County Region	Palos Verdes
PV 2023 Physical Security Upgrades	125482	6	Safety and Security	LA County Region	Palos Verdes
PV 2024 Physical Security Upgrades	125483	6	Safety and Security	LA County Region	Palos Verdes
SEL 2022 Physical Security Upgrades	125485	6	Safety and Security	Selma	
SEL 2024 Physical Security Upgrades	125486	6	Safety and Security	Selma	
SLN 2023 Toro Hydrant Replacement	125489	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2022 Physical Security Upgrades	125491	6	Safety and Security	Salinas Valley Region	Salinas
SLN 2023 Physical Security Upgrades	125493	6	Safety and Security	Salinas Valley Region	Salinas
SLN 2024 Physical Security Upgrades	125494	6	Safety and Security	Salinas Valley Region	Salinas
STK 2022 Physical Security Upgrades	125495	6	Safety and Security	Stockton	
STK 2023 Physical Security Upgrades	125496	6	Safety and Security	Stockton	
STK 2024 Physical Security Upgrades	125497	6	Safety and Security	Stockton	
VIS 2022 Physical Security Upgrades	125499	6	Safety and Security	Visalia	
VIS 2023 Physical Security Upgrades	125500	6	Safety and Security	Visalia	
VIS 2024 Physical Security Upgrades	125501	6	Safety and Security	Visalia	
WIL Physical Security Upgrades	125502	6	Safety and Security	Willows	
AV 2022 Physical Security Upgrades	125503	6	Safety and Security	LA County Region	Antelope Valley
AV 2023 Physical Security Upgrades	125504	6	Safety and Security	LA County Region	Antelope Valley
AV 2024 Physical Security Upgrades	125505	6	Safety and Security	LA County Region	Antelope Valley
KRV 2023 Physical Security Upgrades	125507	6	Safety and Security	Kern River Valley	
KRV 2024 Physical Security Upgrades	125508	6	Safety and Security	Kern River Valley	
MPS 2022 Physical Security Upgrades	125510	6	Safety and Security	Bay Area Region	Bayshore
SSF 2022 Physical Security Upgrades	125511	6	Safety and Security	Bay Area Region	Bayshore
SSF 2023 Physical Security Upgrades	125512	6	Safety and Security	Bay Area Region	Bayshore
SSF 2024 Physical Security Upgrades	125513	6	Safety and Security	Bay Area Region	Bayshore
ARM 2022 Physical Security Upgrades	125515	6	Safety and Security	Bay Area Region	RDV Unified
COS 2022 Physical Security Upgrades	125517	6	Safety and Security	Bay Area Region	RDV Coast Springs
HKN 2022 Physical Security Upgrades	125520	6	Safety and Security	Bay Area Region	RDV Unified
ARM 2024 Physical Security Upgrades	125523	6	Safety and Security	Bay Area Region	RDV Unified
COS 2024 Physical Security Upgrades	125524	6	Safety and Security	Bay Area Region	RDV Coast Springs
MPS 2022 SB1398 Service Replacement	125531	3	Water Quality and Compliance	Bay Area Region	Bayshore
SSF 2023 SB1398 Service Replacement	125533	3	Water Quality and Compliance	Bay Area Region	Bayshore
MPS 2024 SB1398 Service Replacement	125535	3	Water Quality and Compliance	Bay Area Region	Bayshore
RD Refurbish/Replace Clarifier	125543	3	Water Quality and Compliance	Rancho Dominguez	
AV-LAN 001 Generator Replacement	125547	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
BG Wildfire - New Main Morrow Vista	125628	4	Climate Adaptation and Readiness	Bear Gulch	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LAS STA 008 New Mainline to Mora	125629	3	Service Quality, Reliability and Resiliency	Los Altos	
LIV New Main Livermore & Concannon	125632	3	Service Quality, Reliability and Resiliency	Livermore	
LAS Marion Way New Mainline	125633	3	Service Quality, Reliability and Resiliency	Los Altos	
PV Wildfire Zone C-635 New Main We	125640	4	Climate Adaptation and Readiness	LA County Region	Palos Verdes
PV Wildfire Zone F-1325 New Main	125641	4	Climate Adaptation and Readiness	LA County Region	Palos Verdes
PV Wildfire Zone B-280 New Main	125642	4	Climate Adaptation and Readiness	LA County Region	Palos Verdes
PV Wildfire Zone H-1300 NewMain-PRV	125644	4	Climate Adaptation and Readiness	LA County Region	Palos Verdes
BAY SC-116 Rebuild	125645	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
RDV LUC 001 Pier Safety Upgrades	125647	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
SLN 2024 Toro Park hydrant replace	125664	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
DOM Sta 300 Treatment Plant	125762	3	Water Quality and Compliance	South Bay Region	Dominguez
Land Purchase for Recycled Water St	125813	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BG STA 46 Wildfire Generator	126005	4	Climate Adaptation and Readiness	Bear Gulch	
ISDC 11B	126030	3	Service Quality, Reliability and Resiliency	Travis	
ISDC 11C broken valve replacement	126031	3	Service Quality, Reliability and Resiliency	Travis	
TAB 1525 (T2) - Tank Retrofits	126039	3	Service Quality, Reliability and Resiliency	Travis	
TAB Tanks-Remove Ext Ladder Cage	126041	3	Service Quality, Reliability and Resiliency	Travis	
Sharkfin Recharge Facilities	126078	3	Service Quality, Reliability and Resiliency	Visalia	
TAB Backflow Device Replacement	126086	3	Water Quality and Compliance	Travis	
TAB Backflow Device Replacement	126088	3	Water Quality and Compliance	Travis	
TAB 2022 Hydrant Replacement	126120	3	Service Quality, Reliability and Resiliency	Travis	
BK 047-02 Pump Replacement	126268	2	Clean Energy and Emissions Reduction	Bakersfield	
2023 BK 49 Carbon Change Outs	126467	3	Water Quality and Compliance	Bakersfield	
2024 BK Carbon Change Outs	126470	3	Water Quality and Compliance	Bakersfield	
2023 ORO 10 Carbon Change Outs	126474	3	Water Quality and Compliance	North Valley Region	Oroville
2024 ORO 10 Carbon Change Outs	126476	3	Water Quality and Compliance	North Valley Region	Oroville
2022 ELA 62 Carbon Change Outs	126480	3	Water Quality and Compliance	East Los Angeles	
2023 ELA 62 Carbon Change Outs	126481	3	Water Quality and Compliance	East Los Angeles	
2024 ELA 62 Carbon Change Outs	126482	3	Water Quality and Compliance	East Los Angeles	
2022 ELA 63 Carbon Change Outs	126483	3	Water Quality and Compliance	East Los Angeles	
2023 ELA 63 Carbon Change Outs	126484	3	Water Quality and Compliance	East Los Angeles	
2024 ELA 63 Carbon Change Outs	126485	3	Water Quality and Compliance	East Los Angeles	
2024 VIS 38 Carbon Change Outs	126487	3	Water Quality and Compliance	Visalia	
2023 VIS 77 Carbon Change Outs	126492	3	Water Quality and Compliance	Visalia	
2024 VIS 77 Carbon Change Outs	126493	3	Water Quality and Compliance	Visalia	
2023 MRL 15 Carbon Change Outs	126495	3	Water Quality and Compliance	Marysville	
2024 MRL 15 Carbon Change Outs	126496	3	Water Quality and Compliance	Marysville	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
BG Palo Alto Interconnect	126621	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BK 220-01: Pump & Motor Replacement	126877	2	Clean Energy and Emissions Reduction	Bakersfield	
PV Golf Club Recycled Water Line	127148	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
Rpl main canal @ shafter Rd	127761	3	Service Quality, Reliability and Resiliency	Bakersfield	
SEL 12 - Property Purchase	128063	3	Service Quality, Reliability and Resiliency	Selma	
HR-22-01 Media Vessel Repairs 2022	128198	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
ELA 62 Carbon Changeout	128461	3	Water Quality and Compliance	East Los Angeles	
ELA 62-01 Carbon Changeout	128996	3	Water Quality and Compliance	East Los Angeles	
Notre Dame & El Camino, SC	129409	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
Lot (land) for Ag industrail	129416	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
BG 40-A Pump Replacement	129532	2	Clean Energy and Emissions Reduction	Bear Gulch	
BG STA 47 Wildfire Generator	130460	4	Climate Adaptation and Readiness	Bear Gulch	
SSF 008-T1 Roof Replacement	130599	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
inst 8"pvc @ Richardson X Grant	130954	3	Service Quality, Reliability and Resiliency	Los Altos	
BK PFAS Preliminary Desgin	131316	3	Water Quality and Compliance	Bakersfield	
CH PFAS Preliminary Design	131319	3	Water Quality and Compliance	North Valley Region	Chico
SLN 77 Booster Station Construction	131372	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
Skylonda Integration - CWS 1810 Zon	131885	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Skylonda Integration - CWS 1930 Zon	131889	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG Replace Skyline PRV/Vaults	131966	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2025 Control Valve Overhauls	131977	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2026 Control Valve Overhauls	131984	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2027 Control Valve Overhauls	131985	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BAY 2025 ACV Replacements	131986	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2026 ACV Replacements	131987	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2027 ACV Replacements	131988	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2025 Control Valve Overhauls	131991	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2026 Control Valve Overhauls	131992	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2027 Control Valve Overhauls	131993	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2025 Control Valve Overhauls	131994	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2026 Control Valve Overhauls	131995	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2027 Control Valve Overhauls	131996	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BK 2025 ACV Replacements	131997	3	Service Quality, Reliability and Resiliency	Bakersfield	
LAS 2025 Control Valve Overhauls	131998	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2027 Control Valve Overhauls	132000	3	Service Quality, Reliability and Resiliency	Los Altos	
SLN 2025 Control Valve Overhauls	132007	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2026 Control Valve Overhauls	132008	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
SLN 2027 Control Valve Overhauls	132010	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
2026 KC - 1 CV Replacement2026 KC -	132011	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
PV 049-T2 Roof Replacement	132022	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
WLK 2026 Control Valve Overhauls	132023	3	Service Quality, Reliability and Resiliency	Westlake	
BK 2026 ACV Replacements	132025	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2026 Control Valve Overhauls	132026	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2027 ACV Replacements	132027	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2027 Control Valve Overhauls	132028	3	Service Quality, Reliability and Resiliency	Bakersfield	
PV 2025 ACV Replacements	132031	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2026 ACV Replacements	132032	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2027 ACV Replacements	132033	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
STK 2026 ACV Replacement	132038	3	Service Quality, Reliability and Resiliency	Stockton	
RDV 2026 ACV Replacement	132042	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
PV 2025 Control Valve Overhauls	132045	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2026 Control Valve Overhauls	132046	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2027 Control Valve Overhauls	132047	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
MRL 2026 ACV Replacement	132051	3	Service Quality, Reliability and Resiliency	Marysville	
ORO 2025 ACV Replacements	132054	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2027 ACV Replacements	132055	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
HR 2025 ACV Replacement	132057	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2025 Control Valve Overhauls	132058	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2026 ACV Replacements	132059	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2026 Control Valve Overhauls	132060	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2027 Control Valve Overhaul	132061	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
CH 2025 ACV Replacement	132067	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2025 Control Valve Overhauls	132068	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2026 ACV Replacement	132069	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2026 Control valve Overhauls	132070	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2027 ACV Replacement	132072	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2027 Control Valve Overhauls	132073	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
ELA 2025 ACV Replacement	132078	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2025 Control Valve Overhauls	132079	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2026 ACV Replacement	132080	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2026 Control Valve Overhauls	132081	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2027 ACV Replacement	132082	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2027 Control Valve Overhauls	132083	3	Service Quality, Reliability and Resiliency	East Los Angeles	
KRV 2025 Control Valve Overhauls	132091	3	Service Quality, Reliability and Resiliency	Kern River Valley	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
KRV 2026 Control Valve Overhauls	132093	3	Service Quality, Reliability and Resiliency	Kern River Valley	
SSF 002-C Pump Replacement	132105	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
SSF 005-A Pump Replacement	132106	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
SM 006-D Pump Replacement	132108	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
MPS 012-E Pump Replacement	132111	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
MPS 114-B Pump Replacement	132112	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
SSF 101-A Pump Replacement	132115	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
SC 118-A Pump Replacement	132116	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
MPS-120-B Pump Replacement	132117	2	Clean Energy and Emissions Reduction	Bay Area Region	Bayshore
BK 073-E Pump Replacement	132132	2	Clean Energy and Emissions Reduction	Bakersfield	
CH-65-1 Pump Replacement	132135	2	Clean Energy and Emissions Reduction	North Valley Region	Chico
DIX 010-A Pump Replacement	132136	2	Clean Energy and Emissions Reduction	Dixon	
DIX 010-B Pump Replacement	132137	2	Clean Energy and Emissions Reduction	Dixon	
DOM-277-01 Pump Replacement	132139	2	Clean Energy and Emissions Reduction	South Bay Region	Dominguez
DOM-277-A Pump Replacement	132140	2	Clean Energy and Emissions Reduction	South Bay Region	Dominguez
ELA 2025 Chemical Pump Replacement	132141	3	Water Quality and Compliance	East Los Angeles	
ELA-10-03 Pump Replacement	132142	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA 12-C Pump Replacement	132143	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA 2025 Chemical Pump Replacement	132144	3	Water Quality and Compliance	East Los Angeles	
ELA 023-B Booster Replacement	132145	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA 030-C Pump Replacement	132147	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA 032-C Booster Replacement	132148	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA 040-A Pump Replacement	132149	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA 055-A Pump Replacement	132151	2	Clean Energy and Emissions Reduction	East Los Angeles	
ELA-59-A Pump Replacement	132152	2	Clean Energy and Emissions Reduction	East Los Angeles	
KC 010-A Pump Replacement	132155	2	Clean Energy and Emissions Reduction	Salinas Valley Region	King City
KC 013-01 Pump Replacement	132156	2	Clean Energy and Emissions Reduction	Salinas Valley Region	King City
KC 015-A Pump Replacement	132157	2	Clean Energy and Emissions Reduction	Salinas Valley Region	King City
KRV ONYX-1-1 Pump Replacement	132158	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV ONYX-2-1 Pump Replacement	132159	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV SMTN-2-15 Pump Replacement	132160	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV ONYX-3-A Pump Replacement	132161	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV MSHA-6-B Pump Replacement	132167	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV SMTN-15-A Pump Replacement	132171	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV SMTN-15-B Pump Replacement	132172	2	Clean Energy and Emissions Reduction	Kern River Valley	
KRV UBOD-104-2 Pump Replacement	132173	2	Clean Energy and Emissions Reduction	Kern River Valley	
LAS-7-E Pump Replacement	132213	2	Clean Energy and Emissions Reduction	Los Altos	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LAS-27-1 Pump Replacement	132214	2	Clean Energy and Emissions Reduction	Los Altos	
LAS-33-B Pump Replacement	132215	2	Clean Energy and Emissions Reduction	Los Altos	
LAS-34-B Pump Replacement	132216	2	Clean Energy and Emissions Reduction	Los Altos	
LAS-113-B Pump Replacement	132218	2	Clean Energy and Emissions Reduction	Los Altos	
LAS-119-D Pump Replacement	132219	2	Clean Energy and Emissions Reduction	Los Altos	
LAS-121-2 Pump Replacement	132221	2	Clean Energy and Emissions Reduction	Los Altos	
LAS-123-1 Pump Replacement	132222	2	Clean Energy and Emissions Reduction	Los Altos	
LIV 015-1 Replace Well Pump	132223	2	Clean Energy and Emissions Reduction	Livermore	
LIV-019-1 Well Pump Replacement	132224	2	Clean Energy and Emissions Reduction	Livermore	
LIV 020-1 Replace Well Pump	132225	2	Clean Energy and Emissions Reduction	Livermore	
LIV 025-B Pump Replacement	132226	2	Clean Energy and Emissions Reduction	Livermore	
LIV-29-A Pump Replacement	132227	2	Clean Energy and Emissions Reduction	Livermore	
LIV-29-B Pump Replacement	132228	2	Clean Energy and Emissions Reduction	Livermore	
LIV-32-A Pump Replacement	132230	2	Clean Energy and Emissions Reduction	Livermore	
LIV-32-B Pump Replacement	132231	2	Clean Energy and Emissions Reduction	Livermore	
LIV 032-C Pump Replacement	132232	2	Clean Energy and Emissions Reduction	Livermore	
LIV-034 Pump Replacements (B,C,D)	132233	2	Clean Energy and Emissions Reduction	Livermore	
LIV-034-A VFD Replacement	132234	2	Clean Energy and Emissions Reduction	Livermore	
MRL-15-1 Pump Replacement	132235	2	Clean Energy and Emissions Reduction	Marysville	
ORO 015-E Pump Replacement	132236	2	Clean Energy and Emissions Reduction	North Valley Region	Oroville
SLN 021-01 Pump Replacement	132238	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-27-1 Pump Replacement	132239	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-32-1 Pump Replacement	132240	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-57-A Pump Replacement	132241	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-58-B Pump Replacement	132242	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-67-1 Pump Replacement	132243	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-71-1 Pump Replacement	132244	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-73-A Pump Replacement	132245	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-73-B Pump Replacement	132246	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-73-E Pump Replacement	132247	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
SLN-304-A Pump Replacement	132248	2	Clean Energy and Emissions Reduction	Salinas Valley Region	Salinas
STK-59-1 Pump Replacement	132249	2	Clean Energy and Emissions Reduction	Stockton	
STK-60-1 Pump Replacement	132250	2	Clean Energy and Emissions Reduction	Stockton	
VIS-15-1 Pump Replacement	132251	2	Clean Energy and Emissions Reduction	Visalia	
VIS 023-1 Pump Replacement	132252	2	Clean Energy and Emissions Reduction	Visalia	
VIS-32-1 Pump Replacement	132253	2	Clean Energy and Emissions Reduction	Visalia	
VIS-57-2 Pump Replacement	132254	2	Clean Energy and Emissions Reduction	Visalia	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
VIS 201-1 Pump Replacement	132255	2	Clean Energy and Emissions Reduction	Visalia	
WIL-4-1 Pump Replacement	132256	2	Clean Energy and Emissions Reduction	Willows	
BK-125-01 Well Renewal	132272	3	Service Quality, Reliability and Resiliency	Bakersfield	
LAS-027-01 Well Renewal	132277	3	Service Quality, Reliability and Resiliency	Los Altos	
LIV-009-01 Well Renewal	132278	3	Service Quality, Reliability and Resiliency	Livermore	
LIV-014-01 Well Renewal	132279	3	Service Quality, Reliability and Resiliency	Livermore	
STK-060-01 Well Renewal	132281	3	Service Quality, Reliability and Resiliency	Stockton	
VIS 045-01 Well Renewal	132282	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 046-01 Well Renewal	132283	3	Service Quality, Reliability and Resiliency	Visalia	
2026 KRV - ACV Replacements	132296	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KRV 2025 Control Valve Overhauls	132298	3	Service Quality, Reliability and Resiliency	Kern River Valley	
BG 2025 Physical Security Upgrades	132447	6	Safety and Security	Bear Gulch	
LIV 2025 Physical Security Upgrades	132455	6	Safety and Security	Livermore	
BK 2026 - Genset Replacements	132561	3	Service Quality, Reliability and Resiliency	Bakersfield	
CH 2026 - Genset Replacement	132564	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
DOM 2026 - Genset Replacement	132565	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
SLN 2026 - Genset Replacement	132573	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
WLK 2026 - Genset Replacement	132574	3	Service Quality, Reliability and Resiliency	Westlake	
Small portable generators	132585	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
HR 2025 Sample Stations	132596	3	Water Quality and Compliance	South Bay Region	Hermosa Redondo
KC 2025 Sample Stations	132599	3	Water Quality and Compliance	Salinas Valley Region	King City
KC 2026 Sample Stations	132601	3	Water Quality and Compliance	Salinas Valley Region	King City
LIV 2025 Sample Stations	132609	3	Water Quality and Compliance	Livermore	
LIV 2026 Sample Station	132610	3	Water Quality and Compliance	Livermore	
LIV 2027 Sample Stations	132611	3	Water Quality and Compliance	Livermore	
PV 2025 Sample Stations	132612	3	Water Quality and Compliance	LA County Region	Palos Verdes
SLN 2025 Sample Stations	132615	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 2026 Sample Stations	132616	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 2027 Sample Stations	132617	3	Water Quality and Compliance	Salinas Valley Region	Salinas
BK 176 Pressure Tank Replacement	132660	3	Service Quality, Reliability and Resiliency	Bakersfield	
SLN 061 Pressure Vessel Replacement	132661	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
VIS 052-PT1 - Pressure Vessel Rehab	132662	3	Service Quality, Reliability and Resiliency	Visalia	
BK 2025 Carbon Changeouts	132663	3	Water Quality and Compliance	Bakersfield	
BK 2026 Carbon Changeouts	132664	3	Water Quality and Compliance	Bakersfield	
BK 2027 Carbon Changeouts	132665	3	Water Quality and Compliance	Bakersfield	
CH 2025 Carbon Changeouts	132669	3	Water Quality and Compliance	North Valley Region	Chico
CH 2026 Carbon Changeouts	132670	3	Water Quality and Compliance	North Valley Region	Chico

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
CH 2027 Carbon Changeouts	132671	3	Water Quality and Compliance	North Valley Region	Chico
VIS 2025 Carbon Changeouts	132675	3	Water Quality and Compliance	Visalia	
VIS 2026 Carbon Changeouts	132676	3	Water Quality and Compliance	Visalia	
VIS 2027 Carbon Changeouts	132677	3	Water Quality and Compliance	Visalia	
RDV 2025 Carbon Changeout	132678	3	Water Quality and Compliance	Bay Area Region	RDV
RDV 2027 Carbon Changeouts	132679	3	Water Quality and Compliance	Bay Area Region	RDV
ORO-010 Carbon Changeout	132683	3	Water Quality and Compliance	North Valley Region	Oroville
ORO-010 Carbon Changeout	132684	3	Water Quality and Compliance	North Valley Region	Oroville
MRL 010 Carbon Changeout	132685	3	Water Quality and Compliance	Marysville	
MRL 015 Carbon Changeout	132686	3	Water Quality and Compliance	Marysville	
MRL 015 Carbon Changeout	132687	3	Water Quality and Compliance	Marysville	
MRL 015 Carbon Changeout	132688	3	Water Quality and Compliance	Marysville	
BK 219 GAC Vessel Replacement	132697	3	Water Quality and Compliance	Bakersfield	
KRV-LBOD 013 Vessel Replacement	132698	3	Water Quality and Compliance	Kern River Valley	
KRV-KERV 001 Carbon Changeout	132699	3	Water Quality and Compliance	Kern River Valley	
LIV-010 Carbon Changeout	132700	3	Water Quality and Compliance	Livermore	
LIV-014 Carbon Changeout	132701	3	Water Quality and Compliance	Livermore	
BG 2026 Physical Security Upgrades	132707	6	Safety and Security	Bear Gulch	
WIL 004 Station Rebuild	132714	3	Service Quality, Reliability and Resiliency	Willows	
BG 2027 Physical Security Upgrades	132728	6	Safety and Security	Bear Gulch	
CH 2025 Physical Security Upgrades	132731	6	Safety and Security	North Valley Region	Chico
CH 2026 Physical Security Upgrades	132732	6	Safety and Security	North Valley Region	Chico
CH 2027 Physical Security Upgrades	132735	6	Safety and Security	North Valley Region	Chico
DIX 2025 Physical Security Upgrades	132736	6	Safety and Security	Dixon	
DIX 2026 Physical Security Upgrades	132737	6	Safety and Security	Dixon	
2027 DIX Physical Security Upgrades	132738	6	Safety and Security	Dixon	
ELA 2025 Physical Security Upgrades	132739	6	Safety and Security	East Los Angeles	
ELA 2026 Physical Security Upgrades	132740	6	Safety and Security	East Los Angeles	
ELA 2027 Physical Security Upgrades	132741	6	Safety and Security	East Los Angeles	
VIS-060 Pressure Tank Replacement	132742	3	Service Quality, Reliability and Resiliency	Visalia	
VIS-069 Pressure Tank replacement	132743	3	Service Quality, Reliability and Resiliency	Visalia	
KC 2025 Physical Security Upgrades	132761	6	Safety and Security	Salinas Valley Region	King City
KC 2026 Physical Security Upgrades	132764	6	Safety and Security	Salinas Valley Region	King City
KC 2027 Physical Security Upgrades	132768	6	Safety and Security	Salinas Valley Region	King City
KRV 2025 Physical Security Update	132770	6	Safety and Security	Kern River Valley	
KRV 2026 Physical Security Upgrades	132771	6	Safety and Security	Kern River Valley	
KRV 2027 Physical Security Upgrades	132776	6	Safety and Security	Kern River Valley	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
BAY SC 107 Pump House Building	132779	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
LAS 2025 Physical Security Upgrades	132782	6	Safety and Security	Los Altos	
LAS 2026 Physical Security Upgrades	132784	6	Safety and Security	Los Altos	
LIMS Upgrade	132802	3	Water Quality and Compliance	CSS	
Virtal Reality Safety / Ops Modules	132809	6	Safety and Security	CSS	
LIV 2026 Physical Security Upgrade	132814	6	Safety and Security	Livermore	
ORO 2026 Physical Security Upgrades	132816	6	Safety and Security	North Valley Region	Oroville
PV 2026 Physical Security Upgrades	132817	6	Safety and Security	LA County Region	Palos Verdes
PV 2027 Physical Security Upgrades	132818	6	Safety and Security	LA County Region	Palos Verdes
SEL 2025 Physcial Security Upgrades	132819	6	Safety and Security	Selma	
SEL 2026 Physical Security Upgrades	132820	6	Safety and Security	Selma	
STK 2026 Physical Security Upgrades	132821	6	Safety and Security	Stockton	
SLN 2026 Physical Security Upgrades	132822	6	Safety and Security	Salinas Valley Region	Salinas
AV 2026 Physical Security Upgrades	132823	6	Safety and Security	LA County Region	Antelope Valley
SSF 2025 Physical Security Upgrades	132824	6	Safety and Security	Bay Area Region	Bayshore
HR 2025 Physical Security Upgrades	132829	6	Safety and Security	South Bay Region	Hermosa Redondo
HR 2026 Physical Security Upgrades	132830	6	Safety and Security	South Bay Region	Hermosa Redondo
HR 2027 Physical Security Upgrades	132831	6	Safety and Security	South Bay Region	Hermosa Redondo
DOM 2025 Physical Security Upgrades	132874	6	Safety and Security	South Bay Region	Dominguez
DOM 2026 Physical Security Upgrades	132875	6	Safety and Security	South Bay Region	Dominguez
DOM 2027 Physical Security Upgrades	132880	6	Safety and Security	South Bay Region	Dominguez
WLK 2025 Physical Security Upgrades	132881	6	Safety and Security	Westlake	
WLK 2026 Physical Security Upgrades	132882	6	Safety and Security	Westlake	
MPS 2025 Physical Security Upgrades	132885	6	Safety and Security	Bay Area Region	Bayshore
LAS STA 042 Rebuild	132912	3	Service Quality, Reliability and Resiliency	Los Altos	
LIV New Main Tesla Road	132913	3	Service Quality, Reliability and Resiliency	Livermore	
ORO South Feather Interconnect	132914	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
MPS 2026 Physical Security Upgrades	132928	6	Safety and Security	Bay Area Region	Bayshore
MPS 2027 Physical Security Upgrades	132933	6	Safety and Security	Bay Area Region	Bayshore
SSF 2026 Physical Security Upgrades	132935	6	Safety and Security	Bay Area Region	Bayshore
SSF 2027 Physical Security Upgrades	132937	6	Safety and Security	Bay Area Region	Bayshore
VIS 2025 Physical Security Upgrades	132949	6	Safety and Security	Visalia	
VIS 2026 Physical Security Upgrades	132950	6	Safety and Security	Visalia	
VIS 2027 Physical Security Upgrades	132951	6	Safety and Security	Visalia	
WLK 2027 Physical Security Upgrades	132952	6	Safety and Security	Westlake	
2025 UWMP Development	132957	3	Service Quality, Reliability and Resiliency	CSS	
CSS Climate Change Study - 2025	132963	4	Climate Adaptation and Readiness	CSS	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LHUG 001 Portable Generator	132967	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
BAY New Main Delores Parkside	132968	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
ELA 004-T1 Altitude Valve	132970	3	Service Quality, Reliability and Resiliency	East Los Angeles	
LAS Transmission Valve	132972	3	Service Quality, Reliability and Resiliency	Los Altos	
LEO-001 Generator	132973	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LAN 001-T2 Cathodic Protection	132974	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LAN 001 CrVI Treatment	132976	3	Water Quality and Compliance	LA County Region	Antelope Valley
FMT 001 Station Rebuild	132977	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LHUG 001 Flood Protection	132978	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
LHUG 002 Greensand Media	132979	3	Water Quality and Compliance	LA County Region	Antelope Valley
LHUG 003-T1 Cathodic Protection	132980	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
AV 2026 Tank Improvements	132982	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
SSF 008-T1 Preliminary Design	132983	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SM 027 Paving	132984	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SC 117 Station Rebuild Constr	132985	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 001 Cr-As Treatment Pilot Study	132988	3	Water Quality and Compliance	Bay Area Region	Bayshore
SC 112 T2-T3 Residual Control	132989	3	Water Quality and Compliance	Bay Area Region	Bayshore
SC 109 New Generator and ATS	132991	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2025 Grid Strengthening	132992	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SC Wildfire Mititgation 585 Zone	132993	4	Climate Adaptation and Readiness	Bay Area Region	Bayshore
BAY 2025 Replace Isolation Valves	132994	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2026 Replace Isolation Valves	132995	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2027 Replace Isolation Valves	132996	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS Replace Transmission Valves	132997	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SM 017 Station Rebuild Construction	132998	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2025 Tank Improvements	132999	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2025 Tank Improvements	133000	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2026 Tank Improvements	133001	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2026 Tank Improvements	133002	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2027 Tank Improvements	133003	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2027 Tank Improvements	133004	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BG 022 New Generator	133005	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 043 New Generator	133006	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 005 Variable Frequency Drive	133008	2	Clean Energy and Emissions Reduction	Bear Gulch	
BG Skylonda to Skyline Main Conn	133009	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Bay Area Water Transfer (BG)	133011	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 036 New 125K Gal Tank	133012	3	Service Quality, Reliability and Resiliency	Bear Gulch	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
BG Brackish Aquifer Conductivity	133013	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG KM Tanks Farm Station Rebuild	133014	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 053 Tank Design & Permitting	133016	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 016-T2 Mixing and Dosing	133018	3	Water Quality and Compliance	Bear Gulch	
BG 017-T1 Mixing and Dosing	133019	3	Water Quality and Compliance	Bear Gulch	
BG 002 Cathodic Protection	133024	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 021 Cathodic Protection	133025	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2025 Tank Improvements	133026	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2027 Tank Improvements	133028	3	Service Quality, Reliability and Resiliency	Bear Gulch	
CH 050 Partial Station Rebuild	133029	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 080 Automatic Discharge Valve	133030	3	Water Quality and Compliance	North Valley Region	Chico
CH 064 New Generator	133031	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH Portable Booster Pumps	133032	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH PBC South of Canyon Oaks CC	133033	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 044 Wildfire Pump Storage	133034	4	Climate Adaptation and Readiness	North Valley Region	Chico
CH 066-T2 Cathodic Protection	133035	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 074-T1 Cathodic Protection	133036	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2025 Tank Improvements	133037	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
DOM 232 Nitrification Improvements	133047	3	Water Quality and Compliance	South Bay Region	Dominguez
DOM 2025 Hydrant Iso-Valve Install	133049	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2026 Hydrant Iso-Valve Installs	133050	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2027 Hydrant-Iso Valve Installs	133051	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 203 Station Rebuild	133053	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 203-T3 Cathodic Protection	133055	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 215-T1 Cathodic Protection	133056	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 277-T1 Cathodic Protection	133057	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 279-T1 Cathodic Protection	133058	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 279-T2 Cathodic Protection	133059	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 297-T1 Cathodic Protection	133060	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 298-T1 Cathodic Protection	133061	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
ELA 010 Altitude Replacement	133062	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 042 Altitude Valve Replacement	133063	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 058 Altitude Valve Replacement	133064	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 060 Altitude Valve Replacement	133065	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 042 Mixing and Dosing	133068	3	Water Quality and Compliance	East Los Angeles	
ELA 058 Nitrification Treatment	133069	3	Water Quality and Compliance	East Los Angeles	
ELA 023-T1 Cathodic Protection	133070	3	Service Quality, Reliability and Resiliency	East Los Angeles	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
ELA 040-T3 Cathodic Protection	133071	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2025 Tank Improvements	133072	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2026 Tank Improvements	133073	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2027 Tank Improvements	133074	3	Service Quality, Reliability and Resiliency	East Los Angeles	
HR 005-T1 Cathodic Protection	133075	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 009-T3 Cathodic Protection	133076	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 026-T2 Cathodic Protection	133077	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 026-T3 Cathodic Protection	133079	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 008 Roof Replacement	133080	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 026 Station Rebuild Constr	133082	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 005 Station Rebuild Constr	133083	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
KC 2025 Fire Hydrant Replacements	133086	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2026 Fire Hydrant Replacements	133087	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2027 Fire Hydrant Replacements	133088	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2026 Tank Improvements	133089	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2027 Tank Improvements	133090	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC Office Generator	133091	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 012 New Generator	133092	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC Grid Stregthening	133093	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
LAS 2025 Tank Improvements	133103	3	Service Quality, Reliability and Resiliency	Los Altos	
LIV 2025 Tank Improvements	133106	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2026 Tank Improvements	133107	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 029-T2 Cathodic Protection	133108	3	Service Quality, Reliability and Resiliency	Livermore	
LIV Auto Flusher	133109	3	Water Quality and Compliance	Livermore	
LIV Pump House Roof Replacements	133110	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 022-T1 Chloramination System	133111	3	Water Quality and Compliance	Livermore	
LIV 025-T2 Chloramination	133113	3	Water Quality and Compliance	Livermore	
LIV 029 Chloramination System	133115	3	Water Quality and Compliance	Livermore	
MRL Well Siting Study	133118	3	Service Quality, Reliability and Resiliency	Marysville	
MRL Well Land Acquistion	133119	3	Service Quality, Reliability and Resiliency	Marysville	
ORO 016-T1 Cathodic Protection	133120	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO Riverview Terrace Dr New PRV	133121	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 011 Station Rebuild	133122	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 015 Clarification Improvements	133123	3	Water Quality and Compliance	North Valley Region	Oroville
ORO 015 Chlorine System	133124	3	Water Quality and Compliance	North Valley Region	Oroville
ORO 015 Sed Basin Improv Design	133125	3	Water Quality and Compliance	North Valley Region	Oroville
PV 004 Portable Generator Conn	133126	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
PV 015 Station Rebuild Constr	133127	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
WLK 007 Driveway & Wall Constr	133133	3	Service Quality, Reliability and Resiliency	Westlake	
WLK 008 Access Road Replacement	133134	3	Service Quality, Reliability and Resiliency	Westlake	
WLK 009 Access Road Replacement	133135	3	Service Quality, Reliability and Resiliency	Westlake	
WLK WSFMP Update	133136	3	Service Quality, Reliability and Resiliency	Westlake	
WIL 2025 Tank Improvements	133137	3	Service Quality, Reliability and Resiliency	Willows	
VIS 012-T2 Cathodic Protection	133139	3	Service Quality, Reliability and Resiliency	Visalia	
VIS Well Siting Study	133146	3	Service Quality, Reliability and Resiliency	Visalia	
VIS Recharge Feasibility Study	133147	3	Service Quality, Reliability and Resiliency	Visalia	
VIS Property Purchase	133149	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 048 New Generator	133152	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 080 New Generator	133153	3	Service Quality, Reliability and Resiliency	Visalia	
VIS New Tank & Booster Sta Property	133156	3	Service Quality, Reliability and Resiliency	Visalia	
BK NEWTP Benchtop Turbidmeter	133158	3	Water Quality and Compliance	Bakersfield	
BK NEWTP pH Probes and Controllers	133160	3	Water Quality and Compliance	Bakersfield	
BK NWWTP Benchtop Turbidimeter	133161	3	Water Quality and Compliance	Bakersfield	
BK NWWTP pH Probes and Controllers	133163	3	Water Quality and Compliance	Bakersfield	
BK 087-T8 Cathodic Protection	133168	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 100-T1 Cathodic Protection	133169	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 116-T4 Cathodic Protection	133170	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 188-T1 Cathodic Protection	133171	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 213-T2 Cathodic Protection	133172	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 216-T1 Cathodic Protection	133173	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2026 Chemical Tank Replacements	133175	3	Water Quality and Compliance	Bakersfield	
BK 2027 Chemical Tank Replacements	133176	3	Water Quality and Compliance	Bakersfield	
BK Low Zone - Kern River Crossing	133181	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK NEWTP MF Feed Pumps VFD	133182	3	Water Quality and Compliance	Bakersfield	
BK 2026 Station Resurfacing	133187	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2027 Station Resurfacing	133188	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK Low Zone Well Siting Study	133189	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK Railroad Main Replacement Study	133190	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK NG Property Purchase #2	133192	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK NG Property Purchase	133194	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 216 Polymer Storage	133196	3	Water Quality and Compliance	Bakersfield	
BK NEWTP New Filter Modules	133197	3	Water Quality and Compliance	Bakersfield	
BK NEWTP Raw Water Pumps VFD	133198	3	Water Quality and Compliance	Bakersfield	
STK 2025 Tank Improvements	133200	3	Service Quality, Reliability and Resiliency	Stockton	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
STK 069-T1 Cathodic Protection	133202	3	Service Quality, Reliability and Resiliency	Stockton	
STK 035 New Generator	133203	3	Service Quality, Reliability and Resiliency	Stockton	
STK 061 Automatic Transfer Switch	133204	3	Service Quality, Reliability and Resiliency	Stockton	
STK Portable Generators	133206	3	Service Quality, Reliability and Resiliency	Stockton	
STK 080 Station Rebuild	133209	3	Service Quality, Reliability and Resiliency	Stockton	
STK 018 Well Assessment	133210	3	Service Quality, Reliability and Resiliency	Stockton	
STK Well Siting Study	133211	3	Service Quality, Reliability and Resiliency	Stockton	
STK 036 Well Assessment	133212	3	Service Quality, Reliability and Resiliency	Stockton	
STK 059 Well Assessment	133213	3	Service Quality, Reliability and Resiliency	Stockton	
STK Property Purchase #1	133216	3	Service Quality, Reliability and Resiliency	Stockton	
STK Land Purchase #2	133217	3	Service Quality, Reliability and Resiliency	Stockton	
SLN 2025 Tank Improvements	133218	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2026 Tank Improvements	133219	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2027 Tank Improvements	133220	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 072 New Generator	133223	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 203 New Generator	133224	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 057 New Generator	133225	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 805 Zone PBC	133227	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN Well Siting Study	133228	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN WSFMP Update	133229	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN Pipe Design 180 to 400 Zones	133230	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 078 New Well Equipping	133232	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN New Well Station 155 Zone	133233	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLNH Property Purchase	133235	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 037 Treatment Plant Upgrades	133236	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 039 As Treatment	133237	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 064 Ion Exchange	133238	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 065 Install Upgraded Treatment	133239	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 203 Treatment Maintenance	133240	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SLN 303 Treatment Maintenance	133241	3	Water Quality and Compliance	Salinas Valley Region	Salinas
SEL New Well 2 Land Purchase	133249	3	Service Quality, Reliability and Resiliency	Selma	
SEL 2025 Tank Improvements	133251	3	Service Quality, Reliability and Resiliency	Selma	
SEL 021-T1 Cathodic Protection	133252	3	Service Quality, Reliability and Resiliency	Selma	
NOH 201-A Pump Replacement	133256	2	Clean Energy and Emissions Reduction	Bay Area Region	RDV Unified
LUC 003-T1 Cathodic Protection	133257	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
LUC 005-T1 Cathodic Protection	133258	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
COS 007-T4 Cathodic Protection	133259	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LUC PRV Install 17th & Country Club	133260	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
LUC Portable Generator	133261	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
ARM 001 Electrical Panel Cover	133265	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
NOH 201 Plant Re-Design	133266	3	Water Quality and Compliance	Bay Area Region	RDV Unified
RDV 205 ARM Well Siting Study	133267	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
COS 004 Station Rebuild	133268	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs
COS Potable Reuse Study	133269	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs
HKN 001 Station Rebuild Constr	133271	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
LAS 2026 Isolation Valve Install	133273	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2027 Isolation Valve Install	133274	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS New PRV Blandor To Price	133276	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 037 Generator for SCADA	133278	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS PRV Replace El Monte & Foothill	133281	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 014 New Pump 505 Zone	133282	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 117 Station Rebuild Constr	133283	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS Well Hardness Study	133284	3	Water Quality and Compliance	Los Altos	
LAS WSFMP Update	133285	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS New Well Property Purchase	133287	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 112 Chlorination	133290	3	Water Quality and Compliance	Los Altos	
LAS 116 Disinfection	133291	3	Water Quality and Compliance	Los Altos	
LAS 123 Disinfection	133294	3	Water Quality and Compliance	Los Altos	
BK 2026 Physical Secuity Upgrades	133313	6	Safety and Security	Bakersfield	
BK 2027 Physical Security Upgrades	133314	6	Safety and Security	Bakersfield	
BAY Water Quality Testing Units	133371	3	Water Quality and Compliance	Bay Area Region	Bayshore
CH Solar EV Charger	133382	2	Clean Energy and Emissions Reduction	North Valley Region	Chico
DIX Field pH Meters	133384	3	Water Quality and Compliance	Dixon	
DOM 232 Safety Improvements	133390	6	Safety and Security	South Bay Region	Dominguez
ELA Purchase SL-1000 Units	133396	3	Water Quality and Compliance	East Los Angeles	
STK 051 Landscape/Connect Parking	133403	3	Service Quality, Reliability and Resiliency	Stockton	
KERV 001-T3 Cathodic Protection	133458	3	Service Quality, Reliability and Resiliency	Kern River Valley	
SOLA 001-T1 Cathodic Protection	133459	3	Service Quality, Reliability and Resiliency	Kern River Valley	
ONYX 003-T2 Cathodic Protection	133462	3	Service Quality, Reliability and Resiliency	Kern River Valley	
ONYX 003-T3 Cathodic Protection	133463	3	Service Quality, Reliability and Resiliency	Kern River Valley	
SQRL 013-T1 Cathodic Protection	133466	3	Service Quality, Reliability and Resiliency	Kern River Valley	
ARD 014-T1 Cathodic Protection	133467	3	Service Quality, Reliability and Resiliency	Kern River Valley	
ARD 001 GS Media Replacement	133469	3	Water Quality and Compliance	Kern River Valley	
SMTN 001 GS Media Replacement	133471	3	Water Quality and Compliance	Kern River Valley	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
LBOD 013 GS Replacement	133472	3	Water Quality and Compliance	Kern River Valley	
UBOD 104 GS Media Replacement	133473	3	Water Quality and Compliance	Kern River Valley	
SMTN 001 Well Improvement Study	133474	3	Service Quality, Reliability and Resiliency	Kern River Valley	
SOLA Well Siting Study	133476	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KERV 001 Treatment Upgrades	133478	3	Water Quality and Compliance	Kern River Valley	
NOH 202 Paving and Grading	133486	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Unified
RDV 2025 Tank Improvements	133487	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
RDV 2026 Tank Improvements	133488	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
RDV 2027 Tank Improvements	133489	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
TAB STA 002-T2 Cathodic Protection	133495	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2025 Tank Improvements	133496	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2025 Hydrant Check Valves	133497	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2025 Valve Insertions	133499	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2026 Hydrant Check Valves	133500	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2026 Valve Insertions	133502	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2027 Hydrant Check Valves	133503	3	Service Quality, Reliability and Resiliency	Travis	
TAB 2027 Valve Insertions	133505	3	Service Quality, Reliability and Resiliency	Travis	
TAB STA 001 Control Valves	133506	3	Service Quality, Reliability and Resiliency	Travis	
TAB STA 002 Control Valves	133507	3	Service Quality, Reliability and Resiliency	Travis	
TAB WS&F Master Plan	133513	3	Service Quality, Reliability and Resiliency	Travis	
TAB 004 Chlorine Boosting	133514	3	Water Quality and Compliance	Travis	
TAB 010 Chlorine Boosting	133515	3	Water Quality and Compliance	Travis	
TAB 002-T2 Spray Aeration	133516	3	Water Quality and Compliance	Travis	
TAB 2026 Backflow Prevention	133518	3	Water Quality and Compliance	Travis	
TAB 2027 Backflow Prevention	133520	3	Water Quality and Compliance	Travis	
CSS Rooftop Solar	133533	2	Clean Energy and Emissions Reduction	CSS	
Halo Acetic Acids analytical tester	133538	3	Water Quality and Compliance	CSS	
Skylonda - Skyline Main Conn	133565	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG Sta 53 - PRV Addition	133576	3	Service Quality, Reliability and Resiliency	Bear Gulch	
Bakersfield Onsite Solar	133577	2	Clean Energy and Emissions Reduction	Bakersfield	
ICP-MS	133709	3	Water Quality and Compliance	CSS	
LLAN Intertie & Land	133720	3	Service Quality, Reliability and Resiliency	Kern River Valley	
LIV-10 GAC REPLACEMENT	133734	3	Water Quality and Compliance	Livermore	
LBOD 009 Transfer Switch	133785	3	Service Quality, Reliability and Resiliency	Kern River Valley	
KERN 007 Transfer Switch	133786	3	Service Quality, Reliability and Resiliency	Kern River Valley	
MSHA 003 New Storage Tanks	133787	3	Service Quality, Reliability and Resiliency	Kern River Valley	
ELA I-5 Crossing - Humphreys Ave	133794	3	Service Quality, Reliability and Resiliency	East Los Angeles	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
ELA I-5 Crossing - Eastern Ave	133795	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 1-5 Crossing - Atlantic Blvd	133796	3	Service Quality, Reliability and Resiliency	East Los Angeles	
MPS 006 Design Only	133798	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
COS 007 New Access Driveway	133799	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Coast Springs
ORO 2025 Control Valve Overhauls	133803	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2026 Control Valve Overhauls	133804	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2027 Control Valve Overhauls	133805	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
LIV 2025 Control Valve Overhauls	133824	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2026 Control Valve Overhauls	133825	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2027 Control Valve Overhauls	133826	3	Service Quality, Reliability and Resiliency	Livermore	
DOM 2025 Control Valve Overhauls	133828	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2026 Control Valve Overhauls	133829	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2027 Control Valve Overhauls	133830	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
LUC Intake Extension (Design)	133836	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV Lucerne
LUC Seismic Mitigation Plan	133837	3	Water Quality and Compliance	Bay Area Region	RDV Lucerne
KC 2026 Control Valve Overhauls	133840	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
STK 2026 Control Valve Overhauls	133841	3	Service Quality, Reliability and Resiliency	Stockton	
LAS 2026 Control Valve Overhauls	133914	3	Service Quality, Reliability and Resiliency	Los Altos	
BK 2025 Control Valve Overhaul	133916	3	Service Quality, Reliability and Resiliency	Bakersfield	
Replace 6 Broken Valves @ Sepulveda	133967	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
Replace Multiple Valves See Comment	133997	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
TAB 2025 Backflow Prevention	134103	3	Water Quality and Compliance	Travis	
TAB 2025 Gate Valve Replacement	134104	3	Service Quality, Reliability and Resiliency	Travis	
AV-LHUG 002 Greensand Media Replc.	134118	3	Water Quality and Compliance	LA County Region	Antelope Valley
KRV-SMTN 001 Greensand Media Replc.	134121	3	Water Quality and Compliance	Kern River Valley	
KRV-BOD 104 Greensand Media Replc.	134122	3	Water Quality and Compliance	Kern River Valley	
KRV-ARD 001 Greensand Media Replc.	134123	3	Water Quality and Compliance	Kern River Valley	
KRV-BOD 013 Greensand Media Replc.	134124	3	Water Quality and Compliance	Kern River Valley	
BAY 2025 Grid Strengthening	134125	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
MPS 2025 Brackish Aquifer Conductiv	134300	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
SSF 2025 Brackish Aquifer Conductiv	134303	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
DOM 2025 Sample Stations	134437	3	Water Quality and Compliance	South Bay Region	Dominguez
ELA 2025 Sample Stations	134440	3	Water Quality and Compliance	East Los Angeles	
RDV 2025 Sample Stations	134444	3	Water Quality and Compliance	Bay Area Region	RDV
VIS 2025 Sample Stations	134446	3	Water Quality and Compliance	Visalia	
KRV 2025 Sample Stations	134469	3	Water Quality and Compliance	Kern River Valley	
KC 2027 Sample Stations	134472	3	Water Quality and Compliance	Salinas Valley Region	King City

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
BK 2024 Main Replacement Program	101MRP24	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2025 Main Replacement Program	101MRP25	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2026 Main Replacement Program	101MRP26	3	Service Quality, Reliability and Resiliency	Bakersfield	
BK 2027 Main Replacement Program	101MRP27	3	Service Quality, Reliability and Resiliency	Bakersfield	
BG 2024 Main Replacement Program	102MRP24	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2025 Main Replacement Program	102MRP25	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2026 Main Replacement Program	102MRP26	3	Service Quality, Reliability and Resiliency	Bear Gulch	
BG 2027 Main Replacement Program	102MRP27	3	Service Quality, Reliability and Resiliency	Bear Gulch	
CH 2024 Main Replacement Program	104MRP24	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2025 Main Replacement Program	104MRP25	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2026 Main Replacement Program	104MRP26	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
CH 2027 Main Replacement Program	104MRP27	3	Service Quality, Reliability and Resiliency	North Valley Region	Chico
DIX 2024 Main Replacement Program	105MRP24	3	Service Quality, Reliability and Resiliency	Dixon	
DIX 2025 Main Replacement Program	105MRP25	3	Service Quality, Reliability and Resiliency	Dixon	
DIX 2026 Main Replacement Program	105MRP26	3	Service Quality, Reliability and Resiliency	Dixon	
DIX 2027 Main Replacement Program	105MRP27	3	Service Quality, Reliability and Resiliency	Dixon	
ELA 2024 Main Replacement Program	106MRP24	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2025 Main Replacement Program	106MRP25	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2026 Main Replacement Program	106MRP26	3	Service Quality, Reliability and Resiliency	East Los Angeles	
ELA 2027 Main Replacement Program	106MRP27	3	Service Quality, Reliability and Resiliency	East Los Angeles	
HR 2024 Main Replacement Program	108MRP24	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2025 Main Replacement Program	108MRP25	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2026 Main Replacement Program	108MRP26	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
HR 2027 Main Replacement Program	108MRP27	3	Service Quality, Reliability and Resiliency	South Bay Region	Hermosa Redondo
KC 2024 Main Replacement Program	109MRP24	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2025 Main Replacement Program	109MRP25	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2026 Main Replacement Program	109MRP26	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
KC 2027 Main Replacement Program	109MRP27	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	King City
LIV 2024 Main Replacement Program	110MRP24	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2025 Main Replacement Program	110MRP25	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2026 Main Replacement Program	110MRP26	3	Service Quality, Reliability and Resiliency	Livermore	
LIV 2027 Main Replacement Program	110MRP27	3	Service Quality, Reliability and Resiliency	Livermore	
LAS 2024 Main Replacement Program	111MRP24	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2025 Main Replacement Program	111MRP25	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2026 Main Replacement Program	111MRP26	3	Service Quality, Reliability and Resiliency	Los Altos	
LAS 2027 Main Replacement Program	111MRP27	3	Service Quality, Reliability and Resiliency	Los Altos	
MRL 2025 Main Replacement Program	112MRP25	3	Service Quality, Reliability and Resiliency	Marysville	

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
MRL 2026 Main Replacement Program	112MRP26	3	Service Quality, Reliability and Resiliency	Marysville	
ORO 2024 Main Replacement Program	113MRP24	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2025 Main Replacement Program	113MRP25	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2026 Main Replacement Program	113MRP26	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
ORO 2027 Main Replacement Program	113MRP27	3	Service Quality, Reliability and Resiliency	North Valley Region	Oroville
SLN 2024 Main Replacement Program	114MRP24	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2025 Main Replacement Program	114MRP25	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2026 Main Replacement Program	114MRP26	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SLN 2027 Main Replacement Program	114MRP27	3	Service Quality, Reliability and Resiliency	Salinas Valley Region	Salinas
SEL 2024 Main Replacement Program	117MRP24	3	Service Quality, Reliability and Resiliency	Selma	
SEL 2025 Main Replacement Program	117MRP25	3	Service Quality, Reliability and Resiliency	Selma	
SEL 2026 Main Replacement Program	117MRP26	3	Service Quality, Reliability and Resiliency	Selma	
SEL 2027 Main Replacement Program	117MRP27	3	Service Quality, Reliability and Resiliency	Selma	
STK 2024 Main Replacement Program	119MRP24	3	Service Quality, Reliability and Resiliency	Stockton	
STK 2025 Main Replacement Program	119MRP25	3	Service Quality, Reliability and Resiliency	Stockton	
STK 2026 Main Replacement Program	119MRP26	3	Service Quality, Reliability and Resiliency	Stockton	
STK 2027 Main Replacement Program	119MRP27	3	Service Quality, Reliability and Resiliency	Stockton	
VIS 2024 Main Replacement Program	120MRP24	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 2025 Main Replacement Program	120MRP25	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 2026 Main Replacement Program	120MRP26	3	Service Quality, Reliability and Resiliency	Visalia	
VIS 2027 Main Replacement Program	120MRP27	3	Service Quality, Reliability and Resiliency	Visalia	
WIL 2025 Main Replacement Program	121MRP25	3	Service Quality, Reliability and Resiliency	Willows	
WIL 2026 Main Replacement Program	121MRP26	3	Service Quality, Reliability and Resiliency	Willows	
WIL 2027 Main Replacement Program	121MRP27	3	Service Quality, Reliability and Resiliency	Willows	
PV 2024 Main Replacement Program	122MRP24	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2025 Main Replacement Program	122MRP25	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2026 Main Replacement Program	122MRP26	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
PV 2027 Main Replacement Program	122MRP27	3	Service Quality, Reliability and Resiliency	LA County Region	Palos Verdes
WLK 2024 Main Replacement Program	123MRP24	3	Service Quality, Reliability and Resiliency	Westlake	
WLK 2025 Main Replacement Program	123MRP25	3	Service Quality, Reliability and Resiliency	Westlake	
WLK 2026 Main Replacement Program	123MRP26	3	Service Quality, Reliability and Resiliency	Westlake	
WLK 2027 Main Replacement Program	123MRP27	3	Service Quality, Reliability and Resiliency	Westlake	
DOM 2024 Main Replacement Program	128MRP24	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2025 Main Replacement Program	128MRP25	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2026 Main Replacement Program	128MRP26	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
DOM 2027 Main Replacement Program	128MRP27	3	Service Quality, Reliability and Resiliency	South Bay Region	Dominguez
AV 2024 Main Replacement Program	129MRP24	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley

Project	PID	CPUC ESJ Goal #	Project Description	Rate Making Area or District	Sub-area
AV 2025 Main Replacement Program	129MRP25	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
AV 2026 Main Replacement Program	129MRP26	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
AV 2027 Main Replacement Program	129MRP27	3	Service Quality, Reliability and Resiliency	LA County Region	Antelope Valley
KRV 2024 Main Replacement Program	134MRP24	3	Service Quality, Reliability and Resiliency	Kern River Valley	
RDV 2024 Main Replacement Program	146MRP24	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
RDV 2025 Main Replacement Program	146MRP25	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
RDV 2026 Main Replacement Program	146MRP26	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
RDV 2027 Main Replacement Program	146MRP27	3	Service Quality, Reliability and Resiliency	Bay Area Region	RDV
BAY 2024 Main Replacement Program	152MRP24	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2025 Main Replacement Program	152MRP25	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2026 Main Replacement Program	152MRP26	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore
BAY 2027 Main Replacement Program	152MRP27	3	Service Quality, Reliability and Resiliency	Bay Area Region	Bayshore

LIST OF ATTACHMENTS FOR CHAPTER 4

	Attachment #	Description
1	Attachment 4-1	CWS's Response to DR SIH-006 (Proposed Capital Projects)
2	Attachment 4-2	CWS's Response to DR KN3-010 (Specific Districts)
3	Attachment 4-3	A.21-07-002 2021 GRC Chico District Project Justification Book
	Attachment 4-4	CWS's Response to DR KN3-007 (All Capital Project II)

Attachment 4-1:
CWS's Response to DR SIH-006
(Proposed Capital Projects)

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Sari Ibrahim (213) 266-4737
Utilities Engineer Sari.ibrahim@cpuc.ca.gov

From: **California Water Service** mailto:2024GRCDataRequest@calwater.com

Natalie D. Wales (408) 367-8566
Director, Rates nwales@calwater.com

Patrick Alexander (408) 367-8230
General Rate Case Manager palexander@calwater.com

Melody Singh (916) 329-1856
Manager, Revenue msingh@calwater.com

Date: **November 13, 2024** Re: **SIH 006** Subj: **Proposed Capital Projects**	Request Received from CPUC: **November 6, 2024** Requested Due Date: **November 13, 2024**

Comments:

- **Full response attached.**
- **Response provided by Engineering.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **SIH-006 Attachment #1**

Data Requests and Responses

Referring to the list of capital projects provided in A2407003 Public Advocates Data Request KN3-007 (All Capital Projects-II) Attachment 1- Project List:

1. Please clarify whether the provided contingency amounts are the total escalated costs or the base 2023 dollar amounts.
   Response: These costs are in 2023 dollars.

2. Please provide the formula Cal Water is using to determine escalation on capital projects. If Cal Water used different escalation formulas for different capital project types, please provide each formula and clarify which project types it applies to.
   Response: Cal Water escalated all capital projects at a rate of 2.5% per year from the base year of 2023.

3. Please provide the total construction management and special inspections cost associated with each project by completing columns L and M in the attached Excel spreadsheet, "A2407003 Public Advocates DR SIH-006 (Proposed Capital Projects) Attachment 01." which is from the above referenced data request response.
   Response: Please see attachment #1. Please note that for projects that were originally budgeted before the 2021 GRC, Construction Management and Special Inspection costs were not added to projects with consistent nomenclature, so they need to be identified manually; therefore, there may be some minor omissions in the attachment from these older projects.

End Response

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
South Bay Region	12047	WELLHEAD TREATMENT STA 219-02	April 2005	2024	215,696	256,902	-	0%	Yes	315.11	$ -	0%	$ -
Bay Area Region	20688	Access Road at SSF Sta 11	March 2015	2024	78,891	92,577	-	0%	Yes	N/A	$ -	0%	$ -
South Bay Region	20775	Well 301 (long Beach)	November 2011	2026	5,302,035	5,994,389	44,612	10%	Advice Letter	$ 5,302,035.44	$ -	0%	$ -
South Bay Region	20838	Construct/Equip Well 216-02	April 2012	2024	5,583,966	6,478,007	58,087	10%	Advice Letter	(138,993)	$ -	0%	$ -
South Bay Region	21521	TREAMENT WELL 219-02	September 2008	2024	219,916	256,921	-	0%	Yes	11,287.67	$ -	0%	$ -
Stockton	61732	STK 77-01 Replace Pump & Col	November 2015	2024	101,266	118,184	8,702	10%	Advice Letter	$ 26,455.98	$ -	0%	$ -
Bay Area Region	61972	Purchase Land for SM Well	July 2013	2024	2,661,469	3,094,956	266,147	10%	Advice Letter	$ 2,661,469.00	$ -	0%	$ -
Bear Gulch	65389	Sta 33 STA Rebuild	December 2014	2025	862,112	987,691	547,967	20%	Advice Letter	$ 862,111.79	$ -	0%	$ -
Bear Gulch	76196	Operations Center Design	March 2014	2025	65,401	76,240	4,751	10%	Yes	20,072.39	$ -	0%	$ -
Bear Gulch	97302	Sta 42 0.25MG Welded Steel Tank	September 2015	2024	2,677,915	3,081,201	267,792	10%	Advice Letter	$ 2,677,915.37	$ -	0%	$ -
Bear Gulch	97310	Sta 5 3MG Welded Steel Tank	September 2015	2026	2,616,668	2,948,748	261,667	10%	Advice Letter	$ 2,616,667.65	$ -	0%	$ -
North Valley Region	97517	Cherokee Res: Conceptual Design	October 2016	2025	18,652	21,245	-	0%	Yes	682.40	$ -	0%	$ -
Bear Gulch	97628	Raw Water Line	February 2017	2024	406,121	482,737	33,856	10%	Advice Letter	$ 406,121.12	$ -	0%	$ -
Bear Gulch	97637	Sta 3 Reduce Sediment Intake	September 2015	2025	369,009	423,671	31,144	10%	Advice Letter	$ 369,009.23	$ -	0%	$ -
South Bay Region	97756	HR Sta 24 rebuild design	August 2015	2025	379,747	440,051	304,011	10%	Advice Letter	$ 110,615.14	$ -	0%	$ -
North Valley Region	97980	Purchase Land for New Well Site	May 2017	2024	194,093	228,167	13,679	10%	Yes	(62,019.37)	$ -	0%	$ -
Bear Gulch	98018	Upper Diversion Slope Stabilization	September 2015	2025	593,192	691,500	41,804	10%	Advice Letter	$ 593,192.41	$ -	0%	$ -
Salinas Valley Region	98022	Storage/Dump Facility STN14 SLN	March 2017	2025	379,747	435,461	50,944	10%	Yes	13,893.18	$ -	0%	$ -
Bear Gulch	98036	BG Skeggs Tanks (Design)	August 2015	2026	423,336	480,826	162,246	10%	Advice Letter	$ 423,336.35	$ -	0%	$ -
LA County Region	98227	PV Storage Study	March 2017	2025	632,911	731,705	52,307	10%	Yes	23,155.29	$ -	0%	$ -
Bear Gulch	98236	Upper Low Zone Mitigation	November 2015	2024	716,614	824,748	50,501	10%	Advice Letter	$ 716,613.83	$ -	0%	$ -
Westlake	98271	Sta 001 Install Cover for Genset	June 2016	2024	34,049	40,547	-	0%	Yes	1,245.69	$ -	0%	$ -
South Bay Region	98334	Sta 300 New Well 01	February 2017	2025	83,139	97,129	5,859	10%	Advice Letter	$ 83,139.13	$ -	0%	$ -
Bear Gulch	98428	Video Surveillance at Reservoir	February 2018	2024	93,002	109,842	7,416	10%	Yes	3,402.50	$ -	0%	$ -
Bay Area Region	98466	ARMV 002-T1-Overflow Airgap Retrof.	February 2018	2024	20,849	24,491	1,466	10%	Advice Letter	$ 20,848.51	$ -	0%	$ -
Westlake	98530	Sta 007 Install Driveway at Harper	November 2017	2024	421,941	502,466	29,735	10%			$ -	0%	$ -
Bay Area Region	98596	Partial Rebuild SC 106	June 2017	2024	951,964	1,097,936	110,338	10%	Yes	575,540.95	$ -	0%	$ -
Marysville	98693	Panelboard Replacement MRL 9	March 2016	2024	485,317	544,581	34,200	10%	Advice Letter	$ 253,763.44	$ -	0%	$ -
Los Altos	98765	Flow meters at 3 of 5 stations	July 2016	2024	253,165	290,390	-	0%	Yes	49,912.52	$ -	0%	$ -
North Valley Region	98912	Solar Powered Transmitter	January 2016	2024	46,763	55,976	-	0%			$ -	0%	$ -
Bakersfield	99154	Replace chemical feed pumps	October 2020	2024	264,515	296,680	-	0%	Yes	(182,639.70)	$ -	0%	$ -
South Bay Region	99173	Advanced Metering Infrastructure	January 2020	2024	2,042,194	2,387,520	-	0%	Yes	800,028.90	$ -	0%	$ -
South Bay Region	99183	Advanced Metering Infrastructure	September 2021	2024	1,321,570	1,515,576	-	0%	Yes	48,350.11	$ -	0%	$ -
Bay Area Region	99307	Widen Driveway	March 2016	2024	334,464	381,624	23,570	10%	Yes	12,236.49	$ -	0%	$ -
South Bay Region	99341	IX Treatment DOM 297	September 2016	2024	4,344,021	4,865,516	326,266	10%	Advice Letter	(231,614)	$ -	0%	$ -
South Bay Region	99381	Nitrification Mitigation	January 2019	2025	468,925	547,830	-	0%			$ -	0%	$ -
South Bay Region	99415	Replace Discharge Pipe Sta-297	April 2022	2024	36,287	42,721	2,557	10%	Yes	1,327.57	$ -	0%	$ -
Bakersfield	103497	New Well Property North Garden #1	November 2015	2024	506,329	582,614	-	0%	Yes	55,744.56	$ -	0%	$ -
Los Altos	114151	LAS 9 Tank Mixing	December 2017	2024	1,017,728	1,195,694	-	0%	Yes	733,175.42	$ -	0%	$ -
Bakersfield	114159	BK-100 Station Re-Build	August 2020	2024	253,165	297,449	9,596	10%	Yes	202,130.41	$ -	0%	$ -
Stockton	114288	STK-35 Station Rebuild	December 2018	2024	1,123,773	1,259,451	141,444	20%	Yes	656,293.81	$ -	0%	$ -
East Los Angeles	114301	ELA Station 61 Pump Station	February 2019	2025	1,073,249	1,222,458	109,492	20%	Advice Letter	$ 1,073,249.05	$ -	0%	$ -
Bear Gulch	114325	Sta 18 Station Rebuild	December 2018	2024	1,590,720	1,846,481	240,372	20%	Advice Letter	$ 1,590,720.17	$ -	0%	$ -
Bear Gulch	114326	BG Sta 40 Property Acquisition	June 2021	2024	1,264	1,477	204	20%	Advice Letter	$ 1,264.01	$ -	0%	$ -
Bear Gulch	114327	Low Zone Surge Protection	October 2020	2024	822,803	965,558	126,103	20%	Advice Letter	$ (33,544.22)	$ -	0%	$ -
Bear Gulch	114328	Portola Road Pipeline	January 2019	2024	2,043,063	2,366,504	213,972	10%	Yes	1,948,233.21	$ -	0%	$ -
North Valley Region	114342	Chico Station 11 Rebuild	January 2019	2025	103,458	118,725	7,586	10%	Advice Letter	$ 103,458.09	$ -	0%	$ -
Westlake	114361	Harris Res. - Install PAX Mixer	January 2021	2024	280,944	334,561	27,564	20%	Advice Letter	$ 42,271.26	$ -	0%	$ -
South Bay Region	114364	HR Sta 23 Seismic Retrofit	June 2021	2024	200,541	240,789	19,669	20%	Advice Letter	$ 200,540.93	$ -	0%	$ -
South Bay Region	114459	HR Sta 24 Rebuild-Construction	January 2019	2025	3,550,597	4,037,355	353,254	20%	Advice Letter	$ 3,550,597.07	$ -	0%	$ -
South Bay Region	114503	Sta 215 Treatment Plant Design	January 2019	2024	632,911	720,727	87,326	20%	Yes	(817.61)	$ -	0%	$ -
South Bay Region	114504	Sta 203 Booster System Design	March 2020	2024	506,329	591,529	48,747	20%	Advice Letter	$ 506,329.11	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	**PID**	**Description**	**Project Starting Date**	**Completion Year**	**Direct Cost**	**Total Cost**	**Contingency [$]**	**Contingency (%)**	**Authorized in a previous GRC? (Yes, No, Advice Letter)**	**Incremental Amount Proposed**	**Direct Construction Management and Special Inspections Cost ($)**	**Construction Management and Special Inspections (%)**	**Escalated Construction Management and Sepcial Inspections Cost ($)**
South Bay Region	114507	Sta 215 Treatment Plant Construct	September 2022	2024	4,430,380	5,175,879	588,203	20%	Yes	(1,204,549.52)	$ -	0%	$ -
South Bay Region	114508	Sta 219 Treatment Plant Design	January 2019	2025	81,718	95,469	10,434	20%	Yes	81,717.89	$ -	0%	$ -
Bear Gulch	114641	Sta 14 Partial Rebuild	December 2018	2025	2,953,586	3,383,821	472,019	20%	Yes	2,332,486.62	$ -	0%	$ -
Bear Gulch	114642	Sta 21 Partial Rebuild	June 2020	2024	1,872,104	2,182,362	288,695	20%	Advice Letter	$ 1,872,104.28	$ -	0%	$ -
Bear Gulch	114643	Sta 17 Partial Rebuild	December 2018	2025	215,533	246,929	32,559	20%	Advice Letter	$ 215,533.36	$ -	0%	$ -
Bear Gulch	114644	AMI (Smart) Meter Pilot	April 2022	2024	1,065,573	1,263,904	135,614	20%	Advice Letter	$ 1,065,572.66	$ -	0%	$ -
Bear Gulch	114646	Sta 30 Chem Addition	April 2019	2024	954,364	1,129,585	144,102	20%	Yes	547,859.65	$ -	0%	$ -
LA County Region	114791	Lake Hughes 003-T1 Seismic Retrofit	May 2021	2024	73,320	84,897	7,417	20%	Yes	20,138.67	$ -	0%	$ -
LA County Region	114792	LAN 001-T2 Seismic Retrofit	May 2021	2024	87,764	101,621	8,879	10%	Yes	(26,057.43)	$ -	0%	$ -
LA County Region	114793	LAN 001-T3 Seismic Retrofit	April 2021	2024	87,764	100,316	8,662	10%	Yes	(26,057.43)	$ -	0%	$ -
South Bay Region	114865	DOM 277-A: Pump and Motor Replace	February 2021	2024	41,235	49,225	1,484	10%	Advice Letter	$ 41,234.84	$ -	0%	$ -
Bakersfield	114875	BK 140-1W: Pump & Motor Replace	January 2020	2024	151,899	174,678	5,872	10%	Yes	62,191.21	$ -	0%	$ -
Bay Area Region	114882	ARMV 002-T1 - New CP Install	November 2020	2024	11,730	13,779	1,228	10%	Yes	3,599.88	$ -	0%	$ -
North Valley Region	114889	Station Rebuild CH STA 12	April 2020	2024	557,069	648,879	38,807	10%	Advice Letter	$ 557,068.94	$ -	0%	$ -
LA County Region	114949	Sta 005 Rebuild	February 2019	2025	62,324	74,901	6,546	20%	Advice Letter	$ 62,324.04	$ -	0%	$ -
CSS	114960	WQ-VOC GC/MS	March 2022	2024	189,060	196,331	-	0%	Advice Letter	$ (10,692.83)	$ -	0%	$ -
Bay Area Region	114980	SSF Sta.11 New Access Road	November 2018	2025	27,806	31,795	2,738	10%	Advice Letter	$ 27,806.21	$ -	0%	$ -
Westlake	114982	WLK Emergency Fuel Supply	February 2024	2024	26,564	31,633	2,998	10%	Advice Letter	$ 26,563.51	$ -	0%	$ -
Bay Area Region	114994	MPS 116-A: Pump & Motor Replacement	January 2021	2024	53,461	62,870	5,319	10%	Yes	1,955.90	$ -	0%	$ -
Bear Gulch	115002	BG 036-A: Pump & Motor Replacement	September 2021	2024	42,194	49,302	4,157	10%	Advice Letter	$ (6,501.36)	$ -	0%	$ -
Bay Area Region	115010	Install new station piping SM116	March 2024	2025	176,963	201,430	16,337	10%	Advice Letter	$ 176,962.82	$ -	0%	$ -
Bear Gulch	115017	BG 043-A:Pump & Motor Replacement	October 2021	2024	2,403	2,826	237	10%	Advice Letter	$ 2,403.40	$ -	0%	$ -
Bear Gulch	115020	BG 43-B:Pump & Motor Replacement	October 2021	2024	3,247	3,819	320	10%	Advice Letter	$ 3,247.28	$ -	0%	$ -
Visalia	115059	New Tank Install	April 2019	2024	3,247,930	3,779,937	-	0%	Advice Letter	$ 3,247,930.08	$ -	0%	$ -
Bay Area Region	115080	Panelboard Replacement MPS 117	February 2021	2027	274,913	309,130	26,810	10%	Advice Letter	$ 274,912.56	$ -	0%	$ -
Bay Area Region	115085	Replace Panelboard MPS 118	August 2019	2024	302,473	358,758	-	0%	Advice Letter	$ 302,472.70	$ -	0%	$ -
South Bay Region	115087	Sepulveda Line Reliability Study	April 2024	2025	125,597	147,174	12,511	20%	Advice Letter	$ 125,597.06	$ -	0%	$ -
Bakersfield	115097	Replace 5 CL2 Tanks 2021	July 2022	2024	19,409	22,738	693	10%	Advice Letter	$ 1,387.13	$ -	0%	$ -
Marysville	115109	Marysville 12 Panel & Generator	November 2020	2024	380,956	442,162	25,891	10%	Advice Letter	$ 380,956.01	$ -	0%	$ -
Bay Area Region	115110	Panelboard Replacement MPS 107	October 2019	2024	464,135	550,502	-	0%	Advice Letter	$ 464,135.02	$ -	0%	$ -
Bay Area Region	115112	Panelboard Replacement MPS 112	July 2019	2024	484,975	561,733	-	0%	Advice Letter	$ 484,974.67	$ -	0%	$ -
Los Altos	115162	LAS 013-C Replace Pump and Motor	June 2021	2024	46,539	54,287	4,538	10%	Yes	(22,858.72)	$ -	0%	$ -
Bear Gulch	115179	Panelboard Replacement BG-16	February 2019	2024	881,460	1,036,617	92,316	10%	Yes	596,907.07	$ -	0%	$ -
CSS	115207	SGMA support & review	March 2023	2024	199,387	232,160	-	0%	Advice Letter	$ 629.54	$ -	0%	$ -
Stockton	115212	12" Cherokee Rd. Pipeline	September 2018	2024	6,585	7,808	-	0%	Advice Letter	$ 6,585.06	$ -	0%	$ -
Selma	115213	Panelboard Replacement SEL-6	September 2019	2024	167,070	189,769	6,388	10%	Advice Letter	$ (40,843.46)	$ -	0%	$ -
Bay Area Region	115214	LUC 01 - Acid Feed Installation	May 2019	2024	54,334	63,729	5,732	10%	Advice Letter	$ (18,581.26)	$ -	0%	$ -
South Bay Region	115218	HR 004-E: Pump & Motor Replace	June 2020	2024	47,004	56,438	1,734	10%	Yes	1,719.67	$ -	0%	$ -
South Bay Region	115223	HR 009-C: Pump & Motor Replace	January 2021	2024	3,905	4,689	141	10%	Advice Letter	$ 3,905.21	$ -	0%	$ -
CSS	115225	Cloud Access Security Broker	April 2021	2024	266,798	277,059	26,680	10%	Advice Letter	$ (15,090.46)	$ -	0%	$ -
South Bay Region	115226	HR 023-C: Pump & Motor Replace	June 2020	2024	40,000	48,028	1,476	10%	Yes	1,463.41	$ -	0%	$ -
South Bay Region	115230	HR 005-A: Pump & Motor Replace	June 2020	2024	101,266	119,573	3,736	10%	Yes	55,566.56	$ -	0%	$ -
Stockton	115263	STK-61 Blow Off	September 2018	2025	94,443	110,158	12,639	20%			$ -	0%	$ -
Selma	115272	SEL 018-01:Pump & Motor Replacement	July 2021	2024	1,004	1,176	37	10%	Advice Letter	$ 1,004.05	$ -	0%	$ -
Bakersfield	115307	BK 005-05 Pump & Motor Replace	October 2022	2024	33,250	39,189	1,210	10%	Advice Letter	$ 33,250.19	$ -	0%	$ -
Stockton	115323	STK-68 Blow Off	October 2019	2025	74,938	87,407	5,458	10%	Yes	(278,464.80)	$ -	0%	$ -
Stockton	115326	STK-71 Blow Off	January 2021	2025	63,984	74,631	4,546	10%			$ -	0%	$ -
Stockton	115329	STK-77 Blow Off	July 2018	2025	123,325	143,846	9,002	10%			$ -	0%	$ -
Bear Gulch	115337	BG 23-A Pump & Motor Replacement	September 2020	2024	64,979	75,596	6,567	10%	Yes	19,905.63	$ -	0%	$ -
South Bay Region	115340	Replace F.H. & Valves	January 2021	2024	164,557	196,444	6,116	10%	Yes	6,020.38	$ -	0%	$ -
South Bay Region	115379	Replace Blow-offs	July 2024	2025	130,722	152,719	4,907	10%	Yes	4,782.53	$ -	0%	$ -
South Bay Region	115380	Replace Blow-offs	January 2021	2025	133,990	156,536	4,907	10%	Yes	4,902.07	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Livermore	115382	LIV 019-A Replace Pump and Motor	April 2022	2024	1,229	1,474	90	10%	Advice Letter	$ 1,229.16	$ -	0%	$ -
Livermore	115386	LIV 015-01 Replace Pump and Motor	February 2023	2025	33,399	39,192	2,270	10%	Advice Letter	$ 33,398.51	$ -	0%	$ -
Salinas Valley Region	115409	SLN 016-02 Replace Pump and Motor	September 2021	2024	156,583	184,328	10,642	10%	Advice Letter	$ 61,689.03	$ -	0%	$ -
Bakersfield	115417	BK 216 D Pump & Motor Replace	January 2020	2024	65,178	76,820	2,520	10%	Advice Letter	$ 65,178.06	$ -	0%	$ -
Bakersfield	115440	BK 216 MFS1 Pump & Motor Replace	June 2021	2024	177,215	206,982	6,539	10%	Advice Letter	$ 51,221.53	$ -	0%	$ -
Bakersfield	115540	BK 216 MFS3 Pump & Motor Replace	June 2021	2024	2,667	3,210	98	10%	Advice Letter	$ 2,667.42	$ -	0%	$ -
Stockton	115584	STK 75-01 Pump & Motor Replacement	November 2022	2024	25,546	30,606	1,885	10%	Advice Letter	$ 25,546.16	$ -	0%	$ -
Bear Gulch	115586	Algal Treatment Study - BG	November 2021	2024	14,235	16,956	-	0%	Advice Letter	$ 3,375.56	$ -	0%	$ -
Bakersfield	115626	YEAR 2021: 2,100 F/M CONVERSIONS	April 2021	2024	2,143,664	2,499,748	84,052	10%	Yes	77,273.53	$ -	0%	$ -
Bay Area Region	115635	SSF 014-T1: Repl Interior Ladder	September 2022	2024	1,391	1,625	136	10%	Advice Letter	$ (2,991.84)	$ -	0%	$ -
Bay Area Region	115716	MPS 031-T1 - Tank Struct Retrofit	September 2021	2024	56,371	66,292	5,497	10%	Advice Letter	$ 56,371.31	$ -	0%	$ -
LA County Region	115740	2019 - Vehicle Replacement Program	January 2019	2024	69,326	69,626	3,389	10%			$ -	0%	$ -
Bay Area Region	115747	2020 Vehicle Replacement Program	July 2020	2024	267,299	279,751	31,741	10%	Yes	35,713.36	$ -	0%	$ -
Bay Area Region	115748	2021 Vehicle Replacement Program	February 2021	2024	92,659	95,538	10,735	10%	Yes	(3,179.47)	$ -	0%	$ -
North Valley Region	115768	2021 Vehicle Replacement Program	October 2020	2024	260,664	270,586	21,047	10%	Yes	(8,280.61)	$ -	0%	$ -
Dixon	115772	2020 Vehicle Replacement Program	September 2021	2024	64,136	68,226	5,308	10%	Yes	(2,200.73)	$ -	0%	$ -
CSS	115787	2021 Vehicle Replacement Program	January 2021	2024	539,124	559,859	-	0%	Yes	(18,499.36)	$ -	0%	$ -
Rancho Dominguez	115826	2020 Vehicle Replacement Program	March 2020	2024	521,327	546,793	-	0%	Yes	20,672.74	$ -	0%	$ -
Kern River Valley	115830	Lakeland WTP Upgrades	May 2020	2025	221,025	254,807	18,580	10%	Yes	(57,631.18)	$ -	0%	$ -
Salinas Valley Region	115835	2021 Vehicle Replacement Program	December 2020	2024	175,355	183,893	17,536	10%	Advice Letter	$ (77,552.33)	$ -	0%	$ -
Stockton	115842	2021 Vehicle Replacement Program	January 2021	2024	130,891	135,647	11,150	10%	Yes	(4,491.36)	$ -	0%	$ -
Bay Area Region	115844	MPS 118- T1- Tank Struct Retrofit	December 2021	2024	78,162	91,130	7,813	10%	Advice Letter	$ 38,521.04	$ -	0%	$ -
Salinas Valley Region	115845	New well at Salinas Oak Hills	April 2022	2025	2,489,451	2,900,727	385,205	20%	Advice Letter	363,588	$ -	0%	$ -
Salinas Valley Region	115854	Proposed 250K Storage Tank LL 302	September 2018	2025	950,084	1,081,886	125,814	20%	Advice Letter	$ 950,083.88	$ -	0%	$ -
Bakersfield	115863	Replace Gen-set at Station BK 116	December 2019	2024	623,315	712,905	23,349	10%	Advice Letter	$ 224,944.42	$ -	0%	$ -
Bay Area Region	115868	MPS 027-PT2 - Replace Pressure Tank	March 2019	2024	779,981	913,321	81,688	10%	Yes	536,078.15	$ -	0%	$ -
East Los Angeles	115873	ELA 059-PT1 - Replace Pressure Tank	October 2020	2024	288,734	339,550	10,536	10%	Yes	140,194.43	$ -	0%	$ -
CSS	115880	Supplier Invoice Process Automation	March 2021	2024	616,114	639,809	-	0%	Yes	(21,141.16)	$ -	0%	$ -
CSS	115909	2019 Power Quality Analyzers	March 2020	2024	13,128	13,633	-	0%	Yes	1,121.10	$ -	0%	$ -
Salinas Valley Region	115930	Install Booster Pumps SLN 50	March 2020	2024	375,970	439,520	47,873	20%	Advice Letter	$ 375,970.07	$ -	0%	$ -
Salinas Valley Region	115959	New well at Salinas - Las Lomas	January 2021	2025	2,531,646	2,956,996	391,734	20%	Advice Letter	373,664	$ -	0%	$ -
Bear Gulch	115970	BG 005-T9 - New 30" Manway	December 2018	2024	240	281	25	10%	Advice Letter	$ 240.27	$ -	0%	$ -
Bay Area Region	115989	ARM_STA_02_T1_Seismic_Upgrad	December 2019	2024	66,667	78,314	10,729	20%	Advice Letter	$ 66,666.67	$ -	0%	$ -
Bay Area Region	115992	MPS 118-T2 - Tank Struct Retrofits	October 2019	2024	11,224	13,114	1,175	10%	Advice Letter	$ 11,223.63	$ -	0%	$ -
CSS	116003	Portable Booster Pump	October 2020	2024	52,057	61,252	-	0%	Advice Letter	$ 52,057.05	$ -	0%	$ -
Livermore	116006	LIV 023-T1 - Tank Retrofits	October 2020	2024	1,771	2,089	123	10%	Advice Letter	$ 1,770.73	$ -	0%	$ -
CSS	116011	GIS Development for Valley District	September 2020	2024	225,837	257,339	-	0%	Advice Letter	$ 96,521.06	$ -	0%	$ -
LA County Region	116013	LAN 001-PT1: Replace Pressure Tank	February 2021	2025	191,080	214,854	6,803	10%	Yes	22,210.20	$ -	0%	$ -
Bay Area Region	116014	SSF 005-T1 - Roof Retrofit	December 2020	2024	60,338	70,957	5,979	10%	Advice Letter	$ 60,337.55	$ -	0%	$ -
Los Altos	116020	New well replacement at station 20	February 2019	2026	1,350,407	1,548,973	204,683	20%	Advice Letter	$ 1,350,407.15	$ -	0%	$ -
Bay Area Region	116051	MPS 114-PT1 - Replace Pressure Tank	June 2020	2024	455,696	532,450	45,548	10%	Yes	197,240.92	$ -	0%	$ -
Bay Area Region	116058	MPS 116-PT1 - Replace Pressure Tank	June 2020	2025	57,824	67,261	5,780	10%	Advice Letter	$ 57,823.57	$ -	0%	$ -
Kern River Valley	116059	BOD 011-T1: Tank Retrofits	September 2023	2024	128,515	154,145	4,575	10%	Yes	32,579.55	$ -	0%	$ -
Bay Area Region	116064	MPS 120-PT1: Replace Pressure Tank	May 2021	2024	369,079	430,314	35,990	10%	Yes	209,510.22	$ -	0%	$ -
LA County Region	116071	LEO 001-T1: Seismic Retrofit	July 2021	2024	122,652	141,836	4,660	10%	Yes	4,487.67	$ -	0%	$ -
Bay Area Region	116139	SSF 011-T1: Seismic Retrofit	July 2019	2024	50,757	60,458	5,073	10%	Advice Letter	$ 50,757.32	$ -	0%	$ -
Marysville	116154	Sta. 9 Driveway Improvement	September 2021	2024	20,355	24,251	1,466	10%	Yes	744.71	$ -	0%	$ -
Bakersfield	116211	Acid feed system - NW WTP	March 2021	2024	52,321	62,966	2,137	10%	Yes	(61,500.46)	$ -	0%	$ -
CSS	116215	ENERGY EFFICIENCY IMPROVEMENTS	May 2021	2024	223,629	256,122	-	0%	Yes	8,251.76	$ -	0%	$ -
Bakersfield	116231	Replace potassium permang - NEWTP	April 2019	2024	72,738	87,537	2,915	10%	Yes	2,661.13	$ -	0%	$ -
Bakersfield	116237	Replace 4 bulk chem tanks - NE WTP	March 2020	2024	180,749	205,970	6,764	10%	Yes	6,612.75	$ -	0%	$ -
Bay Area Region	116271	RDP_102_Replace_Pump_Bldg	May 2024	2024	1,841	2,214	296	20%	Advice Letter	$ 1,841.14	$ -	0%	$ -

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District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bear Gulch	116305	BG16 Slope Stabilization	August 2024	2025	109,673	127,849	16,967	20%	Advice Letter	$ 109,673.37	$ -	0%	$ -
Los Altos	116323	Advanced Metering Infrastructure	August 2022	2024	85,136	101,692	11,953	10%	Advice Letter	$ 85,135.95	$ -	0%	$ -
Bay Area Region	116335	Station 26 Stabilization Project	January 2019	2025	433,899	500,298	38,263	10%	Advice Letter	$ 433,899.47	$ -	0%	$ -
Bakersfield	116386	Replace membrane feed pumps - NWTP	November 2020	2024	43,064	50,603	3,213	10%	Advice Letter	$ 770.94	$ -	0%	$ -
Bear Gulch	116387	BG 2020 Flowmeter Replacements	January 2020	2025	8,094	9,315	809	10%	Advice Letter	$ 8,093.90	$ -	0%	$ -
Bear Gulch	116413	BG Skeggs Tanks Construction	April 2022	2026	3,080,331	3,551,816	455,523	20%	Advice Letter	$ 3,080,331.38	$ -	0%	$ -
Bay Area Region	116414	MPS 2020 Flowmeter Replacements	January 2020	2024	139,241	163,044	4,974	10%	Yes	82,329.94	$ -	0%	$ -
Bay Area Region	116415	MPS 2021 Flowmeter Replacements	February 2021	2024	14,220	16,687	1,387	20%	Advice Letter	$ 14,220.18	$ -	0%	$ -
Bakersfield	116483	BK 2021 Flowmeter Replacements	May 2021	2024	256,567	299,662	9,134	20%	Advice Letter	$ 18,910.25	$ -	0%	$ -
North Valley Region	116490	CH 2021 Flowmeter Replacements	May 2021	2024	55,060	64,241	4,057	10%	Advice Letter	$ 5,537.88	$ -	0%	$ -
Visalia	116494	Visalia Reliability Study	October 2021	2024	212,651	254,099	7,777	10%	Advice Letter	$ 8,389.12	$ -	0%	$ -
Bakersfield	116497	Bakersfield Reliability Study	October 2021	2024	545,028	640,366	19,933	10%	Advice Letter	$ 394,735.67	$ -	0%	$ -
Selma	116509	Selma Reliability Study	October 2021	2024	154,965	180,326	5,667	10%	Advice Letter	$ 372.85	$ -	0%	$ -
Bay Area Region	116516	Mid Penninsula Reliability Study	September 2020	2024	8,037	9,391	803	10%	Advice Letter	$ 8,037.12	$ -	0%	$ -
Bear Gulch	116517	Bear Gulch Reliability Study	December 2019	2024	7,505	8,770	783	10%	Advice Letter	$ 7,505.31	$ -	0%	$ -
Westlake	116561	WLK 2019 Flowmeter Replacements	August 2020	2024	70,759	82,496	2,705	10%	Advice Letter	$ 30,236.44	$ -	0%	$ -
CSS	116566	Person Down Radio Solution	January 2020	2024	805,687	836,674	-	0%	Yes	(404,652.99)	$ -	0%	$ -
Salinas Valley Region	116581	King City WSFMP	March 2023	2024	2,463	2,926	-	0%	Advice Letter	$ 2,463.29	$ -	0%	$ -
Selma	116582	Selma WSFMP	August 2023	2024	138,197	160,814	13,820	15%	Advice Letter	$ 1,244.38	$ -	0%	$ -
Bakersfield	116584	Bakersfield WSFMP	May 2022	2024	12,506	14,338	-	0%	Advice Letter	$ 12,505.85	$ -	0%	$ -
Visalia	116586	VIS 2021 Flowmeter Replacements	May 2021	2024	77,637	90,567	2,764	10%	Advice Letter	$ 6,314.72	$ -	0%	$ -
Bakersfield	116631	Structural Improvements - NE WTP	October 2020	2025	59,916	69,109	2,188	10%	Yes	2,192.03	$ -	0%	$ -
Marysville	116650	MRL 2020 Flowmeter Replacements	June 2020	2024	111,823	130,381	8,074	10%	Advice Letter	$ 102,892.77	$ -	0%	$ -
Los Altos	116761	Upgrade Sample Stations	May 2023	2024	61,339	72,236	7,709	10%	Yes	2,244.10	$ -	0%	$ -
Los Altos	116799	Upgrade Sample Stations Phase 2	October 2021	2024	91,831	104,829	11,014	10%	Yes	29,911.23	$ -	0%	$ -
Bay Area Region	116850	SSF Reliability Study	September 2020	2024	5,613	6,558	585	10%	Advice Letter	$ 5,613.00	$ -	0%	$ -
CSS	116883	Groundwater Banking Study	April 2021	2024	6,780	8,013	678	15%	Advice Letter	$ 6,779.96	$ -	0%	$ -
CSS	116896	CSI Technical Specs	October 2021	2025	4,485	5,118	-	0%	Advice Letter	$ 4,484.89	$ -	0%	$ -
Salinas Valley Region	116899	SLN-LL new Chromium treatment	January 2021	2025	1,595,335	1,863,372	303,808	30%			$ -	0%	$ -
Salinas Valley Region	116901	SLN-OH new chromium 6 treatment	January 2021	2025	1,595,335	1,863,372	303,808	30%			$ -	0%	$ -
CSS	116910	ADDITIONAL CONF. ROOM -RDOM	August 2021	2024	43,882	51,172	-	0%	Advice Letter	$ 43,881.86	$ -	0%	$ -
Bay Area Region	116923	COS_07 Free Chlorine Conversion	August 2019	2024	187,803	201,555	19,829	10%	Yes	102,161.88	$ -	0%	$ -
Bay Area Region	116925	CSPR Sta 8 - Spray Aeration Sys	May 2020	2025	11,067	11,466	1,171	10%	Advice Letter	$ 11,067.26	$ -	0%	$ -
East Los Angeles	116988	Tubeway Phase 2	November 2018	2025	7,004,219	8,082,951	-	0%	Advice Letter	5,044,667	$ -	0%	$ -
Stockton	117176	STK 2020 Physical Security Upgrades	September 2019	2024	57,556	68,064	4,010	10%	Advice Letter	$ 57,556.25	$ -	0%	$ -
South Bay Region	117187	HR 2020 Physical Security Upgrades	December 2020	2024	296,397	355,883	10,816	10%	Yes	55,505.35	$ -	0%	$ -
LA County Region	117192	PV 2019 Physical Security Upgrades	April 2020	2024	160,338	192,694	6,131	10%	Yes	48,142.43	$ -	0%	$ -
Stockton	117195	STK 2021 Physical Security Upgrades	April 2022	2024	662,570	758,752	45,031	10%	Advice Letter	$ 166,642.38	$ -	0%	$ -
Bear Gulch	117237	BG 2021 Physical Security Upgrades	August 2021	2024	334,525	390,030	32,621	10%	Advice Letter	$ 3,643.29	$ -	0%	$ -
Livermore	117363	LIV 28 Generator & VFD	September 2020	2024	319,637	372,097	21,724	10%	Advice Letter	$ 319,636.53	$ -	0%	$ -
Livermore	117367	LIV 14 Panelboard	January 2020	2024	307,921	354,619	21,451	10%	Advice Letter	$ 307,921.15	$ -	0%	$ -
Salinas Valley Region	117379	Replace six RTUs	April 2020	2024	184,998	217,778	14,103	10%	Advice Letter	$ 184,998.31	$ -	0%	$ -
Bay Area Region	117399	Install SCADA PLC at COS_RDV	June 2020	2024	367,278	415,632	33,598	10%	Yes	222,821.04	$ -	0%	$ -
Marysville	117409	Army Corps Marysville Phase 3	April 2021	2025	237,688	271,940	16,646	10%	Yes	237,687.81	$ -	0%	$ -
Los Altos	117411	Install Genset - LAS 9	March 2019	2024	683,473	814,469	71,540	10%	Advice Letter	$ 683,473.43	$ -	0%	$ -
Visalia	117412	VIS 79 Install Generator	October 2020	2025	78,272	89,574	2,787	10%	Advice Letter	$ 78,272.01	$ -	0%	$ -
Westlake	117416	Generator STA 10	May 2020	2024	427,500	499,475	42,750	10%	Advice Letter	$ 125,885.51	$ -	0%	$ -
South Bay Region	117425	HR 2020 Flowmeter Replacements	February 2022	2024	33,755	39,297	1,232	10%	Yes	10,994.30	$ -	0%	$ -
Los Altos	117429	LAS 2021 Flowmeter Replacement	May 2021	2024	13,851	16,157	1,477	10%	Advice Letter	$ 13,851.11	$ -	0%	$ -
Livermore	117432	LIV 2019 Flowmeter Replacements	January 2020	2024	68,849	80,802	4,994	10%	Yes	(8,060.96)	$ -	0%	$ -
Livermore	117436	LIV 2021 Flowmeter Replacements	May 2021	2024	99,035	115,913	6,731	10%	Advice Letter	$ (1,352.22)	$ -	0%	$ -
Bay Area Region	117486	383-393 E. Grand, 200' Equake pipe	January 2018	2024	1,370,316	1,608,032	137,032	20%	Yes	(255,700.65)	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bay Area Region	117538	NOH_201_Trmt_Mods	December 2019	2024	413,502	487,176	-	0%	Yes	326,123.25	$ -	0%	$ -
CSS	117587	REPLACE - DATA CENTER A/C	June 2021	2025	4,421	5,053	-	0%	Advice Letter	$ 4,421.47	$ -	0%	$ -
Bay Area Region	117656	SSF 4 New Pumps	February 2019	2024	546,317	647,977	56,854	10%	Advice Letter	$ 546,316.91	$ -	0%	$ -
Bay Area Region	117796	Bayshore Ops. Center Improvements	May 2019	2025	449,665	508,900	-	0%	Advice Letter	$ 449,665.08	$ -	0%	$ -
Bay Area Region	117876	ARM-NOH AMI Meters	June 2020	2024	650,000	751,649	128,667	35%	Advice Letter	$ 579,679.69	$ -	0%	$ -
Bay Area Region	117877	LUC AMI Smart Meter	June 2022	2024	255,415	304,711	50,565	35%	Advice Letter	$ 255,415.05	$ -	0%	$ -
Bay Area Region	117880	HKN - AMI Smart Meters	June 2020	2024	11,277	13,208	2,233	20%	Advice Letter	$ 11,277.10	$ -	0%	$ -
East Los Angeles	117904	Install generator at CSC	September 2019	2024	347,793	411,107	14,139	10%	Advice Letter	$ 347,792.53	$ -	0%	$ -
Bear Gulch	118020	Modular Building	April 2022	2024	409,603	476,875	-	0%	Yes	12,227.55	$ -	0%	$ -
Bear Gulch	118028	Replace Genset - Sta 33	October 2020	2025	273,858	318,567	28,665	10%	Advice Letter	$ 273,858.38	$ -	0%	$ -
Travis	118053	Backflow Devices isdc 6	September 2019	2024	210,970	250,720	-	0%	Yes	(79,647.42)	$ -	0%	$ -
Bakersfield	118093	2019- VEH. FOR PROPOSED COMPLEME	August 2022	2024	89,100	91,993	4,005	10%	Advice Letter	$ (7,177.38)	$ -	0%	$ -
Bay Area Region	118094	2020- VEH. FOR PROPOSED COMPLEME	September 2023	2024	970,596	1,015,811	114,483	10%	Yes	(33,304.75)	$ -	0%	$ -
South Bay Region	118107	Sta.275 4-Log Disinfection	January 2021	2024	2,531,646	2,882,760	403,339	25%	Advice Letter	$ 564,625.73	$ -	0%	$ -
Salinas Valley Region	118116	Instrumentation Energy Optimization	January 2021	2024	54,852	64,229	3,819	10%	Yes	3,244.41	$ -	0%	$ -
Visalia	118121	2019 - VEHICLE FOR NEW COMPLEMEN	September 2023	2024	45,329	47,591	6,244	10%	Advice Letter	$ 45,328.91	$ -	0%	$ -
Salinas Valley Region	118492	SLN 205-01 CR(VI) Treatment Plant	December 2022	2025	1,597,375	1,844,491	296,757	30%			$ -	0%	$ -
Bear Gulch	118528	2019 - ADDITIONAL VEHICLES	May 2019	2024	240,052	251,246	29,218	10%	Yes	(8,237.08)	$ -	0%	$ -
CSS	118564	RENOVATE HR AREA	December 2023	2024	54,852	64,349	-	0%	Advice Letter	$ 54,852.32	$ -	0%	$ -
CSS	118570	RECONFIG ENG/ACCTG	April 2020	2024	559,613	652,576	-	0%	Advice Letter	$ 559,612.62	$ -	0%	$ -
CSS	118571	RECONFIGURE IT/ ADDITIONAL TRAILER	March 2021	2025	78,897	90,038	-	0%	Advice Letter	$ 78,896.98	$ -	0%	$ -
CSS	118572	REPURPOSE FOUNTAIN AREA	July 2021	2024	371,980	433,122	-	0%	Advice Letter	$ 17,503.24	$ -	0%	$ -
CSS	119073	PowerPlan Budget Forecasting	November 2018	2024	259,693	266,485	-	0%	No	N/A	$ -	0%	$ -
Los Altos	119986	Los Altos Field Office Upgrade	November 2020	2024	311,899	357,761	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	120835	HR 23 - Abandon/replace vault	September 2019	2024	753,755	868,556	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	121170	HR-024 Stationary Generator (PSPS)	December 2020	2025	329,114	381,378	24,834	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	121171	SLN-049 PSPS Genset	January 2020	2024	466,667	551,895	54,811	15%	No	N/A	$ -	0%	$ -
Bay Area Region	121261	SC-118 PSPS Genset	April 2020	2024	569,975	676,037	68,402	30%	No	N/A	$ -	0%	$ -
Bear Gulch	121345	BG-025 PSPS Genset	November 2019	2024	813,941	967,493	115,478	30%	No	N/A	$ -	0%	$ -
Bear Gulch	121347	BG-026 PSPS Genset	January 2020	2024	703,110	821,546	96,472	30%	No	N/A	$ -	0%	$ -
LA County Region	121426	PV-22 PSPS Electrical Modifications	March 2020	2026	671,507	783,050	58,725	10%	No	N/A	$ -	0%	$ -
North Valley Region	121485	CH FH/PB Connections (PSPS)	June 2023	2024	59,072	70,656	4,559	10%	Yes	31,172.54	$ -	0%	$ -
Los Altos	121487	PSPS LAS-33 Genset	January 2020	2024	520,029	618,243	71,939	15%	No	N/A	$ -	0%	$ -
LA County Region	121589	Olmsted Creek Pipe Crossing	January 2020	2024	506,329	608,506	-	0%			$ -	0%	$ -
Salinas Valley Region	121845	Land for New Well and Tank	February 2021	2024	302,291	355,032	77,392	35%			$ -	0%	$ -
CSS	122697	Plotter for BK Engineering office	September 2020	2024	23,218	24,111	-	0%	No	N/A	$ -	0%	$ -
Visalia	122819	VIS 77 installing Generator	August 2020	2024	210,335	248,348	21,034	10%			$ -	0%	$ -
Bakersfield	122824	Install Backup Generator BK 212	December 2020	2026	359,493	419,884	70,528	20%	No	N/A	$ -	0%	$ -
Westlake	122859	Install Backup Generator WLK 006	October 2020	2024	604,780	708,113	67,666	20%	No	N/A	$ -	0%	$ -
Bear Gulch	122876	Install Backup Generator BG 017	March 2021	2025	338,928	396,875	64,779	20%	No	N/A	$ -	0%	$ -
Westlake	122933	Install Backup Generator WLK Office	December 2020	2025	212,747	253,348	40,662	20%	No	N/A	$ -	0%	$ -
Travis	122940	TAB Phys Security & Instrument Inst	August 2020	2024	742,616	866,170	-	0%	Yes	547,597.33	$ -	0%	$ -
Bay Area Region	122976	SSF Hillside Blvd PRV	February 2021	2024	329,114	386,207	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	122978	SSF-007 Control Valve	March 2021	2024	194,624	227,406	-	0%	Yes	100,531.79	$ -	0%	$ -
LA County Region	123008	PV Narcissa Drive New Main	May 2021	2025	480,352	564,179	-	0%	No	N/A	$ -	0%	$ -
LA County Region	123009	PV 4" Main Replacement	May 2021	2026	4,678,481	5,526,849	-	0%	No	N/A	$ -	0%	$ -
LA County Region	123091	AV 2022 Vehicle Replacemnt Program	March 2022	2024	89,654	90,041	8,150	10%	Yes	5,364.60	$ -	0%	$ -
Kern River Valley	123105	ARD 011-T1 - CP Upgrade	July 2023	2024	13,844	16,189	1,258	10%	Yes	2,026.60	$ -	0%	$ -
Livermore	123106	Purchase Land for Well in Zone 610	September 2020	2026	802,165	914,112	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	123130	BK 2022 CP Upgrades	May 2022	2024	64,352	75,161	5,850	10%	Yes	2,343.56	$ -	0%	$ -
Bakersfield	123132	BK 116-T1 - Tank Retrofits	August 2022	2024	33,502	39,341	3,046	10%	Yes	4,251.92	$ -	0%	$ -
Bear Gulch	123141	BG Tank Exterior Ladder Lifelines	August 2022	2024	84,388	98,816	7,672	10%	Yes	(24,977.76)	$ -	0%	$ -

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Bakersfield	123142	BK 116-T1 - Seismic Retrofit	April 2022	2024	80,169	94,140	7,288	10%	Yes	10,174.85	$ -	0%	$ -
Bakersfield	123159	BK 2022 Vehicle Replacement Program	January 2022	2024	165,843	170,195	15,077	10%	Yes	84,995.66	$ -	0%	$ -
Livermore	123160	New Well-Livermore	May 2022	2024	3,588,504	4,302,978	601,400	20%	No	N/A	$ -	0%	$ -
Bakersfield	123165	BK New Tank & Booster Facility	July 2024	2026	3,126,872	3,613,687	277,650	10%	Yes	557,935.57	198,686.33	10%	$ 213,963.45
Bear Gulch	123168	BG 022-T1 - Tank Retrofits	October 2024	2024	45,625	54,347	4,483	10%	Yes	4,729.10	$ -	0%	$ -
Bakersfield	123170	BK 675 Rezone	March 2023	2025	1,346,019	1,509,695	117,241	10%	Yes	(110,082.78)	110,265.89	10%	$ 115,848.10
Bakersfield	123171	BK 2023 Vehicle Replacement Program	February 2023	2024	49,428	52,267	4,494	10%	Yes	14,221.82	$ -	0%	$ -
Bakersfield	123176	BK 1025 Zone SCADA	January 2023	2024	106,594	128,282	17,019	20%	Yes	24,320.57	$ -	0%	$ -
South Bay Region	123178	HR 027-T1 - Tank Retrofits	June 2023	2024	33,755	39,634	3,069	10%	Yes	3,836.50	$ -	0%	$ -
Bakersfield	123180	BK 150 Surge Tank	October 2022	2024	310,619	358,495	28,238	10%	Yes	87,290.11	4,798.08	2.5%	$ 4,918.03
Bakersfield	123181	BKNG 219 Surge Tank	October 2022	2024	301,901	349,272	27,446	10%	Yes	78,571.97	4,798.08	2.5%	$ 4,918.03
Bakersfield	123183	BK 186 Corner Tank BFV Controls	June 2024	2025	75,085	86,345	6,826	10%	Yes	4,987.16	$ -	0%	$ -
Bakersfield	123185	BK 87 Station Rebuild - Design	January 2023	2024	1,195,204	1,404,272	199,201	20%	No	N/A	$ -	0%	$ -
Bakersfield	123190	BK 116 PB & Building Replacement	January 2022	2025	1,164,345	1,317,836	186,258	20%	Yes	532,587.46	25,574.33	10%	$ 26,869.03
Bakersfield	123193	BK 148 PB & Building Replacement	January 2023	2024	461,752	542,523	73,871	20%	Yes	105,489.46	14,071.47	5%	$ 14,423.26
Bakersfield	123194	BK 23 Building Replacement	March 2023	2025	245,870	288,720	39,257	20%	Yes	48,766.09	$ -	0%	$ -
Bakersfield	123196	BK 2023 Poly Service Replacements	June 2023	2024	716,481	849,544	65,135	10%	Yes	95,113.23	$ -	0%	$ -
Bakersfield	123197	BK 2024 Poly Service Replacements	August 2024	2024	734,393	848,729	66,763	10%	Yes	97,491.02	$ -	0%	$ -
Bakersfield	123200	BK 36-02 Piping Replacement	January 2024	2024	95,552	112,537	15,256	20%	Yes	18,951.89	$ -	0%	$ -
Bakersfield	123201	BK 82 Piping Replacement	January 2023	2025	208,922	238,075	33,357	20%	Yes	137,838.10	$ -	0%	$ -
Livermore	123204	LIV 013-T2 - Tank Retrofits	November 2023	2024	7,556	8,796	687	10%	Yes	2,572.06	$ -	0%	$ -
Bear Gulch	123211	BG 036-T1 - Tank Retrofits	January 2024	2024	18,005	21,447	1,637	10%	Yes	2,300.75	$ -	0%	$ -
Selma	123214	SEL 011-01 - Replace Pump & Motor	June 2022	2024	99,304	114,050	9,028	10%	Yes	21,919.66	$ -	0%	$ -
Dixon	123217	DIX 010-T1 - Ext Ladder Lifeline	August 2022	2024	9,451	11,011	859	10%	Yes	3,689.95	$ -	0%	$ -
Willows	123219	WIL 011-T1 - Ext Ladder Lifeline	August 2022	2024	9,115	10,683	829	10%	Yes	3,353.94	$ -	0%	$ -
Visalia	123232	VIS 070-01 - Replace Pump and Motor	October 2022	2024	126,206	147,582	11,473	10%	Yes	49,236.32	$ -	0%	$ -
Visalia	123233	VIS 072-01 - Replace Pump & Motor	October 2022	2024	100,576	117,896	9,143	10%	Yes	25,483.62	$ -	0%	$ -
Visalia	123239	VIS 012-A - Replace Pump & Motor	January 2022	2024	36,844	44,025	3,349	10%	Yes	4,707.95	$ -	0%	$ -
Salinas Valley Region	123245	KC Tank Exterior Ladder Lifelines	August 2022	2024	25,316	29,644	2,301	10%	Yes	13,134.42	$ -	0%	$ -
Bay Area Region	123246	COS 008-T1 - CP Upgrade	August 2022	2024	16,194	17,616	1,472	10%	Yes	3,451.77	$ -	0%	$ -
North Valley Region	123248	ORO Tank Exterior Ladder Lifelines	August 2022	2024	12,963	15,088	1,178	10%	Yes	4,165.76	$ -	0%	$ -
Bay Area Region	123251	LUC 002-T1 - Tank Retrofits	April 2023	2024	17,250	20,233	1,568	10%	Yes	1,047.33	$ -	0%	$ -
Bakersfield	123255	BK 213-T3 - Tank Retrofits	January 2024	2024	13,716	16,507	1,247	10%	Yes	1,752.76	$ -	0%	$ -
Stockton	123260	STK STA 66-02 Roof Replacement	November 2022	2024	153,586	179,642	25,598	20%	Yes	34,313.81	9,069.48	10%	$ 9,296.22
South Bay Region	123262	HR 005-T1 - Tank Retrofits	January 2024	2024	10,249	12,306	932	10%	Yes	1,309.65	$ -	0%	$ -
Stockton	123265	STK 12" Cherokee Rd Pipeline	September 2023	2025	1,818,697	2,116,223	312,131	20%	Yes	408,362.37	111,091.73	10%	$ 116,715.75
Stockton	123266	STK Main Tie-ins at Army & Charte	January 2024	2024	1,579,606	1,817,330	263,268	20%	Yes	545,510.21	77,353.74	10%	$ 79,287.58
Stockton	123268	STK Mainline Flushing	January 2024	2024	312,020	328,456	28,365	10%	Yes	23,648.74	11,250.00	10%	$ 11,531.25
Visalia	123270	VIS 032-01 - Replace Pump & Motor	June 2024	2024	90,939	108,664	8,267	10%	Yes	11,620.43	$ -	0%	$ -
South Bay Region	123271	DOM 203-T2 - Tank Retrofits	July 2022	2024	8,439	10,074	767	10%	Yes	(738.94)	$ -	0%	$ -
South Bay Region	123273	DOM 203-T4 - Tank Retrofits	June 2022	2024	3,376	4,030	307	10%	Yes	31.58	$ -	0%	$ -
Visalia	123276	VIS 079-01 - Replace Pump & Motor	January 2023	2024	88,246	105,445	8,022	10%	Yes	11,276.20	$ -	0%	$ -
East Los Angeles	123282	ELA 055-A Replace Pump & Motor	September 2023	2024	56,540	67,346	5,140	10%	Yes	14,634.43	$ -	0%	$ -
Bay Area Region	123283	MPS 112-T1 - Tank Retrofits	June 2022	2024	8,439	9,945	767	10%	Yes	2,750.78	$ -	0%	$ -
Bay Area Region	123284	BAY 2022 Vehicle Replacement Progrm	March 2022	2024	190,568	199,446	17,324	10%	Yes	56,176.83	$ -	0%	$ -
Los Altos	123286	LAS 121-T3 - Tank Retrofits	March 2024	2024	11,477	13,452	1,043	10%	Yes	5,500.86	$ -	0%	$ -
Los Altos	123290	LAS 042-T2 - Tank Retrofits	March 2024	2024	14,231	16,720	1,294	10%	Yes	3,242.29	$ -	0%	$ -
Bay Area Region	123292	BAY 2023 Vehicle Replacement Progrm	November 2022	2024	196,209	203,610	17,743	10%	Yes	58,872.05	$ -	0%	$ -
Bay Area Region	123293	MPS 032-T2 - Tank Retrofits	January 2024	2024	23,633	28,150	2,148	10%	Yes	4,054.46	$ -	0%	$ -
South Bay Region	123294	HR 2023 CP Upgrades	December 2022	2024	34,177	39,789	3,107	10%	Yes	1,254.57	$ -	0%	$ -
Bay Area Region	123296	MPS 123-T3 - Tank Retrofits	April 2024	2024	12,658	14,886	1,151	10%	Yes	(8,986.20)	$ -	0%	$ -
Bay Area Region	123297	MPS 2022 Control Valve Replacement	September 2021	2024	421,941	495,137	46,316	10%	Yes	(318,456.10)	$ -	0%	$ -

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Salinas Valley Region	123299	SLN 2023 CP Upgrades	April 2024	2024	49,590	59,186	4,508	10%	Yes	6,336.76	$ -	0%	$ -
Salinas Valley Region	123305	SLN 2024 CP Upgrades	April 2024	2024	39,040	46,595	3,549	10%	Yes	4,988.60	$ -	0%	$ -
Bay Area Region	123306	MPS 029-T1 - Tank Retrofits	January 2025	2025	33,600	39,167	3,055	10%	Yes	4,293.56	$ -	0%	$ -
Visalia	123309	VIS 38 - PFAS Treatment	January 2022	2025	1,399,408	1,597,626	127,219	10%	Yes	190,139.04	54,356.54	5%	$ 57,108.34
Visalia	123313	VIS 55 - PFAS Treatment	October 2022	2025	1,645,461	1,873,973	149,587	10%	Yes	(143,205.36)	77,863.63	5%	$ 81,805.48
Bay Area Region	123315	MPS 112-T3 - Tank Retrofits	January 2024	2024	33,635	40,063	3,058	10%	Yes	4,297.82	$ -	0%	$ -
Bay Area Region	123316	SSF 001-T1 - Tank Retrofits	August 2023	2024	35,398	41,182	3,218	10%	Yes	9,041.04	$ -	0%	$ -
Bay Area Region	123318	SSF 001-T2 - Tank Retrofits	August 2023	2024	3,510	4,084	319	10%	Yes	(1,628.32)	$ -	0%	$ -
Bay Area Region	123321	MPS 030-T1 - Tank Retrofits	September 2023	2024	22,264	25,958	2,024	10%	Yes	6,943.47	$ -	0%	$ -
Bay Area Region	123324	MPS 115-T1 - Tank Retrofits	April 2023	2024	14,905	17,528	1,355	10%	Yes	1,609.01	$ -	0%	$ -
Livermore	123330	LIV 018-T2 - Tank Retrofits	August 2022	2024	16,459	19,159	1,496	10%	Yes	(4,712.77)	$ -	0%	$ -
Kern River Valley	123333	KRV 006-T1 - CP Upgrade	September 2022	2024	15,376	18,641	1,398	10%	Yes	3,183.07	$ -	0%	$ -
Bear Gulch	123338	BG 030-T1 - Tank Retrofits	October 2023	2024	27,287	31,883	2,481	10%	Yes	3,585.51	$ -	0%	$ -
Los Altos	123344	LAS 114-T1 - Tank Retrofits	February 2023	2024	17,950	20,938	1,632	10%	Yes	(5,231.63)	$ -	0%	$ -
Bakersfield	123345	BK 096-T2 - Tank Retrofits	August 2024	2024	18,565	22,211	1,688	10%	Yes	3,720.21	$ -	0%	$ -
Bakersfield	123347	BK 096-T3 - Tank Retrofits	August 2024	2024	18,565	22,211	1,688	10%	Yes	3,720.21	$ -	0%	$ -
Bakersfield	123352	BK 096-T4 - Tank Retrofits	August 2024	2024	22,785	27,259	2,071	10%	Yes	3,777.72	$ -	0%	$ -
Visalia	123354	VIS 97 - New Storage Tank	January 2022	2025	4,040,641	4,702,493	673,440	20%	Yes	1,753,412.13	177,534.49	10%	$ 186,522.17
Bay Area Region	123358	SSF 014-T1 - Tank Retrofits	December 2022	2024	73,418	86,339	6,674	10%	Yes	25,726.91	$ -	0%	$ -
Visalia	123359	VIS 200 - New Storage Tank	January 2022	2025	1,241,881	1,441,886	206,980	20%	Yes	291,340.81	73,780.89	10%	$ 77,516.05
Bear Gulch	123365	BG 041-T2 - Tank Retrofits	December 2022	2024	29,394	34,568	2,672	10%	Yes	1,784.67	$ -	0%	$ -
Bakersfield	123371	BK 116-T3 - Tank Retrofits	August 2022	2025	29,030	33,383	2,639	10%	Yes	3,697.99	$ -	0%	$ -
Bakersfield	123376	BK 087-T5 - Tank Retrofits	January 2024	2024	38,416	46,232	3,492	10%	Yes	4,908.84	$ -	0%	$ -
Bakersfield	123377	BK 2023 Control Valve Overhaul	February 2023	2024	57,384	67,226	3,216	10%	Yes	4,408.40	$ -	0%	$ -
South Bay Region	123387	HR 026-T2 - Tank Retrofits	June 2022	2024	97,046	113,302	8,822	10%	Yes	72,789.85	$ -	0%	$ -
LA County Region	123389	PV 023-T1 - CP Upgrade	January 2022	2025	12,658	15,213	1,151	10%	Yes	464.80	$ -	0%	$ -
South Bay Region	123393	DOM New Property Purchase	May 2024	2024	1,392,405	1,596,230	236,727	20%	No	N/A	$ -	0%	$ -
Visalia	123396	VIS 99 - New Well Station	January 2023	2024	2,937,724	3,435,308	244,935	10%	Yes	205,839.64	$ -	0%	$ -
Los Altos	123397	LAS Tank Exterior Ladder Lifelines	August 2022	2024	128,413	153,385	11,674	10%	Yes	30,299.61	$ -	0%	$ -
Bakersfield	123399	BK 2024 Control Valve Overhaul	February 2024	2024	60,759	70,293	3,439	10%	Yes	5,946.92	$ -	0%	$ -
Livermore	123400	LIV Tank Exterior Ladder Lifelines	August 2022	2024	69,701	81,580	6,336	10%	Yes	16,701.75	$ -	0%	$ -
South Bay Region	123403	DOM Sta 219 Treatment Construction	January 2023	2024	5,585,312	6,509,476	930,435	20%	No	N/A	386,723.60	5%	$ 396,391.69
South Bay Region	123405	DOM 232 to Zone 1 Main Reliability	February 2022	2024	3,623,835	4,296,236	603,973	20%	Yes	1,687,308.73	157,539.66	10%	$ 161,478.15
Bakersfield	123409	BK 003-04 Replace Pump & Motor	January 2024	2024	85,929	103,413	7,812	10%	Yes	10,980.13	$ -	0%	$ -
South Bay Region	123411	DOM Sta 279 Sta Rebuild - Design	January 2023	2024	1,896,165	2,209,910	293,463	20%	No	N/A	$ -	0%	$ -
Bay Area Region	123413	MPS Tank Exterior Ladder Lifelines	August 2022	2024	189,453	225,662	17,223	10%	Yes	54,259.76	$ -	0%	$ -
South Bay Region	123415	DOM Sta 298 Sta Rebuild - Design	January 2023	2024	1,928,041	2,247,061	298,396	20%	No	N/A	$ -	0%	$ -
South Bay Region	123419	DOM From Sta 232 N to Zone I	February 2022	2024	2,419,015	2,887,763	402,865	20%			$ -	0%	$ -
Los Altos	123422	LAS Sta. 14 Panelboard Replacement	February 2022	2026	520,084	595,115	47,280	10%	Yes	241,667.16	10,890.43	5%	$ 11,727.80
Bay Area Region	123423	RDV Tank Exterior Ladder Lifelines	August 2022	2024	37,975	44,737	3,452	10%	Yes	10,574.51	$ -	0%	$ -
Salinas Valley Region	123424	SLN Tank Exterior Ladder Lifelines	August 2022	2024	88,608	103,585	8,055	10%	Yes	14,738.16	$ -	0%	$ -
Bakersfield	123425	BK 2024 Control Valve Replacement	March 2024	2024	77,637	93,434	4,402	10%	Yes	23,519.13	$ -	0%	$ -
Bay Area Region	123426	SSF Tank Exterior Ladder Lifelines	August 2022	2024	49,117	57,266	4,465	10%	Yes	4,719.39	$ -	0%	$ -
Stockton	123428	STK Tank Exterior Ladder Lifelines	August 2022	2024	35,456	41,490	3,223	10%	Yes	2,216.79	$ -	0%	$ -
Bear Gulch	123429	BG 038-T1 - Tank Retrofits	January 2025	2025	35,824	40,964	3,257	10%	Yes	3,235.80	$ -	0%	$ -
Bakersfield	123430	BK 087-E Replace Pump & Motor	August 2023	2024	78,682	92,177	7,153	10%	Yes	14,529.29	$ -	0%	$ -
Bakersfield	123437	BK 091-C Replace Pump & Motor	March 2023	2024	46,873	55,578	4,261	10%	Yes	5,989.68	$ -	0%	$ -
Bakersfield	123440	BK 097-B Replace Pump & Motor	January 2024	2024	49,246	59,266	4,477	10%	Yes	6,292.79	$ -	0%	$ -
Bakersfield	123441	BK 2023 Control Valve Replacements	January 2023	2024	198,312	230,918	10,857	10%	Yes	31,782.90	$ -	0%	$ -
Kern River Valley	123442	SQUM 007-T1 - CP Upgrade	September 2022	2024	11,443	13,431	1,040	10%	Yes	(85.67)	$ -	0%	$ -
LA County Region	123446	LEO 004-T1 - CP Upgrade	January 2024	2024	14,329	16,379	1,303	10%	Yes	1,831.03	$ -	0%	$ -
LA County Region	123447	LHUG 003-T1 - CP Upgrade	January 2023	2024	14,329	16,379	1,303	10%	Yes	1,831.03	$ -	0%	$ -

	[A]			[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Stockton	123448	STK 080-T1 - CP Upgrade	April 2024	2024	15,084	18,071	1,371	10%	Yes	1,927.44	$ -	0%	$ -
Bay Area Region	123451	MPS 024-T1 - Tank Retrofits	April 2024	2024	12,827	15,117	1,166	10%	Yes	2,106.25	$ -	0%	$ -
Los Altos	123452	LAS 113-T1 - Tank Retrofits	March 2024	2024	34,968	41,768	3,179	10%	Yes	4,468.30	$ -	0%	$ -
Dixon	123453	DIX 001-T1 - Tank Retrofits	January 2025	2025	12,964	15,360	1,179	10%	Yes	1,656.55	$ -	0%	$ -
Bakersfield	123454	BK 100-T3 - Tank Retrofits	January 2024	2024	37,544	45,183	3,413	10%	Yes	4,797.41	$ -	0%	$ -
Bakersfield	123456	BK 100-T1 - Tank Retrofits	January 2024	2024	41,739	50,231	3,794	10%	Yes	5,540.84	$ -	0%	$ -
Bakersfield	123459	BK 073-T3 - Tank Retrofits	January 2024	2024	34,533	41,559	3,139	10%	Yes	4,412.77	$ -	0%	$ -
Bear Gulch	123461	BG 019-T1 - Tank Retrofits	October 2023	2024	16,878	19,721	1,534	10%	Yes	(36,295.06)	$ -	0%	$ -
Bakersfield	123462	BK 097-C Replace Pump & Motor	January 2024	2024	49,246	59,266	4,477	10%	Yes	6,292.79	$ -	0%	$ -
North Valley Region	123464	ORO 016-T1 - Tank Retrofits	January 2023	2024	21,097	25,254	1,918	10%	Yes	(11,677.09)	$ -	0%	$ -
North Valley Region	123466	ORO 2023 Control Valve Replacement	August 2023	2024	62,391	73,556	11,093	20%	Yes	13,173.96	9,883.45	5%	$ 10,130.54
Livermore	123467	LIV 022-T2 - Tank Retrofits	November 2023	2024	29,042	33,899	2,640	10%	Yes	5,334.71	$ -	0%	$ -
Livermore	123468	LIV 022-T1 - Tank Retrofits	November 2023	2024	40,954	47,804	3,723	10%	Yes	18,777.05	$ -	0%	$ -
North Valley Region	123469	ORO 2024 Control Valve Replacement	June 2024	2024	63,428	75,924	11,735	20%	Yes	13,927.49	10,179.91	5%	$ 10,434.41
Bakersfield	123471	BK 100-E Replace Pump & Motor	March 2023	2024	47,277	56,057	4,665	10%	Yes	6,393.34	$ -	0%	$ -
Bakersfield	123473	BK 144-01 Replace Pump & Motor	September 2023	2025	87,616	101,668	7,965	10%	Yes	14,495.05	$ -	0%	$ -
Bakersfield	123475	BK 195-01 Replace Pump & Motor	October 2023	2025	137,553	158,658	12,505	10%	Yes	64,431.76	$ -	0%	$ -
Livermore	123478	LIV 2022 Control Valve Replacement	June 2022	2024	174,133	206,029	33,000	20%	Yes	42,200.93	29,362.46	5%	$ 30,096.52
Livermore	123479	LIV 2023 Control Valve Replacement	July 2024	2024	98,048	117,570	17,359	20%	Yes	17,308.31	16,129.78	5%	$ 16,533.02
LA County Region	123480	LAN 001-T2 - CP Upgrade	January 2024	2024	14,688	16,788	1,335	10%	Yes	1,876.86	$ -	0%	$ -
Livermore	123481	LIV 2024 Control Valve Replacement	January 2024	2024	129,393	151,840	22,871	20%	Yes	22,627.18	20,767.09	5%	$ 21,286.27
Livermore	123490	LIV 2022 Control Valve Overhaul	November 2022	2024	40,406	47,807	6,308	20%	Yes	26,842.72	1,028.44	5%	$ 1,054.15
Livermore	123492	LIV 2023 Control Valve Overhaul	May 2024	2024	40,406	48,451	4,984	10%	Yes	21,578.16	$ -	0%	$ -
Livermore	123496	LIV 2024 Control Valve Overhaul	January 2024	2024	40,406	48,451	10,899	30%	Yes	24,641.03	$ -	0%	$ -
Westlake	123498	WLK 007-T1 - CP Upgrade	January 2024	2024	14,688	17,491	1,335	10%	Yes	1,876.86	$ -	0%	$ -
LA County Region	123499	LAN 001-T1 - CP Upgrade	September 2022	2024	8,161	9,437	742	10%	Yes	(4,032.40)	$ -	0%	$ -
Livermore	123500	LIV Land Purchase for New Well	January 2022	2024	1,188,936	1,395,193	198,165	20%	No	N/A	$ -	0%	$ -
Livermore	123501	LIV New Well	January 2024	2026	3,849,935	4,433,186	-	0%			$ -	0%	$ -
Livermore	123503	LIV 34 New 2,000 gal. Press. Tank	January 2022	2025	464,135	530,182	77,356	20%	Yes	242,204.59	4,648.24	3%	$ 4,883.56
Livermore	123506	LIV Sta 8 New Booster Sta - Design	January 2023	2024	1,273,984	1,491,404	212,322	20%	No	N/A	$ -	0%	$ -
LA County Region	123509	AV Tank Exterior Ladder Lifelines	August 2022	2024	68,861	79,221	6,260	10%	Yes	25,654.55	$ -	0%	$ -
Bakersfield	123510	BK Tank Exterior Ladder Lifelines	August 2022	2025	190,802	218,752	17,346	10%	Yes	24,338.29	$ -	0%	$ -
South Bay Region	123514	DOM Tank Exterior Ladder Lifelines	March 2022	2024	26,160	30,584	2,378	10%	Yes	4,763.20	$ -	0%	$ -
East Los Angeles	123518	ELA Tank Exterior Ladder Lifelines	March 2022	2024	81,857	95,272	7,442	10%	Yes	9,547.15	$ -	0%	$ -
Kern River Valley	123520	KRV 2024 Control Valve Overhaul	February 2024	2024	59,072	70,093	3,268	10%	Yes	6,558.77	$ -	0%	$ -
South Bay Region	123522	HR Tank Exterior Ladder Lifelines	March 2022	2024	65,401	76,139	5,946	10%	Yes	5,405.37	$ -	0%	$ -
Kern River Valley	123526	KRV Tank Exterior Ladder Lifelines	August 2022	2024	134,093	157,962	12,190	10%	Yes	17,097.72	$ -	0%	$ -
Los Altos	123528	LAS 118-PT1 - Pressure Vessel Rplcm	March 2022	2026	449,393	512,998	39,525	10%	Yes	154,771.98	11,524.31	5%	$ 12,410.42
East Los Angeles	123529	ELA 2023 Control Valve Replacement	February 2023	2024	135,021	157,967	7,635	10%	Yes	(35,044.40)	$ -	0%	$ -
LA County Region	123530	PV Tank Exterior Ladder Lifelines	March 2022	2024	70,042	82,026	6,368	10%	Yes	19,870.86	$ -	0%	$ -
Westlake	123531	WLK Tank Exterior Ladder Lifelines	March 2022	2024	13,502	15,742	1,228	10%	Yes	5,144.81	$ -	0%	$ -
North Valley Region	123541	CH 064-PT1 - Pressure Vessel Rehab	February 2024	2024	86,464	101,897	7,860	10%	Yes	11,048.53	$ -	0%	$ -
Los Altos	123553	LAS 2022 CP Upgrades	April 2022	2024	13,502	15,825	1,227	10%	Yes	(10,986.50)	$ -	0%	$ -
Bay Area Region	123564	MPS 2023 Control Valve Replacement	February 2023	2024	358,650	420,867	35,101	10%	Yes	(532,389.58)	$ -	0%	$ -
Bear Gulch	123574	BG 2022 Control Valve Replacement	April 2022	2024	210,970	247,573	41,530	20%	Yes	71,336.45	$ -	0%	$ -
Bear Gulch	123578	BG 2023 Control Valve Replacement	May 2023	2024	105,485	124,586	20,944	20%	Yes	26,314.19	$ -	0%	$ -
Bear Gulch	123580	BG 2024 Control Valve Replacement	January 2024	2024	109,558	130,503	21,427	20%	Yes	24,385.44	$ -	0%	$ -
Bakersfield	123595	BK 100-F Install VFD	April 2023	2024	67,374	78,882	6,347	10%	Yes	3,736.86	$ -	0%	$ -
South Bay Region	123597	DOM 2023 Control Valve Replacement	November 2022	2024	240,315	285,564	13,282	10%	Yes	21,276.16	$ -	0%	$ -
South Bay Region	123598	DOM 2024 Control Valve Replacement	January 2024	2024	328,672	392,361	17,815	10%	Yes	22,842.70	$ -	0%	$ -
South Bay Region	123599	DOM 2022 Control Valve Overhaul	May 2022	2024	67,511	78,556	3,753	10%	Yes	5,272.95	$ -	0%	$ -
South Bay Region	123600	DOM 2023 Control Valve Overhaul	October 2023	2024	73,418	86,839	4,054	10%	Yes	7,242.67	$ -	0%	$ -

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District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
South Bay Region	123601	DOM 2024 Control Valve Overhaul	January 2024	2024	76,575	91,413	4,235	10%	Yes	6,823.36	$ -	0%	$ -
Bay Area Region	123606	SSF 2024 CP Upgrades	April 2024	2024	29,498	35,136	2,682	10%	Yes	3,769.30	$ -	0%	$ -
Bakersfield	123607	BKD 116-G Install VFD	April 2023	2024	69,605	79,559	6,328	10%	Yes	3,421.62	5,318.43	10%	$ 5,451.39
Kern River Valley	123608	KRV 2022 Control Valve Replacement	April 2022	2024	143,460	167,768	14,946	10%	Yes	(42,852.17)	$ -	0%	$ -
Kern River Valley	123610	KRV 2023 Control Valve Replacement	February 2023	2024	113,080	133,210	10,056	10%	Yes	(17,547.41)	$ -	0%	$ -
Kern River Valley	123611	KRV 2024 Control Valve Replacement	February 2024	2024	126,582	152,912	12,591	10%	Yes	(35,909.91)	$ -	0%	$ -
Los Altos	123614	LAS 2022 Control Valve Replacements	February 2022	2024	387,632	463,012	76,291	20%	Yes	37,280.66	$ -	0%	$ -
Los Altos	123616	LAS 2023 Control Valve Replacement	June 2023	2024	388,186	446,321	74,241	20%	Yes	(57,949.73)	$ -	0%	$ -
Los Altos	123617	LAS 2024 Control Valve Replacement	August 2024	2024	595,071	693,931	117,171	20%	Yes	136,333.80	$ -	0%	$ -
Los Altos	123618	LAS Sta. 39 and 104 Well Chloram	January 2023	2025	2,033,294	2,343,376	190,633	10%	Yes	927,701.40	83,044.73	10%	$ 87,248.87
Bay Area Region	123619	RDV-COS - Well Housing (Various)	January 2024	2024	203,700	200,764	18,518	10%	Yes	26,029.34	$ -	0%	$ -
Bay Area Region	123623	RDV HKN Sta 1 - Upgrade - Design	February 2022	2025	217,196	252,760	36,199	20%	No	N/A	$ -	0%	$ -
Bear Gulch	123624	BG 041-T1 - Tank Retrofits	August 2022	2024	25,213	29,651	2,292	10%	Yes	4,516.76	$ -	0%	$ -
Bakersfield	123625	BK 073-T5 Tank Retrofits	May 2022	2024	25,316	30,378	2,302	10%	Yes	6,789.12	$ -	0%	$ -
Bakersfield	123626	BK 188-T1 - Seismic Retrofit	April 2022	2024	73,165	87,791	6,651	10%	Yes	9,318.63	$ -	0%	$ -
Bakersfield	123628	BK 188-T2 - Seismic Retrofit	July 2022	2024	80,169	96,196	7,288	10%	Yes	10,174.85	$ -	0%	$ -
LA County Region	123629	AV LV Sta 4 New 0.22MG Storage Tank	January 2022	2024	1,501,818	1,718,840	250,303	20%	Yes	349,005.89	94,365.67	10%	$ 96,724.81
South Bay Region	123630	DOM 277-T1 - Seismic Retrofit	April 2024	2024	118,143	139,093	10,740	10%	Yes	16,648.50	$ -	0%	$ -
LA County Region	123632	LAN 001-T2 - Seismic Retrofit	January 2022	2024	92,013	105,173	8,365	10%	Yes	11,757.70	$ -	0%	$ -
LA County Region	123634	AV Wrigely Well Property Purch.	August 2022	2025	421,941	478,738	70,323	20%	Yes	(55,440.30)	$ -	0%	$ -
LA County Region	123636	LAN 001-T3 - Seismic Retrofit	November 2023	2024	63,291	72,814	5,754	10%	Yes	(2,320.53)	$ -	0%	$ -
Bakersfield	123637	BK 218-D Install VFD	March 2023	2024	67,048	77,335	6,316	10%	Yes	3,718.88	$ -	0%	$ -
Marysville	123638	MRL Tank Exterior Ladder Lifelines	August 2022	2024	21,802	25,364	1,982	10%	Yes	2,850.46	$ -	0%	$ -
Bay Area Region	123641	MPS Station 29 Replace Generator	April 2023	2026	315,453	361,397	36,046	10%	Yes	60,510.48	12,459.51	5%	$ 13,417.53
Bakersfield	123642	BK 176-A VFD Install	February 2022	2024	136,828	160,288	12,439	10%	Yes	72,571.73	2,352.30	10%	$ 2,411.11
Bakersfield	123643	BK 212-D Replace Pump & Motor	January 2023	2024	50,151	60,355	4,559	10%	Yes	6,408.51	$ -	0%	$ -
Bakersfield	123644	BK 209-A VFD Install	April 2023	2024	60,888	72,196	5,535	10%	Yes	2,819.60	2,073.92	10%	$ 2,125.77
Bakersfield	123645	BK 116-F Replace Pump & Motor	October 2022	2024	80,647	97,055	7,332	10%	Yes	18,017.37	$ -	0%	$ -
Kern River Valley	123648	Arden Sta. 6 Booster Panelboard	April 2022	2024	44,434	51,963	4,039	10%	Yes	5,677.51	$ -	0%	$ -
Bakersfield	123654	BK 162-A Replace Pump & Motor	September 2023	2024	49,749	58,458	4,523	10%	Yes	8,864.91	$ -	0%	$ -
Bakersfield	123655	BK 148-T1 - Tank Retrofit	January 2023	2024	47,021	56,589	4,275	10%	Yes	6,008.55	$ -	0%	$ -
Bakersfield	123658	BK 162-B - Replace Pump & Motor	September 2023	2025	49,749	57,209	4,523	10%	Yes	8,864.91	$ -	0%	$ -
South Bay Region	123660	HR 029-T2 - Seismic Retrofit	January 2023	2024	75,030	90,088	6,821	10%	Yes	9,587.43	$ -	0%	$ -
Bakersfield	123662	BK 176-T2 - Seismic Retrofit	March 2024	2024	189,873	222,964	17,261	10%	Yes	29,139.07	$ -	0%	$ -
Livermore	123663	LIV 025-T3 - Tank Retrofit	March 2024	2024	13,580	16,284	1,653	10%	Yes	2,136.75	$ -	0%	$ -
Bay Area Region	123673	MPS 023-T1 - Tank Retrofit	April 2024	2024	39,139	46,028	3,558	10%	Yes	6,307.15	$ -	0%	$ -
Bakersfield	123675	BK 100-T4 - Tank Retrofit	January 2024	2024	39,117	47,075	3,556	10%	Yes	4,998.50	$ -	0%	$ -
Bakersfield	123676	BK 176-T2 - Tank Retrofit	March 2024	2024	29,536	35,441	2,685	10%	Yes	4,814.03	$ -	0%	$ -
Salinas Valley Region	123678	SLN 058-A - Replace Pump & Motor	August 2023	2025	42,194	49,283	3,877	10%	Yes	9,819.97	$ -	0%	$ -
Salinas Valley Region	123682	SLN 020-01 - Replace Pump & Motor	January 2024	2024	108,052	128,962	9,823	10%	Yes	28,733.34	$ -	0%	$ -
North Valley Region	123683	CH 065-PT1 - Pressure Vessel Rplcmn	March 2022	2024	441,698	519,240	40,154	10%	Yes	175,859.25	10,895.99	5%	$ 11,168.39
Bakersfield	123684	BK Sta 146-04 Wildfire Generator	March 2023	2026	347,520	401,083	31,593	10%	Yes	48,155.51	12,494.30	5%	$ 13,454.99
Livermore	123695	LIV028-PT2 Pressure Vessel Rplcmt	October 2022	2025	506,329	586,274	46,030	10%	Yes	227,695.03	11,141.90	5%	$ 11,705.96
South Bay Region	123697	DOM 215-A Replace Pump & Motor	April 2024	2024	84,285	100,618	7,662	10%	Yes	10,770.13	$ -	0%	$ -
Salinas Valley Region	123699	SLN 072-PT1 - Pressure Vessel Rehab	January 2023	2024	87,377	104,285	7,943	10%	Yes	11,165.23	$ -	0%	$ -
Bay Area Region	123702	BAY 2024 Vehicle Replacemnt Program	October 2023	2024	98,145	102,717	8,922	10%	Yes	4,014.99	$ -	0%	$ -
Visalia	123703	VIS 052-PT1 - Pressure Vessel Rehab	January 2025	2025	87,377	102,176	7,943	10%	Yes	11,165.23	$ -	0%	$ -
North Valley Region	123704	CH 066-PT1 - Pressure Vessel Rehab	September 2024	2024	101,340	119,726	8,346	10%	Yes	23,312.42	$ -	0%	$ -
Salinas Valley Region	123706	SLN 040-PT1 - Pressure Vessel Rplcm	October 2022	2025	506,329	588,703	46,030	10%	Yes	232,354.97	10,955.56	5%	$ 11,510.19
Salinas Valley Region	123707	SLN 303-PT1 - Pressure Vessel Rplcm	January 2024	2024	327,522	390,902	26,974	10%	Yes	38,526.64	11,169.29	5%	$ 11,448.52
Salinas Valley Region	123708	SLN 304-PT1 - Pressure Vessel Rplcm	November 2022	2025	506,329	588,703	46,030	10%	Yes	241,968.95	10,571.12	5%	$ 11,106.28
Bay Area Region	123709	SSF 005 Panelboard Replacement	July 2023	2026	399,903	454,209	44,051	10%	Yes	48,808.26	16,464.91	5%	$ 17,730.91

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bay Area Region	123711	RDV COS 7 New Generator	April 2022	2026	379,046	397,154	34,459	10%	Yes	52,524.37	24,383.50	10%	$ 26,258.36
Bay Area Region	123712	COS Study - New Access Driveway	February 2022	2025	118,035	125,357	10,223	10%	Yes	56,432.52	$ -	0%	$ -
Bay Area Region	123714	RDV COS- Design and Permit New Well	February 2022	2027	675,629	677,363	71,777	10%	No	N/A	$ -	0%	$ -
Bear Gulch	123716	BG 2022 Vehicle Replacement Program	March 2022	2024	146,919	153,771	13,356	10%	Yes	12,528.02	$ -	0%	$ -
Bear Gulch	123720	BG 2024 Vehicle Replacement Program	January 2024	2024	157,061	164,385	14,278	10%	Yes	9,379.03	$ -	0%	$ -
Bakersfield	123721	BK 148 Generator Replacement	March 2024	2026	245,806	287,099	22,512	10%	Yes	15,715.54	9,656.73	5%	$ 10,399.24
North Valley Region	123722	CH 2022 Vehicle Replacement Program	August 2023	2024	38,863	40,843	3,533	10%	Yes	2,308.48	$ -	0%	$ -
North Valley Region	123723	CH 2023 Vehicle Replacemnt Program	December 2022	2024	90,047	92,778	8,186	10%	Yes	2,586.34	$ -	0%	$ -
North Valley Region	123724	CH 2024 Vehicle Replacement Progrm	November 2023	2024	281,834	296,199	25,621	10%	Yes	54,816.04	$ -	0%	$ -
LA County Region	123727	AV 2022 Flowmeter Replacement	October 2022	2024	71,730	82,842	4,506	10%	Yes	38,807.39	$ -	0%	$ -
East Los Angeles	123733	ELA 2024 Vehicle Replacemnt Program	May 2024	2024	135,862	142,913	12,351	10%	Yes	50,695.73	$ -	0%	$ -
CSS	123734	CSS 2022 Vehicle Replacemnt Program	August 2022	2024	834,123	855,938	72,176	10%	Yes	454,159.22	$ -	0%	$ -
Stockton	123736	STK 007-02 Replace Pump & Motor	February 2022	2024	92,827	108,335	8,439	10%	Yes	14,101.85	$ -	0%	$ -
CSS	123737	CSS 2023 Vehicle Replacemnt Program	June 2023	2024	1,043,404	1,083,533	94,855	10%	Yes	623,201.91	$ -	0%	$ -
South Bay Region	123738	DOM 275-01 Replace Pump & Motor	January 2023	2024	84,285	100,618	7,662	10%	Yes	10,770.13	$ -	0%	$ -
CSS	123739	CSS 2024 Vehicle Replacement Progrm	July 2024	2024	412,974	428,857	37,543	10%	Yes	203,887.24	$ -	0%	$ -
Kern River Valley	123740	KRV 2022 Vehicle Replacemnt Program	March 2022	2024	91,943	95,513	8,358	10%	Yes	5,294.60	$ -	0%	$ -
Kern River Valley	123742	KRV 2024 Vehicle Replacemnt Program	May 2024	2024	45,287	48,239	4,117	10%	Yes	2,704.16	$ -	0%	$ -
South Bay Region	123743	DOM 298-01 Replace Pump & Motor	January 2023	2024	135,749	162,054	12,341	10%	Yes	17,346.41	$ -	0%	$ -
Livermore	123749	LIV 2023 Vehicle Replacemnt Program	February 2023	2024	46,508	47,698	4,228	10%	Yes	2,777.06	$ -	0%	$ -
Stockton	123751	STK 069-A Replace Pump & Motor	March 2023	2024	67,511	80,882	6,137	10%	Yes	(41,607.24)	$ -	0%	$ -
LA County Region	123752	PV 014-A Replace Pump & Motor	January 2023	2024	35,673	42,872	3,243	10%	Yes	4,558.33	$ -	0%	$ -
Los Altos	123754	LAS 2023 Vehicle Replacement Progrm	February 2023	2024	48,833	51,251	4,439	10%	Yes	2,916.03	$ -	0%	$ -
Los Altos	123755	LAS 2024 Vehicle Replacement Progrm	November 2023	2024	60,927	63,944	5,539	10%	Yes	3,638.13	$ -	0%	$ -
LA County Region	123758	PV 015-D Replace Pump & Motor	January 2023	2024	17,806	21,399	1,619	10%	Yes	(25,936.74)	$ -	0%	$ -
LA County Region	123764	AV 2023 Flowmeter Replacement	March 2024	2024	40,506	46,661	2,571	10%	Yes	6,132.61	$ -	0%	$ -
Rancho Dominguez	123765	RD 2022 Vehicle Replacement Program	February 2022	2024	178,361	183,214	16,215	10%	Yes	88,470.79	$ -	0%	$ -
Rancho Dominguez	123766	RD 2023 Vehicle Replacement Program	February 2023	2024	360,190	377,784	32,745	10%	Yes	151,617.38	$ -	0%	$ -
Kern River Valley	123767	BOD 104-B - Replace Pump & Motor	March 2023	2024	48,045	56,598	4,368	10%	Yes	6,139.39	$ -	0%	$ -
Rancho Dominguez	123768	RD 2024 Vehicle Replacement Program	May 2024	2024	265,887	278,875	24,172	10%	Yes	95,557.17	$ -	0%	$ -
Bay Area Region	123770	RDV 2023 Vehicle Replacement Progrm	January 2023	2024	104,398	111,222	9,491	10%			$ -	0%	$ -
Salinas Valley Region	123773	SLN 2022 Vehicle Replacemnt Program	September 2022	2024	45,373	46,498	4,125	10%	Yes	2,709.37	$ -	0%	$ -
Salinas Valley Region	123774	SLN 2023 Vehicle Replacemnt Program	February 2023	2024	94,787	97,589	8,617	10%	Yes	7,325.68	$ -	0%	$ -
Salinas Valley Region	123776	SLN 2024 Vehicle Replacement Progrm	January 2024	2024	163,722	171,692	14,884	10%	Yes	9,776.54	$ -	0%	$ -
Selma	123778	SEL 2023 Vehicle Replacemnt Program	January 2023	2024	56,610	59,287	5,146	10%	Yes	3,380.47	$ -	0%	$ -
Stockton	123781	STK 2023 Vehicle Replacement Progrm	February 2023	2024	376,926	396,782	34,266	10%	Yes	333,195.02	$ -	0%	$ -
Stockton	123783	STK 2024 Vehicle Replacement Progrm	April 2024	2024	286,556	301,651	26,536	10%	Yes	62,436.98	$ -	0%	$ -
Visalia	123784	VIS 2022 Vehicle Replacement Progrm	January 2022	2024	197,156	206,996	17,923	10%	Yes	22,038.40	$ -	0%	$ -
Visalia	123785	VIS 2023 Vehicle Replacement Progrm	February 2023	2024	225,917	237,192	20,538	10%	Yes	94,724.86	$ -	0%	$ -
Visalia	123786	VIS 2024 Vehicle Replacemnt Program	May 2024	2024	93,799	98,480	7,125	10%	Yes	4,151.26	$ -	0%	$ -
LA County Region	123788	AV 2024 Flowmeter Replacement	April 2024	2024	36,957	42,242	2,119	10%	Yes	1,423.58	$ -	0%	$ -
Westlake	123789	WLK 2023 Vehicle Replacemnt Program	February 2023	2024	44,182	46,230	4,017	10%	Yes	2,638.19	$ -	0%	$ -
Bay Area Region	123794	MPS 2022 Flowmeter Replacement	April 2023	2024	111,392	131,278	14,446	20%	Yes	(13,012.61)	$ -	0%	$ -
Bay Area Region	123796	SSF STA 101 Wildfire Generator	January 2024	2026	253,652	293,716	27,541	10%	Yes	22,897.12	10,464.27	5%	$ 11,268.87
Visalia	123797	VIS 077-PT1 - Pressure Vessel Rplcm	March 2022	2024	506,329	594,963	46,030	10%	Yes	232,402.13	11,227.51	5%	$ 11,508.20
Marysville	123798	MRL 12 Driveway Pavement Extension	January 2023	2024	24,369	29,033	4,061	20%	Yes	4,813.55	$ -	0%	$ -
Bakersfield	123799	BK 2024 Vehicle Replacemnt Program	March 2024	2024	504,398	533,365	45,854	10%	Yes	30,120.11	$ -	0%	$ -
North Valley Region	123803	CH 2022 Conrol Valve Overhauls	November 2022	2024	23,747	28,404	2,991	20%	Yes	3,833.03	$ -	0%	$ -
North Valley Region	123808	CH 2023 Control Valve Overhauls	May 2024	2024	24,469	28,836	3,157	20%	Yes	4,014.32	$ -	0%	$ -
North Valley Region	123809	2024 Control Valve Overhaul CH	May 2024	2024	25,833	30,899	3,315	20%	Yes	4,100.85	$ -	0%	$ -
Salinas Valley Region	123811	SLN Las Lomas Intertie Design	January 2024	2024	109,553	130,753	-	0%	No	N/A	$ -	0%	$ -
East Los Angeles	123817	ELA 2024 Control Valve Overhaul	February 2024	2024	25,316	29,849	1,410	10%	Yes	283.92	$ -	0%	$ -

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South Bay Region	123821	HR 2023 Control Valve Overhaul	May 2023	2024	54,591	64,641	3,011	10%	Yes	5,103.41	$ -	0%	$ -
South Bay Region	123822	HR 2024 Control Valve Overhaul	January 2024	2024	57,201	68,681	3,164	10%	Yes	5,110.47	$ -	0%	$ -
South Bay Region	123824	HR 2023 Control Valve Replacement	February 2023	2024	253,165	303,974	14,081	10%	Yes	20,742.74	$ -	0%	$ -
South Bay Region	123825	HR 2024 Control Valve Replacement	January 2024	2024	271,011	318,449	14,963	10%	Yes	23,719.68	$ -	0%	$ -
LA County Region	123827	FREM 001-01 - Replace Pump & Moto	January 2023	2024	35,877	41,008	3,262	10%	Yes	4,584.40	$ -	0%	$ -
Bay Area Region	123828	MPS 027-T1 - Tank Retrofits	July 2024	2024	12,679	14,911	1,153	10%	Yes	1,620.26	$ -	0%	$ -
LA County Region	123829	LHUG 001-01 - Replace Pump & Motor	January 2023	2024	29,870	34,142	2,715	10%	Yes	3,816.87	$ -	0%	$ -
LA County Region	123831	LHUG 001-02 - Replace Pump & Motor	January 2023	2024	29,870	34,142	2,715	10%	Yes	3,816.87	$ -	0%	$ -
LA County Region	123834	LHUG 002-02 - Replace Pump & Motor	January 2023	2024	35,877	41,008	3,262	10%	Yes	4,584.40	$ -	0%	$ -
Salinas Valley Region	123835	KC 2023 Control Valve Replacement	July 2023	2024	42,194	49,265	2,808	10%	Yes	(18,526.10)	$ -	0%	$ -
Salinas Valley Region	123837	SLN 2024 Control Valve Replacement	January 2024	2024	53,969	64,413	6,902	20%	Yes	21,828.94	$ -	0%	$ -
Salinas Valley Region	123839	SLN 071: Sta Rebuild - Design	April 2022	2027	600,000	678,274	100,000	20%	No	N/A	$ -	0%	$ -
Los Altos	123842	LAS 019-T1 - Tank Retrofits	April 2023	2024	60,600	70,688	5,368	10%	Yes	23,481.24	$ -	0%	$ -
Salinas Valley Region	123845	SLN 2023 Control Valve Overhaul	February 2023	2024	80,169	94,810	10,274	20%	Yes	11,168.60	$ -	0%	$ -
Salinas Valley Region	123846	SLN 2024 Control Valve Overhaul	January 2024	2024	83,816	100,036	10,836	20%	Yes	13,796.15	$ -	0%	$ -
Bay Area Region	123848	BAY SM STA 012 Wildfire Generator	April 2023	2025	266,611	310,782	28,673	10%	Yes	37,390.23	10,464.27	5%	$ 10,994.02
Bakersfield	123850	BK 156 Generator Replacement	February 2023	2026	265,823	306,794	24,216	10%	Yes	46,828.20	9,151.08	5%	$ 9,854.71
Salinas Valley Region	123851	SLN 016-T1 - Tank Retrofits	September 2022	2024	57,872	68,127	5,261	10%	Yes	7,394.98	$ -	0%	$ -
Bay Area Region	123852	SSF 006-F Replace Pump & Motor	December 2022	2024	58,853	69,062	5,592	10%	Yes	12,807.82	$ -	0%	$ -
Bay Area Region	123854	SSF 013-A Replace Pump & Motor	December 2022	2024	41,524	48,518	3,946	10%	Yes	8,771.93	$ -	0%	$ -
Bay Area Region	123856	SSF 101-A Replace Pump & Motor	May 2024	2024	52,074	62,026	4,948	10%	Yes	6,859.72	$ -	0%	$ -
Livermore	123857	LIV 009-T4 - Tank Retrofits	January 2024	2024	54,852	64,375	4,987	10%	Yes	(14,990.99)	$ -	0%	$ -
Bay Area Region	123858	SSF 101-B Replace Pump & Motor	May 2024	2024	52,074	62,026	4,948	10%	Yes	6,859.72	$ -	0%	$ -
Bakersfield	123859	BK 215 VFD Controls Upgrades	April 2024	2025	96,644	112,145	8,786	10%	Yes	6,591.27	3,137.84	5%	$ 3,296.69
Stockton	123860	STK 065-T1&T2 - Tank Retrofits	March 2024	2024	64,979	76,842	5,907	10%	Yes	15,222.71	$ -	0%	$ -
Los Altos	123862	LAS 001-02 Replace Pump & Motor	February 2022	2024	118,666	139,085	11,276	10%	Yes	51,137.26	$ -	0%	$ -
Bakersfield	123863	BK 2022 CARB VEHICLE REPLACEMENT	April 2022	2024	388,626	398,822	35,330	10%	Yes	(82,706.79)	$ -	0%	$ -
Bakersfield	123864	BK 162 Panelboard Replacement	April 2023	2025	382,172	448,776	35,282	10%	Yes	58,830.70	13,592.92	5%	$ 14,281.06
Los Altos	123865	LAS 001-E Replace Pump & Motor	October 2022	2024	76,034	89,117	7,225	10%	Yes	11,716.08	$ -	0%	$ -
Los Altos	123867	LAS 009-D Replace Pump & Motor	October 2022	2024	46,784	54,572	4,446	10%	Yes	3,748.90	$ -	0%	$ -
Los Altos	123870	LAS 009-E Replace Pump & Motor	October 2022	2024	59,072	69,071	5,613	10%	Yes	16,036.36	$ -	0%	$ -
Los Altos	123876	LAS 2022 CARB Vehicle Replacement	December 2022	2024	241,102	253,041	21,918	10%	Yes	14,397.33	$ -	0%	$ -
Salinas Valley Region	123881	SLN 039: As Treatmnt Plant - Design	December 2022	2025	71,028	82,394	11,838	20%	No	N/A	$ -	0%	$ -
Rancho Dominguez	123882	RD 2022 CARB Vehicle Replacement	August 2022	2024	706,505	725,730	64,228	10%	Yes	42,188.85	$ -	0%	$ -
Salinas Valley Region	123884	SLN Wildfire Oak Hills Grid Imprv	December 2022	2024	10,269	12,172	1,711	20%	Yes	(2,689,934.62)	204,477.68	10%	$ 209,589.62
Salinas Valley Region	123886	Davis Rd Bridge 12" Pipe Provisions	January 2022	2024	140,025	167,122	-	0%	Yes	1,965.52	$ -	0%	$ -
Salinas Valley Region	123887	SLN 076: New Well	October 2022	2026	3,796,275	4,423,447	-	0%			$ -	0%	$ -
South Bay Region	123890	HR Station 4 Panelboard Replacement	March 2024	2026	317,797	369,438	28,891	10%	Yes	24,516.55	12,016.48	5%	$ 12,940.43
Los Altos	123895	LAS Sta. 41 New Booster Pump	June 2023	2026	1,837,673	2,102,790	167,061	10%	Yes	294,050.36	111,766.62	10%	$ 120,360.43
Los Altos	123897	LAS Sta. 33 Paneboard Replacement	August 2024	2024	305,517	355,520	27,774	10%	Yes	21,358.59	10,890.43	5%	$ 11,162.69
Los Altos	123898	LAS Wildfire Control Valves 2023	January 2023	2024	584,424	689,891	53,129	10%	Yes	77,582.20	19,342.00	5%	$ 19,825.55
Bakersfield	123899	BK 212 Panelboard Replacement	July 2024	2026	352,586	414,261	32,550	10%	Yes	27,994.44	13,592.92	5%	$ 14,638.09
North Valley Region	123900	CH 7 Install GAC Treatment	June 2024	2024	1,330,232	1,555,945	120,930	10%	Yes	180,744.53	45,736.48	5%	$ 46,879.89
Bay Area Region	123903	MPS 2023 Flowmeter Replacement	May 2023	2024	111,392	127,374	14,795	20%	Yes	(16,394.14)	$ -	0%	$ -
Bay Area Region	123906	MPS 2024 Flowmeter Replacement	December 2023	2024	97,446	112,838	13,498	20%	Yes	11,773.92	$ -	0%	$ -
Stockton	123911	STK 2022 Customer Meter Vault Lids	January 2022	2024	60,572	72,569	5,507	10%	Yes	8,041.07	$ -	0%	$ -
Los Altos	123913	LAS Sta. 117 Rebuild - Design	February 2023	2026	210,970	240,254	35,626	20%	No	N/A	$ -	0%	$ -
Bear Gulch	123914	BG 2022 Flowmeter Replacement	December 2023	2024	99,399	116,895	13,132	20%	Yes	18,213.05	$ -	0%	$ -
Visalia	123916	VIS 62 Generator Installation	February 2023	2024	266,799	315,016	24,255	10%	Yes	32,696.83	9,271.05	5%	$ 9,502.83
Los Altos	123917	LAS 011-D - Replace Pump & Motor	December 2022	2024	72,574	84,655	6,896	10%	Yes	28,462.66	$ -	0%	$ -
Los Altos	123923	LAS 023-D - Replace Pump & Motor	January 2023	2024	94,515	110,248	8,981	10%	Yes	28,589.21	$ -	0%	$ -
Visalia	123924	VIS 72 Generator Installation	May 2024	2026	250,100	284,938	22,736	10%	Yes	15,997.37	9,271.05	5%	$ 9,983.91

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Bakersfield	123925	BK 2022 Flowmeter Replacement	September 2022	2024	210,970	247,156	29,379	20%	Yes	109,303.34	$ -	0%	$ -
East Los Angeles	123926	ELA 12 Pressure Tank	January 2022	2024	522,529	614,492	47,503	10%	Yes	309,745.21	9,159.69	5%	$ 9,388.68
North Valley Region	123928	CH 41 Install GAC Treatment	January 2025	2024	1,326,588	1,586,750	132,659	10%	No	N/A	$ -	0%	$ -
LA County Region	123929	FMT 001-PT1 - Pressure Vessel Rplcm	April 2022	2024	445,695	512,090	40,518	10%	Yes	177,980.15	11,524.31	5%	$ 11,812.42
Visalia	123930	VIS 81 Generator Installation	May 2024	2026	248,320	284,264	22,575	10%	Yes	14,766.96	9,271.05	5%	$ 9,983.91
Salinas Valley Region	123932	SLN Sta 47 Genset Installation	March 2023	2026	315,771	362,907	22,263	10%	Yes	26,082.14	16,763.67	10%	$ 18,052.64
Bear Gulch	123935	BG Sta. 20 Panelboard Replacement	October 2023	2025	407,747	473,174	37,068	10%	Yes	59,127.45	13,252.91	5%	$ 13,923.84
Bakersfield	123936	BK 116-PT1 Pressure Vessel Replace	October 2022	2025	339,348	391,651	30,850	10%	Yes	43,362.87	12,430.49	5%	$ 13,059.78
North Valley Region	123938	CH 51 Install GAC Treatment	January 2022	2025	1,147,488	1,323,410	104,317	10%	Yes	155,914.39	40,439.64	5%	$ 42,486.90
Stockton	123940	STK 2023 Customer Meter Vault Lids	January 2023	2024	62,087	74,383	5,644	10%	Yes	8,242.02	$ -	0%	$ -
Stockton	123942	STK 2024 Customer Meter Vault Lids	January 2024	2024	63,639	76,243	5,785	10%	Yes	8,448.18	$ -	0%	$ -
Visalia	123943	VIS 2022 Customer Meter Vault Lids	January 2022	2024	30,286	36,189	2,753	10%	Yes	4,020.45	$ -	0%	$ -
Visalia	123945	VIS 2023 Customer Meter Vault Lids	January 2023	2024	31,043	37,094	2,822	10%	Yes	4,120.98	$ -	0%	$ -
Visalia	123946	VIS 2024 Customer Meter Vault Lids	January 2024	2024	31,819	38,021	2,893	10%	Yes	4,224.00	$ -	0%	$ -
LA County Region	123948	PV 2022 Customer Meter Vault Lids	January 2022	2024	14,386	17,289	1,308	10%	Yes	1,909.73	$ -	0%	$ -
LA County Region	123949	PV 2023 Customer Meter Vault Lids	January 2023	2024	14,746	17,721	1,341	10%	Yes	1,957.52	$ -	0%	$ -
LA County Region	123950	PV 2024 Customer Meter Vault Lids	January 2024	2024	15,114	18,164	1,374	10%	Yes	2,006.36	$ -	0%	$ -
Westlake	123953	WLK 2022 Customer Meter Vault Lids	January 2022	2024	28,772	34,263	2,616	10%	Yes	3,819.49	$ -	0%	$ -
Visalia	123954	VIS 23 Panelboard & Gen Set	February 2022	2024	457,136	546,236	41,558	10%	Yes	76,001.51	15,479.09	5%	$ 15,866.07
Bear Gulch	123957	BG Sta. 23 Panelboard Replacement	April 2023	2026	422,251	484,800	38,386	10%	Yes	58,697.97	13,847.17	5%	$ 14,911.89
Westlake	123959	WLK 2023 Customer Meter Vault Lids	January 2023	2024	29,491	34,369	2,681	10%	Yes	3,915.02	$ -	0%	$ -
Salinas Valley Region	123960	SLN Sta 57 Panelboard Replacement	March 2024	2026	331,607	381,987	30,483	10%	Yes	19,890.84	24,044.00	10%	$ 25,892.76
Bakersfield	123961	BK 2023 Flowmeter Replacements	March 2023	2024	152,743	178,398	9,057	10%	Yes	23,507.03	$ -	0%	$ -
Bakersfield	123962	BK 2024 Flowmeter Replacements	January 2024	2024	141,191	169,918	8,877	10%	Yes	14,243.49	$ -	0%	$ -
North Valley Region	123963	CH 2022 Flowmeter Replacement	July 2022	2024	210,970	246,148	27,957	20%	Yes	(58,710.18)	$ -	0%	$ -
North Valley Region	123964	CH 2023 Flowmeter Replacement	April 2023	2024	359,129	422,175	47,543	20%	Yes	74,091.30	$ -	0%	$ -
Westlake	123965	WLK 2024 Customer Meter Vault Lids	January 2024	2024	30,228	35,144	2,748	10%	Yes	4,012.85	$ -	0%	$ -
North Valley Region	123966	CH 2024 Flowmeter Replacement	July 2023	2024	357,683	427,830	46,504	20%	Yes	50,434.06	$ -	0%	$ -
South Bay Region	123967	DOM 2022 Customer Meter Vault Lids	January 2022	2024	57,544	68,694	5,231	10%	Yes	7,638.98	$ -	0%	$ -
South Bay Region	123968	DOM 2022 Flowmeter Replacement	October 2022	2024	52,505	61,239	2,865	10%	Yes	3,822.98	$ -	0%	$ -
South Bay Region	123970	DOM 2023 Customer Meter Vault Lids	January 2023	2024	58,982	70,412	5,362	10%	Yes	7,829.93	$ -	0%	$ -
South Bay Region	123971	DOM 2024 Customer Meter Vault Lids	January 2024	2024	60,457	72,172	5,496	10%	Yes	8,025.64	$ -	0%	$ -
South Bay Region	123973	DOM 2023 Flowmeter Replacement	October 2022	2024	103,111	120,546	5,828	10%	Yes	9,774.17	$ -	0%	$ -
Bakersfield	123974	BK 2022 Customer Meter Vault Lids	January 2022	2024	28,772	34,626	2,616	10%	Yes	3,819.49	$ -	0%	$ -
Bakersfield	123975	BK 2023 Customer Meter Vault Lids	January 2023	2024	29,491	35,492	2,681	10%	Yes	3,915.02	$ -	0%	$ -
South Bay Region	123976	DOM 2024 Flowmeter Replacement	August 2024	2024	139,626	166,683	8,191	10%	Yes	5,690.65	$ -	0%	$ -
Bakersfield	123978	BK 2024 Customer Meter Vault Lids	January 2024	2024	30,228	36,379	2,748	10%	Yes	4,012.85	$ -	0%	$ -
North Valley Region	123979	CH 050 Station Rebuild - Design	January 2023	2024	178,677	213,718	29,780	20%	No	N/A	$ -	0%	$ -
Los Altos	123981	LAS 032-01 - Replace Pump & Motor	May 2024	2024	90,863	108,532	8,634	10%	Yes	11,969.29	$ -	0%	$ -
Salinas Valley Region	123982	SLN STA 058 Wildfire New Generator	March 2023	2024	228,442	268,298	20,732	10%	Yes	7,572.29	16,763.00	10%	$ 17,182.08
Los Altos	123984	LAS 039-01 - Replace Pump & Motor	February 2022	2024	148,150	172,812	14,078	10%	Yes	72,653.14	$ -	0%	$ -
LA County Region	123986	AV-LEO Sta 04 Tank-1 Aeration	January 2023	2024	62,897	71,892	5,716	10%	Yes	8,005.12	$ -	0%	$ -
Bear Gulch	123989	BG Customer Meter Vault Lids	January 2024	2024	18,947	22,569	3,037	20%	Yes	3,769.53	$ -	0%	$ -
North Valley Region	123994	CH 2024 Customer Meter Vault Lids	January 2024	2024	31,819	38,060	2,893	10%	Yes	4,224.05	$ -	0%	$ -
Marysville	123995	MRL Sta 8 Flowmeter Replacement	January 2022	2024	37,635	43,976	4,728	20%	Yes	6,063.07	$ -	0%	$ -
Dixon	123996	DIX 2022 Customer Meter Vault Lids	January 2022	2024	15,143	18,333	1,377	10%	Yes	2,010.17	$ -	0%	$ -
Dixon	123998	DIX 2023 Customer Meter Vault Lids	January 2025	2024	14,413	17,450	1,310	10%	Yes	952.32	$ -	0%	$ -
Livermore	123999	LIV Turnout 5 RTU Install	May 2023	2025	167,174	190,442	22,840	20%	Yes	43,132.07	$ -	0%	$ -
Dixon	124000	DIX 2024 Customer Meter Vault Lids	January 2024	2024	15,910	19,262	1,446	10%	Yes	2,111.93	$ -	0%	$ -
Bay Area Region	124001	MPS 106-B - Replace Pump & Motor	January 2022	2024	69,530	82,819	6,321	10%	Yes	5,814.51	$ -	0%	$ -
East Los Angeles	124002	ELA 2022 Customer Meter Vault Lids	January 2022	2024	28,772	34,445	2,616	10%	Yes	3,819.49	$ -	0%	$ -
Los Altos	124003	LAS 033-A - Replace Pump & Motor	December 2022	2024	54,607	65,225	4,818	10%	Yes	10,164.64	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Marysville	124004	MRL Sta 9 Flowmeter Replacement	August 2023	2024	39,964	46,698	5,021	20%	Yes	8,392.04	$ -	0%	$ -
East Los Angeles	124005	ELA 2023 Customer Meter Vault Lids	January 2023	2024	29,491	35,306	2,681	10%	Yes	3,915.02	$ -	0%	$ -
East Los Angeles	124006	ELA 2024 Customer Meter Vault Lids	January 2024	2024	30,228	36,189	2,748	10%	Yes	4,012.85	$ -	0%	$ -
Marysville	124007	MRL Sta 10 Flowmeter Replacement	May 2023	2024	38,576	45,959	4,846	20%	Yes	6,214.56	$ -	0%	$ -
South Bay Region	124008	HR 2022 Customer Meter Vault Lids	January 2022	2024	28,772	34,546	2,616	10%	Yes	3,819.49	$ -	0%	$ -
South Bay Region	124010	HR 2023 Customer Meter Vault Lids	January 2023	2024	29,491	35,410	2,681	10%	Yes	3,915.02	$ -	0%	$ -
Marysville	124011	MRL 2023 Flowmeter Replacement 11	October 2023	2024	38,576	45,959	4,846	20%	Yes	6,214.56	$ -	0%	$ -
South Bay Region	124012	HR 2024 Customer Meter Vault Lids	January 2024	2024	30,228	36,295	2,748	10%	Yes	4,012.85	$ -	0%	$ -
Salinas Valley Region	124013	SLN STA 61 Panelboard Replacement	March 2024	2026	309,634	358,320	26,546	10%	Yes	18,255.85	20,742.00	10%	$ 22,336.87
Salinas Valley Region	124015	KC 2022 Customer Meter Vault Lids	March 2022	2024	5,509	6,617	501	10%	Yes	(7,624.08)	$ -	0%	$ -
Salinas Valley Region	124016	KC 2023 Customer Meter Vault Lids	April 2023	2024	15,522	18,175	1,411	10%	Yes	2,060.57	$ -	0%	$ -
Salinas Valley Region	124017	KC 2024 Customer Meter Vault Lids	June 2024	2024	15,910	19,110	1,446	10%	Yes	2,111.93	$ -	0%	$ -
Livermore	124018	LIV Customer Meter Vault Lids	January 2022	2024	15,143	18,158	1,377	10%	Yes	2,010.17	$ -	0%	$ -
Los Altos	124019	LAS 104-A - Replace Pump & Motor	March 2024	2024	20,592	24,597	1,957	10%	Yes	(24,621.62)	$ -	0%	$ -
Livermore	124020	LIV 2023 Customer Meter Vault Lids	January 2023	2024	15,522	18,612	1,411	10%	Yes	2,060.57	$ -	0%	$ -
Livermore	124021	LIV 2024 Customer Meter Vault Lids	January 2024	2024	15,910	19,077	1,446	10%	Yes	2,111.93	$ -	0%	$ -
Salinas Valley Region	124026	SLN STA 205 Wildfire New Generator	February 2023	2024	267,992	319,852	29,742	10%	Yes	41,526.15	21,533.00	10%	$ 22,071.33
Marysville	124027	MRL 2022 Customer Meter Vault Lids	January 2022	2024	15,143	18,041	1,377	10%	Yes	2,010.17	$ -	0%	$ -
Marysville	124028	MRL 2023 Customer Meter Vault Lids	January 2023	2024	15,522	18,493	1,411	10%	Yes	2,060.57	$ -	0%	$ -
Marysville	124029	MRL 2024 Customer Meter Vault Lids	January 2024	2024	15,910	18,955	1,446	10%	Yes	2,111.93	$ -	0%	$ -
North Valley Region	124030	ORO Customer Meter Vault Lids	January 2022	2024	15,143	18,126	1,377	10%	Yes	2,010.17	$ -	0%	$ -
North Valley Region	124031	ORO 2023 Customer Meter Vault Lids	January 2023	2024	15,522	18,580	1,411	10%	Yes	2,060.57	$ -	0%	$ -
North Valley Region	124032	ORO 2024 Customer Meter Vault Lids	January 2024	2024	14,413	17,253	1,310	10%	Yes	615.73	$ -	0%	$ -
Livermore	124033	LIV Turnout 6 RTU Install	January 2024	2024	148,372	172,724	20,271	20%	Yes	21,229.23	$ -	0%	$ -
Salinas Valley Region	124034	SLN STA 304 Panelboard Installation	May 2023	2026	318,484	361,795	27,869	10%	Yes	40,485.29	20,305.00	10%	$ 21,866.26
Salinas Valley Region	124036	SLN 2022 Customer Meter Vault Lids	June 2022	2024	30,286	36,147	2,753	10%	Yes	4,020.45	$ -	0%	$ -
Salinas Valley Region	124037	SLN 2023 Customer Meter Vault Lids	January 2023	2024	31,043	37,051	2,822	10%	Yes	4,120.98	$ -	0%	$ -
Salinas Valley Region	124038	SLN 2024 Customer Meter Vault Lids	January 2024	2024	31,819	37,977	2,893	10%	Yes	4,224.00	$ -	0%	$ -
Bay Area Region	124039	MPS 2022 Customer Meter Vault Lids	January 2022	2024	31,800	37,878	2,891	10%	Yes	4,221.48	$ -	0%	$ -
Bay Area Region	124040	MPS 2023 Customer Meter Vault Lids	January 2023	2024	32,595	38,825	2,963	10%	Yes	4,327.09	$ -	0%	$ -
Bay Area Region	124041	MPS 2024 Customer Meter Vault Lids	January 2024	2024	33,410	39,796	3,037	10%	Yes	4,435.30	$ -	0%	$ -
Selma	124042	SEL 2022 Customer Meter Vault Lids	January 2022	2024	15,143	18,049	1,377	10%	Yes	2,010.17	$ -	0%	$ -
Selma	124043	SEL 2023 Customer Meter Vault Lids	January 2023	2024	15,522	18,105	1,411	10%	Yes	2,060.57	$ -	0%	$ -
Selma	124044	SEL 2024 Customer Meter Vault Lids	January 2024	2024	15,910	18,513	1,446	10%	Yes	2,111.93	$ -	0%	$ -
Bay Area Region	124045	SSF 2022 Customer Meter Vault Lids	January 2022	2024	31,800	37,878	2,891	10%	Yes	4,221.48	$ -	0%	$ -
Bay Area Region	124046	SSF 2023 Customer Meter Vault Lids	January 2023	2024	32,595	38,825	2,963	10%	Yes	4,327.09	$ -	0%	$ -
Visalia	124047	VIS 30 Install ATS	February 2023	2024	71,730	84,897	6,521	10%	Yes	17,178.81	2,181.33	5%	$ 2,235.86
Bay Area Region	124048	SSF 2024 Customer Meter Vault Lids	January 2024	2024	33,410	39,796	3,037	10%	Yes	4,435.30	$ -	0%	$ -
Los Altos	124050	LAS 2024 Customer Meter Vault Lids	January 2024	2024	33,410	39,907	3,037	10%	Yes	4,435.30	$ -	0%	$ -
North Valley Region	124055	CH 027-01 Replace Pump & Motor	January 2023	2024	118,143	137,843	10,740	10%	Yes	40,759.27	$ -	0%	$ -
East Los Angeles	124056	ELA Relocate Existing Control Valve	January 2022	2024	128,950	150,865	11,723	10%	Yes	15,280.67	4,893.12	5%	$ 5,015.45
North Valley Region	124057	CH 029-01 Replace Pump & Motor	March 2022	2024	114,515	133,609	10,410	10%	Yes	39,017.94	$ -	0%	$ -
Dixon	124058	DIX 04 CrVI Treatment	February 2022	2025	2,710,211	3,170,451	436,888	20%			45,648.76	5%	$ 47,959.73
North Valley Region	124060	CH 081-C Replace Pump & Motor	March 2022	2024	60,600	71,416	6,323	10%	Yes	(3,717.78)	$ -	0%	$ -
North Valley Region	124061	CH 064-01 - Replace Pump & Motor	April 2022	2024	93,952	109,894	8,541	10%	Yes	18,455.54	$ -	0%	$ -
East Los Angeles	124062	ELA 2022 Flowmeter Replacement	July 2022	2024	126,582	151,541	8,599	10%	Yes	(18,765.52)	$ -	0%	$ -
East Los Angeles	124063	ELA 2023 Flowmeter Replacement	March 2024	2024	168,776	201,544	10,287	10%	Yes	39,540.78	$ -	0%	$ -
East Los Angeles	124064	ELA 2024 Flowmeter Replacement	July 2024	2024	160,338	191,952	10,047	10%	Yes	27,870.96	$ -	0%	$ -
Los Altos	124070	LAS 2024 Flowmeter Replacement	April 2024	2024	93,264	111,400	13,519	20%	Yes	12,007.01	$ -	0%	$ -
Livermore	124072	LIV 016-A Replace Pump & Motor	January 2022	2025	50,633	59,417	4,603	10%	Yes	7,597.54	$ -	0%	$ -
Livermore	124074	LIV 023-G Replace Pump & Motor	January 2024	2024	51,838	62,159	4,713	10%	Yes	6,623.98	$ -	0%	$ -
Bay Area Region	124075	MPS 112-A Replace Pump & Motor	December 2022	2024	40,995	48,830	3,727	10%	Yes	(5,322.01)	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Livermore	124076	LIV Crane Ridge 001 New Generator	March 2023	2025	275,517	320,737	25,047	10%	Yes	38,920.43	9,391.86	5%	$ 9,867.32
Livermore	124078	LIV 025-B - Replace Pump & Motor	January 2024	2024	46,963	56,313	4,269	10%	Yes	1,748.65	$ -	0%	$ -
East Los Angeles	124079	ELA Main Replcmnt Fwy Crossing-Dsgn	February 2022	2024	387,321	455,488	64,554	20%	No	N/A	$ -	0%	$ -
Bay Area Region	124081	MPS 114-B Replace Pump & Motor	June 2024	2024	36,613	43,610	3,328	10%	Yes	1,363.21	$ -	0%	$ -
Bay Area Region	124083	RDV 2022 Flowmeter Replacement	January 2022	2024	46,012	53,599	6,441	20%	Yes	8,045.56	$ -	0%	$ -
Livermore	124084	LIV 026-B - Replace Pump & Motor	August 2024	2024	42,194	50,595	3,836	10%	Yes	9,442.10	$ -	0%	$ -
Bay Area Region	124085	MPS 118-A Replace Pump & Motor	January 2024	2024	30,997	36,921	2,818	10%	Yes	(39,955.44)	$ -	0%	$ -
Los Altos	124086	LAS Grant Rd. Rezone	January 2023	2025	1,010,151	1,153,132	91,832	10%	Yes	129,083.65	64,591.48	10%	$ 67,861.42
Bay Area Region	124087	RDV 2023 Flowmeter Replacement	September 2023	2024	47,455	57,376	6,800	20%	Yes	8,448.72	$ -	0%	$ -
Bay Area Region	124088	RDV 2024 Flowmeter Replacement	August 2023	2024	97,899	115,560	14,357	20%	Yes	17,745.94	$ -	0%	$ -
Selma	124089	SEL 2023 Flowmeter Replacement	April 2024	2024	46,699	54,472	6,476	20%	Yes	8,107.45	$ -	0%	$ -
Bay Area Region	124090	MPS 120-B Replace Pump & Motor	January 2024	2024	18,835	22,292	1,712	10%	Yes	(16,615.83)	$ -	0%	$ -
Selma	124091	SEL 2024 Flowmeter Replacement	September 2023	2024	91,128	105,581	12,962	20%	Yes	12,015.26	$ -	0%	$ -
South Bay Region	124092	HR 005 Sta Rebuild - Design	March 2023	2025	265,958	312,512	45,794	20%			$ -	0%	$ -
Los Altos	124093	LAS STA 008 Wildfire New Generator	April 2023	2026	292,825	333,470	26,620	10%	Yes	41,365.35	9,526.06	5%	$ 10,258.52
East Los Angeles	124097	ELA 012-T2 Install Tank Mixer	October 2023	2024	78,481	93,243	12,967	20%	Yes	15,681.99	$ -	0%	$ -
East Los Angeles	124103	ELA 040-T1 Install Tank Mixer	October 2023	2024	78,481	93,243	12,967	20%	Yes	15,681.99	$ -	0%	$ -
East Los Angeles	124104	ELA 055-T1 Install Tank Mixer	October 2023	2024	78,481	93,243	12,967	20%	Yes	15,681.99	$ -	0%	$ -
East Los Angeles	124105	ELA 060-T1 Install Tank Mixer	June 2024	2024	77,208	91,497	12,757	20%	Yes	12,839.40	$ -	0%	$ -
Visalia	124110	VIS 2022 Flowmeter Replacement	July 2022	2024	331,237	392,979	42,255	20%	Yes	63,073.61	$ -	0%	$ -
East Los Angeles	124112	ELA - Land Purchase	February 2022	2024	526,508	627,136	45,679	10%	Yes	77,995.78	$ -	0%	$ -
Visalia	124113	VIS 2023 Flowmeter Replacement	February 2023	2024	329,114	392,327	42,020	20%	Yes	53,175.82	$ -	0%	$ -
Selma	124116	SEL 021 VFD Replacement	June 2024	2025	76,898	88,706	6,991	10%	Yes	6,143.86	5,292.67	10%	$ 5,560.61
Visalia	124118	VIS 2024 Flowmeter Replacement	November 2023	2024	375,773	449,014	47,858	20%	Yes	61,158.82	$ -	0%	$ -
Visalia	124119	VIS 026-01 Replace Pump & Motor	January 2024	2024	90,939	108,664	8,267	10%	Yes	11,620.43	$ -	0%	$ -
Salinas Valley Region	124120	KC STA 14 Generator Installation	March 2024	2026	269,036	314,608	24,457	10%	Yes	22,537.86	18,438.00	10%	$ 19,855.71
Stockton	124121	STK 2022 Flowmeter Replacement	July 2023	2024	149,816	179,488	17,515	10%	Yes	22,881.40	$ -	0%	$ -
Stockton	124123	STK 2023 Flowmeter Replacements	June 2024	2024	154,127	180,708	18,041	10%	Yes	23,560.31	$ -	0%	$ -
Visalia	124124	VIS 042-01 Replace Pump & Motor	January 2023	2024	66,781	79,797	6,071	10%	Yes	8,533.54	$ -	0%	$ -
Stockton	124127	STK 2024 Flowmeter Replacements	January 2024	2024	158,577	185,479	20,511	20%	Yes	26,110.85	$ -	0%	$ -
Willows	124133	WIL 2023 Flowmeter Replacement	July 2023	2024	21,097	25,119	2,961	20%	Yes	(16,956.05)	$ -	0%	$ -
Rancho Dominguez	124137	RD Office Improvements 2022	August 2024	2024	17,975	19,190	1,555	10%	Yes	1,189.94	$ -	0%	$ -
Kern River Valley	124138	KRV 2023 Flowmeter Replacement	December 2022	2024	63,885	77,448	3,643	10%	Yes	6,086.15	$ -	0%	$ -
Los Altos	124140	LAS Wildfire Control Valves 2024	December 2023	2025	516,711	589,848	46,974	10%	Yes	22,073.73	18,416.00	5%	$ 19,348.31
Kern River Valley	124141	KRV 2024 Flowmeter Replacements	April 2024	2025	63,771	73,517	3,674	10%	Yes	3,422.64	$ -	0%	$ -
Livermore	124142	LIV 2022 Flowmeter Replacement	April 2023	2024	324,078	388,602	42,937	20%	Yes	54,340.75	$ -	0%	$ -
Visalia	124143	VIS 083-01 - Replace Pump & Motor	April 2023	2024	125,104	147,004	11,373	10%	Yes	15,986.13	$ -	0%	$ -
Visalia	124145	VIS 300-01 - Replace Pump & Motor	September 2023	2024	65,495	77,332	5,954	10%	Yes	14,171.66	$ -	0%	$ -
Livermore	124146	LIV 2023 Flowmeter Replacement	July 2023	2024	300,568	352,710	38,855	20%	Yes	49,470.60	$ -	0%	$ -
Westlake	124150	WLK Sta. 6 Tank Mixing	August 2022	2025	265,867	307,152	24,170	10%	Yes	20,304.12	$ -	0%	$ -
Westlake	124151	WLK Sta. 7 Tank Mixing	September 2023	2025	264,483	305,553	24,044	10%	Yes	24,909.08	$ -	0%	$ -
Livermore	124154	LIV 2024 Flowmeter Replacement	August 2023	2024	241,962	290,136	32,093	20%	Yes	18,974.70	$ -	0%	$ -
North Valley Region	124157	ORO 2022 Flowmeter Replacement	July 2022	2024	93,232	109,916	12,913	20%	Yes	20,020.70	$ -	0%	$ -
North Valley Region	124161	ORO 2023 Flowmeter Replacement	August 2023	2024	53,841	63,800	6,776	20%	Yes	10,687.37	$ -	0%	$ -
Salinas Valley Region	124163	SLN 2022 Flowmeter Replacements	September 2022	2024	191,134	227,081	25,793	20%	Yes	40,231.33	$ -	0%	$ -
Salinas Valley Region	124166	SLN 2023 Flowmeter Replacement	September 2023	2024	159,537	188,240	20,341	20%	Yes	31,981.97	$ -	0%	$ -
Bay Area Region	124170	MPS 2023 Control Valve Overhaul	February 2023	2024	40,406	47,721	3,673	10%	Yes	(75,385.93)	$ -	0%	$ -
Bay Area Region	124171	MPS 2024 Control Valve Overhaul	January 2024	2024	40,406	48,128	3,673	10%	Yes	(78,280.71)	$ -	0%	$ -
Bakersfield	124173	BK 209 Panel Shade Awning	October 2023	2024	13,957	16,599	1,269	10%	Yes	1,933.81	$ -	0%	$ -
Salinas Valley Region	124175	KC 2022 Flowmeter Replacement	March 2022	2024	13,502	15,765	1,816	20%	Yes	(33,827.57)	$ -	0%	$ -
LA County Region	124177	PV 2023 Control Valve Overhaul	January 2023	2024	497,046	597,350	45,186	10%	Yes	64,526.49	$ -	0%	$ -
Bakersfield	124178	BK 2023 Misc Field Equipment	February 2023	2024	40,185	41,364	3,386	10%	Yes	2,123.09	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
South Bay Region	124179	HR 2022 Flowmeter Replacement	April 2023	2024	134,177	157,098	8,278	10%	Yes	13,346.75	$ -	0%	$ -
LA County Region	124181	PV 2024 Control Valve Overhaul	January 2024	2026	40,406	48,560	3,673	10%	Yes	(402,927.20)	$ -	0%	$ -
North Valley Region	124182	ORO 011-A - Replace Pump & Motor	December 2022	2024	45,992	53,529	4,181	10%	Yes	13,052.20	$ -	0%	$ -
South Bay Region	124184	HR 2023 Flowmeter Replacement	April 2023	2024	168,776	202,089	10,089	10%	Yes	80,824.28	$ -	0%	$ -
South Bay Region	124186	HR 2024 Flowmeter Replacement	January 2024	2024	94,622	112,984	5,816	10%	Yes	4,471.07	$ -	0%	$ -
Westlake	124187	WLK 2024 Control Valve Overhaul	February 2024	2024	40,506	47,731	3,682	10%	Yes	5,833.34	$ -	0%	$ -
Stockton	124188	STK 016 ATS Panel Installation	June 2024	2025	51,117	59,157	2,658	10%	Yes	551.03	$ -	0%	$ -
Stockton	124189	STK 018-01 - Replace Pump & Motor	August 2024	2025	75,949	89,048	6,905	10%	Yes	17,701.80	$ -	0%	$ -
Bakersfield	124190	BK Sta 96 Vault Lid Replacement	January 2023	2024	73,882	88,914	6,237	10%	Yes	(21,073.10)	$ -	0%	$ -
Stockton	124191	STK 60-01 - Replace Pump & Motor	November 2021	2024	135,021	159,252	12,275	10%	Yes	28,564.67	$ -	0%	$ -
Bay Area Region	124194	SSF 2023 Control Valve Overhaul	February 2023	2024	40,406	47,415	3,673	10%	Yes	3,017.97	$ -	0%	$ -
Stockton	124196	STK STA 076 ATS Panel Installation	May 2024	2025	56,305	65,161	3,212	10%	Yes	1,048.63	$ -	0%	$ -
North Valley Region	124198	CH 2024 ADDITIONAL TRUCK	January 2024	2024	101,912	107,106	9,265	10%			$ -	0%	$ -
Bay Area Region	124199	SSF 2024 Control Valve Overhaul	January 2024	2024	40,406	48,128	3,673	10%	Yes	2,083.17	$ -	0%	$ -
Stockton	124200	STK STA 79 Motor Control Upgrade	February 2023	2024	16,550	19,315	2,837	20%	Yes	2,164.53	$ -	0%	$ -
North Valley Region	124202	CH 2022 ADDITIONAL DUMP TRUCK	January 2022	2024	90,499	95,111	8,227	10%			$ -	0%	$ -
Bear Gulch	124204	BG 2023 Control Valve Overhaul	March 2023	2024	40,406	47,416	3,673	10%	Yes	(62,153.88)	$ -	0%	$ -
Bear Gulch	124205	BG 2024 Control Valve Overhaul	January 2024	2024	40,406	48,131	3,673	10%	Yes	(64,717.47)	$ -	0%	$ -
Stockton	124206	STK STA 21-01 Well Study	February 2022	2024	55,168	65,752	5,153	10%	Yes	8,347.74	$ -	0%	$ -
Los Altos	124208	LAS Transm. Main Isolation Valves	September 2023	2025	1,612,884	1,872,108	146,626	10%	Yes	418,684.53	$ -	0%	$ -
Stockton	124209	STK DIST OFC Genset Installation	April 2023	2026	244,144	280,391	21,967	10%	Yes	33,616.64	15,861.00	10%	$ 17,080.56
North Valley Region	124211	CH 54 New Generator and ATS	August 2023	2026	285,980	329,032	25,998	10%	Yes	16,603.77	10,704.80	5%	$ 11,527.90
Los Altos	124217	LAS 2023 Control Valve Overhaul	April 2023	2024	40,406	47,811	3,673	10%	Yes	(23,446.45)	$ -	0%	$ -
Los Altos	124218	LAS 2024 Control Valve Overhaul	January 2024	2024	40,406	48,263	3,673	10%	Yes	(25,042.81)	$ -	0%	$ -
Los Altos	124221	LAS STA 14 Wildfire New Pump & Main	June 2024	2024	630,227	752,782	105,038	20%	Yes	128,769.09	35,865.50	10%	$ 36,762.14
North Valley Region	124222	CH 2024 Hydrants for City	January 2024	2024	35,820	42,845	3,256	10%	Yes	4,577.29	$ -	0%	$ -
Rancho Dominguez	124224	RD Office Improvements 2023	January 2023	2024	16,318	17,421	1,378	10%	Yes	(926.65)	$ -	0%	$ -
East Los Angeles	124226	ELA Vacuum Truck Replacement	May 2024	2024	224,165	235,203	19,448	10%	Yes	(5,103.86)	$ -	0%	$ -
Rancho Dominguez	124228	RD Office Improvements 2024	January 2024	2024	16,318	17,181	1,344	10%	Yes	(1,397.48)	$ -	0%	$ -
Palos Verdes Pipeline	124230	PV D-500 Main Replacement PDR	November 2022	2025	1,313,400	1,521,402	218,900	20%	Yes	16,417.66	$ -	0%	$ -
LA County Region	124232	PV Sta 014 Rebuild - Design	April 2022	2026	550,000	645,031	98,791	20%	No	N/A	64,104.85	5%	$ 69,033.91
LA County Region	124233	PV Sta 015 Rebuild Design	April 2022	2024	1,054,852	1,203,572	189,472	20%	No	N/A	$ -	0%	$ -
North Valley Region	124234	CH GAC Changeouts 2023-Sta 21&46	March 2023	2024	209,511	243,830	19,046	10%	Yes	(3,442.23)	$ -	0%	$ -
North Valley Region	124236	CH 32 Panelboard Replacement	March 2024	2026	300,483	348,303	27,317	10%	Yes	23,283.60	10,814.18	5%	$ 11,645.69
North Valley Region	124237	CH Routine GAC Changeouts 2024	January 2024	2024	400,023	478,473	36,315	10%	Yes	181,745.62	$ -	0%	$ -
Los Altos	124239	LAS New Well For Zone 375	January 2023	2025	4,197,999	4,815,278	-	0%			228,053.92	10%	$ 239,599.15
North Valley Region	124241	CH New gas monitors	July 2024	2024	6,304	6,626	573	10%	Yes	391.77	$ -	0%	$ -
LA County Region	124243	PV Sta 023 Rebuild Design	April 2022	2024	1,300,000	1,496,056	233,506	20%	No	N/A	$ -	0%	$ -
Bay Area Region	124248	MPS 123-T4 - Tank Retrofits	January 2024	2024	4,915	5,854	447	10%	Yes	627.98	$ -	0%	$ -
Bay Area Region	124249	MPS 027-T2 - Tank Retrofits	January 2025	2025	134,618	156,921	12,238	10%	Yes	17,201.79	$ -	0%	$ -
LA County Region	124250	Antelope Valley WSFMP	January 2027	2027	113,166	124,216	10,288	10%	Yes	3,813.48	$ -	0%	$ -
North Valley Region	124251	Chico WSFMP	March 2024	2024	311,674	372,798	28,334	10%	Yes	17,848.99	$ -	0%	$ -
Salinas Valley Region	124252	SLN 2023 Additional Valve Truck	January 2023	2024	143,167	150,137	13,015	10%	Yes	8,549.23	$ -	0%	$ -
Dixon	124253	Dixon WSFMP	January 2023	2025	229,267	271,641	20,842	10%	Yes	13,129.29	$ -	0%	$ -
Los Altos	124254	LAS Station 17 New Generator	April 2024	2026	293,388	340,525	26,672	10%	Yes	17,905.33	10,420.91	5%	$ 11,222.18
South Bay Region	124255	Dominguez WSFMP	January 2026	2026	307,488	358,366	27,954	10%	Yes	24,366.67	$ -	0%	$ -
East Los Angeles	124256	East Los Angeles WSFMP	January 2026	2026	307,488	359,386	27,954	10%	Yes	24,366.67	$ -	0%	$ -
South Bay Region	124257	Hermosa Redondo WSFMP	January 2026	2026	307,488	360,443	27,954	10%	Yes	24,366.67	$ -	0%	$ -
Kern River Valley	124258	Kern River Valley WSFMP	January 2025	2025	113,166	134,259	10,288	10%	Yes	3,813.48	$ -	0%	$ -
Marysville	124259	MRL 010-T2 - Seismic Retrofits	July 2024	2024	358,650	425,472	32,604	10%	Yes	(38,949.11)	$ -	0%	$ -
Rancho Dominguez	124260	RD Slurry /Re-Stripe Back Park. Lot	March 2023	2024	20,608	24,599	1,740	10%	Yes	(3,470.05)	$ -	0%	$ -
Livermore	124261	Livermore WSFMP	January 2023	2025	311,674	365,744	28,334	10%	Yes	17,848.99	$ -	0%	$ -

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District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bakersfield	124262	BK 047-02 Well Liner Installation	March 2023	2024	309,502	355,060	28,137	10%	Yes	34,887.60	22,619.60	10%	$ 23,185.09
Marysville	124263	Marysville WSFMP	January 2023	2025	119,122	138,556	10,829	10%	Yes	6,821.24	$ -	0%	$ -
North Valley Region	124264	Oroville WSFMP	April 2024	2024	375,379	439,736	34,125	10%	Yes	244,003.90	$ -	0%	$ -
LA County Region	124265	Palos Verdes WSFMP	January 2026	2024	307,488	354,869	27,954	10%	Yes	24,366.67	$ -	0%	$ -
Bay Area Region	124266	Redwood Valley WSFMP	March 2024	2024	125,078	148,417	11,371	10%	Yes	4,214.94	$ -	0%	$ -
Stockton	124267	Stockton WSFMP	July 2024	2025	229,267	268,160	20,842	10%	Yes	13,129.29	$ -	0%	$ -
Visalia	124268	Visalia WSFMP	March 2024	2024	311,674	372,422	28,334	10%	Yes	25,015.03	$ -	0%	$ -
Los Altos	124269	LAS Station 119 New Generator	May 2023	2026	279,842	320,980	25,440	10%	Yes	39,531.43	9,077.21	5%	$ 9,775.16
LA County Region	124272	FMT Sta. 1 Panelboard Replacement	June 2024	2026	274,687	302,684	24,971	10%	Yes	19,983.59	19,968.61	10%	$ 21,504.01
CSS	124273	CSS PeopleSoft FS&PeopleTools Upgr.	January 2022	2024	542,180	563,032	49,289	10%	Yes	(17,916.85)	$ -	0%	$ -
LA County Region	124274	PV 2023 Control Valve Replacement	October 2022	2024	295,359	354,962	26,851	10%	Yes	62,698.59	$ -	0%	$ -
Los Altos	124279	LAS Sta 38 Wildfire New Main & PRV	January 2023	2024	383,893	458,545	34,899	10%	Yes	124,147.64	19,042.00	10%	$ 19,518.05
Bakersfield	124280	BKD 2022 chemical pump replacements	August 2023	2024	20,038	24,116	1,822	10%	Yes	2,660.14	$ -	0%	$ -
LA County Region	124281	PVD 2024 Control Valve Replacem.	January 2024	2024	384,605	462,218	34,964	10%	Yes	2,496.65	$ -	0%	$ -
Los Altos	124283	LAS 039-01: Well Renewal	January 2023	2024	214,961	250,745	19,542	10%	Yes	105,018.71	$ -	0%	$ -
Bakersfield	124286	BK 2023 Chemical Pump Replace	November 2023	2025	19,045	22,099	-	0%	Yes	876.46	$ -	0%	$ -
Los Altos	124288	LAS 104-02: Well Renewal	January 2024	2024	295,626	353,113	32,986	10%	Yes	11,154.44	20,819.48	10%	$ 21,339.97
Bakersfield	124290	BK 2024 chemical pump replace	January 2024	2024	14,522	17,477	1,320	10%	Yes	(4,473.20)	$ -	0%	$ -
Bakersfield	124291	BK 040-02 - Replace Pump & Motor	September 2022	2024	211,425	248,439	19,220	10%	Yes	66,583.15	$ -	0%	$ -
Stockton	124292	STK STA 66-02 Panelboard Replacemen	May 2023	2025	412,093	478,261	42,550	10%	Yes	67,828.42	30,242.00	10%	$ 31,773.00
Livermore	124293	LIV 020-01: Well Renewal	August 2024	2025	253,165	297,084	23,015	10%	Yes	27,448.76	17,739.04	10%	$ 18,637.08
North Valley Region	124294	ORO 010-01 Well Renewal	January 2022	2024	209,327	250,568	19,030	10%	Yes	10,316.17	15,640.27	10%	$ 16,031.28
Bakersfield	124295	BK 134-01 - Replace Pump & Motor	June 2022	2024	225,295	264,736	20,481	10%	Yes	83,464.49	$ -	0%	$ -
Selma	124296	SEL 011-01 Well Renewal	January 2023	2024	190,307	218,567	17,301	10%	Yes	24,317.80	$ -	0%	$ -
Bakersfield	124297	BK 042-02 - Replace Pump & Motor	January 2024	2024	85,929	103,413	7,812	10%	Yes	10,980.13	$ -	0%	$ -
Visalia	124298	VIS 012-01 Well Renewal	January 2022	2024	248,324	296,725	22,575	10%	Yes	12,238.09	18,554.08	10%	$ 19,017.93
Visalia	124299	VIS 014-01 Well Renewal	February 2023	2024	291,073	342,851	26,461	10%	Yes	25,821.33	20,337.69	10%	$ 20,846.13
Willows	124300	WIL 007-01 Well Renewal	January 2022	2024	329,097	396,741	29,918	10%	Yes	16,218.86	24,589.13	10%	$ 25,203.86
LA County Region	124301	Leona Valley Portable Generator	June 2024	2025	89,883	90,623	8,171	10%	Yes	7,561.59	$ -	0%	$ -
Bakersfield	124302	BK 079-01 Well Renewal	December 2023	2025	322,836	379,307	29,349	10%	Yes	50,406.39	21,892.34	10%	$ 23,000.64
Marysville	124304	MRL 009-01 Well Renewal	July 2024	2024	204,620	238,004	18,602	10%	Yes	10,084.38	14,915.73	10%	$ 15,288.62
Bakersfield	124306	BK 042-02 Well Renewal	January 2024	2024	259,093	304,414	23,554	10%	Yes	33,107.53	$ -	0%	$ -
Bay Area Region	124308	SSF 2023 Control Valve Replacement	February 2023	2024	135,021	158,444	12,275	10%	Yes	55,192.03	$ -	0%	$ -
Stockton	124311	STK STA 71 Panel and Genset Install	February 2023	2027	427,390	481,535	38,945	10%	Yes	55,913.58	28,320.00	10%	$ 31,259.98
Rancho Dominguez	124312	RD Replace Signage	September 2024	2024	37,329	44,560	3,230	10%	Yes	(5,124.28)	$ -	0%	$ -
Bay Area Region	124313	SC Wildfire New Main 460 Zone	January 2022	2024	452,307	538,754	41,119	10%	Yes	7,707.12	$ -	0%	$ -
Los Altos	124314	LAS 27 New Generator	March 2024	2027	263,204	294,122	23,928	10%	Yes	15,499.71	9,383.79	5%	$ 10,357.95
Bakersfield	124325	BK Sta 96 Isolation Valve install	January 2023	2024	44,329	53,349	4,030	10%	Yes	(12,239.97)	$ -	0%	$ -
Bakersfield	124329	BK 2023 MISC PUMPING TOOLS	March 2023	2024	20,096	23,400	1,696	10%	Yes	(5,225.58)	$ -	0%	$ -
Los Altos	124330	LAS Station 30 New Generator	April 2023	2026	348,376	395,779	31,671	10%	Yes	48,276.40	11,241.50	5%	$ 12,105.87
Bakersfield	124331	BK 2024 pumping tools	May 2024	2024	20,096	24,185	1,827	10%	Yes	(6,190.04)	$ -	0%	$ -
Bay Area Region	124333	ARM 001 New Genset	July 2023	2026	252,104	287,422	22,919	10%	Yes	30,641.96	8,398.86	5%	$ 9,044.65
Los Altos	124334	LAS Land for New Well	March 2022	2024	2,270,798	2,635,638	378,466	20%	No	N/A	$ -	0%	$ -
Los Altos	124336	LAS Station 31 New Generator	April 2023	2026	289,229	328,584	-	0%	Yes	15,165.14	$ -	0%	$ -
South Bay Region	124339	HR 026 Sta Rebuild - Design	March 2023	2024	205,818	247,124	35,439	20%	No	N/A	$ -	0%	$ -
Los Altos	124342	LAS STA 42 Wildfire Bstr Pmps-Dsgn	January 2023	2024	348,115	415,810	58,019	20%	No	N/A	$ -	0%	$ -
LA County Region	124343	Antelope Valley Reliability Study	January 2025	2025	134,870	150,865	12,261	10%	Yes	5,604.92	$ -	0%	$ -
North Valley Region	124344	Chico Reliability Study	February 2023	2024	152,443	182,339	13,858	10%	Yes	21,052.98	$ -	0%	$ -
Dixon	124345	Dixon Reliability Study	May 2022	2024	143,306	167,549	13,028	10%	Yes	11,916.08	$ -	0%	$ -
South Bay Region	124346	Dominguez Reliability Study	March 2024	2024	136,141	162,521	12,376	10%	Yes	7,405.11	$ -	0%	$ -
East Los Angeles	124347	East Los Angeles Reliability Study	March 2024	2024	136,141	162,984	12,376	10%	Yes	7,405.11	$ -	0%	$ -
South Bay Region	124348	Hermosa Redondo Reliability Study	March 2024	2024	136,141	163,463	12,376	10%	Yes	7,405.11	$ -	0%	$ -

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Bay Area Region	124349	MPS Sta 106 Slope Mitigation	March 2022	2024	565,401	659,074	94,234	20%	Yes	112,635.02	$ -	0%	$ -
Kern River Valley	124350	Kern River Valley Reliability Study	October 2021	2024	146,451	177,542	13,314	10%	Yes	18,245.06	$ -	0%	$ -
Livermore	124351	Livermore Reliability Study	May 2022	2024	227,253	259,591	20,659	10%	Yes	30,167.92	$ -	0%	$ -
Marysville	124352	Marysville Reliability Study	February 2023	2024	152,443	177,314	13,858	10%	Yes	21,052.98	$ -	0%	$ -
North Valley Region	124353	Oroville Reliability Study	February 2023	2024	152,443	177,885	13,858	10%	Yes	21,052.98	$ -	0%	$ -
LA County Region	124354	Palos Verdes Reliability Study	November 2023	2024	136,141	163,614	12,376	10%	Yes	7,405.11	$ -	0%	$ -
Stockton	124356	Stockton Reliability Study	May 2022	2024	300,611	336,905	27,328	10%	Yes	24,996.16	$ -	0%	$ -
Westlake	124357	Westlake Reliability Study	March 2024	2024	136,141	158,277	12,376	10%	Yes	7,405.11	$ -	0%	$ -
Bakersfield	124358	BK 2022 GAC Media Replacement	April 2022	2024	376,432	453,023	32,658	10%	Yes	(524,858.61)	$ -	0%	$ -
Bay Area Region	124360	SC Wildfire New Main 600 Zone	October 2023	2025	1,024,212	1,176,207	93,099	10%	Yes	73,976.39	$ -	0%	$ -
Bakersfield	124364	BK 2023 GAC Media Replacement	April 2023	2024	447,116	511,059	38,791	10%	Yes	136,974.20	$ -	0%	$ -
Bakersfield	124365	BK 2024 GAC Media Replacement	January 2024	2024	83,309	100,260	7,228	10%	Yes	10,729.44	$ -	0%	$ -
East Los Angeles	124368	ELA Sta. 12 Panelboard Replacement	March 2022	2025	399,868	460,195	36,352	10%	Yes	139,172.68	21,473.05	10%	$ 22,560.12
Bay Area Region	124372	SC Wildfire New Main 345 Zone	January 2023	2024	2,116,317	2,504,791	192,393	10%	Yes	405,009.58	$ -	0%	$ -
Visalia	124373	VIS 2022 - GAC Media Replacement	July 2022	2024	607,595	726,020	55,236	10%	Yes	48,498.16	$ -	0%	$ -
Visalia	124378	VIS 2024 GAC Media Replacement	December 2023	2024	146,341	174,864	13,304	10%	Yes	19,426.82	$ -	0%	$ -
South Bay Region	124379	HR SCADA and Meters HR-PV	September 2022	2026	371,292	428,017	33,186	10%	Yes	18,058.36	$ -	0%	$ -
Bear Gulch	124381	BG Wildfire New Main Tynan Way	December 2023	2025	200,000	232,157	18,182	10%	Yes	(698,688.09)	64,276.00	10%	$ 67,529.97
Bay Area Region	124383	MPS El Camino Real Main Connection	January 2022	2024	387,786	452,124	64,631	20%	Yes	164,771.09	$ -	0%	$ -
South Bay Region	124387	HR 29 SCADA Communications Relocat	October 2023	2024	32,484	38,357	2,682	10%			$ -	0%	$ -
Willows	124390	Willows Reliability Study	February 2023	2024	121,778	143,327	11,071	10%	Yes	16,817.82	$ -	0%	$ -
South Bay Region	124395	Relocate SCADA WB-39 Connection	January 2022	2024	37,170	44,372	3,224	10%	Yes	(18,641.28)	$ -	0%	$ -
Bay Area Region	124396	SM Wildfire New Main 465 Zone	January 2022	2024	1,076,006	1,262,667	97,819	10%	Yes	95,598.63	$ -	0%	$ -
Bear Gulch	124399	BG Wildfire Pmp Sta Kngs Mt-Design	January 2023	2024	736,000	876,707	121,890	20%	No	N/A	$ -	0%	$ -
CSS	124406	CSS 2023 AM Large Tools	March 2023	2024	98,911	102,715	-	0%	Yes	(3,394.08)	$ -	0%	$ -
East Los Angeles	124407	ELA Sta. 55 Panelboard Replacement	January 2024	2026	354,195	403,083	32,200	10%	Yes	27,083.77	25,645.40	10%	$ 27,617.29
South Bay Region	124408	DOM 290 Asphalt Replacement	March 2022	2024	24,116	28,790	2,087	10%	Yes	(3,310.26)	$ -	0%	$ -
CSS	124409	CSS 2024 AM Large Tools	March 2024	2024	101,383	105,283	-	0%	Yes	(3,478.84)	$ -	0%	$ -
Bay Area Region	124410	SSF Wildfire New Main 555 Zone	January 2023	2025	2,230,549	2,550,560	202,757	10%	Yes	441,764.67	$ -	0%	$ -
Bakersfield	124412	BK 2022 Flat to Meter	November 2022	2024	2,776,370	3,301,844	252,397	10%	Yes	354,782.77	$ -	0%	$ -
Westlake	124413	WLK 2024 Flowmeter Replacement	January 2024	2024	163,562	190,158	9,230	10%	Yes	15,489.60	$ -	0%	$ -
South Bay Region	124415	DOM 272 Asphalt Replacement	March 2023	2024	35,715	42,636	3,015	10%	Yes	(6,014.04)	$ -	0%	$ -
Bay Area Region	124417	SSF Wildfire New Main 390 Zone	January 2022	2024	1,544,468	1,800,712	140,052	10%	Yes	136,864.82	$ -	0%	$ -
Bay Area Region	124418	SSF New Main	November 2022	2024	760,632	894,501	126,772	20%	Yes	59,922.54	$ -	0%	$ -
Bakersfield	124419	BK 2023 Flat to Meter	March 2024	2024	1,983,966	2,387,634	180,361	10%	Yes	(547,803.67)	$ -	0%	$ -
Bakersfield	124420	BK 2024 Flat to Meter	January 2024	2024	2,023,646	2,383,352	183,968	10%	Yes	(623,319.83)	$ -	0%	$ -
Bay Area Region	124424	SC-117 Sta Rebuild - Design	February 2023	2024	286,672	338,571	50,260	20%	No	N/A	$ -	0%	$ -
Bay Area Region	124426	BAY Zone Interie at Polhemus Rd	March 2024	2024	1,069,152	1,273,493	178,192	20%	Yes	122,673.41	$ -	0%	$ -
Bay Area Region	124427	MPS SM-17 Sta Rebuild - Design	January 2023	2025	118,593	135,866	19,766	20%	No	N/A	$ -	0%	$ -
Kern River Valley	124428	KRV Kernville 001 Repl AP6 Filters	April 2024	2024	104,112	126,215	9,465	10%	Yes	6,576.69	$ -	0%	$ -
South Bay Region	124429	HR 027 Sta Rebuild - Design	February 2023	2024	281,542	338,047	48,377	20%	No	N/A	$ -	0%	$ -
Kern River Valley	124431	KRV 001 Replace AP4 Filters	April 2024	2024	52,056	63,107	4,732	10%	Yes	3,288.34	$ -	0%	$ -
Kern River Valley	124432	Arden 007 Partial Rebuild	April 2024	2025	389,030	446,857	34,316	10%	Yes	40,172.87	27,121.14	10%	$ 28,494.15
Kern River Valley	124433	KRV Arden 009 Sta Rebuild - Design	March 2023	2024	250,869	296,914	41,812	20%	No	N/A	$ -	0%	$ -
Kern River Valley	124434	KRV Arden 012 Station Rebuild	March 2022	2024	295,359	341,740	25,425	10%	Yes	19,267.46	$ -	0%	$ -
Bear Gulch	124437	BG Land For New Booster Station	December 2022	2024	400,000	476,471	66,667	20%	No	N/A	$ -	0%	$ -
Livermore	124440	LIV Pressure Vessels Ladder/Plat	January 2025	2025	52,661	61,796	4,787	10%	Yes	6,729.12	$ -	0%	$ -
East Los Angeles	124441	ELA Sta. 59 Panelboard Replacement	January 2024	2026	291,998	332,301	26,545	10%	Yes	22,327.80	21,142.02	10%	$ 22,767.64
Bay Area Region	124442	SSF Wildfire 380 Zone SFPUC Conn.	January 2022	2025	500,003	570,503	45,455	10%	Yes	67,263.10	$ -	0%	$ -
South Bay Region	124444	DOM PRV/Vault @ 1610 E. Sepulveda	May 2023	2024	230,380	275,022	20,066	10%	Yes	(31,651.00)	$ -	0%	$ -
South Bay Region	124449	HR 029 Chemical Building	January 2023	2024	528,579	621,102	102,556	20%	Yes	104,485.33	41,020.29	10%	$ 42,045.80
Bay Area Region	124452	SSF STA 1 Wildfire Booster Pump	February 2022	2024	717,300	850,776	65,209	10%	Yes	(21,671.00)	55,528.65	10%	$ 56,916.87

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bay Area Region	124455	BAY Extend 345 Zone at Nevada Ave	April 2022	2024	939,397	1,092,885	156,566	20%	Yes	180,858.83	$ -	0%	$ -
Bay Area Region	124462	Wildfire SC-121 Station Rebuild	July 2023	2026	1,666,083	1,937,446	277,681	20%	Yes	411,018.41	$ -	0%	$ -
South Bay Region	124465	DOM WB 10 connection overhaul	June 2023	2024	201,916	240,489	17,472	10%	Yes	24,560.70	$ -	0%	$ -
CSS	124473	CSS Automate HR Bidding Process	April 2024	2024	293,839	305,140	26,713	10%	Yes	11,636.15	$ -	0%	$ -
South Bay Region	124478	HR Via Colusa PBC	January 2022	2024	144,305	173,267	24,051	20%	Yes	20,821.58	$ -	0%	$ -
East Los Angeles	124479	ELA Sta. 12 Genset Replacement	April 2022	2025	332,515	380,712	30,229	10%	Yes	117,968.81	17,240.81	10%	$ 18,113.63
South Bay Region	124482	DOM WB 21 connection overhaul	October 2023	2024	204,289	243,315	17,246	10%	Yes	22,079.73	$ -	0%	$ -
CSS	124483	CSS Digitize Hist. Personnel Rec.	January 2024	2024	234,597	243,620	21,327	10%	Yes	(7,752.56)	$ -	0%	$ -
CSS	124485	CSS Integrate Data- Dashboard Tool	September 2022	2024	568,720	590,593	51,702	10%	Yes	3,237.89	$ -	0%	$ -
South Bay Region	124487	HR Sta 30 Manual Transfer Switch	February 2022	2024	71,922	84,208	6,538	10%	Yes	7,981.26	$ -	0%	$ -
CSS	124488	CSS Procurement Process Improvm.	January 2022	2024	807,431	838,485	73,403	10%	Yes	(26,682.28)	$ -	0%	$ -
CSS	124489	CSS Inventory Management System	May 2024	2024	531,336	551,772	48,303	10%	Yes	(17,558.57)	$ -	0%	$ -
CSS	124492	CSS SCADA security system	October 2023	2024	236,967	242,800	21,542	10%	Yes	21,544.92	$ -	0%	$ -
CSS	124496	CSS Zoom Video Conference	August 2024	2024	539,016	559,747	49,002	10%	Yes	(17,811.94)	$ -	0%	$ -
Salinas Valley Region	124498	KC 2023 Hydrant Replacements	April 2023	2024	82,700	96,560	7,518	10%	Yes	31,230.02	$ -	0%	$ -
Salinas Valley Region	124499	KC 2024 Hydrant Replacements	June 2024	2024	59,066	69,956	5,370	10%	Yes	6,308.78	$ -	0%	$ -
South Bay Region	124500	DOM WB 14 connection overhaul	October 2023	2024	228,447	267,077	19,285	10%	Yes	(38,467.79)	$ -	0%	$ -
South Bay Region	124501	DOM WB 35 connection overhaul	April 2024	2024	173,080	205,670	15,290	10%	Yes	(33,311.93)	$ -	0%	$ -
South Bay Region	124502	DOM WB 36 connection overhaul	February 2024	2024	206,920	245,881	17,278	10%	Yes	(41,135.14)	$ -	0%	$ -
South Bay Region	124503	DOM WB 39 connection overhaul	June 2024	2024	205,148	243,775	16,819	10%	Yes	(41,189.37)	$ -	0%	$ -
Kern River Valley	124508	KRV SM 005 Sta Rebuild - Design	June 2023	2024	500,874	592,805	83,479	20%	No	N/A	$ -	0%	$ -
Kern River Valley	124509	KRV 005-T1 Tank Mixing	March 2023	2024	124,382	150,787	11,307	10%	Yes	(10,490.50)	$ -	0%	$ -
Kern River Valley	124510	Kernville 006-T1 Tank Mixing	March 2022	2024	122,173	148,110	11,107	10%	Yes	1,831.75	$ -	0%	$ -
Kern River Valley	124511	Kernville 001 Site Access Upgrade	January 2022	2024	84,388	99,772	7,672	10%	Yes	20,271.89	$ -	0%	$ -
Kern River Valley	124512	Bodfish 013 Vessel Replacement	March 2023	2024	38,819	46,228	3,529	10%	Yes	4,849.69	$ -	0%	$ -
Kern River Valley	124513	Bodfish 104 Vessel Replacement	March 2023	2024	29,198	35,397	2,654	10%	Yes	(4,770.60)	$ -	0%	$ -
Kern River Valley	124514	KRV Arden 001 Backwash Retrofit	November 2023	2024	12,658	14,966	-	0%	Yes	(536.72)	$ -	0%	$ -
CSS	124544	CSS PC Refresh 2023	December 2022	2024	568,720	590,593	51,702	10%	Yes	(665,729.62)	$ -	0%	$ -
CSS	124545	CSS PC Refresh 2024	March 2024	2024	708,852	736,114	64,441	10%	Yes	253,232.73	$ -	0%	$ -
Bay Area Region	124546	LUC 003-T1 - CP Upgrade	May 2024	2025	15,349	18,161	1,395	10%	Yes	1,961.21	$ -	0%	$ -
CSS	124552	CSS 2024 Website Enhancements	January 2024	2024	104,265	108,275	9,479	10%	Yes	(6,115.92)	$ -	0%	$ -
CSS	124576	CSS 2023 Network Hardware Replacmt.	March 2023	2024	350,711	364,199	31,883	10%	Yes	46,381.66	$ -	0%	$ -
Los Altos	124598	LAS Sta. 31 Redwood Tank Replace	January 2022	2026	1,012,658	1,131,615	92,060	10%	Yes	286,980.01	54,529.82	10%	$ 58,722.65
Willows	124599	WIL 002-T1 - Seismic/Geotech Study	February 2022	2024	97,046	112,103	8,822	10%	Yes	49,431.28	$ -	0%	$ -
CSS	124601	CSS 2024 Network Hardware Replacem.	April 2024	2024	300,547	312,106	27,322	10%	Yes	(11,390.37)	$ -	0%	$ -
CSS	124605	CSS SCADA Server & Network Replace	August 2022	2024	331,754	344,513	30,159	10%	Yes	27,072.27	$ -	0%	$ -
CSS	124609	CSS 2023 SCADA Server Replacement	August 2023	2024	325,118	337,623	29,556	10%	Yes	19,281.49	$ -	0%	$ -
CSS	124611	CSS 2024 SCADA Server Replacement	May 2024	2024	303,100	314,757	27,555	10%	Yes	(11,487.19)	$ -	0%	$ -
CSS	124612	CSS UPS and Storage Replacement	April 2024	2024	517,774	537,688	47,070	10%	Yes	(6,623.01)	$ -	0%	$ -
Los Altos	124619	LAS Sta. 15 Redwood Tank Replace	April 2024	2024	865,780	1,012,045	78,707	10%	Yes	110,218.70	54,039.59	10%	$ 55,390.58
Los Altos	124621	LAS-115 Redwood Tank Replacement	April 2024	2024	825,395	962,519	75,036	10%	Yes	68,611.39	54,127.00	10%	$ 55,480.18
Bay Area Region	124622	MPS 109-T2 - Tank Retrofits	January 2025	2025	56,431	65,780	5,224	10%	Yes	7,301.21	$ -	0%	$ -
Bay Area Region	124624	SSF 101-T1 - Tank Retrofits	January 2024	2024	11,020	13,126	1,002	10%	Yes	1,408.13	$ -	0%	$ -
Dixon	124632	DIX 001-T1 - Seismic/Geotech Study	February 2022	2024	97,046	115,076	8,822	10%	Yes	51,385.37	$ -	0%	$ -
CSS	124633	CSS Portable Booster Pumps	January 2024	2024	105,734	124,964	-	0%	Yes	(82,003.69)	$ -	0%	$ -
Marysville	124634	MRL 010-T2 - Seismic/Geotech Study	February 2022	2024	97,046	111,701	8,822	10%	Yes	48,044.44	$ -	0%	$ -
Visalia	124636	VIS Elev Tanks Seismic/Geotech Stud	November 2021	2024	138,481	163,115	12,589	10%	Yes	40,122.25	$ -	0%	$ -
Stockton	124639	STK 082-T7 - Seismic/Geotech Study	February 2022	2024	97,046	114,463	-	0%	Yes	40,670.94	$ -	0%	$ -
CSS	124667	CSS Meter Reading Handheld Replace	March 2022	2024	355,450	367,480	32,314	10%	Yes	23,727.24	$ -	0%	$ -
CSS	124669	CSS EAM GIS Modernization	December 2021	2024	1,107,240	1,149,824	100,658	10%	Yes	45,295.98	$ -	0%	$ -
CSS	124682	CSS Cust. Serv. Analytics Software	January 2024	2024	206,635	214,582	18,785	10%	Yes	7,983.77	$ -	0%	$ -
Bay Area Region	124688	MPS 032-T1 - Tank Retrofits	January 2024	2025	14,282	16,649	1,298	10%	Yes	1,825.04	$ -	0%	$ -

	[A]			[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Visalia	124689	VIS 201-PT1 - Pressure Vessel Rplcm	March 2022	2025	363,705	416,222	33,064	10%	Yes	50,641.56	12,831.61	5%	$ 13,481.21
Livermore	124690	LIV 2022 Physical Security Upgrades	October 2022	2024	404,196	484,672	36,772	10%	Yes	50,857.84	$ -	0%	$ -
CSS	124691	CSS EWWM-Buildout of Integration	March 2022	2024	1,137,441	1,181,187	103,404	10%	Yes	338,262.13	$ -	0%	$ -
CSS	124692	CSS EAM-Work Digitization,Analytics	February 2022	2024	1,895,735	1,968,644	172,339	10%	Yes	78,681.03	$ -	0%	$ -
CSS	124693	CSS CC&B Cloud Upgrade	August 2022	2024	13,383,247	13,897,966	1,216,659	10%	Yes	547,496.67	$ -	0%	$ -
CSS	124699	CSS Customer Feedback Mngmt. Systen	October 2022	2024	549,763	570,907	49,978	10%	Yes	11,208.12	$ -	0%	$ -
CSS	124700	CSS Compliance Monitorng Analytics	January 2022	2024	104,015	108,016	9,456	10%	Yes	(3,437.31)	$ -	0%	$ -
CSS	124702	CSS Op. Data Management System	April 2022	2024	1,706,161	1,771,780	155,106	10%	Yes	60,051.29	$ -	0%	$ -
CSS	124703	CSS LIMS Software Enhancements	August 2024	2024	280,763	291,561	25,524	10%	Yes	11,485.73	$ -	0%	$ -
Livermore	124725	LIV 2023 Physical Security Upgrades	October 2023	2024	61,603	73,869	5,589	10%	Yes	(341,047.61)	$ -	0%	$ -
Bakersfield	124729	BK 045-T1 - Tank Roof Replacement	May 2022	2024	491,641	568,183	44,695	10%	Yes	62,823.04	$ -	0%	$ -
Los Altos	124733	LAS New Operations Building	June 2021	2024	6,773,165	7,719,835	1,171,648	20%	Yes	1,782,845.58	382,531.86	10%	$ 392,095.16
Los Altos	124735	LAS Covington Ph2 New 16" Main	May 2022	2024	1,867,371	2,204,365	311,229	20%	Yes	438,078.18	110,941.62	10%	$ 113,715.16
Visalia	124743	VIS Property Purchase	February 2022	2024	542,920	648,740	49,356	10%	No	N/A	$ -	0%	$ -
Bakersfield	124745	BKD 147 Storage Tank Replacement	February 2021	2025	987,183	1,145,510	85,986	10%	Yes	95,192.80	70,025.33	5%	$ 73,570.36
Bay Area Region	124748	SSF-1 Treatment Plant Automation	January 2022	2024	521,165	594,649	82,944	20%	Yes	472,220.68	$ -	0%	$ -
Stockton	124751	STK STA 75 GAC Media Replacment	January 2023	2024	154,556	185,167	14,023	10%	Yes	20,490.81	$ -	0%	$ -
CSS	124754	CSS Recycled Water Strategic Plan	May 2024	2024	136,305	161,096	12,391	10%	Yes	11,333.35	$ -	0%	$ -
Bay Area Region	124760	BAY Misc Tools Equipment 2022	January 2022	2024	37,233	38,968	-	0%	Yes	(4,036.45)	$ -	0%	$ -
Bay Area Region	124761	BAY 2023 Misc Equipment	January 2023	2024	38,350	40,136	-	0%	Yes	(5,220.13)	$ -	0%	$ -
Bay Area Region	124762	BAY 2024 Misc Tools-Equipment	January 2024	2024	39,900	41,758	-	0%	Yes	(6,564.39)	$ -	0%	$ -
Livermore	124768	LIV 2024 Physical Security Upgrades	May 2024	2024	375,980	440,145	35,426	10%	Yes	65,117.01	$ -	0%	$ -
Salinas Valley Region	124771	SLN 057-PT1 - Pressure Vessel Rplcm	April 2022	2024	506,329	602,934	46,030	10%	Yes	245,130.83	10,705.79	5%	$ 10,973.43
Salinas Valley Region	124774	SLN 060-PT1 - Pressure Vessel Rplcm	January 2024	2024	327,522	390,902	29,775	10%	Yes	41,219.32	11,169.29	5%	$ 11,448.52
Salinas Valley Region	124775	SLN 033-PT1 Pressure Vessel Rplcmnt	March 2022	2024	653,078	770,575	59,371	10%	Yes	355,927.14	12,179.22	5%	$ 12,483.70
South Bay Region	124776	HR 029 AMMONIA INJECTION	June 2024	2025	599,304	692,528	99,884	20%	Yes	122,869.91	38,286.05	10%	$ 40,224.28
CSS	124805	CSS Next Generation Vulnerab. Scan	January 2022	2024	312,796	324,826	28,436	10%	Yes	(10,336.56)	$ -	0%	$ -
LA County Region	124813	PV Station 37 Mixing and Dosing	January 2023	2024	155,103	182,420	25,850	20%	Yes	(278,942.40)	18,228.58	5%	$ 18,684.29
LA County Region	124814	PV Station 49 Mixing and Dosing T-2	January 2023	2024	174,327	205,030	29,055	20%	Yes	(271,387.96)	18,718.69	5%	$ 19,186.66
CSS	124815	CSS OPEN OFFICE ACOUSTICS	June 2024	2024	584,307	663,164	97,385	20%	Yes	113,988.94	$ -	0%	$ -
CSS	124817	CSS ADDITIONAL EV CHARGERS	December 2022	2024	324,680	372,411	54,113	20%	Yes	66,566.23	$ -	0%	$ -
Bakersfield	124819	BK 2023 NEWTP Filter Modules	December 2024	2024	337,553	397,553	27,194	10%	Yes	45,766.83	$ -	0%	$ -
Bakersfield	124820	BK 2024 NEWTP Filter Modules	January 2024	2024	337,553	397,553	26,531	10%	Yes	37,832.93	$ -	0%	$ -
Bakersfield	124822	BK NEWTP Traveling Screen Rebuild	November 2024	2024	113,924	137,104	9,884	10%	Yes	(48,544.14)	$ -	0%	$ -
Bakersfield	124823	BK NWWTP Traveling Screen Rebuild	January 2024	2024	147,679	177,727	12,812	10%	Yes	65,832.07	$ -	0%	$ -
Bakersfield	124824	BK NEWTP CIP Neutralization Tank	December 2024	2024	189,873	228,506	30,316	20%	Yes	16,160.78	$ -	0%	$ -
Bakersfield	124826	BK NWWTP Algal Toxin Study	November 2023	2024	125,667	151,235	10,903	10%	Yes	16,184.61	$ -	0%	$ -
Bakersfield	124828	BK NEWTP Algal Toxin Study	November 2023	2024	100,149	120,526	8,689	10%	Yes	(4,102.73)	$ -	0%	$ -
South Bay Region	124830	DOM Sta 203 Tank Mixing & Dosing	July 2024	2024	908,749	1,056,786	151,458	20%	Yes	48,753.43	67,423.31	10%	$ 69,108.89
South Bay Region	124843	HR 005 Tank Mix & Boost	May 2024	2024	443,399	521,012	65,547	20%	Yes	(76,914.90)	18,491.10	5%	$ 18,953.38
South Bay Region	124844	HR Sta 026 Tank Mix & Boost	May 2024	2025	393,959	448,843	65,660	20%	Yes	(396,005.39)	63,481.23	10%	$ 66,694.97
CSS	124853	CSS Energy Efficiency - HVAC	November 2023	2024	792,522	909,862	132,087	20%	Yes	200,246.08	$ -	0%	$ -
CSS	124855	CSS Media Center - Furniture	January 2022	2024	50,479	52,420	4,589	10%	Yes	3,014.37	$ -	0%	$ -
CSS	124856	CSS Replace Building Eaves	December 2023	2024	297,671	344,293	49,612	20%	Yes	69,835.18	$ -	0%	$ -
CSS	124857	CSS Access Control System	January 2023	2024	244,272	282,531	38,094	20%	Yes	29,770.39	$ -	0%	$ -
Bay Area Region	124862	RDV-COS PALL unit expansion	January 2023	2024	24,182	23,834	2,198	10%	Yes	2,688.16	$ -	0%	$ -
Livermore	124885	LIV 028-A Replace Pump & Motor	January 2024	2024	52,330	62,749	5,205	10%	Yes	7,115.96	$ -	0%	$ -
Livermore	124887	LIV 028-B Replace Pump & Motor	January 2024	2024	52,330	62,749	5,205	10%	Yes	7,115.96	$ -	0%	$ -
CSS	124888	LIV Portable Booster Pump	January 2023	2024	94,286	111,435	-	0%	Yes	(2,721.56)	$ -	0%	$ -
Bay Area Region	124895	RDV-COS STA 08 Tank MaintenanceArea	April 2022	2024	20,329	20,036	1,848	10%	Yes	2,325.60	$ -	0%	$ -
Stockton	124896	STK Sta 85 Treatment Design	January 2022	2024	230,567	271,946	38,428	20%	No	N/A	$ -	0%	$ -
LA County Region	124904	PV 27in Pipe CP System Upgrade	September 2022	2024	71,730	84,737	6,521	10%	Yes	(13,067.13)	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
CSS	124910	CSS-WATER QUALITY SATELLITE LAB	June 2024	2026	2,870,664	3,312,307	458,341	20%	Yes	(212,041.72)	$ -	0%	$ -
Stockton	124923	STK Outfitt Hydrant Foreman Equip.	January 2023	2024	293,123	308,564	26,647	10%	Yes	66,800.15	$ -	0%	$ -
LA County Region	124925	AV 2022 Analyzer Replacements	January 2022	2024	37,781	43,184	3,435	10%	Yes	4,827.74	$ -	0%	$ -
East Los Angeles	124927	ELA-New Forklift for New Warehouse	September 2023	2024	48,296	50,803	4,391	10%	Yes	2,884.03	$ -	0%	$ -
Bay Area Region	124949	SC and SM Nitrification Evaluation	August 2023	2024	127,490	151,857	24,087	20%	Yes	26,986.00	$ -	0%	$ -
LA County Region	124959	PV 015-PT1 - Saddle Retrofit	August 2024	2024	12,613	15,158	1,147	10%	Yes	1,611.71	$ -	0%	$ -
South Bay Region	124960	HR 023 Tank Mixing & Boosting	November 2023	2025	222,316	255,453	32,865	20%	Yes	(285,307.56)	18,491.10	5%	$ 19,427.21
Bay Area Region	124965	MPS-027 T1,T2,T3 Nitrification Cont	May 2023	2025	1,179,271	1,348,121	51,051	10%	Yes	603,730.04	18,531.18	5%	$ 19,469.32
CSS	124968	CSS-SC RCC PHASE 2 OFFICE SP. BUILD	January 2022	2024	412,889	470,013	65,923	20%	Yes	79,147.89	$ -	0%	$ -
Bay Area Region	124970	MPS-029 T1 Nitrification Control	March 2023	2025	718,143	822,946	65,158	10%	Yes	359,167.98	18,531.18	5%	$ 19,469.32
Bear Gulch	124975	BG 2024 Analyzers Replacement	January 2024	2024	92,067	109,669	8,370	10%	Yes	11,764.58	$ -	0%	$ -
CSS	124978	CSS Energy Management System	September 2022	2024	299,163	341,187	49,861	20%	Yes	(140,776.56)	$ -	0%	$ -
Bakersfield	124979	BK 2022 Analyzer Replacements	January 2022	2024	12,725	15,314	1,157	10%	Yes	1,626.14	$ -	0%	$ -
Bakersfield	124983	BK 2023 Analyzers Replacement	April 2024	2024	5,122	6,165	466	10%	Yes	654.59	$ -	0%	$ -
Bakersfield	124986	BK 2024 Analyzers Replacement	January 2024	2024	6,997	8,421	636	10%	Yes	894.06	$ -	0%	$ -
Bay Area Region	124989	SC 106 Nitrification Control	June 2023	2025	1,018,565	1,169,722	92,597	10%	Yes	531,969.52	18,531.18	5%	$ 19,469.32
Bay Area Region	124991	SC 123 Nitrification Control	December 2023	2026	531,000	608,337	48,273	10%	Yes	44,404.96	18,531.18	5%	$ 19,956.05
North Valley Region	124992	CH 2023 Analyzers Replacement	October 2023	2024	42,194	49,478	3,836	10%	Yes	(13,572.20)	$ -	0%	$ -
Bay Area Region	124993	SSF-14 Res 11 Nitrification Control	June 2024	2024	411,602	490,270	33,899	10%	Yes	(91,842.18)	18,531.18	5%	$ 18,994.46
North Valley Region	124997	CH 2024 Analyzers Replacement	July 2024	2024	6,454	7,587	587	10%	Yes	(3,863.42)	$ -	0%	$ -
Los Altos	125008	LAS Sta. 30 Redwood Tank Replace	April 2024	2024	851,341	992,776	77,395	10%	Yes	113,016.02	54,127.00	10%	$ 55,480.18
Livermore	125014	LIV 2022 SB1398 Service Replacement	January 2022	2024	79,129	94,883	6,847	10%	Yes	9,778.73	$ -	0%	$ -
Livermore	125015	LIV 2023 SB1398 Service Replacement	January 2023	2024	93,584	112,217	7,899	10%	Yes	11,374.68	$ -	0%	$ -
Marysville	125018	MRL 2023 SB1398 Service Replacement	January 2023	2024	131,019	156,097	11,060	10%	Yes	15,926.04	$ -	0%	$ -
Stockton	125020	STK 2022 SB1398 Service Replacement	January 2022	2024	273,907	320,374	23,701	10%	Yes	33,849.41	$ -	0%	$ -
Stockton	125022	STK 2023 SB1398 Service Replacement	January 2023	2024	280,755	323,008	23,701	10%	Yes	34,127.14	$ -	0%	$ -
Bay Area Region	125025	BAY SM STA 028 Wildfire Generator	January 2024	2026	257,890	299,894	27,541	10%	Yes	22,810.08	10,464.27	5%	$ 11,268.87
South Bay Region	125026	DOM 2022 Analyzer Replacement	May 2023	2024	70,886	82,873	6,444	10%	Yes	64,712.22	$ -	0%	$ -
South Bay Region	125028	DOM 2023 Analyzer Replacement	May 2024	2024	29,182	34,836	2,653	10%	Yes	3,728.89	$ -	0%	$ -
CSS	125030	CSS Dist. System Integrity Tools	February 2022	2024	75,753	78,666	6,275	10%	Yes	723.83	$ -	0%	$ -
South Bay Region	125033	DOM 2024 Analyzer Replacement	January 2024	2024	29,911	35,708	2,719	10%	Yes	3,822.13	$ -	0%	$ -
East Los Angeles	125035	ELA 2022 Analyzer Replacement	February 2024	2024	22,447	26,602	2,041	10%	Yes	2,873.33	$ -	0%	$ -
East Los Angeles	125038	ELA 2023 Analyzer Replacements	December 2023	2024	21,926	26,250	1,993	10%	Yes	2,801.83	$ -	0%	$ -
LA County Region	125040	LEO 0004-T1: Tank Mixer	January 2023	2025	72,215	81,095	12,036	20%	Yes	10,065.10	$ -	0%	$ -
CSS	125041	CSS AutoCAD AECC Subscriptions	January 2022	2024	37,938	39,397	-	0%	Yes	(4,112.92)	$ -	0%	$ -
East Los Angeles	125042	ELA 2024 Analyzer Replacements	January 2024	2024	15,800	18,916	1,436	10%	Yes	2,018.99	$ -	0%	$ -
LA County Region	125047	LAN 001: New Production Meter	January 2023	2024	524,293	586,472	81,143	20%	Yes	101,539.03	17,504.45	5%	$ 17,942.06
Kern River Valley	125048	KRV 2022 Analyzer Replacements	September 2022	2024	22,796	27,636	2,072	10%	Yes	2,912.81	$ -	0%	$ -
Los Altos	125051	LAS 28 Tank Mixing and Dosing	September 2021	2024	1,158,495	1,370,806	105,318	10%	Yes	444,854.32	52,317.36	10%	$ 53,625.29
Salinas Valley Region	125052	SLN Wharfhead Replacements	January 2024	2024	91,094	108,722	7,502	10%	Yes	11,349.78	$ -	0%	$ -
Kern River Valley	125056	KRV 2023 Analyzer Replacements	January 2023	2024	35,012	42,445	3,183	10%	Yes	4,473.92	$ -	0%	$ -
Kern River Valley	125058	KRV 2024 Analyzer Replacements	March 2024	2024	11,963	14,502	1,088	10%	Yes	1,528.66	$ -	0%	$ -
Salinas Valley Region	125060	SLN 155 Zone: New Well - Design	October 2022	2026	1,136,027	1,323,707	189,338	20%	No	N/A	$ -	0%	$ -
Salinas Valley Region	125061	SLN 045 Wildfire Station Upgrade	January 2023	2024	1,895,077	2,261,802	172,280	10%	Yes	250,978.18	124,502.24	10%	$ 127,614.80
CSS	125065	CSS GPS Basestations	September 2022	2024	154,143	160,071	-	0%	Yes	(5,289.59)	$ -	0%	$ -
CSS	125068	CSS Three Dimensl. (3D) GIS - Pilot	January 2022	2024	54,597	56,697	-	0%	Yes	(6,675.32)	$ -	0%	$ -
Livermore	125077	LIV 14 Analyzer Replacment	June 2024	2024	31,224	36,744	2,838	10%	Yes	4,020.57	$ -	0%	$ -
Livermore	125080	LIV 2023 Analyzer Replacements	June 2024	2024	73,418	87,334	6,674	10%	Yes	7,585.75	$ -	0%	$ -
Marysville	125081	MRL 2022 Analyzer Replacements	January 2022	2024	17,978	21,419	1,634	10%	Yes	2,297.37	$ -	0%	$ -
North Valley Region	125082	ORO 2024 Analyzer Replacement	January 2024	2024	7,828	9,370	712	10%	Yes	1,000.16	$ -	0%	$ -
Bay Area Region	125086	RDV-LUC 2022 Analyzer Replacements	January 2022	2024	27,468	33,211	2,497	10%	Yes	3,509.84	$ -	0%	$ -
CSS	125088	CSS RO Model Improvements	July 2023	2024	278,460	285,315	25,315	10%	Yes	11,391.57	$ -	0%	$ -

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District	**PID**	**Description**	**Project Starting Date**	**Completion Year**	**Direct Cost**	**Total Cost**	**Contingency [$]**	**Contingency (%)**	**Authorized in a previous GRC? (Yes, No, Advice Letter)**	**Incremental Amount Proposed**	**Direct Construction Management and Special Inspections Cost ($)**	**Construction Management and Special Inspections (%)**	**Escalated Construction Management and Sepcial Inspections Cost ($)**
Bay Area Region	125090	RDV-LUC 2023 Analyzer Replacements	January 2023	2024	17,271	20,881	1,570	10%	Yes	5,340.05	$ -	0%	$ -
Bay Area Region	125093	RDV-LUC 2024 Analyzer Replacements	January 2024	2024	26,145	31,611	2,377	10%	Yes	973.44	$ -	0%	$ -
Los Altos	125094	LAS Sta. 111 Tank Mixing and Dosing	December 2022	2025	914,930	1,056,966	83,175	10%	Yes	398,142.40	19,721.45	5%	$ 20,719.85
CSS	125096	CSS 2022 Portable Large Test Meter	January 2022	2024	32,379	33,325	2,944	10%	Yes	6,113.22	$ -	0%	$ -
CSS	125099	CSS 2023 Portable Large Test Meter	January 2023	2024	32,379	33,624	2,944	10%	Yes	5,456.58	$ -	0%	$ -
CSS	125100	CSS 2024 Portable Large Test Meter	January 2024	2024	32,379	33,624	2,944	10%	Yes	4,783.50	$ -	0%	$ -
CSS	125105	CSS Install high volume printer	March 2023	2024	14,087	14,629	1,281	10%	Yes	967.06	$ -	0%	$ -
Stockton	125106	STK 2022 Analyzer Replacement	January 2022	2024	31,188	37,366	2,835	10%	Yes	3,985.33	$ -	0%	$ -
Stockton	125107	STK 2023 Analyzer Replacement	January 2023	2024	31,968	37,481	2,906	10%	Yes	4,084.92	$ -	0%	$ -
Stockton	125108	STK 2024 Analyzer Replacement	January 2024	2024	11,829	13,836	1,075	10%	Yes	1,511.54	$ -	0%	$ -
Willows	125110	WIL 2022 Analyzer Replacement	July 2024	2024	11,270	13,587	1,033	10%	Yes	1,449.89	$ -	0%	$ -
Bay Area Region	125118	LUC Field Yard Land Acquisition	January 2022	2024	133,143	157,162	12,104	10%	Yes	19,166.61	$ -	0%	$ -
Los Altos	125120	LAS Sta. 42 Tank Mixing and Dosing	June 2023	2025	1,148,983	1,333,649	104,453	10%	No	N/A	21,641.41	5%	$ 22,737.01
Livermore	125124	LIV 13-E Replace Pump & Motor	August 2024	2025	59,072	68,214	5,370	10%	Yes	12,685.00	$ -	0%	$ -
Livermore	125126	LIV 19-01 Replace Pump & Motor	April 2022	2024	84,388	101,190	7,672	10%	Yes	16,525.66	$ -	0%	$ -
Salinas Valley Region	125127	KC 010: New Bladder Tank	January 2022	2024	460,237	545,090	41,840	10%	Yes	351,412.37	2,279.29	3%	$ 2,336.27
Los Altos	125128	LAS Sta. 41 Tank Mixing and Dosing	January 2023	2025	974,455	1,125,731	88,587	10%	Yes	613,801.78	13,452.66	5%	$ 14,133.70
Bear Gulch	125130	BG 2022 Sample Sites	May 2022	2024	86,323	102,172	14,387	20%	Yes	17,304.84	$ -	0%	$ -
Bear Gulch	125132	BG 2023 Sample Sites	January 2023	2024	79,633	94,857	13,272	20%	Yes	15,963.84	$ -	0%	$ -
Los Altos	125134	LAS 2023 Sample Sites	January 2023	2024	70,785	84,550	11,797	20%	Yes	14,190.06	$ -	0%	$ -
Livermore	125141	LIV 2022 Sample Site	July 2024	2024	8,221	9,596	1,370	20%	Yes	1,648.04	$ -	0%	$ -
Bay Area Region	125152	SSF 2022 Sample Sites	March 2024	2024	51,794	61,693	8,632	20%	Yes	10,382.99	$ -	0%	$ -
Bay Area Region	125153	SSF 2023 Sample Sites	January 2023	2024	44,240	52,696	7,373	20%	Yes	8,868.73	$ -	0%	$ -
South Bay Region	125155	HR 2022 Sample Site	January 2022	2024	7,810	9,378	1,302	20%	Yes	1,565.56	$ -	0%	$ -
Rancho Dominguez	125170	Car Port/Cover For Vehicle Maint.	January 2023	2024	37,873	45,210	3,213	10%	Yes	(5,278.65)	$ -	0%	$ -
Rancho Dominguez	125171	Install Cover Over Spoils/Dump Area	January 2022	2024	56,810	67,814	4,819	10%	Yes	(7,917.99)	$ -	0%	$ -
Salinas Valley Region	125173	SLN- SLNH 2022 Sample Site	October 2022	2024	21,097	24,606	3,516	20%	Yes	14,523.86	$ -	0%	$ -
Kern River Valley	125176	KRV-SOLA 2022 Sample Sites	May 2023	2024	23,430	27,300	3,905	20%	Yes	4,697.02	$ -	0%	$ -
Kern River Valley	125177	KRV-LBOD 2022 Sample Sites	May 2023	2024	13,102	15,322	2,184	20%	Yes	613.24	$ -	0%	$ -
Rancho Dominguez	125186	RD Purch. Meter Reading Handhelds	November 2022	2024	63,810	66,927	5,521	10%	Yes	469.15	$ -	0%	$ -
Los Altos	125187	LAS 32, 1, 121 Well Chloramination	April 2022	2025	2,961,539	3,421,170	269,231	10%	Yes	1,363,924.13	119,452.72	10%	$ 125,500.01
Bay Area Region	125189	BAY-SC 2022 Sample Site	January 2024	2024	112,220	133,668	18,703	20%	Yes	22,496.39	$ -	0%	$ -
Bay Area Region	125190	BAY-SM 2022 Sample Site	July 2024	2024	86,323	102,821	14,387	20%	Yes	17,304.84	$ -	0%	$ -
Rancho Dominguez	125195	RD 2022 Hand Tools	October 2022	2024	7,109	7,456	-	0%	Yes	(3,397.27)	$ -	0%	$ -
Rancho Dominguez	125196	RD 2023 Hand Tools	January 2023	2024	9,479	9,942	-	0%	Yes	(1,290.23)	$ -	0%	$ -
Rancho Dominguez	125197	RD 2024 Hand Tools	August 2024	2024	9,479	9,805	-	0%	Yes	(1,559.45)	$ -	0%	$ -
Rancho Dominguez	125198	RD 2022 Air Tools	January 2022	2024	28,436	29,825	-	0%	Yes	(3,082.76)	$ -	0%	$ -
Rancho Dominguez	125199	RD 2023 Air Tools	January 2023	2024	28,436	29,825	-	0%	Yes	(3,870.68)	$ -	0%	$ -
Rancho Dominguez	125200	RD 2024 Air Tools	January 2024	2024	28,436	29,415	-	0%	Yes	(4,678.34)	$ -	0%	$ -
LA County Region	125243	PV Install Pump Shelter	January 2024	2024	34,529	41,497	-	0%	Yes	(2,038.73)	$ -	0%	$ -
South Bay Region	125246	HR 28: Building Rebuild - Design	January 2023	2024	22,390	26,883	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	125247	HR 008: Roof Replacement	January 2023	2024	18,691	22,442	-	0%	Yes	860.19	$ -	0%	$ -
Bakersfield	125251	BK 49-03 GAC Treatment	January 2022	2025	1,362,510	1,528,190	217,958	20%	Yes	266,070.84	44,939.99	10%	$ 47,215.08
South Bay Region	125257	HR 023-T2 Tank Retrofits	January 2024	2024	55,331	66,436	5,030	10%	Yes	7,070.30	$ -	0%	$ -
Salinas Valley Region	125260	KCD Replace Mainline Valves - 2023	April 2023	2024	27,262	32,289	2,478	10%	Yes	(5,044.26)	$ -	0%	$ -
Salinas Valley Region	125261	KC 2024 Replace Mainline Valves	June 2024	2024	27,944	33,378	2,301	10%	Yes	(5,481.51)	$ -	0%	$ -
Salinas Valley Region	125263	KC 2023 Valve Casings/Covers	April 2023	2024	22,532	27,064	2,048	10%	Yes	2,609.18	$ -	0%	$ -
Salinas Valley Region	125264	KC 2024 Valve casings/covers	June 2024	2024	17,232	20,583	1,567	10%	Yes	(3,188.45)	$ -	0%	$ -
CSS	125327	CSS Survey Equipment for Eng South	May 2022	2024	30,332	31,498	-	0%	Yes	(5,241.77)	$ -	0%	$ -
Visalia	125328	VIS Chemical Shelter Replacement	October 2022	2024	55,358	64,578	5,033	10%	Yes	7,349.05	$ -	0%	$ -
East Los Angeles	125358	ELA Main Office Improvements	March 2024	2025	1,023,376	1,174,741	170,563	20%	Yes	262,325.50	$ -	0%	$ -
LA County Region	125371	AV-LEO 001 Replace Production Meter	September 2024	2024	23,266	26,594	3,878	20%	Yes	4,770.14	1,486.36	10%	$ 1,523.52

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District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
South Bay Region	125393	HR 2022 Vault Safety & Ops Imprvmnt	August 2022	2024	333,333	388,062	28,843	10%	Yes	31,934.47	$ -	0%	$ -
South Bay Region	125394	HR 2023 Vault Safety & Ops Imprvmnt	May 2023	2024	327,426	377,295	27,641	10%	Yes	31,878.18	$ -	0%	$ -
South Bay Region	125395	HR 2024 Vault Safety & Ops Imprvmnt	January 2024	2024	296,582	350,199	24,426	10%	Yes	(59,402.76)	$ -	0%	$ -
Bay Area Region	125404	LUC Field Yard Site Improvements	June 2023	2024	39,923	48,269	6,654	20%	Yes	8,693.31	$ -	0%	$ -
Bear Gulch	125414	BG 2022 Physical Security Upgrades	March 2023	2024	528,804	617,878	50,248	10%	Yes	49,162.10	$ -	0%	$ -
Bear Gulch	125415	BG 2023 Physical Security Upgrades	September 2023	2024	117,300	139,725	14,104	10%	Yes	(260,414.66)	$ -	0%	$ -
Bakersfield	125421	BK 2022 Physical Security Upgrades	July 2022	2024	965,039	1,133,986	87,731	10%	Yes	128,109.36	$ -	0%	$ -
Bakersfield	125422	BK 2023 Physical Security Upgrades	December 2023	2024	61,603	70,627	5,600	10%	Yes	(769,992.11)	$ -	0%	$ -
Bakersfield	125423	BK 2024 Physical Security Upgrades	May 2024	2024	600,450	693,932	54,586	10%	Yes	79,710.04	$ -	0%	$ -
North Valley Region	125424	CH 2022 Physical Security Upgrades	March 2023	2024	101,266	118,449	9,206	10%	Yes	(25,685.73)	$ -	0%	$ -
North Valley Region	125425	CH 2023 Physical Security Upgrades	September 2023	2024	188,788	220,821	20,004	10%	Yes	53,051.59	$ -	0%	$ -
North Valley Region	125426	CH 2024 Physical Security Upgrades	May 2024	2024	99,406	118,901	9,037	10%	Yes	13,196.27	$ -	0%	$ -
North Valley Region	125431	CH-HC 2024 Analyzer Replacement	July 2024	2024	11,829	14,149	1,075	10%	Yes	1,511.54	$ -	0%	$ -
Bay Area Region	125434	RDV-HWK 2023 Analyzer Replacement	January 2023	2024	4,920	5,916	447	10%	Yes	628.66	$ -	0%	$ -
Dixon	125436	DIX 2022 Physical Security Upgrades	August 2022	2024	112,965	136,765	10,270	10%	Yes	14,996.18	$ -	0%	$ -
Dixon	125439	DIX 2023 Physical Security Upgrades	September 2023	2024	61,603	74,583	610	0%	Yes	(78,991.14)	$ -	0%	$ -
South Bay Region	125440	DOM 2022 Physical Security Upgrades	August 2022	2024	163,713	191,261	14,883	10%	Yes	21,778.78	$ -	0%	$ -
South Bay Region	125441	DOM 2023 Physical Security Upgrades	October 2023	2024	80,748	94,624	7,341	10%	Yes	10,719.32	$ -	0%	$ -
South Bay Region	125444	DOM 2024 Physical Security Upgrades	May 2024	2024	105,132	125,504	10,315	10%	Yes	14,678.79	$ -	0%	$ -
East Los Angeles	125446	ELA 2023 Physical Security Upgrades	January 2023	2024	111,383	133,345	4,796	10%	Yes	32,333.82	$ -	0%	$ -
East Los Angeles	125448	ELA 2024 Physical Security Upgrades	May 2024	2024	123,709	148,101	5,188	10%	Yes	10,643.29	$ -	0%	$ -
South Bay Region	125451	HR 2022 Physical Security Upgrades	May 2023	2024	210,970	241,151	19,179	10%	Yes	29,176.04	$ -	0%	$ -
South Bay Region	125453	HR 2023 Physical Security Upgrades	December 2023	2024	61,603	72,127	5,600	10%	Yes	(142,002.19)	$ -	0%	$ -
South Bay Region	125458	HR 2024 Physical Security Upgrades	May 2024	2024	200,256	230,900	18,205	10%	Yes	26,583.95	$ -	0%	$ -
Westlake	125459	WLK 7 Driveway & Wall - Design	February 2022	2024	883,955	1,019,357	140,227	20%	No	N/A	$ -	0%	$ -
Salinas Valley Region	125462	KC 2023 Physical Security Upgrades	September 2023	2024	42,194	49,407	3,836	10%	Yes	(12,845.80)	$ -	0%	$ -
Salinas Valley Region	125463	KC 2024 Physical Security Upgrades	May 2024	2024	40,183	48,266	3,653	10%	Yes	5,334.33	$ -	0%	$ -
Los Altos	125465	LAS 2022 Physical Security Upgrades	October 2022	2024	145,235	173,477	13,203	10%	Yes	12,903.54	$ -	0%	$ -
Los Altos	125466	LAS 2023 Physical Security Upgrades	January 2023	2024	834,593	996,889	75,872	10%	Yes	110,792.36	$ -	0%	$ -
Salinas Valley Region	125472	SLN 2022 Toro Hydrant Repacement	September 2022	2024	101,266	120,862	9,205	10%	Yes	9,256.17	$ -	0%	$ -
Marysville	125473	MRL 2023 Physical Security Upgrades	January 2023	2024	61,603	73,395	5,600	10%	Yes	(8,084.10)	$ -	0%	$ -
Marysville	125474	MRL 2024 Physical Security Upgrades	June 2024	2024	76,048	88,668	6,913	10%	Yes	10,095.43	$ -	0%	$ -
North Valley Region	125477	ORO 2022 Physical Security Upgrades	October 2022	2024	179,720	215,128	15,800	10%	Yes	34,836.70	$ -	0%	$ -
Westlake	125478	WLK 2022 Physical Security Upgrades	September 2022	2024	118,722	138,711	10,793	10%	Yes	15,760.34	$ -	0%	$ -
Westlake	125479	WLK 2023 Physical Security Upgrades	September 2023	2024	61,603	70,588	5,600	10%	Yes	(35,292.82)	$ -	0%	$ -
Westlake	125480	WLK 2024 Physical Security Upgrades	May 2024	2024	95,913	111,508	8,719	10%	Yes	12,732.62	$ -	0%	$ -
LA County Region	125481	PV 2022 Physical Security Upgrades	July 2022	2024	175,527	210,949	15,957	10%	Yes	18,669.37	$ -	0%	$ -
LA County Region	125482	PV 2023 Physical Security Upgrades	September 2023	2024	223,923	269,111	20,357	10%	Yes	(368,483.82)	$ -	0%	$ -
LA County Region	125483	PV 2024 Physical Security Upgrades	May 2024	2024	146,780	176,400	13,344	10%	Yes	19,485.14	$ -	0%	$ -
Selma	125485	SEL 2022 Physical Security Upgrades	October 2022	2024	132,489	154,489	10,961	10%	Yes	31,366.00	$ -	0%	$ -
Selma	125486	SEL 2024 Physical Security Upgrades	May 2024	2024	165,895	193,044	15,082	10%	Yes	22,023.60	$ -	0%	$ -
Salinas Valley Region	125489	SLN 2023 Toro Hydrant Replacement	August 2023	2024	75,949	90,647	6,904	10%	Yes	(27,791.52)	$ -	0%	$ -
Rancho Dominguez	125490	RD Replace 1st floor bathrooms	May 2022	2024	13,924	16,621	1,205	10%	Yes	(1,911.26)	$ -	0%	$ -
Salinas Valley Region	125491	SLN 2022 Physical Security Upgrades	August 2022	2024	320,878	382,972	29,171	10%	Yes	(4,705.59)	$ -	0%	$ -
Salinas Valley Region	125493	SLN 2023 Physical Security Upgrades	October 2023	2024	61,603	73,525	5,600	10%	Yes	(285,667.52)	$ -	0%	$ -
Salinas Valley Region	125494	SLN 2024 Physical Security Upgrades	January 2024	2024	244,515	291,832	22,229	10%	Yes	36,691.11	$ -	0%	$ -
Stockton	125495	STK 2022 Physical Security Upgrades	July 2022	2024	611,472	715,204	55,588	10%	Yes	73,295.78	$ -	0%	$ -
Stockton	125496	STK 2023 Physical Security Upgrades	October 2023	2024	61,603	70,546	5,600	10%	Yes	(34,326.55)	$ -	0%	$ -
Stockton	125497	STK 2024 Physical Security Upgrades	May 2024	2024	791,922	926,267	71,993	10%	Yes	105,128.04	$ -	0%	$ -
Visalia	125499	VIS 2022 Physical Security Upgrades	June 2022	2024	175,503	209,710	15,955	10%	Yes	11,637.64	$ -	0%	$ -
Visalia	125500	VIS 2023 Physical Security Upgrades	April 2023	2024	61,603	73,610	5,600	10%	Yes	(227,753.19)	$ -	0%	$ -
Visalia	125501	VIS 2024 Physical Security Upgrades	June 2024	2024	278,869	333,223	25,352	10%	Yes	37,020.03	$ -	0%	$ -

	[A]			[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Willows	125502	WIL Physical Security Upgrades	January 2023	2024	113,809	137,202	11,304	10%	Yes	16,021.94	$ -	0%	$ -
LA County Region	125503	AV 2022 Physical Security Upgrades	November 2022	2024	60,111	68,708	5,465	10%	Yes	7,274.28	$ -	0%	$ -
LA County Region	125504	AV 2023 Physical Security Upgrades	September 2023	2024	22,629	25,865	3,038	20%	Yes	3,939.17	$ -	0%	$ -
LA County Region	125505	AV 2024 Physical Security Upgrades	May 2024	2024	155,087	177,268	13,464	10%	Yes	135,859.70	$ -	0%	$ -
Kern River Valley	125507	KRV 2023 Physical Security Upgrades	May 2023	2024	129,430	151,915	11,766	10%	Yes	(77,189.28)	$ -	0%	$ -
Kern River Valley	125508	KRV 2024 Physical Security Upgrades	January 2024	2024	69,573	84,343	6,325	10%	Yes	(126,902.71)	$ -	0%	$ -
Bay Area Region	125510	MPS 2022 Physical Security Upgrades	March 2023	2024	345,096	402,269	31,372	10%	Yes	45,811.56	$ -	0%	$ -
Bay Area Region	125511	SSF 2022 Physical Security Upgrades	March 2023	2024	255,740	297,394	23,249	10%	Yes	33,949.55	$ -	0%	$ -
Bay Area Region	125512	SSF 2023 Physical Security Upgrades	September 2023	2024	89,451	104,271	8,132	10%	Yes	(66,043.38)	$ -	0%	$ -
Bay Area Region	125513	SSF 2024 Physical Security Upgrades	June 2024	2024	122,564	145,990	11,142	10%	Yes	16,270.52	$ -	0%	$ -
Bay Area Region	125515	ARM 2022 Physical Security Upgrades	August 2023	2024	59,768	70,003	5,433	10%	Yes	16,017.20	$ -	0%	$ -
Bay Area Region	125517	COS 2022 Physical Security Upgrades	July 2023	2024	76,354	83,061	5,702	10%	Yes	8,953.65	$ -	0%	$ -
Bay Area Region	125520	HKN 2022 Physical Security Upgrades	October 2022	2024	3,207	3,745	292	10%	Yes	(1,631.01)	$ -	0%	$ -
Bay Area Region	125523	ARM 2024 Physical Security Upgrades	January 2024	2024	6,221	7,480	566	10%	Yes	825.86	$ -	0%	$ -
Bay Area Region	125524	COS 2024 Physical Security Upgrades	January 2024	2024	68,252	67,268	6,205	10%	Yes	9,060.43	$ -	0%	$ -
Bay Area Region	125531	MPS 2022 SB1398 Service Replacement	January 2023	2024	121,542	144,772	10,348	10%	Yes	14,858.33	$ -	0%	$ -
Rancho Dominguez	125532	RD New Copier For Operations	September 2024	2024	21,270	22,309	1,840	10%	Yes	156.41	$ -	0%	$ -
Bay Area Region	125533	SSF 2023 SB1398 Service Replacement	January 2023	2024	124,581	148,391	10,348	10%	Yes	14,981.63	$ -	0%	$ -
Bay Area Region	125535	MPS 2024 SB1398 Service Replacement	January 2024	2024	127,695	152,101	10,348	10%	Yes	15,107.93	$ -	0%	$ -
Salinas Valley Region	125542	SLN 2022 Vault Replacements	July 2022	2024	160,338	191,365	29,089	20%	Yes	25,237.70	$ -	0%	$ -
Rancho Dominguez	125543	RD Refurbish/Replace Clarifier	June 2024	2024	57,384	68,499	-	0%	Yes	(14,058.55)	$ -	0%	$ -
LA County Region	125547	AV-LAN 001 Generator Replacement	July 2023	2026	270,464	299,576	24,588	10%	Yes	30,040.06	19,320.30	10%	$ 20,805.85
Salinas Valley Region	125550	SLN 2023 Vault replacement	January 2023	2024	162,025	190,294	29,395	20%	Yes	23,548.10	$ -	0%	$ -
Salinas Valley Region	125551	SLN 2024 Vault replacement	January 2024	2024	178,951	211,147	32,466	20%	Yes	37,011.87	$ -	0%	$ -
Bear Gulch	125628	BG Wildfire - New Main Morrow Vista	January 2022	2024	1,164,250	1,372,126	194,042	20%	Yes	202,082.06	74,992.02	10%	$ 76,866.82
Los Altos	125629	LAS STA 008 New Mainline to Mora	January 2023	2025	2,228,510	2,543,943	371,420	20%	Yes	456,893.52	135,826.61	10%	$ 142,702.83
Livermore	125632	LIV New Main Livermore & Concannon	May 2024	2024	2,213,575	2,590,827	368,929	20%	No	N/A	134,925.58	10%	$ 138,298.72
Los Altos	125633	LAS Marion Way New Mainline	February 2023	2024	4,673,084	5,423,889	778,847	20%	Yes	1,367,310.83	253,464.70	10%	$ 259,801.32
LA County Region	125640	PV Wildfire Zone C-635 New Main We	February 2022	2025	1,267,525	1,523,312	211,254	20%	Yes	208,856.99	83,200.95	10%	$ 87,413.00
LA County Region	125641	PV Wildfire Zone F-1325 New Main	November 2023	2025	2,514,518	2,908,407	419,086	20%	Yes	935,996.98	118,078.53	10%	$ 124,056.26
LA County Region	125642	PV Wildfire Zone B-280 New Main	January 2023	2025	895,883	1,038,715	149,314	20%	Yes	183,674.96	54,607.38	10%	$ 57,371.88
LA County Region	125644	PV Wildfire Zone H-1300 NewMain-PRV	February 2022	2024	311,360	374,192	51,893	20%	Yes	(41,061.19)	27,696.84	10%	$ 28,389.26
Bay Area Region	125645	BAY SC-116 Rebuild	May 2022	2025	2,507,665	2,909,928	417,944	20%	Yes	1,056,736.63	$ -	0%	$ -
Bay Area Region	125647	RDV LUC 001 Pier Safety Upgrades	February 2022	2024	382,996	449,223	63,833	20%	Yes	(108,512.49)	31,792.35	10%	$ 32,587.16
Selma	125648	SEL Well Level Monitoring	November 2022	2024	19,747	23,034	1,795	10%	Yes	1,429.41	$ -	0%	$ -
Kern River Valley	125649	KRV Vault Retrofit Project	June 2022	2024	337,553	399,508	30,686	10%	Yes	139,691.81	$ -	0%	$ -
Salinas Valley Region	125664	SLN 2024 Toro Park hydrant replace	January 2024	2024	75,949	90,440	6,904	10%	Yes	(30,384.99)	$ -	0%	$ -
Salinas Valley Region	125746	SLN New Customer Parking Lot	January 2022	2024	1,245,659	1,486,711	113,242	10%	Yes	139,249.45	$ -	0%	$ -
South Bay Region	125762	DOM Sta 300 Treatment Plant	April 2023	2025	3,417,722	3,983,229	593,339	20%	Yes	859,007.33	217,009.56	10%	$ 227,995.67
Bay Area Region	125813	Land Purchase for Recycled Water St	January 2022	2024	1,181,897	1,351,898	107,445	10%	No	N/A	$ -	0%	$ -
Bear Gulch	126005	BG STA 46 Wildfire Generator	August 2021	2024	272,574	324,684	24,442	10%			$ -	0%	$ -
Travis	126030	ISDC 11B	May 2022	2024	319,831	381,853	29,076	10%	Yes	68,706.53	$ -	0%	$ -
Travis	126031	ISDC 11C broken valve replacement	November 2023	2024	296,203	353,642	26,928	10%	Yes	38,799.68	$ -	0%	$ -
Travis	126039	TAB 1525 (T2) - Tank Retrofits	March 2022	2024	157,693	183,496	14,336	10%	Yes	65,897.33	$ -	0%	$ -
Travis	126041	TAB Tanks-Remove Ext Ladder Cage	January 2022	2024	51,692	61,716	4,699	10%	Yes	1,082.21	$ -	0%	$ -
CSS	126076	Enterprise AMI Feasibility Study	June 2021	2024	265,823	309,051	-	0%			$ -	0%	$ -
Visalia	126078	Sharkfin Recharge Facilities	January 2023	2024	94,737	113,201	15,789	20%	Yes	17,539.76	$ -	0%	$ -
Travis	126086	TAB Backflow Device Replacement	March 2025	2024	388,660	453,023	35,840	10%	Yes	22,911.74	$ -	0%	$ -
Travis	126088	TAB Backflow Device Replacement	January 2024	2024	366,287	437,317	33,299	10%	Yes	(1,201.55)	$ -	0%	$ -
Bear Gulch	126093	BG Skyline 06IN Relocate	March 2021	2024	4,131,756	4,724,582	-	0%			$ -	0%	$ -
Travis	126095	TAB Station 1 Vault Replacement	July 2023	2024	126,582	149,037	11,508	10%	Yes	(30,798.52)	$ -	0%	$ -
Travis	126096	TAB Sta 1 Flowmeter Replacement	July 2023	2024	29,536	34,613	2,685	10%	Yes	3,340.48	$ -	0%	$ -

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District	**PID**	**Description**	**Project Starting Date**	**Completion Year**	**Direct Cost**	**Total Cost**	**Contingency [$]**	**Contingency (%)**	**Authorized in a previous GRC? (Yes, No, Advice Letter)**	**Incremental Amount Proposed**	**Direct Construction Management and Special Inspections Cost ($)**	**Construction Management and Special Inspections (%)**	**Escalated Construction Management and Sepcial Inspections Cost ($)**
Travis	126120	TAB 2022 Hydrant Replacement	November 2023	2024	172,686	202,844	15,699	10%	Yes	22,924.96	$ -	0%	$ -
Bakersfield	126268	BK 047-02 Pump Replacement	April 2021	2024	168,776	197,724	-	0%			$ -	0%	$ -
East Los Angeles	126347	ELA Replace V208165	December 2022	2024	129,100	135,800	12,030	10%	Yes	10,985.08	$ -	0%	$ -
Bakersfield	126467	2023 BK 49 Carbon Change Outs	January 2023	2024	152,460	179,560	13,860	10%	Yes	20,239.94	$ -	0%	$ -
Bakersfield	126470	2024 BK Carbon Change Outs	May 2024	2024	156,272	188,068	14,207	10%	Yes	20,745.96	$ -	0%	$ -
North Valley Region	126474	2023 ORO 10 Carbon Change Outs	January 2023	2024	87,288	104,485	7,935	10%	Yes	11,587.89	$ -	0%	$ -
North Valley Region	126476	2024 ORO 10 Carbon Change Outs	January 2024	2024	89,470	107,097	8,134	10%	Yes	11,877.64	$ -	0%	$ -
East Los Angeles	126480	2022 ELA 62 Carbon Change Outs	March 2022	2024	367,089	431,695	33,372	10%	Yes	114,061.77	$ -	0%	$ -
East Los Angeles	126481	2023 ELA 62 Carbon Change Outs	June 2023	2024	299,053	351,685	27,187	10%	Yes	39,700.73	$ -	0%	$ -
East Los Angeles	126482	2024 ELA 62 Carbon Change Outs	August 2024	2024	306,530	366,970	27,866	10%	Yes	40,693.43	$ -	0%	$ -
East Los Angeles	126483	2022 ELA 63 Carbon Change Outs	August 2023	2024	485,232	570,631	44,112	10%	Yes	121,016.28	$ -	0%	$ -
East Los Angeles	126484	2023 ELA 63 Carbon Change Outs	September 2023	2024	430,468	506,229	39,134	10%	Yes	57,147.20	$ -	0%	$ -
East Los Angeles	126485	2024 ELA 63 Carbon Change Outs	January 2024	2024	441,230	528,229	40,112	10%	Yes	58,575.51	$ -	0%	$ -
Visalia	126487	2024 VIS 38 Carbon Change Outs	January 2024	2024	88,066	105,231	8,006	10%	Yes	11,691.26	$ -	0%	$ -
Visalia	126492	2023 VIS 77 Carbon Change Outs	January 2023	2024	153,410	183,311	13,946	10%	Yes	20,366.06	$ -	0%	$ -
Visalia	126493	2024 VIS 77 Carbon Change Outs	January 2024	2024	157,246	187,894	14,295	10%	Yes	20,875.23	$ -	0%	$ -
Marysville	126495	2023 MRL 15 Carbon Change Outs	January 2023	2024	87,288	103,995	7,935	10%	Yes	11,587.93	$ -	0%	$ -
Marysville	126496	2024 MRL 15 Carbon Change Outs	January 2024	2024	89,470	104,318	8,134	10%	Yes	11,877.64	$ -	0%	$ -
Bear Gulch	126621	BG Palo Alto Interconnect	April 2021	2024	804,024	941,490	-	0%			$ -	0%	$ -
Bakersfield	126877	BK 220-01: Pump & Motor Replacement	June 2021	2025	244,726	288,226	-	0%			$ -	0%	$ -
LA County Region	127148	PV Golf Club Recycled Water Line	April 2024	2025	2,691,042	3,164,993	-	0%	No	N/A	$ -	0%	$ -
Travis	127164	Material Storage Bunkers	October 2021	2025	548,523	644,317	-	0%			$ -	0%	$ -
Bakersfield	127761	Rpl main canal @ shafter Rd	January 2022	2024	421,941	484,050	-	0%			$ -	0%	$ -
Bakersfield	128024	Install 8" tr flex @ Marella OverX	February 2022	2024	665,931	768,570	-	0%			$ -	0%	$ -
CSS	128042	GRC 2021 Rev Rec Project	July 2022	2025	379,147	391,396	-	0%			$ -	0%	$ -
Selma	128063	SEL 12 - Property Purchase	February 2023	2024	212,032	243,518	-	0%			$ -	0%	$ -
South Bay Region	128198	HR-22-01 Media Vessel Repairs 2022	March 2022	2024	168,776	200,408	1,242	10%			$ -	0%	$ -
East Los Angeles	128461	ELA 62 Carbon Changeout	April 2022	2024	181,435	211,171	-	0%			$ -	0%	$ -
LA County Region	128971	Construct retaining wall/fence @ 22	August 2022	2024	249,215	294,406	16,100	7%			$ -	0%	$ -
East Los Angeles	128996	ELA 62-01 Carbon Changeout	June 2022	2024	244,886	287,245	-	0%			$ -	0%	$ -
CSS	129198	BLDG A - OFFICE UPDATES	July 2022	2024	189,873	222,413	-	0%			$ -	0%	$ -
Bay Area Region	129409	Notre Dame & El Camino, SC	September 2022	2024	253,165	297,721	-	0%			$ -	0%	$ -
Salinas Valley Region	129416	Lot (land) for Ag industrail	October 2022	2024	675,105	805,748	-	0%			$ -	0%	$ -
Bakersfield	129528	E. California 21" main protection	January 2023	2024	204,083	240,536	-	0%			$ -	0%	$ -
Bear Gulch	129532	BG 40-A Pump Replacement	November 2022	2024	210,970	247,040	19,000	10%			$ -	0%	$ -
Bay Area Region	130235	Genentech Feasibility Study	February 2023	2024	42,502	50,625	-	0%			$ -	0%	$ -
Bear Gulch	130460	BG STA 47 Wildfire Generator	July 2023	2024	252,085	300,278	25,208	10%			$ -	0%	$ -
Bakersfield	130571	REPLACE V206012	July 2023	2025	217,536	230,028	-	0%			$ -	0%	$ -
Bay Area Region	130599	SSF 008-T1 Roof Replacement	May 2023	2024	248,945	286,504	-	0%			$ -	0%	$ -
Salinas Valley Region	130698	Hwy 156 - 12" DI Relocation	October 2023	2024	662,447	774,421	-	0%			$ -	0%	$ -
Los Altos	130954	inst 8"pvc @ Richardson X Grant	June 2023	2024	219,342	260,153	-	0%			$ -	0%	$ -
Bakersfield	131316	BK PFAS Preliminary Desgin	July 2023	2024	689,260	805,034	60,750	10%			$ -	0%	$ -
North Valley Region	131319	CH PFAS Preliminary Design	July 2023	2024	374,253	441,054	33,000	10%			$ -	0%	$ -
Salinas Valley Region	131372	SLN 77 Booster Station Construction	September 2023	2024	1,905,310	2,242,914	190,531	15%			$ -	0%	$ -
CSS	131496	MSPO Roadmap	July 2023	2024	206,751	230,830	-	0%			$ -	0%	$ -
LA County Region	131846	main abandonment/service relocation	September 2023	2024	379,747	446,017	37,975	10%			$ -	0%	$ -
Bear Gulch	131885	Skylonda Integration - CWS 1810 Zon	December 2023	2024	1,088,672	1,296,802	176,285	20%			$ -	0%	$ -
Bear Gulch	131889	Skylonda Integration - CWS 1930 Zon	December 2023	2024	940,843	1,120,711	175,374	20%			$ -	0%	$ -
Bear Gulch	131966	BG Replace Skyline PRV/Vaults	January 2025	2026	316,660	368,252	27,738	10%	No	N/A	$ 31,600.65	10%	$ 34,030.44
Bear Gulch	131977	BG 2025 Control Valve Overhauls	January 2025	2025	467,565	545,053	40,458	10%	No	N/A	$ -	0%	$ -
Bear Gulch	131984	BG 2026 Control Valve Overhauls	January 2026	2026	479,254	557,338	40,458	10%	No	N/A	$ -	0%	$ -
Bear Gulch	131985	BG 2027 Control Valve Overhauls	January 2027	2027	491,224	561,906	40,458	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bay Area Region	131986	BAY 2025 ACV Replacements	January 2025	2025	418,675	488,039	36,227	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131987	BAY 2026 ACV Replacements	January 2026	2026	429,142	499,038	36,227	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131988	BAY 2027 ACV Replacements	January 2027	2027	439,860	503,128	36,227	10%	No	N/A	$ -	0%	$ -
CSS	131989	TIME TRACKING IMPROVEMENT PHASE 2	November 2023	2025	353,923	395,737	35,392	10%			$ -	0%	$ -
Bay Area Region	131990	2026 BAY - 6 Flowmeter Replacements	January 2026	2026	622,139	720,407	50,784	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131991	MPS 2025 Control Valve Overhauls	January 2025	2025	467,565	545,029	40,458	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131992	MPS 2026 Control Valve Overhauls	January 2026	2026	498,424	579,605	42,076	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131993	MPS 2027 Control Valve Overhauls	January 2027	2027	491,224	561,881	40,458	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131994	SSF 2025 Control Valve Overhauls	January 2025	2025	112,216	130,807	9,710	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131995	SSF 2026 Control Valve Overhauls	January 2026	2026	95,851	111,463	8,092	10%	No	N/A	$ -	0%	$ -
Bay Area Region	131996	SSF 2027 Control Valve Overhauls	January 2027	2027	98,245	112,376	8,092	10%	No	N/A	$ -	0%	$ -
Bakersfield	131997	BK 2025 ACV Replacements	January 2025	2025	319,389	376,161	27,636	10%	No	N/A	$ -	0%	$ -
Los Altos	131998	LAS 2025 Control Valve Overhauls	January 2025	2025	299,242	349,796	25,893	10%	No	N/A	$ -	0%	$ -
Los Altos	132000	LAS 2027 Control Valve Overhauls	January 2027	2027	314,383	360,611	25,893	10%	No	N/A	$ -	0%	$ -
Livermore	132001	LIV 2025 Flowmeter Replacements	January 2025	2025	278,349	324,901	23,284	10%	No	N/A	$ -	0%	$ -
Livermore	132002	LIV 2026 Flowmeter Replacements	January 2026	2026	281,612	327,921	23,773	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132007	SLN 2025 Control Valve Overhauls	January 2025	2025	249,368	291,265	21,577	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132008	SLN 2026 Control Valve Overhauls	January 2026	2026	255,602	297,830	21,577	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132010	SLN 2027 Control Valve Overhauls	January 2027	2027	261,986	300,271	21,577	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132011	2026 KC - 1 CV Replacement2026 KC -	January 2026	2026	81,741	95,854	-	0%	No	N/A	$ -	0%	$ -
LA County Region	132022	PV 049-T2 Roof Replacement	October 2023	2024	1,856,540	2,115,347	-	0%			$ -	0%	$ -
Westlake	132023	WLK 2026 Control Valve Overhauls	January 2026	2026	173,444	201,647	14,642	10%	No	N/A	$ -	0%	$ -
Bakersfield	132025	BK 2026 ACV Replacements	January 2026	2026	327,374	384,639	27,636	10%	No	N/A	$ -	0%	$ -
Bakersfield	132026	BK 2026 Control Valve Overhauls	January 2026	2026	438,176	514,822	36,990	10%	No	N/A	$ -	0%	$ -
Bakersfield	132027	BK 2027 ACV Replacements	January 2027	2027	335,550	387,791	27,636	10%	No	N/A	$ -	0%	$ -
Bakersfield	132028	BK 2027 Control Valve Overhauls	January 2027	2027	449,119	519,042	36,990	10%	No	N/A	$ -	0%	$ -
Bakersfield	132029	BK 2026 Flowmeter Replacements	January 2026	2026	972,844	1,139,645	79,393	10%	No	N/A	$ -	0%	$ -
LA County Region	132031	PV 2025 ACV Replacements	January 2025	2027	1,256,025	1,477,238	108,682	10%	No	N/A	$ -	0%	$ -
LA County Region	132032	PV 2026 ACV Replacements	January 2026	2026	1,236,800	1,451,133	104,408	10%	No	N/A	$ -	0%	$ -
LA County Region	132033	PV 2027 ACV Replacements	January 2027	2027	1,319,580	1,522,912	108,682	10%	No	N/A	$ -	0%	$ -
Stockton	132038	STK 2026 ACV Replacement	January 2026	2026	81,741	95,608	6,900	10%	No	N/A	$ -	0%	$ -
Stockton	132039	STK 2025 Flowmeter Replacements	January 2025	2025	245,144	280,578	20,506	10%	No	N/A	$ -	0%	$ -
Stockton	132040	STK 2026 Flowmeter Replacements	January 2026	2026	256,749	298,751	20,882	10%	No	N/A	$ -	0%	$ -
Stockton	132041	STK 2027 Flowmeter Replacements	January 2027	2027	256,520	293,598	20,506	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132042	RDV 2026 ACV Replacement	January 2026	2026	85,828	101,598	7,245	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132043	RDV 2026 Flowmeter Replacement	January 2026	2026	223,069	262,182	18,209	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132044	RDV 2027 Flowmeter Replacement	January 2027	2027	107,120	123,841	8,500	10%	No	N/A	$ -	0%	$ -
LA County Region	132045	PV 2025 Control Valve Overhauls	January 2025	2025	2,030,569	2,388,196	175,702	10%	No	N/A	$ -	0%	$ -
LA County Region	132046	PV 2026 Control Valve Overhauls	January 2026	2026	2,063,989	2,421,670	174,238	10%	No	N/A	$ -	0%	$ -
LA County Region	132047	PV 2027 Control Valve Overhauls	January 2027	2027	2,115,538	2,441,518	174,238	10%	No	N/A	$ -	0%	$ -
LA County Region	132048	PV 2026 Flowmeter Replacement	January 2026	2025	121,222	141,422	9,862	10%	No	N/A	$ -	0%	$ -
LA County Region	132049	PV 2027 Flowmeter Replacement	January 2027	2026	206,972	238,864	16,475	10%	No	N/A	$ -	0%	$ -
Marysville	132051	MRL 2026 ACV Replacement	January 2026	2026	81,843	95,196	6,909	10%	No	N/A	$ -	0%	$ -
Marysville	132052	MRL 2026 Flowmeter Replacement	January 2026	2026	210,075	243,305	17,155	10%	No	N/A	$ -	0%	$ -
North Valley Region	132054	ORO 2025 ACV Replacements	January 2025	2025	100,545	117,783	8,700	10%	No	N/A	$ -	0%	$ -
North Valley Region	132055	ORO 2027 ACV Replacements	January 2027	2027	56,502	64,949	4,654	10%	No	N/A	$ -	0%	$ -
South Bay Region	132057	HR 2025 ACV Replacement	January 2025	2025	75,764	89,026	6,564	10%	No	N/A	$ -	0%	$ -
South Bay Region	132058	HR 2025 Control Valve Overhauls	January 2025	2025	219,978	258,484	19,034	10%	No	N/A	$ -	0%	$ -
South Bay Region	132059	HR 2026 ACV Replacements	January 2026	2026	155,503	182,283	13,127	10%	No	N/A	$ -	0%	$ -
South Bay Region	132060	HR 2026 Control Valve Overhauls	January 2026	2026	208,133	243,977	17,570	10%	No	N/A	$ -	0%	$ -
South Bay Region	132061	HR 2027 Control Valve Overhaul	January 2027	2027	213,332	245,977	17,570	10%	No	N/A	$ -	0%	$ -
South Bay Region	132062	HR 2026 Flowmeter Replacements	January 2026	2027	273,679	307,709	22,368	10%	No	N/A	$ -	0%	$ -

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South Bay Region	132063	HR 2027 Flowmeter Replacements	January 2027	2027	281,005	324,007	22,368	10%	No	N/A	$ -	0%	$ -
North Valley Region	132067	CH 2025 ACV Replacement	January 2025	2025	79,747	93,349	6,900	10%	No	N/A	$ -	0%	$ -
North Valley Region	132068	CH 2025 Control Valve Overhauls	January 2025	2025	124,684	145,950	10,789	10%	No	N/A	$ -	0%	$ -
North Valley Region	132069	CH 2026 ACV Replacement	January 2026	2026	81,741	95,452	6,900	10%	No	N/A	$ -	0%	$ -
North Valley Region	132070	CH 2026 Control valve Overhauls	January 2026	2026	109,544	127,920	9,247	10%	No	N/A	$ -	0%	$ -
North Valley Region	132072	CH 2027 ACV Replacement	January 2027	2027	83,782	96,235	6,900	10%	No	N/A	$ -	0%	$ -
North Valley Region	132073	CH 2027 Control Valve Overhauls	January 2027	2027	112,280	128,968	9,247	10%	No	N/A	$ -	0%	$ -
North Valley Region	132074	CH 2025 Flowmeter Replacements	January 2025	2025	239,205	278,628	22,797	10%	No	N/A	$ -	0%	$ -
North Valley Region	132075	CH 2026 Flowmeter Replacements	January 2026	2026	316,417	367,680	26,711	10%	No	N/A	$ -	0%	$ -
North Valley Region	132076	CH 2027 Flowmeter Replacements	January 2027	2027	327,501	374,329	29,772	10%	No	N/A	$ -	0%	$ -
South Bay Region	132077	DOM 2027 Flowmeter Replacement	January 2027	2027	206,946	236,694	16,473	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132078	ELA 2025 ACV Replacement	January 2025	2025	75,855	88,871	6,564	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132079	ELA 2025 Control Valve Overhauls	January 2025	2025	101,528	118,950	8,785	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132080	ELA 2026 ACV Replacement	January 2026	2026	77,751	90,874	6,564	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132081	ELA 2026 Control Valve Overhauls	January 2026	2026	104,067	121,632	8,785	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132082	ELA 2027 ACV Replacement	January 2027	2027	79,693	91,619	6,564	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132083	ELA 2027 Control Valve Overhauls	January 2027	2027	106,666	122,628	8,785	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132084	ELA 2025 Flowmeter Replacement	January 2027	2027	207,576	238,036	16,472	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132085	ELA 2026 Flowmeter Replacement	January 2026	2026	201,903	234,787	16,473	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132087	ELA 2027 Flowmeter Replacement	January 2027	2027	206,956	236,724	16,473	10%	No	N/A	$ -	0%	$ -
LA County Region	132088	AV 2025 Vehicle Replacement Program	January 2025	2025	183,974	184,768	15,919	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132091	KRV 2025 Control Valve Overhauls	January 2025	2025	249,368	295,849	21,577	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132093	KRV 2026 Control Valve Overhauls	January 2026	2026	237,345	280,908	20,036	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132096	KRV 2025 Flowmeter Replacements	January 2025	2025	281,473	333,937	23,545	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132097	KRV 2026 Flowmeter Replacements	January 2026	2026	288,607	341,579	23,553	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132098	KRV 2027 Flowmeter Replacements	January 2027	2027	295,743	344,293	23,547	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132105	SSF 002-C Pump Replacement	January 2025	2025	83,494	97,093	7,225	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132106	SSF 005-A Pump Replacement	January 2026	2026	85,581	99,520	7,225	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132108	SM 006-D Pump Replacement	January 2025	2025	83,494	97,093	7,225	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132111	MPS 012-E Pump Replacement	January 2027	2027	74,330	85,021	6,122	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132112	MPS 114-B Pump Replacement	January 2027	2027	33,768	38,625	2,781	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132115	SSF 101-A Pump Replacement	January 2025	2025	83,494	97,093	7,225	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132116	SC 118-A Pump Replacement	January 2025	2025	111,639	130,135	9,660	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132117	MPS-120-B Pump Replacement	January 2027	2027	74,330	85,021	6,122	10%	No	N/A	$ -	0%	$ -
Bakersfield	132132	BK 073-E Pump Replacement	January 2025	2025	79,518	93,652	6,881	10%	No	N/A	$ -	0%	$ -
North Valley Region	132135	CH-65-1 Pump Replacement	January 2026	2026	144,345	168,559	12,185	10%	No	N/A	$ -	0%	$ -
Dixon	132136	DIX 010-A Pump Replacement	January 2026	2026	69,065	81,634	5,830	10%	No	N/A	$ -	0%	$ -
Dixon	132137	DIX 010-B Pump Replacement	January 2026	2026	69,065	81,634	5,830	10%	No	N/A	$ -	0%	$ -
South Bay Region	132139	DOM-277-01 Pump Replacement	January 2026	2026	202,702	236,242	17,112	10%	No	N/A	$ -	0%	$ -
South Bay Region	132140	DOM-277-A Pump Replacement	January 2026	2026	103,532	120,663	8,740	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132141	ELA 2025 Chemical Pump Replacement	January 2025	2025	9,334	10,936	-	0%	No	N/A	$ -	0%	$ -
East Los Angeles	132142	ELA-10-03 Pump Replacement	January 2027	2027	140,553	161,586	11,576	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132143	ELA 12-C Pump Replacement	January 2027	2027	79,364	91,241	6,537	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132144	ELA 2025 Chemical Pump Replacement	January 2025	2025	9,316	10,915	806	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132145	ELA 023-B Booster Replacement	January 2025	2025	101,007	118,339	8,740	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132147	ELA 030-C Pump Replacement	January 2025	2025	75,542	88,504	6,537	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132148	ELA 032-C Booster Replacement	January 2027	2027	115,585	132,882	9,520	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132149	ELA 040-A Pump Replacement	January 2026	2026	65,612	76,686	5,539	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132151	ELA 055-A Pump Replacement	January 2027	2027	106,118	121,998	8,740	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132152	ELA-59-A Pump Replacement	January 2027	2027	79,364	91,241	6,537	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132155	KC 010-A Pump Replacement	January 2026	2026	140,935	165,269	11,897	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132156	KC 013-01 Pump Replacement	January 2027	2027	136,942	157,958	11,279	10%	No	N/A	$ -	0%	$ -

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Salinas Valley Region	132157	KC 015-A Pump Replacement	January 2025	2025	67,381	79,205	5,830	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132158	KRV ONYX-1-1 Pump Replacement	January 2025	2025	79,656	94,504	6,893	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132159	KRV ONYX-2-1 Pump Replacement	January 2027	2027	83,687	97,426	6,893	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132160	KRV SMTN-2-15 Pump Replacement	January 2027	2027	83,687	97,426	6,893	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132161	KRV ONYX-3-A Pump Replacement	January 2026	2026	69,065	81,742	5,830	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132167	KRV MSHA-6-B Pump Replacement	January 2027	2027	83,541	97,256	6,881	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132171	KRV SMTN-15-A Pump Replacement	January 2025	2025	90,800	107,724	7,857	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132172	KRV SMTN-15-B Pump Replacement	January 2025	2025	82,545	97,931	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	132173	KRV UBOD-104-2 Pump Replacement	January 2026	2026	81,648	96,634	6,893	10%	No	N/A	$ -	0%	$ -
CSS	132210	MSPO Configuration/Upgrades	January 2025	2025	936,320	972,331	851,200	10%	No	N/A	$ -	0%	$ -
CSS	132211	Workday Modification/Configuration	January 2025	2025	181,500	188,480	16,500	10%	No	N/A	$ -	0%	$ -
Los Altos	132213	LAS-7-E Pump Replacement	January 2026	2026	114,430	133,440	9,660	10%	No	N/A	$ -	0%	$ -
Los Altos	132214	LAS-27-1 Pump Replacement	January 2025	2025	121,599	142,142	10,522	10%	No	N/A	$ -	0%	$ -
Los Altos	132215	LAS-33-B Pump Replacement	January 2026	2026	85,581	99,799	7,225	10%	No	N/A	$ -	0%	$ -
Los Altos	132216	LAS-34-B Pump Replacement	January 2027	2027	151,678	173,980	12,492	10%	No	N/A	$ -	0%	$ -
Los Altos	132218	LAS-113-B Pump Replacement	January 2026	2026	72,519	84,566	6,122	10%	No	N/A	$ -	0%	$ -
Los Altos	132219	LAS-119-D Pump Replacement	January 2027	2027	87,718	100,617	7,225	10%	No	N/A	$ -	0%	$ -
Los Altos	132221	LAS-121-2 Pump Replacement	January 2025	2025	44,426	51,931	3,844	10%	No	N/A	$ -	0%	$ -
Los Altos	132222	LAS-123-1 Pump Replacement	January 2026	2026	74,315	86,661	6,273	10%	No	N/A	$ -	0%	$ -
Livermore	132223	LIV 015-1 Replace Well Pump	January 2025	2025	130,346	152,958	11,279	10%	No	N/A	$ -	0%	$ -
Livermore	132224	LIV-019-1 Well Pump Replacement	January 2026	2026	108,588	127,119	9,167	10%	No	N/A	$ -	0%	$ -
Livermore	132225	LIV 020-1 Replace Well Pump	January 2026	2026	41,497	48,579	3,503	10%	No	N/A	$ -	0%	$ -
Livermore	132226	LIV 025-B Pump Replacement	January 2025	2025	79,656	93,475	6,893	10%	No	N/A	$ -	0%	$ -
Livermore	132227	LIV-29-A Pump Replacement	January 2026	2026	69,065	80,852	5,830	10%	No	N/A	$ -	0%	$ -
Livermore	132228	LIV-29-B Pump Replacement	January 2026	2026	69,065	80,852	5,830	10%	No	N/A	$ -	0%	$ -
Livermore	132230	LIV-32-A Pump Replacement	January 2026	2026	69,065	80,852	5,830	10%	No	N/A	$ -	0%	$ -
Livermore	132231	LIV-32-B Pump Replacement	January 2026	2026	69,065	80,852	5,830	10%	No	N/A	$ -	0%	$ -
Livermore	132232	LIV 032-C Pump Replacement	January 2025	2025	67,381	79,070	5,830	10%	No	N/A	$ -	0%	$ -
Livermore	132233	LIV-034 Pump Replacements (B,C,D)	January 2027	2027	250,624	288,593	20,642	10%	No	N/A	$ -	0%	$ -
Livermore	132234	LIV-034-A VFD Replacement	June 2026	2027	68,206	77,913	5,820	10%	No	N/A	$ -	0%	$ -
Marysville	132235	MRL-15-1 Pump Replacement	January 2026	2026	133,605	152,858	11,279	10%	No	N/A	$ -	0%	$ -
North Valley Region	132236	ORO 015-E Pump Replacement	January 2026	2026	69,065	80,712	5,830	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132238	SLN 021-01 Pump Replacement	January 2026	2026	142,752	166,336	12,051	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132239	SLN-27-1 Pump Replacement	January 2027	2027	136,942	156,953	11,279	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132240	SLN-32-1 Pump Replacement	January 2025	2025	130,346	152,246	11,279	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132241	SLN-57-A Pump Replacement	January 2027	2027	83,541	95,749	6,881	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132242	SLN-58-B Pump Replacement	January 2025	2025	67,381	78,701	5,830	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132243	SLN-67-1 Pump Replacement	January 2026	2026	161,140	187,762	13,603	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132244	SLN-71-1 Pump Replacement	January 2025	2025	105,939	123,738	9,167	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132245	SLN-73-A Pump Replacement	January 2026	2026	39,728	46,291	3,354	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132246	SLN-73-B Pump Replacement	January 2026	2026	39,728	46,291	3,354	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132247	SLN-73-E Pump Replacement	January 2026	2026	43,368	50,533	3,661	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132248	SLN-304-A Pump Replacement	January 2025	2025	67,381	78,701	5,830	10%	No	N/A	$ -	0%	$ -
Stockton	132249	STK-59-1 Pump Replacement	January 2025	2025	140,825	165,111	12,185	10%	No	N/A	$ -	0%	$ -
Stockton	132250	STK-60-1 Pump Replacement	January 2025	2025	140,825	165,111	12,185	10%	No	N/A	$ -	0%	$ -
Visalia	132251	VIS-15-1 Pump Replacement	January 2027	2027	111,300	127,713	9,167	10%	No	N/A	$ -	0%	$ -
Visalia	132252	VIS 023-1 Pump Replacement	January 2027	2027	136,942	157,137	11,279	10%	No	N/A	$ -	0%	$ -
Visalia	132253	VIS-32-1 Pump Replacement	January 2026	2026	133,605	155,859	11,279	10%	No	N/A	$ -	0%	$ -
Visalia	132254	VIS-57-2 Pump Replacement	January 2025	2025	79,656	93,148	6,893	10%	No	N/A	$ -	0%	$ -
Visalia	132255	VIS 201-1 Pump Replacement	January 2025	2025	40,484	47,341	3,503	10%	No	N/A	$ -	0%	$ -
Willows	132256	WIL-4-1 Pump Replacement	January 2026	2026	70,776	83,300	5,975	10%	No	N/A	$ -	0%	$ -
Bakersfield	132262	BK 2025 VEHICLE REPLACEMENT PROG	January 2025	2025	292,258	309,042	25,289	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Bakersfield	132263	BK 2026 VEHICLE REPLACEMENT PROG	January 2026	2026	506,147	535,214	42,728	10%	No	N/A	$ -	0%	$ -
Bakersfield	132264	BK 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	1,698,022	1,795,536	139,851	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132265	BAY 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	85,825	89,823	7,426	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132266	BAY 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	161,378	168,895	13,623	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132267	BAY 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	726,767	760,624	61,354	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132268	BG 2025 VEHICLE REPLACEMENT PROG	January 2025	2025	392,233	410,524	33,939	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132269	BG 2026 VEHICLE REPLACEMENT PROG	January 2026	2026	87,970	92,073	7,426	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132270	BG 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	438,116	458,546	36,084	10%	No	N/A	$ -	0%	$ -
Bakersfield	132272	BK-125-01 Well Renewal	January 2026	2026	288,984	339,534	24,396	10%	No	N/A	$ -	0%	$ -
Los Altos	132277	LAS-027-01 Well Renewal	January 2027	2027	297,548	341,300	25,615	10%	No	N/A	$ -	0%	$ -
Livermore	132278	LIV-009-01 Well Renewal	January 2026	2026	288,984	338,303	24,396	10%	No	N/A	$ -	0%	$ -
Livermore	132279	LIV-014-01 Well Renewal	January 2027	2027	296,202	341,075	24,396	10%	No	N/A	$ -	0%	$ -
Stockton	132281	STK-060-01 Well Renewal	January 2025	2025	281,936	329,765	24,396	10%	No	N/A	$ -	0%	$ -
Visalia	132282	VIS 045-01 Well Renewal	January 2026	2026	288,984	331,601	24,396	10%	No	N/A	$ -	0%	$ -
Visalia	132283	VIS 046-01 Well Renewal	January 2025	2025	281,936	329,690	24,396	10%	No	N/A	$ -	0%	$ -
Willows	132293	WIL 2027 Vehicle Replacement Progra	January 2027	2027	45,760	48,471	4,160	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132296	2026 KRV - ACV Replacements	January 2026	2026	245,531	290,596	20,727	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132298	KRV 2025 Control Valve Overhauls	January 2025	2025	249,368	295,849	21,577	10%	No	N/A	$ -	0%	$ -
Westlake	132308	WLK 2027 Vehicle Replacement Progra	January 2027	2027	180,335	188,692	14,853	10%	No	N/A	$ -	0%	$ -
North Valley Region	132309	CH 2025 VEHICLE REPLACEMENT PROG	January 2025	2025	333,575	350,577	28,864	10%	No	N/A	$ -	0%	$ -
North Valley Region	132310	CH 2026 VEHICLE REPLACEMENT PROG	January 2026	2026	351,882	369,817	29,705	10%	No	N/A	$ -	0%	$ -
North Valley Region	132311	CH 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	654,769	688,141	53,928	10%	No	N/A	$ -	0%	$ -
Dixon	132314	DIX 2027 VEHICLE REPLACEMENT PROJ	January 2027	2027	208,149	221,424	17,143	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132315	ELA 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	190,186	200,057	19,019	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132316	ELA 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	717,269	754,495	60,551	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132317	ELA 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	691,419	727,303	55,655	10%	No	N/A	$ -	0%	$ -
CSS	132318	CSS 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	21,681	22,514	1,876	10%	No	N/A	$ -	0%	$ -
CSS	132319	CSS 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	396,589	411,842	33,479	10%	No	N/A	$ -	0%	$ -
CSS	132320	CSS 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	567,043	588,851	46,702	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132322	KRV 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	87,970	93,705	7,426	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132325	KC 2026 VEHICLE REPLACEMENT PROG	January 2026	2026	77,133	81,406	6,511	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132326	KC 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	90,168	95,162	7,426	10%	No	N/A	$ -	0%	$ -
Livermore	132327	LIV 2025 VEHICLE REPLACEMENT PROG	January 2025	2025	390,870	411,818	33,821	10%	No	N/A	$ -	0%	$ -
Livermore	132328	LIV 2026 VEHICLE REPLACEMENT PROG	January 2026	2026	150,540	158,608	12,708	10%	No	N/A	$ -	0%	$ -
Livermore	132329	LIV 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	300,849	316,973	30,085	10%	No	N/A	$ -	0%	$ -
Los Altos	132331	LAS 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	77,133	80,952	6,511	10%	No	N/A	$ -	0%	$ -
Los Altos	132332	LAS 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	386,566	405,707	31,838	10%	No	N/A	$ -	0%	$ -
Marysville	132333	MRL 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	188,577	197,409	17,143	10%	No	N/A	$ -	0%	$ -
Marysville	132334	MRL 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	71,625	74,980	7,163	10%	No	N/A	$ -	0%	$ -
Marysville	132335	MRL 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	39,369	41,213	3,579	10%	No	N/A	$ -	0%	$ -
North Valley Region	132336	ORO 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	171,650	180,535	17,165	10%	No	N/A	$ -	0%	$ -
North Valley Region	132337	ORO 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	87,970	92,524	8,797	10%	No	N/A	$ -	0%	$ -
North Valley Region	132338	ORO 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	180,335	189,670	18,034	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	132339	RD 2025 VEHICLE REPLACEMENT PROG	January 2025	2025	1,193,755	1,252,068	119,375	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	132340	RD 2026 VEHICLE REPLACEMENT PROG	January 2026	2026	1,142,058	1,197,846	114,206	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	132341	RD 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	1,228,608	1,288,623	101,190	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132345	SLN 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	549,914	576,687	50,058	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132346	SLN 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	71,860	75,358	6,746	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132347	SLN 2027 VEHICLE REPLACEMENT PRO	January 2027	2027	366,923	384,786	33,423	10%	No	N/A	$ -	0%	$ -
Selma	132348	SEL 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	157,442	164,886	13,623	10%	No	N/A	$ -	0%	$ -
Stockton	132351	STK 2025 VEHICLE REPLACEMENT PRO	January 2025	2025	263,069	276,927	22,763	10%	No	N/A	$ -	0%	$ -
Stockton	132352	STK 2026 VEHICLE REPLACEMENT PRO	January 2026	2026	590,633	621,747	50,274	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Stockton	132353	STK 2027 VEHICLE REPLACEMENT PROG	January 2027	2027	386,566	406,929	31,838	10%	No	N/A	$ -	0%	$ -
Visalia	132360	VIS 2025 Vehicle Replacment Progr	January 2025	2025	547,345	574,663	47,361	10%	No	N/A	$ -	0%	$ -
Visalia	132362	VIS 2026 Vehicle Replacement Progr	January 2026	2026	351,882	369,444	29,705	10%	No	N/A	$ -	0%	$ -
Visalia	132363	VIS 2027 Vehicle Replacement Progr	January 2027	2027	374,577	393,272	30,851	10%	No	N/A	$ -	0%	$ -
Travis	132364	TAFB 2025 Vehicle Replacement Progr	January 2025	2025	384,661	403,526	33,284	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132366	BG 2026 Vault Lid Replacements	January 2026	2026	21,161	24,608	3,150	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132367	BG 2027 Vault Lid Replacements	January 2027	2027	21,689	24,810	3,150	10%	No	N/A	$ -	0%	$ -
Travis	132368	TAFB 2026 Vehicle Replacement Progr	January 2026	2026	280,514	294,271	23,681	10%	No	N/A	$ -	0%	$ -
North Valley Region	132371	CH 2025 Vault Lid Replacements	January 2025	2025	34,671	40,584	3,000	10%	No	N/A	$ -	0%	$ -
North Valley Region	132373	CH 2026 Vault Lid Replacements	January 2026	2026	35,537	41,499	3,000	10%	No	N/A	$ -	0%	$ -
North Valley Region	132374	CH 2027 Vault Lid Replacements	January 2027	2027	36,425	41,839	3,000	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132380	BAY-MPS 2025 Vault Lid Replacements	January 2025	2025	36,404	42,435	3,150	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132381	BAY-MPS 2026 Vault Lid Replacements	January 2026	2026	37,314	43,392	3,150	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132382	BAY-MPS 2027 Vault Lid Replacements	January 2027	2027	38,246	43,747	3,150	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132383	BAY-SSF 2025 Vault Lid Replacements	January 2025	2025	36,404	42,435	3,150	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132384	BAY-SSF 2026 Vault Lid Replacements	January 2026	2026	37,314	43,392	3,150	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132385	BAY-SSF 2027 Vault Lid Replacements	January 2027	2027	38,246	43,747	3,150	10%	No	N/A	$ -	0%	$ -
South Bay Region	132389	DOM 2025 Vault Lid Replacements	January 2025	2025	65,874	76,959	5,700	10%	No	N/A	$ -	0%	$ -
South Bay Region	132390	DOM 2026 Vault Lid Replacements	January 2026	2026	67,521	78,693	5,700	10%	No	N/A	$ -	0%	$ -
South Bay Region	132391	DOM 2027 Vault Lid Replacements	January 2027	2027	69,207	79,338	5,700	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132392	ELA 2025 Vault Lid Replacements	January 2025	2025	32,937	38,589	2,850	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132393	ELA 2026 Vault Lid Replacements	January 2026	2026	33,761	39,459	2,850	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132394	ELA 2027 Vault Lid Replacements	January 2027	2027	34,604	39,782	2,850	10%	No	N/A	$ -	0%	$ -
South Bay Region	132395	HR 2025 Vault Lid Replacements	January 2025	2025	32,937	38,702	2,850	10%	No	N/A	$ -	0%	$ -
South Bay Region	132396	HR 2026 Vault Lid Replacements	January 2026	2026	33,761	39,575	2,850	10%	No	N/A	$ -	0%	$ -
South Bay Region	132397	HR 2027 Vault Lid Replacements	January 2027	2027	34,604	39,899	2,850	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132399	KC 2025 Vault Lid Replacements	January 2025	2025	17,335	20,377	1,500	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132400	KC 2026 Vault Lid Replacements	January 2026	2026	17,769	20,837	1,500	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132401	KC 2027 Vault Lid Replacements	January 2027	2027	18,212	21,007	1,500	10%	No	N/A	$ -	0%	$ -
Los Altos	132402	LAS 2025 Vault Lid Replacements	January 2025	2025	36,404	42,554	3,150	10%	No	N/A	$ -	0%	$ -
Los Altos	132403	LAS 2026 Vault Lid Replacements	January 2026	2026	37,314	43,513	3,150	10%	No	N/A	$ -	0%	$ -
Los Altos	132404	LAS 2027 Vault Lid Replacements	January 2027	2027	38,246	43,870	3,150	10%	No	N/A	$ -	0%	$ -
Livermore	132405	LIV 2025 Vault Lid Replacements	January 2025	2025	17,335	20,343	1,500	10%	No	N/A	$ -	0%	$ -
Livermore	132406	LIV 2026 Vault Lid Replacements	January 2026	2026	17,769	20,801	1,500	10%	No	N/A	$ -	0%	$ -
Livermore	132407	LIV 2027 Vault Lid Replacements	January 2027	2027	18,212	20,972	1,500	10%	No	N/A	$ -	0%	$ -
Marysville	132410	MRL 2027 Vault Lid Replacements	January 2027	2027	18,212	20,837	1,500	10%	No	N/A	$ -	0%	$ -
North Valley Region	132411	ORO 2025 Vault Lid Replacements	January 2025	2025	17,335	20,307	1,500	10%	No	N/A	$ -	0%	$ -
North Valley Region	132412	ORO 2026 Vault Lid Replacements	January 2026	2026	17,769	20,765	1,500	10%	No	N/A	$ -	0%	$ -
North Valley Region	132413	ORO 2027 Vault Lid Replacements	January 2027	2027	18,212	20,935	1,500	10%	No	N/A	$ -	0%	$ -
LA County Region	132417	PV 2025 Vault Lid Replacements	January 2025	2027	16,469	19,369	1,425	10%	No	N/A	$ -	0%	$ -
LA County Region	132418	PV 2026 Vault Lid Replacements	January 2026	2027	16,880	19,805	1,425	10%	No	N/A	$ -	0%	$ -
LA County Region	132419	PV 2027 Vault Lid Replacements	January 2027	2027	17,302	19,968	1,425	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132420	SLN 2025 Vault Lid Replacements	January 2025	2025	34,671	40,496	3,000	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132421	SLN 2026 Vault Lid Replacements	January 2026	2026	35,537	41,408	3,000	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132422	SLN 2027 Vault Lid Replacements	January 2027	2027	36,425	41,748	3,000	10%	No	N/A	$ -	0%	$ -
Stockton	132423	STK 2025 Vault Lid Replacements	January 2025	2025	69,341	81,300	6,000	10%	No	N/A	$ -	0%	$ -
Stockton	132424	STK 2026 Vault Lid Replacements	January 2026	2026	71,075	83,132	6,000	10%	No	N/A	$ -	0%	$ -
Stockton	132425	STK 2027 Vault Lid Replacements	January 2027	2027	72,850	83,813	6,000	10%	No	N/A	$ -	0%	$ -
Westlake	132429	WLK 2025 Vault Lid Replacements	January 2025	2025	32,937	38,385	2,850	10%	No	N/A	$ -	0%	$ -
Westlake	132430	WLK 2026 Vault Lid Replacements	January 2026	2026	33,761	39,250	2,850	10%	No	N/A	$ -	0%	$ -
Westlake	132431	WLK 2027 Vault Lid Replacements	January 2027	2027	34,604	39,572	2,850	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132441	ELA-ADDITIONAL FIRE HYD. MAINT TRUC	January 2025	2025	159,153	167,413	13,771	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
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East Los Angeles	132442	ELA - ADDITIONAL LEAK TRUCKS	January 2026	2026	526,138	553,445	45,526	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132443	KRV - VACUUM TRAILER	January 2025	2025	123,593	131,649	11,236	10%	No	N/A	$ -	0%	$ -
CSS	132445	CSS 2025 Midsize Pickup W/4WD	January 2024	2025	40,095	41,637	4,010	10%	No	N/A	$ -	0%	$ -
CSS	132446	CSS 2025 SUV	January 2025	2025	43,916	45,605	3,800	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132447	BG 2025 Physical Security Upgrades	January 2025	2025	143,717	167,535	12,436	10%	No	N/A	$ -	0%	$ -
CSS	132448	CSS 2025 Sedan	January 2025	2025	43,916	45,605	3,800	10%	No	N/A	$ -	0%	$ -
Livermore	132449	LIV - ADDITIONAL TRUCKS	January 2025	2025	157,148	165,569	13,938	10%	No	N/A	$ -	0%	$ -
Livermore	132455	LIV 2025 Physical Security Upgrades	January 2025	2025	331,634	389,166	28,696	10%	No	N/A	$ -	0%	$ -
Visalia	132456	VIS 2025 Chevrolet 1500 Pickup	January 2025	2025	68,166	71,568	6,197	10%	No	N/A	$ -	0%	$ -
Visalia	132458	VIS 2025 FORD F350	January 2025	2025	66,000	69,294	6,000	10%	No	N/A	$ -	0%	$ -
North Valley Region	132462	ORO - REPLACE TRACTOR	January 2025	2025	73,420	77,220	6,353	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132499	BAY 2025 - MCC Replacemen	January 2025	2027	2,083,329	2,382,990	322,367	20%	No	N/A	$ 210,239.16	15%	$ 232,064.69
Bear Gulch	132508	BG 2025 - MCC Replacements	January 2025	2027	2,361,928	2,701,781	365,476	20%	No	N/A	$ 238,354.01	15%	$ 263,098.23
North Valley Region	132513	CH 2025 - MCC Replacements	January 2025	2027	4,059,230	4,662,545	628,111	20%	No	N/A	$ 409,637.38	15%	$ 452,163.02
South Bay Region	132523	DOM 2027 - MCC Replacement	January 2027	2027	1,383,701	1,586,252	208,932	20%	No	N/A	$ 136,260.31	15%	$ 150,405.89
Kern River Valley	132529	KRV 2025 - MCC Replacements	January 2025	2027	2,198,188	2,559,056	366,365	20%	No	N/A	$ 238,933.52	15%	$ 263,737.90
Los Altos	132534	LAS 2025 - MCC Replacements	January 2025	2027	5,737,409	6,581,045	887,786	20%	No	N/A	$ 578,990.80	15%	$ 639,097.51
Livermore	132537	LIV MCC Replacements	January 2025	2027	1,577,200	1,816,140	244,050	20%	No	N/A	$ 159,163.18	15%	$ 175,686.37
Marysville	132539	MRL 2025 - MCC Replacement	January 2025	2027	862,210	986,461	133,415	20%	No	N/A	$ 87,010.00	15%	$ 96,042.76
Salinas Valley Region	132546	SLN 2025 - MCC Replacement	January 2025	2027	2,675,806	3,066,827	414,045	20%	No	N/A	$ 270,029.08	15%	$ 298,061.58
Stockton	132548	STK 2026 - MCC Replacements	January 2026	2027	2,394,767	2,755,170	366,059	20%	No	N/A	$ 238,733.87	15%	$ 263,517.52
Westlake	132553	WLK 2025 - MCC Replacement	January 2025	2027	2,242,944	2,564,959	347,065	20%	No	N/A	$ 226,346.74	15%	$ 249,844.45
Bakersfield	132561	BK 2026 - Genset Replacements	January 2026	2027	2,307,427	2,666,664	352,708	10%	No	N/A	$ 230,026.92	15%	$ 253,906.68
North Valley Region	132564	CH 2026 - Genset Replacement	January 2026	2027	1,413,512	1,623,600	218,764	10%	No	N/A	$ 142,672.50	15%	$ 157,483.74
South Bay Region	132565	DOM 2026 - Genset Replacement	January 2026	2027	1,438,676	1,649,275	219,913	10%	No	N/A	$ 143,421.38	15%	$ 158,310.37
Salinas Valley Region	132573	SLN 2026 - Genset Replacement	January 2026	2027	2,155,255	2,470,206	329,447	10%	No	N/A	$ 214,856.98	15%	$ 237,161.90
Westlake	132574	WLK 2026 - Genset Replacement	January 2026	2027	932,584	1,066,473	142,553	10%	No	N/A	$ 92,969.12	15%	$ 102,620.51
CSS	132575	2025 PC & Device Replacement	January 2025	2025	735,437	763,722	-	0%	No	N/A	$ -	0%	$ -
CSS	132576	2026 PC & Device Replacement	January 2026	2026	753,823	782,815	-	0%	No	N/A	$ -	0%	$ -
CSS	132577	2027 PC & Device Replacement	January 2027	2027	772,651	802,367	-	0%	No	N/A	$ -	0%	$ -
CSS	132578	IT Equipment for new headcounts	January 2025	2027	129,252	134,223	-	0%	No	N/A	$ -	0%	$ -
CSS	132579	Windows 11 Upgrade	January 2025	2025	210,125	218,206	-	0%	No	N/A	$ -	0%	$ -
CSS	132580	Replace Mitel Phone system	January 2025	2025	315,187	327,310	-	0%	No	N/A	$ -	0%	$ -
CSS	132582	Service desk upgrade	January 2026	2026	323,067	335,492	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	132585	Small portable generators	January 2025	2025	377,873	396,027	34,352	10%	No	N/A	$ -	0%	$ -
South Bay Region	132596	HR 2025 Sample Stations	January 2025	2025	14,273	16,771	1,235	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132599	KC 2025 Sample Stations	January 2025	2025	30,048	35,321	2,600	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132601	KC 2026 Sample Stations	January 2026	2026	30,799	36,117	2,600	10%	No	N/A	$ -	0%	$ -
Livermore	132609	LIV 2025 Sample Stations	January 2025	2025	90,144	105,782	7,800	10%	No	N/A	$ -	0%	$ -
Livermore	132610	LIV 2026 Sample Station	January 2026	2026	92,397	108,166	7,800	10%	No	N/A	$ -	0%	$ -
Livermore	132611	LIV 2027 Sample Stations	January 2027	2027	63,137	72,701	5,200	10%	No	N/A	$ -	0%	$ -
LA County Region	132612	PV 2025 Sample Stations	January 2025	2027	42,818	50,359	-	0%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132615	SLN 2025 Sample Stations	January 2025	2025	105,168	122,837	9,100	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132616	SLN 2026 Sample Stations	January 2026	2026	107,797	125,606	9,100	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132617	SLN 2027 Sample Stations	January 2027	2027	94,705	108,544	7,800	10%	No	N/A	$ -	0%	$ -
CSS	132626	Replace EOL MFP	February 2027	2027	377,250	391,759	-	0%	No	N/A	$ -	0%	$ -
CSS	132627	ZTA - Data Pillar	March 2025	2027	992,365	1,030,532	-	0%	No	N/A	$ -	0%	$ -
CSS	132628	ZTA - Identity Pillar	March 2027	2027	1,479,074	1,535,959	-	0%	No	N/A	$ -	0%	$ -
CSS	132630	ZTA - Network Pillar	February 2026	2026	2,541,462	2,639,206	-	0%	No	N/A	$ -	0%	$ -
CSS	132631	Workday Ongoing Enhancements	January 2025	2027	525,415	545,622	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	132660	BK 176 Pressure Tank Replacement	January 2026	2027	480,522	552,057	37,986	10%	No	N/A	$ 62,676.79	15%	$ 69,183.45
Salinas Valley Region	132661	SLN 061 Pressure Vessel Replacement	January 2026	2027	480,522	540,699	37,986	10%	No	N/A	$ 62,676.79	15%	$ 69,183.45

	[A]			[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Visalia	132662	VIS 052-PT1 - Pressure Vessel Rehab	January 2025	2025	45,179	52,831	4,107	10%	No	N/A	$ -	0%	$ -
Bakersfield	132663	BK 2025 Carbon Changeouts	January 2025	2025	551,686	648,188	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	132664	BK 2026 Carbon Changeouts	January 2026	2026	579,615	669,854	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	132665	BK 2027 Carbon Changeouts	January 2027	2027	594,091	686,583	-	0%	No	N/A	$ -	0%	$ -
CSS	132666	Audit and Compliance Management App	January 2025	2027	134,638	139,816	-	0%	No	N/A	$ -	0%	$ -
CSS	132667	ImageQuest Upgrade	January 2025	2027	33,626	34,920	-	0%	No	N/A	$ -	0%	$ -
CSS	132668	PowerPlan Upgrade	January 2025	2027	1,786,411	1,855,116	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	132669	CH 2025 Carbon Changeouts	January 2025	2025	376,985	441,283	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	132670	CH 2026 Carbon Changeouts	January 2026	2026	386,410	451,228	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	132671	CH 2027 Carbon Changeouts	January 2027	2027	396,061	454,926	-	0%	No	N/A	$ -	0%	$ -
CSS	132673	Upgrade/ Redesign CalWater.com 2026	January 2026	2026	107,689	111,831	-	0%	No	N/A	$ -	0%	$ -
Visalia	132675	VIS 2025 Carbon Changeouts	January 2025	2025	758,663	887,164	65,647	10%	No	N/A	$ -	0%	$ -
Visalia	132676	VIS 2026 Carbon Changeouts	January 2026	2026	777,629	907,157	65,646	10%	No	N/A	$ -	0%	$ -
Visalia	132677	VIS 2027 Carbon Changeouts	January 2027	2027	797,051	914,592	65,646	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132678	RDV 2025 Carbon Changeout	January 2025	2027	78,051	89,267	7,096	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132679	RDV 2027 Carbon Changeouts	June 2025	2026	78,051	90,557	7,096	10%	No	N/A	$ -	0%	$ -
North Valley Region	132683	ORO-010 Carbon Changeout	January 2025	2025	126,444	148,122	10,941	10%	No	N/A	$ -	0%	$ -
North Valley Region	132684	ORO-010 Carbon Changeout	January 2027	2027	132,842	152,702	10,941	10%	No	N/A	$ -	0%	$ -
Marysville	132685	MRL 010 Carbon Changeout	January 2026	2026	129,605	150,750	10,941	10%	No	N/A	$ -	0%	$ -
Marysville	132686	MRL 015 Carbon Changeout	January 2025	2025	126,444	147,427	10,941	10%	No	N/A	$ -	0%	$ -
Marysville	132687	MRL 015 Carbon Changeout	January 2026	2026	129,605	150,750	10,941	10%	No	N/A	$ -	0%	$ -
Marysville	132688	MRL 015 Carbon Changeout	January 2027	2027	132,842	151,985	10,941	10%	No	N/A	$ -	0%	$ -
Bakersfield	132697	BK 219 GAC Vessel Replacement	January 2026	2027	92,496	106,897	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	132698	KRV-LBOD 013 Vessel Replacement	January 2026	2026	569,021	641,360	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	132699	KRV-KERV 001 Carbon Changeout	January 2025	2025	126,444	150,012	10,941	10%	No	N/A	$ -	0%	$ -
Livermore	132700	LIV-010 Carbon Changeout	January 2027	2027	132,842	152,967	10,941	10%	No	N/A	$ -	0%	$ -
Livermore	132701	LIV-014 Carbon Changeout	January 2026	2026	129,605	151,723	10,941	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132707	BG 2026 Physical Security Upgrades	January 2026	2026	189,776	220,695	16,021	10%	No	N/A	$ -	0%	$ -
Willows	132714	WIL 004 Station Rebuild	January 2025	2026	37,204	42,139	3,196	10%	No	N/A	$ -	0%	$ -
Bear Gulch	132728	BG 2027 Physical Security Upgrades	January 2027	2027	246,363	281,811	20,291	10%	No	N/A	$ -	0%	$ -
North Valley Region	132731	CH 2025 Physical Security Upgrades	January 2025	2025	86,619	101,392	7,495	10%	No	N/A	$ -	0%	$ -
North Valley Region	132732	CH 2026 Physical Security Upgrades	January 2026	2026	265,856	310,452	22,443	10%	No	N/A	$ -	0%	$ -
North Valley Region	132735	CH 2027 Physical Security Upgrades	January 2027	2027	673,829	773,979	55,497	10%	No	N/A	$ -	0%	$ -
Dixon	132736	DIX 2025 Physical Security Upgrades	January 2025	2025	86,072	101,735	7,448	10%	No	N/A	$ -	0%	$ -
Dixon	132737	DIX 2026 Physical Security Upgrades	January 2026	2026	131,356	155,260	11,089	10%	No	N/A	$ -	0%	$ -
Dixon	132738	2027 DIX Physical Security Upgrades	January 2027	2027	44,774	52,055	3,688	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132739	ELA 2025 Physical Security Upgrades	January 2025	2025	275,844	323,178	23,868	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132740	ELA 2026 Physical Security Upgrades	January 2026	2026	246,065	282,888	20,772	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132741	ELA 2027 Physical Security Upgrades	January 2027	2027	364,500	419,046	30,021	10%	No	N/A	$ -	0%	$ -
Visalia	132742	VIS-060 Pressure Tank Replacement	January 2026	2027	480,522	544,840	37,986	10%	No	N/A	$ 62,676.79	15%	$ 69,183.45
Visalia	132743	VIS-069 Pressure Tank replacement	January 2026	2027	480,522	544,840	37,986	10%	No	N/A	$ 62,676.79	15%	$ 69,183.45
Visalia	132746	VIS 2025 Flowmeter Replacements	January 2027	2027	503,844	575,401	45,804	10%	No	N/A	$ -	0%	$ -
South Bay Region	132749	DOM 2025 Blowoff Replacements	January 2025	2025	159,942	186,856	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	132750	DOM 2026 Blowoff Replacements	January 2026	2026	159,942	186,407	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	132751	DOM 2027 Blowoff Replacements	January 2027	2027	167,140	191,606	15,194	10%	No	N/A	$ -	0%	$ -
South Bay Region	132752	DOM WB-10 Electrical Upgrade	January 2025	2027	474,748	535,492	43,159	10%	No	N/A	$ -	0%	$ -
South Bay Region	132753	DOM WB-21 SCADA Upgrade	January 2025	2026	421,497	491,239	38,318	10%	No	N/A	$ -	0%	$ -
North Valley Region	132754	ORO 015 WTP SCADA Upgrades	January 2025	2025	17,605	20,623	-	0%	No	N/A	$ -	0%	$ -
Los Altos	132757	LAS LA Hills Stations SCADA upgrade	January 2025	2025	919,192	1,074,480	9,108	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132760	RDV 2025 NOH Full SCADA System	January 2025	2025	44,924	53,306	4,084	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132761	KC 2025 Physical Security Upgrades	January 2025	2025	158,504	186,320	13,715	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132764	KC 2026 Physical Security Upgrades	January 2026	2026	101,550	119,084	8,573	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Salinas Valley Region	132768	KC 2027 Physical Security Upgrades	January 2027	2027	49,266	56,827	4,058	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132769	KRV LBOD 013 Upgrade PLC	January 2025	2025	39,738	47,145	3,613	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132770	KRV 2025 Physical Security Update	January 2025	2025	148,800	176,535	12,875	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132771	KRV 2026 Physical Security Upgrades	January 2026	2026	405,734	480,204	34,251	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132774	KRV UBOD 104 Instrument Replacement	January 2025	2025	27,500	32,626	2,500	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132775	KRV LBOD 013 Instrument Replacement	January 2025	2025	55,000	65,252	5,000	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132776	KRV 2027 Physical Security Upgrades	January 2027	2027	376,140	437,889	30,979	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132779	BAY SC 107 Pump House Building	January 2025	2025	164,720	190,738	14,226	10%	No	N/A	$ 16,240.70	15%	$ 17,062.89
Visalia	132781	VIS Water Quality Equipment	January 2025	2025	88,224	103,167	-	0%	No	N/A	$ -	0%	$ -
Los Altos	132782	LAS 2025 Physical Security Upgrades	January 2025	2025	376,997	440,687	32,621	10%	No	N/A	$ -	0%	$ -
Los Altos	132784	LAS 2026 Physical Security Upgrades	January 2026	2026	267,392	311,814	22,573	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132786	LUC 2027 Full SCADA system	January 2027	2027	28,990	33,660	2,635	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132787	COS 2026 Full SCADA system	January 2026	2026	28,990	27,895	2,635	10%	No	N/A	$ -	0%	$ -
CSS	132788	2025 Network Hardware Replacement	January 2025	2025	320,843	333,183	-	0%	No	N/A	$ -	0%	$ -
CSS	132789	2025 SCADA Server & Network Repl.	January 2025	2025	335,118	348,006	-	0%	No	N/A	$ -	0%	$ -
CSS	132790	2025 SAN Storage Upgrade	January 2025	2025	367,719	381,861	-	0%	No	N/A	$ -	0%	$ -
CSS	132791	2025 UPS Replacement	January 2025	2025	160,000	166,154	-	0%	No	N/A	$ -	0%	$ -
CSS	132800	GIS Modernization	January 2025	2027	807,826	838,895	-	0%	No	N/A	$ -	0%	$ -
CSS	132801	EAM Decision support	January 2025	2027	807,826	838,895	-	0%	No	N/A	$ -	0%	$ -
CSS	132802	LIMS Upgrade	January 2025	2027	430,840	447,410	-	0%	No	N/A	$ -	0%	$ -
CSS	132804	Integrate HIS with LIMS	January 2025	2027	269,275	279,631	-	0%	No	N/A	$ -	0%	$ -
CSS	132809	Virtal Reality Safety / Ops Modules	January 2025	2025	231,138	240,027	20,000	10%	No	N/A	$ -	0%	$ -
Livermore	132814	LIV 2026 Physical Security Upgrade	January 2026	2026	128,108	149,971	10,815	10%	No	N/A	$ -	0%	$ -
CSS	132815	Digital Twin Ops Optimization	January 2025	2026	1,137,370	1,181,113	97,200	10%	No	N/A	$ -	0%	$ -
North Valley Region	132816	ORO 2026 Physical Security Upgrades	January 2026	2026	156,913	183,374	13,246	10%	No	N/A	$ -	0%	$ -
LA County Region	132817	PV 2026 Physical Security Upgrades	January 2026	2025	462,391	533,640	39,034	10%	No	N/A	$ -	0%	$ -
LA County Region	132818	PV 2027 Physical Security Upgrades	January 2027	2026	503,462	581,040	41,466	10%	No	N/A	$ -	0%	$ -
Selma	132819	SEL 2025 Physcial Security Upgrades	January 2025	2025	100,228	116,630	8,673	10%	No	N/A	$ -	0%	$ -
Selma	132820	SEL 2026 Physical Security Upgrades	January 2026	2026	94,803	108,512	8,003	10%	No	N/A	$ -	0%	$ -
Stockton	132821	STK 2026 Physical Security Upgrades	January 2026	2026	568,933	665,449	48,028	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	132822	SLN 2026 Physical Security Upgrades	January 2026	2026	709,486	826,698	59,893	10%	No	N/A	$ -	0%	$ -
LA County Region	132823	AV 2026 Physical Security Upgrades	January 2026	2026	123,087	135,105	10,391	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132824	SSF 2025 Physical Security Upgrades	January 2025	2025	439,017	511,751	37,987	10%	No	N/A	$ -	0%	$ -
South Bay Region	132829	HR 2025 Physical Security Upgrades	January 2025	2025	351,896	413,492	30,449	10%	No	N/A	$ -	0%	$ -
South Bay Region	132830	HR 2026 Physical Security Upgrades	January 2026	2026	78,298	91,782	3,131	10%	No	N/A	$ -	0%	$ -
South Bay Region	132831	HR 2027 Physical Security Upgrades	January 2027	2027	149,461	172,333	12,310	10%	No	N/A	$ -	0%	$ -
Bakersfield	132838	BK 2027 Instrumentation Replc.	January 2027	2027	21,126	24,416	1,740	10%	No	N/A	$ -	0%	$ -
South Bay Region	132840	DOM 2026 Instrumentation Replc.	January 2026	2026	5,222	6,086	441	10%	No	N/A	$ -	0%	$ -
South Bay Region	132841	DOM 2027 Instrumentation Replc.	January 2027	2027	24,425	28,000	1,836	10%	No	N/A	$ -	0%	$ -
North Valley Region	132842	CH 2025 Instrumentation Replc.	January 2025	2025	49,602	58,062	4,292	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132843	ELA 2025 Instrumentation Replc.	January 2025	2025	7,641	8,953	661	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132844	ELA 2026 Instrumentation Replc.	January 2026	2026	7,833	9,154	661	10%	No	N/A	$ -	0%	$ -
East Los Angeles	132845	ELA 2027 Instrumentation Replc.	January 2027	2027	6,690	7,691	551	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132847	KRV 2026 Instrumentation Replc.	January 2026	2026	47,956	56,759	4,048	10%	No	N/A	$ -	0%	$ -
Kern River Valley	132848	KRV 2027 Instrumentation Replc.	January 2027	2027	33,511	39,012	2,760	10%	No	N/A	$ -	0%	$ -
Marysville	132849	MRL 2025 Instrumentation Replc.	January 2025	2025	11,906	13,882	1,030	10%	No	N/A	$ -	0%	$ -
North Valley Region	132850	ORO 2026 Instrumentation Replc.	January 2026	2026	4,015	4,692	339	10%	No	N/A	$ -	0%	$ -
Livermore	132851	LIV 2026 Instrumentation Replc.	January 2026	2026	28,282	33,108	2,388	10%	No	N/A	$ -	0%	$ -
Willows	132852	WIL 2025 Instrumentation Replc.	January 2025	2025	15,026	17,728	1,300	10%	No	N/A	$ -	0%	$ -
Stockton	132853	STK 2025 Instrumentation Replc.	January 2025	2025	26,181	30,696	2,265	10%	No	N/A	$ -	0%	$ -
South Bay Region	132857	HR 2025 Instrumentation Replc.	January 2025	2025	7,641	8,979	661	10%	No	N/A	$ -	0%	$ -
South Bay Region	132858	HR 2026 Instrumentation Replc.	January 2026	2026	6,527	7,651	551	10%	No	N/A	$ -	0%	$ -

	[A]			[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
South Bay Region	132874	DOM 2025 Physical Security Upgrades	January 2025	2025	520,227	607,765	45,014	10%	No	N/A	$ -	0%	$ -
South Bay Region	132875	DOM 2026 Physical Security Upgrades	January 2026	2026	470,892	548,807	39,752	10%	No	N/A	$ -	0%	$ -
South Bay Region	132880	DOM 2027 Physical Security Upgrades	January 2027	2027	538,268	617,062	44,332	10%	No	N/A	$ -	0%	$ -
Westlake	132881	WLK 2025 Physical Security Upgrades	January 2025	2025	75,188	87,414	7,973	10%	No	N/A	$ -	0%	$ -
Westlake	132882	WLK 2026 Physical Security Upgrades	January 2026	2026	81,947	95,271	6,918	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132885	MPS 2025 Physical Security Upgrades	January 2025	2025	470,035	547,908	40,671	10%	No	N/A	$ -	0%	$ -
CSS	132890	PowerPlan Tax Module Upgrade	January 2025	2027	323,130	335,558	-	0%	No	N/A	$ -	0%	$ -
CSS	132895	Office Supplies - IT Field Techn	December 2023	2024	9,668	10,040	-	0%			$ -	0%	$ -
Los Altos	132912	LAS STA 042 Rebuild	January 2025	2027	2,192,265	2,514,619	199,297	10%	No	N/A	$ -	0%	$ -
Livermore	132913	LIV New Main Tesla Road	January 2026	2027	1,342,515	1,545,901	111,935	10%	No	N/A	$ 133,138.24	15%	$ 146,959.71
North Valley Region	132914	ORO South Feather Interconnect	January 2025	2026	118,916	137,570	13,513	10%	No	N/A	$ -	0%	$ -
CSS	132924	Workstations (4) for future staff	July 2025	2025	38,099	39,564	-	0%	No	N/A	$ -	0%	$ -
CSS	132925	Workstations (4) for future staff	July 2025	2025	40,028	41,567	-	0%	No	N/A	$ -	0%	$ -
CSS	132926	Office Furnishing for Manager	July 2025	2025	11,550	11,994	-	0%	No	N/A	$ -	0%	$ -
CSS	132927	Office Furnishings for Manager	July 2025	2025	12,135	12,601	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	132928	MPS 2026 Physical Security Upgrades	January 2026	2026	388,928	452,275	32,833	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132933	MPS 2027 Physical Security Upgrades	January 2027	2027	284,050	324,907	23,395	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132935	SSF 2026 Physical Security Upgrades	January 2026	2026	488,577	568,155	41,245	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132937	SSF 2027 Physical Security Upgrades	January 2027	2027	422,125	482,843	34,767	10%	No	N/A	$ -	0%	$ -
Visalia	132949	VIS 2025 Physical Security Upgrades	January 2025	2025	282,041	329,812	24,405	10%	No	N/A	$ -	0%	$ -
Visalia	132950	VIS 2026 Physical Security Upgrades	January 2026	2026	411,373	479,895	34,727	10%	No	N/A	$ -	0%	$ -
Visalia	132951	VIS 2027 Physical Security Upgrades	January 2027	2027	442,015	507,199	36,405	10%	No	N/A	$ -	0%	$ -
Westlake	132952	WLK 2027 Physical Security Upgrades	January 2027	2027	75,640	86,499	6,230	10%	No	N/A	$ -	0%	$ -
Livermore	132954	LIV 34 - VFD INSTALLATION	December 2023	2024	87,202	104,564	-	0%			$ -	0%	$ -
CSS	132957	2025 UWMP Development	July 2025	2026	968,501	1,110,880	-	0%	No	N/A	$ -	0%	$ -
CSS	132962	Demand Model Update	January 2025	2025	125,762	145,460	-	0%	No	N/A	$ -	0%	$ -
CSS	132963	CSS Climate Change Study - 2025	January 2025	2027	445,252	505,342	-	0%	No	N/A	$ -	0%	$ -
LA County Region	132967	LHUG 001 Portable Generator	January 2026	2027	29,167	32,224	6,683	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132968	BAY New Main Delores Parkside	January 2026	2026	299,461	348,235	-	0%	No	N/A	$ -	0%	$ -
East Los Angeles	132970	ELA 004-T1 Altitude Valve	January 2027	2027	142,195	163,474	11,711	10%	No	N/A	$ 14,571.77	15%	$ 16,084.51
Los Altos	132972	LAS Transmission Valve	January 2025	2026	688,751	799,410	58,927	10%	No	N/A	$ 67,132.10	15%	$ 72,293.93
LA County Region	132973	LEO-001 Generator	January 2025	2027	801,462	886,586	67,982	10%	No	N/A	$ 84,585.37	15%	$ 93,366.42
LA County Region	132974	LAN 001-T2 Cathodic Protection	January 2026	2026	16,599	18,523	-	0%	No	N/A	$ -	0%	$ -
LA County Region	132976	LAN 001 CrVI Treatment	January 2025	2027	680,503	753,752	61,864	10%	No	N/A	$ -	0%	$ -
LA County Region	132977	FMT 001 Station Rebuild	January 2025	2027	1,027,990	1,128,364	86,764	10%	No	N/A	$ 107,955.35	15%	$ 119,162.51
LA County Region	132978	LHUG 001 Flood Protection	January 2025	2025	143,965	161,039	-	0%	No	N/A	$ -	0%	$ -
LA County Region	132979	LHUG 002 Greensand Media	January 2025	2025	22,910	25,627	-	0%	No	N/A	$ -	0%	$ -
LA County Region	132980	LHUG 003-T1 Cathodic Protection	January 2025	2025	13,273	14,847	-	0%	No	N/A	$ -	0%	$ -
LA County Region	132982	AV 2026 Tank Improvements	January 2026	2026	6,621	7,389	2,508	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132983	SSF 008-T1 Preliminary Design	January 2025	2026	830,667	949,604	71,430	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132984	SM 027 Paving	January 2025	2026	1,024,173	1,171,487	87,526	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132985	SC 117 Station Rebuild Constr	January 2026	2027	992,658	1,118,615	141,908	10%	No	N/A	$ 112,032.38	10%	$ 123,662.79
Bay Area Region	132988	SSF 001 Cr-As Treatment Pilot Study	January 2025	2025	72,493	84,300	6,273	10%	No	N/A	$ -	0%	$ -
Bay Area Region	132989	SC 112 T2-T3 Residual Control	January 2025	2027	1,205,420	1,349,618	102,718	10%	No	N/A	$ 117,020.83	15%	$ 129,169.10
Bay Area Region	132991	SC 109 New Generator and ATS	January 2025	2027	567,488	642,243	48,089	10%	No	N/A	$ 54,785.00	15%	$ 60,472.39
Bay Area Region	132992	BAY 2025 Grid Strengthening	January 2025	2026	545,775	634,668	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	132993	SC Wildfire Mititgation 585 Zone	January 2026	2027	1,351,392	1,542,500	112,735	10%	No	N/A	$ 128,432.66	15%	$ 141,765.63
Bay Area Region	132994	BAY 2025 Replace Isolation Valves	January 2025	2025	139,972	163,162	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	132995	BAY 2026 Replace Isolation Valves	January 2026	2026	139,972	162,770	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	132996	BAY 2027 Replace Isolation Valves	January 2027	2027	139,972	160,105	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	132997	MPS Replace Transmission Valves	January 2025	2026	2,128,901	2,424,807	193,536	10%	No	N/A	$ 152,791.93	15%	$ 164,540.20
Bay Area Region	132998	SM 017 Station Rebuild Construction	January 2026	2027	1,003,081	1,135,218	229,841	10%	No	N/A	$ -	0%	$ -

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Bay Area Region	132999	MPS 2025 Tank Improvements	January 2025	2025	1,585,920	1,844,227	144,175	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133000	SSF 2025 Tank Improvements	January 2025	2025	613,682	713,635	53,101	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133001	MPS 2026 Tank Improvements	January 2026	2026	1,021,270	1,187,609	92,843	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133002	SSF 2026 Tank Improvements	January 2026	2026	663,877	772,006	56,043	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133003	SSF 2027 Tank Improvements	January 2027	2027	284,400	325,307	23,423	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133004	MPS 2027 Tank Improvements	January 2027	2027	948,073	1,084,441	86,188	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133005	BG 022 New Generator	January 2025	2027	228,040	258,640	21,846	10%	No	N/A	$ 23,617.48	15%	$ 26,069.28
Bear Gulch	133006	BG 043 New Generator	June 2025	2027	503,664	576,136	42,342	10%	No	N/A	$ 48,238.01	15%	$ 53,245.74
Bear Gulch	133008	BG 005 Variable Frequency Drive	January 2026	2027	196,173	220,117	17,834	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133009	BG Skylonda to Skyline Main Conn	June 2025	2027	1,158,428	1,319,492	97,527	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133011	Bay Area Water Transfer (BG)	January 2026	2026	270,565	314,647	22,841	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133012	BG 036 New 125K Gal Tank	June 2025	2027	1,058,510	1,203,115	89,185	10%	No	N/A	$ 101,603.53	15%	$ 112,151.29
Bear Gulch	133013	BG Brackish Aquifer Conductivity	January 2025	2025	571,553	664,674	49,456	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133014	BG KM Tanks Farm Station Rebuild	June 2025	2027	273,850	309,933	27,772	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133016	BG 053 Tank Design & Permitting	June 2025	2027	296,037	335,043	26,912	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133017	BG Watershed Restor/Fire Protection	January 2025	2025	182,038	212,206	15,751	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133018	BG 016-T2 Mixing and Dosing	January 2025	2027	1,177,813	1,318,719	100,366	10%	No	N/A	$ 114,340.81	15%	$ 126,210.86
Bear Gulch	133019	BG 017-T1 Mixing and Dosing	January 2025	2027	1,177,813	1,318,719	100,366	10%	No	N/A	$ 114,340.81	15%	$ 126,210.86
Bear Gulch	133022	BG 002 New Ops Building Design	January 2025	2027	1,204,500	1,377,813	109,500	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133023	BG 002 Staff Housing	January 2025	2026	155,100	180,370	14,100	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133024	BG 002 Cathodic Protection	January 2026	2026	12,212	14,202	-	0%	No	N/A	$ -	0%	$ -
Bear Gulch	133025	BG 021 Cathodic Protection	January 2026	2026	23,322	27,121	2,120	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133026	BG 2025 Tank Improvements	January 2025	2025	1,104,721	1,284,709	95,590	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133028	BG 2027 Tank Improvements	January 2027	2027	305,921	349,940	25,196	10%	No	N/A	$ -	0%	$ -
North Valley Region	133029	CH 050 Partial Station Rebuild	January 2025	2026	682,011	782,726	58,583	10%	No	N/A	$ -	0%	$ -
North Valley Region	133030	CH 080 Automatic Discharge Valve	January 2025	2026	298,800	342,925	25,666	10%	No	N/A	$ 30,527.86	15%	$ 32,875.17
North Valley Region	133031	CH 064 New Generator	January 2025	2027	456,045	516,108	38,683	10%	No	N/A	$ 46,010.15	15%	$ 50,786.60
North Valley Region	133032	CH Portable Booster Pumps	January 2025	2025	324,798	380,195	28,104	10%	No	N/A	$ -	0%	$ -
North Valley Region	133033	CH PBC South of Canyon Oaks CC	January 2025	2025	67,612	78,755	5,850	10%	No	N/A	$ -	0%	$ -
North Valley Region	133034	CH 044 Wildfire Pump Storage	January 2026	2027	2,753,487	3,147,199	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	133035	CH 066-T2 Cathodic Protection	January 2025	2025	18,733	21,928	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	133036	CH 074-T1 Cathodic Protection	January 2025	2025	19,221	22,499	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	133037	CH 2025 Tank Improvements	January 2025	2025	818,955	958,634	70,863	10%	No	N/A	$ -	0%	$ -
Dixon	133040	DIX 004 Install VFD	January 2026	2027	297,629	336,538	137,242	10%	No	N/A	$ -	0%	$ -
South Bay Region	133047	DOM 232 Nitrification Improvements	January 2025	2026	915,411	1,061,976	83,219	10%	No	N/A	$ -	0%	$ -
South Bay Region	133049	DOM 2025 Hydrant Iso-Valve Install	January 2025	2025	669,599	782,272	60,873	10%	No	N/A	$ -	0%	$ -
South Bay Region	133050	DOM 2026 Hydrant Iso-Valve Installs	January 2026	2026	175,670	204,737	14,830	10%	No	N/A	$ -	0%	$ -
South Bay Region	133051	DOM 2027 Hydrant-Iso Valve Installs	January 2027	2027	1,034,714	1,186,178	85,220	10%	No	N/A	$ -	0%	$ -
South Bay Region	133052	DOM 277 Effluent Booster VFD	January 2026	2027	150,416	169,661	13,674	10%	No	N/A	$ -	0%	$ -
South Bay Region	133053	DOM 203 Station Rebuild	January 2026	2027	2,739,388	3,140,389	260,242	10%	No	N/A	$ -	0%	$ -
South Bay Region	133055	DOM 203-T3 Cathodic Protection	January 2026	2026	39,171	45,652	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133056	DOM 215-T1 Cathodic Protection	January 2025	2025	15,716	18,360	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133057	DOM 277-T1 Cathodic Protection	January 2025	2025	15,376	17,963	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133058	DOM 279-T1 Cathodic Protection	January 2026	2026	14,086	16,416	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133059	DOM 279-T2 Cathodic Protection	January 2026	2026	14,086	16,416	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133060	DOM 297-T1 Cathodic Protection	January 2026	2026	14,086	16,416	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133061	DOM 298-T1 Cathodic Protection	January 2025	2025	14,901	17,408	-	0%	No	N/A	$ -	0%	$ -
East Los Angeles	133062	ELA 010 Altitude Replacement	January 2026	2027	25,781	28,965	10,882	10%	No	N/A	$ 13,540.04	15%	$ 14,945.67
East Los Angeles	133063	ELA 042 Altitude Valve Replacement	January 2026	2027	131,814	148,093	11,072	10%	No	N/A	$ 13,776.48	15%	$ 15,206.66
East Los Angeles	133064	ELA 058 Altitude Valve Replacement	January 2026	2027	36,349	40,943	12,274	10%	No	N/A	$ 15,271.62	15%	$ 16,857.01
East Los Angeles	133065	ELA 060 Altitude Valve Replacement	January 2026	2027	144,548	162,819	12,127	10%	No	N/A	$ 15,088.57	15%	$ 16,654.96
East Los Angeles	133067	ELA Small Portable Generators	January 2025	2025	2,709	3,174	-	0%	No	N/A	$ -	0%	$ -

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East Los Angeles	133068	ELA 042 Mixing and Dosing	January 2026	2027	1,137,561	1,294,572	95,081	10%	No	N/A	$ 118,303.31	15%	$ 130,584.72
East Los Angeles	133069	ELA 058 Nitrification Treatment	January 2025	2026	1,063,321	1,210,085	91,097	10%	No	N/A	$ 113,346.06	15%	$ 122,061.31
East Los Angeles	133070	ELA 023-T1 Cathodic Protection	January 2025	2025	9,453	11,075	-	0%	No	N/A	$ -	0%	$ -
East Los Angeles	133071	ELA 040-T3 Cathodic Protection	January 2025	2025	16,715	19,583	-	0%	No	N/A	$ -	0%	$ -
East Los Angeles	133072	ELA 2025 Tank Improvements	January 2025	2025	34,544	40,472	2,989	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133073	ELA 2026 Tank Improvements	January 2026	2026	178,262	208,349	15,049	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133074	ELA 2027 Tank Improvements	January 2027	2027	1,162,385	1,336,332	187,522	10%	No	N/A	$ -	0%	$ -
South Bay Region	133075	HR 005-T1 Cathodic Protection	January 2027	2027	41,396	47,730	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133076	HR 009-T3 Cathodic Protection	January 2027	2027	16,842	19,420	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133077	HR 026-T2 Cathodic Protection	January 2027	2027	16,037	18,491	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133079	HR 026-T3 Cathodic Protection	January 2025	2025	15,153	17,805	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133080	HR 008 Roof Replacement	January 2025	2026	44,139	51,741	3,772	10%	No	N/A	$ -	0%	$ -
South Bay Region	133082	HR 026 Station Rebuild Constr	January 2026	2027	1,832,710	2,113,165	166,610	10%	No	N/A	$ -	0%	$ -
South Bay Region	133083	HR 005 Station Rebuild Constr	January 2026	2027	563,816	635,720	-	0%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133086	KC 2025 Fire Hydrant Replacements	January 2025	2025	51,923	61,035	-	0%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133087	KC 2026 Fire Hydrant Replacements	January 2026	2026	51,923	60,889	4,720	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133088	KC 2027 Fire Hydrant Replacements	January 2027	2027	47,203	54,447	-	0%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133089	KC 2026 Tank Improvements	January 2026	2026	250,888	294,207	40,913	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133090	KC 2027 Tank Improvements	January 2027	2027	24,931	28,758	4,066	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133091	KC Office Generator	June 2025	2027	572,745	658,796	48,183	10%	No	N/A	$ 57,310.20	15%	$ 63,259.74
Salinas Valley Region	133092	KC 012 New Generator	January 2025	2027	671,323	761,364	56,943	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133093	KC Grid Stregthening	January 2026	2027	1,861,036	2,146,644	-	0%	No	N/A	$ -	0%	$ -
Los Altos	133103	LAS 2025 Tank Improvements	January 2025	2025	1,620,985	1,894,835	140,262	10%	No	N/A	$ -	0%	$ -
Livermore	133106	LIV 2025 Tank Improvements	January 2025	2025	49,224	57,764	4,259	10%	No	N/A	$ -	0%	$ -
Livermore	133107	LIV 2026 Tank Improvements	January 2026	2026	1,319,796	1,545,035	217,484	10%	No	N/A	$ -	0%	$ -
Livermore	133108	LIV 029-T2 Cathodic Protection	January 2026	2026	27,833	32,583	-	0%	No	N/A	$ -	0%	$ -
Livermore	133109	LIV Auto Flusher	January 2026	2026	73,098	85,573	6,171	10%	No	N/A	$ -	0%	$ -
Livermore	133110	LIV Pump House Roof Replacements	January 2026	2026	348,900	408,444	29,454	10%	No	N/A	$ -	0%	$ -
Livermore	133111	LIV 022-T1 Chloramination System	January 2025	2027	1,138,116	1,275,715	96,983	10%	No	N/A	$ 115,354.25	15%	$ 127,329.51
Livermore	133113	LIV 025-T2 Chloramination	January 2025	2027	1,176,252	1,318,462	100,233	10%	No	N/A	$ 119,219.61	15%	$ 131,596.14
Livermore	133115	LIV 029 Chloramination System	January 2025	2027	1,128,117	1,264,507	96,131	10%	No	N/A	$ 114,340.81	15%	$ 126,210.86
Marysville	133118	MRL Well Siting Study	January 2025	2025	203,715	236,951	17,627	10%	No	N/A	$ -	0%	$ -
Marysville	133119	MRL Well Land Acquistion	January 2026	2027	614,396	699,932	51,284	10%	No	N/A	$ -	0%	$ -
North Valley Region	133120	ORO 016-T1 Cathodic Protection	January 2026	2026	32,363	37,821	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	133121	ORO Riverview Terrace Dr New PRV	January 2025	2026	358,043	414,208	30,674	10%	No	N/A	$ 36,484.74	15%	$ 39,290.07
North Valley Region	133122	ORO 011 Station Rebuild	January 2025	2027	957,740	1,095,380	80,953	10%	No	N/A	$ -	0%	$ -
North Valley Region	133123	ORO 015 Clarification Improvements	January 2025	2027	1,195,610	1,360,516	99,933	10%	No	N/A	$ -	0%	$ -
North Valley Region	133124	ORO 015 Chlorine System	January 2025	2027	603,798	683,584	51,215	10%	No	N/A	$ -	0%	$ -
North Valley Region	133125	ORO 015 Sed Basin Improv Design	June 2025	2027	404,692	462,852	34,071	10%	No	N/A	$ -	0%	$ -
LA County Region	133126	PV 004 Portable Generator Conn	January 2026	2027	123,033	141,990	20,772	10%	No	N/A	$ -	0%	$ -
LA County Region	133127	PV 015 Station Rebuild Constr	January 2026	2025	4,943,493	5,672,842	449,408	10%	No	N/A	$ -	0%	$ -
Westlake	133132	WLK Portable Booster Pump	January 2026	2026	381,313	443,314	-	0%	No	N/A	$ -	0%	$ -
Westlake	133133	WLK 007 Driveway & Wall Constr	January 2025	2027	539,556	617,019	49,051	10%	No	N/A	$ -	0%	$ -
Westlake	133134	WLK 008 Access Road Replacement	June 2025	2026	773,782	875,592	70,344	10%	No	N/A	$ -	0%	$ -
Westlake	133135	WLK 009 Access Road Replacement	January 2026	2027	600,832	671,238	54,621	10%	No	N/A	$ -	0%	$ -
Westlake	133136	WLK WSFMP Update	January 2025	2025	191,969	223,183	16,611	10%	No	N/A	$ -	0%	$ -
Willows	133137	WIL 2025 Tank Improvements	January 2025	2025	316,221	373,074	27,362	10%	No	N/A	$ -	0%	$ -
Visalia	133139	VIS 012-T2 Cathodic Protection	January 2025	2025	16,462	19,250	-	0%	No	N/A	$ -	0%	$ -
Visalia	133146	VIS Well Siting Study	January 2025	2025	165,350	192,438	14,307	10%	No	N/A	$ -	0%	$ -
Visalia	133147	VIS Recharge Feasibility Study	January 2025	2025	186,282	217,834	16,119	10%	No	N/A	$ -	0%	$ -
Visalia	133149	VIS Property Purchase	January 2025	2026	865,686	976,842	74,360	10%	No	N/A	$ -	0%	$ -
Visalia	133152	VIS 048 New Generator	June 2025	2027	995,164	1,141,921	90,469	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Visalia	133153	VIS 080 New Generator	March 2025	2026	759,794	865,632	69,072	10%	No	N/A	$ -	0%	$ -
Visalia	133156	VIS New Tank & Booster Sta Property	January 2025	2027	971,728	1,109,735	82,135	10%	No	N/A	$ -	0%	$ -
Bakersfield	133158	BK NEWTP Benchtop Turbidmeter	January 2025	2025	5,750	6,772	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133160	BK NEWTP pH Probes and Controllers	January 2025	2025	29,844	35,149	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133161	BK NWWTP Benchtop Turbidimeter	January 2025	2025	7,000	8,244	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133163	BK NWWTP pH Probes and Controllers	January 2025	2025	11,000	12,955	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133164	BK 2025 Service Line Replacements	January 2025	2025	6,988,593	8,230,825	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133165	BK 2026 Service Line Replacements	January 2026	2026	7,119,322	8,364,649	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133166	BK 2027 Service Line Replacements	January 2027	2027	7,266,066	8,397,301	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133168	BK 087-T8 Cathodic Protection	January 2026	2026	19,045	22,377	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133169	BK 100-T1 Cathodic Protection	January 2026	2026	14,848	17,446	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133170	BK 116-T4 Cathodic Protection	January 2026	2026	18,668	21,934	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133171	BK 188-T1 Cathodic Protection	January 2026	2026	14,776	17,361	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133172	BK 213-T2 Cathodic Protection	January 2026	2026	14,612	17,168	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133173	BK 216-T1 Cathodic Protection	January 2026	2026	36,920	43,379	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133175	BK 2026 Chemical Tank Replacements	January 2026	2026	34,157	40,132	2,884	10%	No	N/A	$ -	0%	$ -
Bakersfield	133176	BK 2027 Chemical Tank Replacements	January 2027	2027	35,010	40,461	2,884	10%	No	N/A	$ -	0%	$ -
Bakersfield	133181	BK Low Zone - Kern River Crossing	January 2025	2027	1,282,944	1,443,323	109,184	10%	No	N/A	$ 90,152.17	10%	$ 99,511.13
Bakersfield	133182	BK NEWTP MF Feed Pumps VFD	January 2026	2027	444,977	514,254	40,452	10%	No	N/A	$ -	0%	$ -
Bakersfield	133187	BK 2026 Station Resurfacing	January 2026	2026	443,163	520,682	37,411	10%	No	N/A	$ -	0%	$ -
Bakersfield	133188	BK 2027 Station Resurfacing	January 2027	2027	489,177	565,336	40,289	10%	No	N/A	$ -	0%	$ -
Bakersfield	133189	BK Low Zone Well Siting Study	January 2025	2025	185,653	218,653	16,064	10%	No	N/A	$ -	0%	$ -
Bakersfield	133190	BK Railroad Main Replacement Study	January 2026	2026	502,223	590,073	42,397	10%	No	N/A	$ -	0%	$ -
Bakersfield	133192	BK NG Property Purchase #2	January 2025	2025	545,083	641,972	47,165	10%	No	N/A	$ -	0%	$ -
Bakersfield	133194	BK NG Property Purchase	January 2025	2026	551,276	633,345	47,165	10%	No	N/A	$ -	0%	$ -
Bakersfield	133196	BK 216 Polymer Storage	January 2025	2026	198,512	233,237	18,047	10%	No	N/A	$ -	0%	$ -
Bakersfield	133197	BK NEWTP New Filter Modules	January 2025	2026	629,321	727,299	53,782	10%	No	N/A	$ -	0%	$ -
Bakersfield	133198	BK NEWTP Raw Water Pumps VFD	January 2026	2027	864,640	999,254	160,581	10%	No	N/A	$ -	0%	$ -
Bakersfield	133199	BK Property Purchase (Office)	January 2025	2027	3,500,000	4,044,906	-	0%	No	N/A	$ -	0%	$ -
Stockton	133200	STK 2025 Tank Improvements	January 2025	2025	559,853	656,405	48,443	10%	No	N/A	$ -	0%	$ -
Stockton	133202	STK 069-T1 Cathodic Protection	January 2025	2025	29,872	35,023	-	0%	No	N/A	$ -	0%	$ -
Stockton	133203	STK 035 New Generator	January 2025	2027	633,377	717,388	53,724	10%	No	N/A	$ 63,901.12	15%	$ 70,534.88
Stockton	133204	STK 061 Automatic Transfer Switch	January 2026	2027	59,427	66,779	25,084	10%	No	N/A	$ -	0%	$ -
Stockton	133206	STK Portable Generators	January 2026	2027	1,029,257	1,062,162	93,569	10%	No	N/A	$ -	0%	$ -
Stockton	133207	STK 075 Panelboard	June 2025	2027	150,492	171,349	-	0%	No	N/A	$ -	0%	$ -
Stockton	133209	STK 080 Station Rebuild	January 2025	2027	971,879	1,112,358	-	0%	No	N/A	$ -	0%	$ -
Stockton	133210	STK 018 Well Assessment	January 2026	2027	374,567	430,938	31,230	10%	No	N/A	$ -	0%	$ -
Stockton	133211	STK Well Siting Study	January 2025	2026	291,320	331,044	25,159	10%	No	N/A	$ -	0%	$ -
Stockton	133212	STK 036 Well Assessment	January 2026	2027	201,335	230,437	37,392	10%	No	N/A	$ -	0%	$ -
Stockton	133213	STK 059 Well Assessment	January 2025	2025	348,729	406,756	30,175	10%	No	N/A	$ -	0%	$ -
Stockton	133216	STK Property Purchase #1	June 2025	2027	762,450	865,850	64,354	10%	No	N/A	$ -	0%	$ -
Stockton	133217	STK Land Purchase #2	January 2025	2027	787,097	900,867	66,529	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133218	SLN 2025 Tank Improvements	January 2025	2025	105,878	123,667	9,161	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133219	SLN 2026 Tank Improvements	January 2026	2026	641,976	748,035	54,194	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133220	SLN 2027 Tank Improvements	January 2027	2027	306,319	351,082	25,229	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133223	SLN 072 New Generator	January 2025	2027	288,981	326,681	26,271	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133224	SLN 203 New Generator	January 2025	2027	565,409	639,170	47,959	10%	No	N/A	$ 57,043.80	15%	$ 62,965.68
Salinas Valley Region	133225	SLN 057 New Generator	January 2025	2027	559,738	632,759	47,478	10%	No	N/A	$ 56,471.67	15%	$ 62,334.16
Salinas Valley Region	133227	SLN 805 Zone PBC	January 2026	2027	71,024	80,289	5,850	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133228	SLN Well Siting Study	January 2025	2025	164,138	190,842	14,203	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133229	SLN WSFMP Update	January 2027	2027	292,539	335,288	24,094	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133230	SLN Pipe Design 180 to 400 Zones	June 2025	2026	1,110,599	1,282,280	94,834	10%	No	N/A	$ -	0%	$ -

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Salinas Valley Region	133232	SLN 078 New Well Equipping	January 2025	2026	2,320,074	2,678,719	198,497	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133233	SLN New Well Station 155 Zone	April 2025	2027	5,499,650	6,303,323	468,714	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133235	SLNH Property Purchase	January 2025	2026	791,998	908,117	68,030	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133236	SLN 037 Treatment Plant Upgrades	June 2025	2027	2,715,417	3,105,132	246,856	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133237	SLN 039 As Treatment	January 2026	2027	2,564,863	2,912,868	233,169	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133238	SLN 064 Ion Exchange	June 2025	2027	3,185,075	3,600,590	289,552	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133239	SLN 065 Install Upgraded Treatment	January 2026	2027	2,570,083	2,925,511	233,644	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133240	SLN 203 Treatment Maintenance	June 2027	2027	350,877	400,318	28,899	10%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133241	SLN 303 Treatment Maintenance	January 2025	2025	330,969	385,695	28,638	10%	No	N/A	$ -	0%	$ -
Selma	133248	SEL 016 Panelboard & Generator	January 2025	2027	2,388,112	2,733,442	201,561	10%	No	N/A	$ 159,126.84	10%	$ 175,646.26
Selma	133249	SEL New Well 2 Land Purchase	January 2025	2027	352,894	394,276	30,113	10%	No	N/A	$ -	0%	$ -
Selma	133251	SEL 2025 Tank Improvements	January 2025	2025	597,508	696,967	96,904	10%	No	N/A	$ -	0%	$ -
Selma	133252	SEL 021-T1 Cathodic Protection	January 2026	2026	23,121	26,905	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133256	NOH 201-A Pump Replacement	January 2027	2027	47,002	54,271	4,273	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133257	LUC 003-T1 Cathodic Protection	January 2026	2026	16,442	19,408	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133258	LUC 005-T1 Cathodic Protection	January 2025	2025	17,837	21,105	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133259	COS 007-T4 Cathodic Protection	January 2027	2027	17,520	16,582	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133260	LUC PRV Install 17th & Country Club	January 2026	2027	977,415	1,134,848	81,494	10%	No	N/A	$ 92,841.03	15%	$ 102,479.13
Bay Area Region	133261	LUC Portable Generator	January 2026	2027	17,630	18,170	7,442	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133265	ARM 001 Electrical Panel Cover	January 2025	2025	68,402	80,488	5,919	10%	No	N/A	$ 7,364.28	15%	$ 7,737.10
Bay Area Region	133266	NOH 201 Plant Re-Design	January 2025	2027	426,246	492,168	35,976	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133267	RDV 205 ARM Well Siting Study	January 2025	2025	248,303	291,477	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133268	COS 004 Station Rebuild	January 2025	2027	1,366,584	1,293,416	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133269	COS Potable Reuse Study	January 2026	2027	204,768	193,805	18,615	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133271	HKN 001 Station Rebuild Constr	January 2026	2027	1,308,518	1,506,543	-	0%	No	N/A	$ -	0%	$ -
Los Altos	133273	LAS 2026 Isolation Valve Install	January 2026	2026	1,234,576	1,439,678	104,221	10%	No	N/A	$ -	0%	$ -
Los Altos	133274	LAS 2027 Isolation Valve Install	January 2027	2027	1,265,410	1,451,477	104,221	10%	No	N/A	$ -	0%	$ -
Los Altos	133276	LAS New PRV Blandor To Price	January 2025	2026	750,554	873,194	64,177	10%	No	N/A	$ 73,113.06	15%	$ 78,734.77
Los Altos	133278	LAS 037 Generator for SCADA	January 2025	2025	37,188	43,471	3,381	10%	No	N/A	$ -	0%	$ -
Los Altos	133281	LAS PRV Replace El Monte & Foothill	January 2025	2026	957,185	1,116,204	81,801	10%	No	N/A	$ 93,191.34	15%	$ 100,356.88
Los Altos	133282	LAS 014 New Pump 505 Zone	June 2025	2027	201,005	230,021	-	0%	No	N/A	$ -	0%	$ -
Los Altos	133283	LAS 117 Station Rebuild Constr	January 2025	2027	1,395,763	1,600,998	126,888	10%	No	N/A	$ -	0%	$ -
Los Altos	133284	LAS Well Hardness Study	January 2025	2027	311,441	357,235	-	0%	No	N/A	$ -	0%	$ -
Los Altos	133285	LAS WSFMP Update	January 2026	2026	299,681	349,468	25,299	10%	No	N/A	$ -	0%	$ -
Los Altos	133287	LAS New Well Property Purchase	January 2025	2026	4,786,474	5,568,578	409,273	10%	No	N/A	$ -	0%	$ -
Los Altos	133290	LAS 112 Chlorination	January 2025	2027	1,178,004	1,319,551	100,382	10%	No	N/A	$ 114,359.30	15%	$ 126,231.27
Los Altos	133291	LAS 116 Disinfection	June 2025	2027	1,183,253	1,341,335	113,779	10%	No	N/A	$ 99,872.26	15%	$ 110,240.29
Los Altos	133294	LAS 123 Disinfection	January 2026	2027	1,179,822	1,353,304	-	0%	No	N/A	$ 112,066.98	15%	$ 123,700.98
Rancho Dominguez	133305	RDOM Digital Signage Hardware	February 2024	2024	11,754	12,102	1,175	10%			$ -	0%	$ -
Bakersfield	133313	BK 2026 Physical Secuity Upgrades	January 2026	2026	1,018,793	1,177,406	86,005	10%	No	N/A	$ -	0%	$ -
Bakersfield	133314	BK 2027 Physical Security Upgrades	January 2027	2027	831,067	960,453	68,442	10%	No	N/A	$ -	0%	$ -
CSS	133317	Design Electrical Service Expansion	January 2025	2025	279,539	323,321	-	0%	No	N/A	$ -	0%	$ -
CSS	133318	REPLACE BLDG ROOF SHINGLE AND CA	January 2025	2025	304,117	351,749	-	0%	No	N/A	$ -	0%	$ -
CSS	133319	CSS- DESIGN NEW 4TH ST ENTRY	January 2025	2025	268,582	304,829	-	0%	No	N/A	$ -	0%	$ -
Bakersfield	133323	BK Office Digital Signage	November 2023	2024	14,074	14,532	1,500	10%			$ -	0%	$ -
Bay Area Region	133346	ADDITIONAL VEHICLES	January 2025	2025	143,251	152,614	13,023	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133367	BAY Copy Machine	January 2025	2025	26,142	27,359	2,377	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133368	SSF Field Yard Pipe Racks	January 2025	2025	36,075	42,052	3,280	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133369	BAY Leak Detection Equipment	January 2025	2025	21,989	23,014	1,903	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133370	BAY Forklift	January 2025	2025	50,966	53,340	4,410	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133371	BAY Water Quality Testing Units	January 2025	2025	42,058	44,018	3,730	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133372	BAY Locating Equipment	January 2025	2025	43,035	45,040	3,912	10%	No	N/A	$ -	0%	$ -

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Bay Area Region	133373	BAY Portable Lighting	January 2025	2025	6,715	7,027	581	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133374	BAY Pressure Data Loggers	January 2025	2027	86,586	90,619	7,308	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133375	BAY Solar Arrow/ Message Board	January 2025	2025	31,132	32,582	2,694	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133376	BAY Field Yard Classroom Remodel	January 2026	2027	571,509	653,714	51,955	10%	No	N/A	$ -	0%	$ -
Bakersfield	133378	BK Fire Flow/Hydrant Testing Equip	January 2025	2025	6,592	7,764	-	0%	No	N/A	$ -	0%	$ -
North Valley Region	133379	CH 081 Parking Lot Improvements	January 2025	2025	17,624	20,630	1,525	10%	No	N/A	$ -	0%	$ -
North Valley Region	133380	CH Office HVAC Replacement	January 2026	2026	122,604	143,170	10,350	10%	No	N/A	$ -	0%	$ -
North Valley Region	133381	CH New Roof at District Office	January 2026	2026	278,034	303,012	23,471	10%	No	N/A	$ -	0%	$ -
North Valley Region	133382	CH Solar EV Charger	January 2025	2025	106,219	124,335	9,191	10%	No	N/A	$ -	0%	$ -
Dixon	133383	DIX Dump Trailer	January 2025	2025	11,588	12,327	-	0%	No	N/A	$ -	0%	$ -
Dixon	133384	DIX Field pH Meters	January 2025	2025	3,179	3,382	-	0%	No	N/A	$ -	0%	$ -
Dixon	133385	DIX Office Improvements	January 2026	2026	28,892	34,150	2,439	10%	No	N/A	$ -	0%	$ -
Dixon	133386	DIX Portable Well Sounder	January 2025	2025	3,016	3,209	-	0%	No	N/A	$ -	0%	$ -
Dixon	133388	DIX Teleloggers	January 2025	2025	1,374	1,462	-	0%	No	N/A	$ -	0%	$ -
Dixon	133389	DIX Fire Flow/Hydrant Testing Equip	January 2025	2025	972	1,034	-	0%	No	N/A	$ -	0%	$ -
South Bay Region	133390	DOM 232 Safety Improvements	January 2025	2026	147,167	171,517	13,379	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133391	ELA Trash Pumps	January 2025	2025	2,964	3,473	257	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133392	ELA Construction Message Board	January 2025	2025	20,855	21,937	1,805	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133393	ELA Light Tower	January 2025	2025	18,004	18,939	1,558	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133394	ELA Pneumatic Tool	January 2025	2025	3,641	3,830	1,558	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133395	ELA Portable Valve Machines	January 2025	2025	19,488	20,499	1,686	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133396	ELA Purchase SL-1000 Units	January 2025	2025	5,100	5,364	441	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133397	ELA Towable Compressor	January 2025	2025	28,546	30,027	2,470	10%	No	N/A	$ -	0%	$ -
Los Altos	133398	LAS Fire Flow/Hydrant Testing Equip	January 2025	2025	6,592	6,918	-	0%	No	N/A	$ -	0%	$ -
Livermore	133400	LIV Copy Machine	January 2026	2026	11,387	11,998	961	10%	No	N/A	$ -	0%	$ -
Livermore	133401	LIV Ice Machinie	January 2026	2026	1,161	1,223	98	10%	No	N/A	$ -	0%	$ -
Marysville	133402	MRL Fire Flow/Hydrant Testing Equip	January 2025	2025	4,045	4,234	350	10%	No	N/A	$ -	0%	$ -
Stockton	133403	STK 051 Landscape/Connect Parking	January 2026	2026	20,240	23,674	1,840	10%	No	N/A	$ -	0%	$ -
Visalia	133406	VIS EOC AV Equipment and Furniture	January 2025	2025	70,096	81,968	6,372	10%	No	N/A	$ -	0%	$ -
Visalia	133411	VIS Fire Monitoring System	January 2025	2025	24,905	29,123	-	0%	No	N/A	$ -	0%	$ -
Visalia	133413	VIS Office Space Acquisition	January 2025	2025	1,548,100	1,776,399	142,100	10%	No	N/A	$ -	0%	$ -
Visalia	133416	VIS Building Upgrades Design	January 2026	2027	679,800	780,050	61,800	10%	No	N/A	$ -	0%	$ -
Willows	133417	WIL Fire Flow/Hydrant Testing Equip	January 2025	2025	7,618	8,070	659	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133458	KERV 001-T3 Cathodic Protection	January 2027	2027	18,295	21,298	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133459	SOLA 001-T1 Cathodic Protection	January 2026	2026	16,436	19,452	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133462	ONYX 003-T2 Cathodic Protection	January 2027	2027	15,685	18,260	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133463	ONYX 003-T3 Cathodic Protection	January 2027	2027	15,685	18,260	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133466	SQRL 013-T1 Cathodic Protection	January 2027	2027	10,737	12,500	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133467	ARD 014-T1 Cathodic Protection	January 2027	2027	10,737	12,500	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133469	ARD 001 GS Media Replacement	January 2025	2025	185,900	220,550	16,900	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133470	KERV-001 Amiad Screen Replacement	January 2025	2025	16,500	19,575	1,500	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133471	SMTN 001 GS Media Replacement	January 2025	2025	6,160	7,308	560	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133472	LBOD 013 GS Replacement	January 2025	2025	6,160	7,308	560	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133473	UBOD 104 GS Media Replacement	January 2025	2025	157,300	186,619	14,300	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133474	SMTN 001 Well Improvement Study	January 2026	2026	345,747	406,312	31,432	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133476	SOLA Well Siting Study	January 2027	2027	235,092	271,751	19,362	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133478	KERV 001 Treatment Upgrades	January 2025	2027	465,012	526,042	42,274	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133483	KRV Utility Locating Equipment	January 2027	2027	35,883	38,222	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133486	NOH 202 Paving and Grading	January 2026	2027	145,497	165,582	13,227	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133487	RDV 2025 Tank Improvements	January 2025	2025	476,111	563,592	41,197	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133488	RDV 2026 Tank Improvements	January 2026	2026	333,610	394,908	28,163	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133489	RDV 2027 Tank Improvements	January 2025	2025	246,573	287,100	21,336	10%	No	N/A	$ -	0%	$ -

		[A]		[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
CSS	133490	CSS 2025 Asset Mgmt Large Tools	January 2025	2025	101,150	105,040	8,752	10%	No	N/A	$ -	0%	$ -
CSS	133491	CSS 2026 Asset Mgmt Large Tools	January 2026	2026	106,790	110,897	9,015	10%	No	N/A	$ -	0%	$ -
CSS	133492	CSS 2027 Asset Mgmt Large Tools	January 2027	2027	112,740	117,076	9,285	10%	No	N/A	$ -	0%	$ -
CSS	133493	ROV for Asset Condition Assessment	January 2025	2025	134,868	140,055	11,670	10%	No	N/A	$ -	0%	$ -
Travis	133495	TAB STA 002-T2 Cathodic Protection	January 2025	2025	28,531	33,336	-	0%	No	N/A	$ -	0%	$ -
Travis	133496	TAB 2025 Tank Improvements	January 2025	2025	1,089,281	1,272,727	96,610	10%	No	N/A	$ -	0%	$ -
Travis	133497	TAB 2025 Hydrant Check Valves	January 2025	2025	59,245	69,223	-	0%	No	N/A	$ -	0%	$ -
Travis	133499	TAB 2025 Valve Insertions	January 2025	2025	78,929	92,221	-	0%	No	N/A	$ -	0%	$ -
Travis	133500	TAB 2026 Hydrant Check Valves	January 2026	2026	60,727	70,783	-	0%	No	N/A	$ -	0%	$ -
Travis	133502	TAB 2026 Valve Insertions	January 2026	2026	80,902	94,300	-	0%	No	N/A	$ -	0%	$ -
Travis	133503	TAB 2027 Hydrant Check Valves	January 2027	2027	62,243	71,363	-	0%	No	N/A	$ -	0%	$ -
Travis	133505	TAB 2027 Valve Insertions	January 2027	2027	82,923	95,073	-	0%	No	N/A	$ -	0%	$ -
Travis	133506	TAB STA 001 Control Valves	January 2025	2026	275,607	314,531	-	0%	No	N/A	$ -	0%	$ -
Travis	133507	TAB STA 002 Control Valves	January 2026	2027	282,494	322,391	-	0%	No	N/A	$ -	0%	$ -
Travis	133509	TAB 2025 Main Location	January 2025	2025	85,868	99,866	-	0%	No	N/A	$ -	0%	$ -
Travis	133510	TAB 2027 Main Location	January 2027	2027	90,212	103,430	7,430	10%	No	N/A	$ -	0%	$ -
Travis	133513	TAB WS&F Master Plan	January 2025	2025	257,248	299,849	-	0%	No	N/A	$ -	0%	$ -
Travis	133514	TAB 004 Chlorine Boosting	January 2025	2026	219,453	246,964	-	0%	No	N/A	$ -	0%	$ -
Travis	133515	TAB 010 Chlorine Boosting	January 2026	2027	224,938	253,137	-	0%	No	N/A	$ -	0%	$ -
Travis	133516	TAB 002-T2 Spray Aeration	January 2025	2026	1,065,294	1,215,747	-	0%	No	N/A	$ -	0%	$ -
Travis	133517	TAB Office Design	January 2026	2027	524,126	600,921	-	0%	No	N/A	$ -	0%	$ -
Travis	133518	TAB 2026 Backflow Prevention	January 2026	2026	501,905	585,022	-	0%	No	N/A	$ -	0%	$ -
Travis	133519	TAB 2026 Main Location	January 2026	2026	88,014	102,590	7,430	10%	No	N/A	$ -	0%	$ -
Travis	133520	TAB 2027 Backflow Prevention	January 2027	2027	514,440	589,816	-	0%	No	N/A	$ -	0%	$ -
Travis	133521	TAB Compactor/Jackhammer/Compress	January 2025	2025	100,854	105,800	-	0%	No	N/A	$ -	0%	$ -
Travis	133522	TAB Insert Valve Machine	January 2025	2025	96,458	101,188	-	0%	No	N/A	$ -	0%	$ -
Travis	133523	TAB Leak Correlator	January 2025	2025	22,637	23,747	-	0%	No	N/A	$ -	0%	$ -
Travis	133524	TAB Portable Well Sounder	January 2025	2025	3,016	3,164	-	0%	No	N/A	$ -	0%	$ -
Travis	133525	TAB Radio Locator	January 2025	2025	11,546	12,113	-	0%	No	N/A	$ -	0%	$ -
CSS	133533	CSS Rooftop Solar	June 2024	2026	3,600,000	4,153,848	-	0%	No	N/A	$ -	0%	$ -
CSS	133538	Halo Acetic Acids analytical tester	January 2025	2025	455,328	472,840	39,399	10%	No	N/A	$ -	0%	$ -
CSS	133544	High perf PC's + CSSmonitors	January 2025	2027	10,400	10,800	900	10%	No	N/A	$ -	0%	$ -
Bear Gulch	133565	Skylonda - Skyline Main Conn	July 2024	2025	1,160,181	1,337,761	163,758	20%			$ -	0%	$ -
Bear Gulch	133576	BG Sta 53 - PRV Addition	February 2024	2024	136,471	162,561	18,872	20%			$ -	0%	$ -
Bakersfield	133577	Bakersfield Onsite Solar	June 2024	2026	7,800,000	9,164,393	-	0%	No	N/A	$ -	0%	$ -
CSS	133578	Network Hardware Replacement_2027	January 2027	2027	345,505	358,793	-	0%	No	N/A	$ -	0%	$ -
CSS	133579	Network Hardware Replacement 2026	January 2026	2026	337,086	350,050	-	0%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133580	RDOM Replace Media Ctr Furniture	January 2025	2025	79,754	83,650	6,901	10%	No	N/A	$ -	0%	$ -
CSS	133584	CSS- STUDY TO RELOCATE GAS LINE	January 2025	2025	132,089	152,778	-	0%	No	N/A	$ -	0%	$ -
CSS	133585	CSS-RDOM 2ND FL. REDESIGN	January 2025	2025	97,858	113,185	-	0%	No	N/A	$ -	0%	$ -
Bear Gulch	133593	BG - AMI INITIATIVE-VEHICLES/EQUIP	January 2025	2025	559,957	586,068	-	0%	No	N/A	$ -	0%	$ -
CSS	133596	CSS 2025 mobile water stations	January 2025	2025	77,011	79,973	-	0%	No	N/A	$ -	0%	$ -
Los Altos	133597	LAS-AMI INITIATIVE-VEHICLES/EQUIP	January 2025	2025	474,132	497,609	41,026	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133598	RDOM-AMI INITIATIVE-VEHICLES/EQUIP	January 2025	2025	559,957	587,310	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133599	BSH-AMI INITIATIVE-VEHICLES/EQUIPM	January 2025	2025	1,048,689	1,097,542	-	0%	No	N/A	$ -	0%	$ -
Westlake	133601	WLK-AMI INITIATIVE-VEHICLES/EQUIP	January 2025	2025	302,482	316,499	26,173	10%	No	N/A	$ -	0%	$ -
CSS	133602	CSS 2026 RO Model Improvements	January 2026	2026	266,530	276,781	22,500	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133605	RDOM Replace Office Furniture	January 2025	2027	82,106	86,117	6,930	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133606	RDOM Replace Stairwell Carpet	January 2025	2025	86,677	90,911	7,500	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133607	RDOM Replace Pergola	January 2026	2026	88,844	103,537	7,500	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133608	RDOM LED Light Fixture Retrofit	January 2026	2026	321,495	374,667	27,140	10%	No	N/A	$ -	0%	$ -
Rancho Dominguez	133609	RDOM Updated First Floor Space Plan	January 2025	2027	97,954	112,286	8,268	10%	No	N/A	$ -	0%	$ -

	[A]			[B]			[C]	[D]	[E]					
District	PID	Description	Project Starting Date	Completion Year	Direct Cost	Total Cost	Contingency [$]	Contingency (%)	Authorized in a previous GRC? (Yes, No, Advice Letter)	Incremental Amount Proposed	Direct Construction Management and Special Inspections Cost ($)	Construction Management and Special Inspections (%)	Escalated Construction Management and Sepcial Inspections Cost ($)
Westlake	133610	WLK 2027 AMI INITIATIVE-METERS	January 2027	2027	2,188,453	2,502,645	-	0%	No	N/A	$ -	0%	$ -
LA County Region	133620	AV 2027 AMI INITIATIVE-METERS	January 2027	2027	219,663	241,111	-	0%	No	N/A	$ -	0%	$ -
Bear Gulch	133622	BG 2027 AMI INITIATIVE-METERS	January 2027	2027	5,109,121	5,844,264	-	0%	No	N/A	$ -	0%	$ -
Los Altos	133625	LAS 2027 AMI INITIATIVE-METERS	January 2027	2027	4,939,695	5,666,034	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133627	MPS 2027 AMI INITIATIVE-METERS	January 2027	2027	9,189,163	10,510,910	-	0%	No	N/A	$ -	0%	$ -
LA County Region	133629	PV 2027 AMI INITIATIVE-METERS	January 2026	2026	6,281,129	7,248,977	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133632	RDV 2027 AMI INITIATIVE-METERS	January 2027	2027	497,499	579,269	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133634	SSF 2027 AMI INITIATIVE-METERS	January 2027	2027	4,296,428	4,914,416	-	0%	No	N/A	$ -	0%	$ -
CSS	133646	CSS 2026 AMI INITIATIVE-IT INT/DEV	January 2026	2026	1,537,615	1,596,751	139,783	10%	No	N/A	$ -	0%	$ -
CSS	133654	SCADA Server & Network Repl. 2026	January 2026	2026	343,496	356,707	-	0%	No	N/A	$ -	0%	$ -
CSS	133655	SCADA Server & Network Repl. 2027	January 2027	2027	352,075	365,616	-	0%	No	N/A	$ -	0%	$ -
CSS	133658	Upgrade CalWater.com 2025	January 2025	2025	105,062	109,103	-	0%	No	N/A	$ -	0%	$ -
CSS	133659	Upgrade CalWater.com 2027	January 2027	2027	110,379	114,624	-	0%	No	N/A	$ -	0%	$ -
CSS	133661	30 Mobile Power Generators	February 2025	2025	2,889,219	2,991,449	-	0%	No	N/A	$ -	0%	$ -
CSS	133709	ICP-MS	January 2025	2025	240,309	249,551	20,794	10%	No	N/A	$ -	0%	$ -
CSS	133714	Workforce Mgt & Integration	January 2025	2027	538,550	559,263	-	0%	No	N/A	$ -	0%	$ -
Kern River Valley	133720	LLAN Intertie & Land	January 2025	2027	1,049,928	1,196,366	174,988	10%	No	N/A	$ -	0%	$ -
Livermore	133734	LIV-10 GAC REPLACEMENT	March 2024	2024	168,776	202,380	-	0%			$ -	0%	$ -
Kern River Valley	133785	LBOD 009 Transfer Switch	January 2026	2027	30,745	34,780	10,382	10%	No	N/A	$ 12,348.14	15%	$ 13,630.04
Kern River Valley	133786	KERN 007 Transfer Switch	January 2026	2027	26,999	30,543	9,117	10%	No	N/A	$ -	0%	$ -
Kern River Valley	133787	MSHA 003 New Storage Tanks	January 2025	2027	1,994,860	2,314,139	168,489	10%	No	N/A	$ 139,119.16	10%	$ 153,561.52
Bay Area Region	133790	BAY 2025 Instrumentation Replc.	January 2025	2025	8,446	9,845	731	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133794	ELA I-5 Crossing - Humphreys Ave	January 2025	2026	1,096,413	1,228,632	99,674	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133795	ELA I-5 Crossing - Eastern Ave	January 2025	2026	791,465	886,910	71,951	10%	No	N/A	$ -	0%	$ -
East Los Angeles	133796	ELA 1-5 Crossing - Atlantic Blvd	January 2025	2026	1,040,947	1,163,453	94,632	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133798	MPS 006 Design Only	January 2025	2026	277,272	321,750	25,207	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133799	COS 007 New Access Driveway	January 2025	2027	637,964	648,550	54,061	10%	No	N/A	$ -	0%	$ -
North Valley Region	133803	ORO 2025 Control Valve Overhauls	January 2025	2025	142,496	166,926	12,330	10%	No	N/A	$ -	0%	$ -
North Valley Region	133804	ORO 2026 Control Valve Overhauls	January 2026	2026	146,059	170,689	12,330	10%	No	N/A	$ -	0%	$ -
North Valley Region	133805	ORO 2027 Control Valve Overhauls	January 2027	2027	130,993	150,576	10,789	10%	No	N/A	$ -	0%	$ -
Livermore	133824	LIV 2025 Control Valve Overhauls	January 2025	2025	106,872	125,412	9,247	10%	No	N/A	$ -	0%	$ -
Livermore	133825	LIV 2026 Control Valve Overhauls	January 2026	2026	109,544	128,239	9,247	10%	No	N/A	$ -	0%	$ -
Livermore	133826	LIV 2027 Control Valve Overhauls	January 2027	2027	93,566	107,741	7,706	10%	No	N/A	$ -	0%	$ -
South Bay Region	133828	DOM 2025 Control Valve Overhauls	January 2025	2025	84,607	98,844	7,321	10%	No	N/A	$ -	0%	$ -
South Bay Region	133829	DOM 2026 Control Valve Overhauls	January 2026	2026	86,722	101,072	7,321	10%	No	N/A	$ -	0%	$ -
South Bay Region	133830	DOM 2027 Control Valve Overhauls	January 2027	2027	88,888	101,900	7,321	10%	No	N/A	$ -	0%	$ -
Bay Area Region	133836	LUC Intake Extension (Design)	January 2025	2027	283,434	329,087	-	0%	No	N/A	$ -	0%	$ -
Bay Area Region	133837	LUC Seismic Mitigation Plan	January 2025	2026	102,630	119,534	-	0%	No	N/A	$ -	0%	$ -
Salinas Valley Region	133840	KC 2026 Control Valve Overhauls	January 2026	2026	54,772	64,229	4,624	10%	No	N/A	$ -	0%	$ -
Stockton	133841	STK 2026 Control Valve Overhauls	January 2026	2026	73,029	85,418	6,165	10%	No	N/A	$ -	0%	$ -
South Bay Region	133875	Emergency Main Repair @ Marathon	January 2024	2024	310,840	363,145	29,374	10%			$ -	0%	$ -
Los Altos	133914	LAS 2026 Control Valve Overhauls	January 2026	2026	306,723	357,679	25,893	10%	No	N/A	$ -	0%	$ -
Bakersfield	133916	BK 2025 Control Valve Overhaul	January 2025	2025	374,052	440,541	32,366	10%	No	N/A	$ -	0%	$ -

Attachment 4-2:
CWS's Response to DR KN3-010 (Specific Districts)

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Patrick Alexander (408) 367-8230
General Rate Case Manager palexander@calwater.com

Melody Singh (916) 329-1856
Manager, Revenue msingh@calwater.com

Date: **December 18, 2024** Re: **KN3-010** Subj: **Specific Districts**	Request Received from CPUC: **December 11, 2024** Requested Due Date: **December 18, 2024**

Comments:

- **Full response attached.**
- **Response provided by Engineering.**
- **Contains confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-010 Attachment 1_Q1.a._Contractor's Quote**
  - **Attachment #2 – KN3-010 Attachment 2_Q1.a._ Cost Table and Schedule**

- **Attachment #3 – CONFIDENTIAL KN3-010 Attachment 3_Q4.a._DIX 001-T1 Seismic Analysis Report (2023-05-12)**
- **Attachment #4 – CONFIDENTIAL KN3-010 Attachment 4_Q5.c._Chico_FireThreatMap_400pz**
- **Attachment #5 – CONFIDENTIAL KN3-010 Attachment 5_Q7.c._Water Discoloration**
- **Attachment #6 – CONFIDENTIAL KN3-010 Attachment 6_Q11.b._Oroville_FireThreatMap_435pz**
- **Attachment #7 – KN3-010 Attachment 7_Q12.b.i.-ii._Oroville_Treatment Plant Shutdowns**
- **Attachment #8 – KN3-010 Attachment 8_Q15.a._Oroville Water Quality Complaints 2020 - 12.12.2024**
- **Attachment #9 – CONFIDENTIAL KN3-010 Attachment 9_Q15.b._General Order 103A**
- **Attachment #10 – CONFIDENTIAL KN3-010 Attachment 10_Q16.a._ Roof Hatch Leak**
- **Attachment #11 – CONFIDENTIAL KN3-010 Attachment 11_Q16.a._ Pump House Condition**
- **Attachment #12 – CONFIDENTIAL KN3-010 Attachment 12_Q16.b._WIL 004-01 - Pump Building Drawing - 1929**
- **Attachment #13 – KN3-010 Attachment 13_Q16.b._WIL 004-01 - Motor Dimensions 2016**
- **Attachment #14 – KN3-010 Attachment 14_Q16.b._Flwsrv Type W Heads – Dimension**
- **Attachment #15 – CONFIDENTIAL KN3-010 Attachment 15_Q16.b._WIL 004-01 - PUMP INSTALL – 2016**
- **Attachment #16 – CONFIDENTIAL KN3-010 Attachment 16_Q16.b._WIL 004-01 - PUMP INSTALL PT.2 - 2016**

Data Requests and Responses

1. Reference DIX_2024_GRC_PJ_Book_Final, Dixon Office Improvements, project identification number (PID#)133385 (page 46).

   a. Please provide the proposed cost estimate, schedule, and preliminary plans demonstrating that the proposed office shower installation fits in the current proposed installation space.
   Response: Please refer to KN3-010 Attachment 1_Q1.a._Contractor's Quote estimated for $25,000. The improvement is scheduled to be carried out between 01/01/2026 and 12/31/2026 and construction should last less than 3 months. Please see attached KN3-010 Attachment 2_Q1.a._Cost Table and Schedule.xlsx for schedule. Due to the small size of the project, final plans are to be made closer to the time of construction.

   b. Please provide evidence that the space designated for the proposed shower installation is adequate to meet state and local building codes if Cal Water installs the shower.
   Response: Per the official contractor's proposal, the new shower facility along with related improvements will be installed in the available space based on state and local building codes.

   c. During the field visit on October 4, 2024, Cal Water mentioned that there are currently three employees at the Dixon Office. Please provide the approximate driving distance and time it takes each employee to arrive at the office.
   Response: There are 4 employees including the District Manager. The approximate driving time for each of them to arrive at the office is 45 minutes, 45 minutes, 25 minutes, and 2 minutes. Miles and minutes mirror each other.

2. Reference DIX_2024_GRC_PJ_Book_Final, Dixon Office Improvements PID 133383 (page 46).

   d. In the last five years (2020-2024), indicate how many times the Dixon District has required an outside contractor's dump trailer when repairing a leak.
   Response: The Dixon district has required use of an outside contractor's dump trailer approximately 25 times in the last five years.

   e. Has Cal Water performed a cost-benefit analysis comparing purchase of a dump trailer versus hiring contractors for leak repairs? Please provide the cost-benefit analysis and its supporting documentation.
   Response: On average, contractors charge $8,000-$10,000 per job, while the cost of acquiring a dump trailer is approximately $11,500. Accordingly, purchasing a new dump trailer for the District is justified.

3. Reference DIX_2024_GRC_PJ_Book_Final, Dixon Office Improvements, PID 133388 (page 46).

   f. In the last five years (2020-2024), please indicate how many times the Dixon District has borrowed a portable pressure telelogger from nearby districts.
   Response: Dixon has borrowed a portable pressure telelogger from the Travis District every year from 2020-2024. This leads to delays in reports and reliance on employees from the Travis for assistance with the data processing.

   g. Since 2019, has Cal Water ever attempted and been unable to borrow (a) telelogger(s) from a nearby district in a timely manner? Please describe the incidents and provide any supporting documentation.
   Response: Although Cal Water has managed to coordinate with other districts to use their teleloggers, this causes operational challenges as both districts may need to use the teleloggers at the same time every year. In particular, teleloggers are used for the annual pressure surveys, which are conducted when demand is highest, which is typically during the hottest months of the year. There are also maintenance/repairs that need to be scheduled and that gets harder to coordinate when two districts need the same teleloggers. The Dixon District would like to purchase its own portable pressure telelogger for better resource planning, maintenance scheduling, and reliability.

4. Reference DIX_2024_GRC_PJ_Book_Final, Dixon VFD, PID 133040 (page 20).

h. Please provide evidence demonstrating that the existing elevated tank requires removal. Such evidence may include, but is not limited to, cost-benefit analysis of the elevated tank removal, contractor invoices, relevant state or local regulations, and internal communications.
Response: In 2023 a Condition Assessment Evaluation Forensic Foundation Inspection and Seismic Analysis was performed on the elevated tank by a tank consultant. Please see CONFIDENTIAL KN3-010 Attachment 3_Q4.a._DIX 001-T1 Seismic Analysis Report (2023-05-12), (PDF page numbers 6 and 32). The evaluation indicated some deficiencies, deteriorated coating conditions, and seismic deficiencies that were recommended to be addressed to properly maintain the tank. Due to the inherent safety risks with an elevated tank, as well as the estimated costs to address these deficiencies (total estimated costs $1,136,000 to $1,231,0000 including $390,000 to $485,000 for structural retrofits and $746,000 for other deficiencies), Cal Water is pursuing the proposed VFDs to operate safely, reliably, and with pressures similar to that which customers have experienced with the use of the existing elevated tank. Inherent risks with an elevated tank were to fail in an earthquake include adverse impacts such as flooding (failure of the elevated tank), property damage and potential loss of life for members of the public who are present when the tank collapses. Following the approval and installation of the VFDs, removal of the elevated tank will be proposed in a future GRC.

a. Has the elevated tank been out of service before (possibly for painting or retrofitting)? If so, please indicate:

i. How long the elevated tank was out of service?
Response: The elevated tank has been isolated two times since 2020, for five days in a row.

i. How did Cal Water keep the system running while the elevated tank is out of service?
Response: The District uses a 2" Pressure Sustaining Valve to bleed excess pressure into the ground level tank at Station 10, along with a booster pump that is manually operated. The system has alarms set in case the water level in the ground tank gets too high or too low during this process. It has been run successfully for five days in a row in this mode, but it is a manual operation that requires the district's planning to mobilize and install. Cal Water would be able to operate the system automatically by adding these VFDs to the system.

i. When does Cal Water need to complete the structural upgrades to the elevated tank in mentions in the Introduction of PJ-20? Please provide written evidence from State, Local, and other regulations calling for the upgrades.
Response: There is no determination from State, local, and other regulators requiring the elevated tank recommendations be completed. While Cal Water does not have a specific regulatory mandate to complete the structural upgrades or remove the tank, this work should be completed before the tank fails. The tank evaluation, foundation investigation, and seismic analysis were performed to assess the tank condition for maintaining compliance with current standards. However, based on the cost

of the elevated tank improvements to correct deficiencies/seismic upgrades and risk associated with elevated tanks, Cal Water identified that removal of the elevated tank should be completed after installing the VFDs.

ii. Please provide the record of how many times the water system has experienced pumps start and stop in the last five years (2020-2024) and how long were customers out of service during the occurrence.
Response: During the two times Cal Water isolated the tank since 2020, no customers experienced service interruptions. This has been completed by mobilization of district staff to manually operate pumps, install bypass valves and complete the isolation of the elevated tank from the water system. This takes significant care and attention to make sure customers experience no interruption of service, and could not be sustained indefinitely with existing resources.

b. Has Cal Water acquired permits for the demolition and removal of the elevated tank? If so, please provide the permits and its supporting documentation.
Response: As stated in DIX_2024_GRC_PJ_Book_Final, Dixon VFD, PID 133040 (page 20), the demolition will be addressed in a subsequent General Rate Case following the installation of the proposed VFDs. Cal Water has not yet obtained permits for the demolition and removal of the elevated tank.

5. Reference NVR_2024_GRC_PJ_Book_Final, Chico 400 Zone Wildfire Pump Storage Facility PID# 133034 (pages 17-20).

   a. During Cal Advocates' field visit, Cal Water discussed the difficulty of acquiring the work permit for the Wildfire Pump Storage as it will be constructed on the location of a bioswale that is currently on the land:

      i. Please provide the name, authority associated, and explanation of permits that are needed.
      Response: The Chico District initially approached the City of Chico about purchasing property north of CH-64 for the purpose of constructing a storage tank and booster pumps. An internal environmental assessment of the parcel noted a bioswale that would require Cal Water to obtain permitting through the Army Corps of Engineers. After efforts to identify other parcels in the 400-zone suitable for a tank site were unsuccessful, the district approached the City of Chico about carving out a section of the parcel (via boundary line modification) that is outside of the bioswale. This would avoid the challenges associated with acquiring Army Corps permits. The district is currently awaiting survey results in order to move forward with the boundary line modification process.

   j. Please show support that Cal Water will be able to acquire the permits in Q.5.a.ii prior to January 1st, 2026.
   Response: Permitting for the project if it is constructed outside of the bioswale would require a CEQA review through the City of Chico and a Building permit. Estimated time to obtain those permits is approximately three months. Upon completion of the project, the storage tank will also require a water system permit amendment from DDW.

   b. As of December 13, 2024, how much of the PID#124797 permitting (federal, local, or state) process from the 2021 GRC has Cal Water completed?
   Response: Cal Water has not begun permitting (federal, local, or state) related to PID#124797 due to being in the process of acquiring the land to install the pump storage facility. Pending the property purchase, Cal Water will begin the design and engage the required permitting agencies.

   c. Please provide mapping of the Chico District 400 zone on top of the High Fire Threat District Map.
   Response: Please see CONFIDENTIAL KN3-010 Attachment 4_Q5.c._Chico_FireThreatMap_400pz.

6. Reference NVR_2024_GRC_PJ_Book_Final, Chico PID #133031 (page 56):

   a. Please provide a detailed cost-benefit analysis to explain Cal Water's decision to propose purchase of a permanent generator rather than a portable generator.
   Response: A comprehensive operational service risk is used to determine whether a portable or fixed generator is best suited to a site. Among the factors considered are:

- **Station importance and criticality to meeting peak hydraulic demand in its zone. Response times for a portable can be 4-48 hours to transport, connect and energize while a permanent generator and ATS responds in seconds to outages.**
- **History of the local utility's PSPS frequency.**

   k. **A fixed generator is required when the system configuration does not allow for a short-term shut down of the pump facilities without impacting customers.**

- **Some sites may not allow Cal Water to move portable generators into the site due to ingress/egress issues.**

i. In the last five years (2020-2024), please provide the records of CH-064's power loss. Please provide a short description of each event. For example: November 1, 2020 power shut off due to wildfire risk.
Response: Shutoff dates and times are listed below. Cal Water does not record, and does not always know, the reasons for power interruption. Power loss records below were gathered from Cal Water's SCADA records:

- **7/21/20 11:16 AM**
- **11/20/20 7:20 PM**
- **05/08/21 7:10 AM**
- **06/15/21 10:38 AM**
- **08/18/21 7:00 AM**
- **10/28/21 9:15 AM**
- **04/12/22 12:24 PM**
- **06/30/22 10:51 AM**
- **08/27/22 1:45 PM**
- **09/18/22 7:43 AM**
- **11/01/22 8:14 AM**
- **12/14/22 1:50 AM**
- **01/05/23 8:53 AM**
- **04/11/23 8:29 AM**
- **05/24/23 2:24 PM**
- **07/06/23 1:25 PM**
- **04/02/24 9:00 AM**
- **04/04/24 12:15 PM**
- **05/20/24 1:12 PM**
- **06/28/24 10:12 AM**
- **07/23/24 11:15 AM**
  09/04/24 12:19 PM

7. Reference NVR_2024_GRC_PJ_Book_Final, Chico PID #133030 (page 55):

   a. Please indicate the approximate number of times per year that the proposed automatic discharge valve will operate.
   Response: Once per day (365 days/year).

      ii. Please explain in detail how the automatic discharge valve installation will benefit customers compared to the manual blow-off piping method currently in use.
      Response: With the manual discharge, Cal Water must have someone onsite managing the discharge every day for about month each year until the water clears up. Due to the onerous labor involved, Cal Water only runs the well during the months of April – October when demand is the highest and the well can be kept running the majority of the time. The automatic discharge valve will benefit customers by allowing Cal Water to run the well everyday as demand allows. Cal Water also will not need to manage the discharge at the station, which will increase efficiency, allowing staff to be directed to other important tasks.

      iii. Please provide records of discoloration due to water stagnancy in the past three years (2022-2024).
      Response: Water discoloration appears anytime the well does not operate for more than a week. Please see CONFIDENTIAL KN3-010 Attachment 5_Q7.c._Water Discoloration; the picture of the discharge shows a green hue. This flush was when the well was not running for 7 days. The longer it is off, the darker the color becomes.

8. Reference NVR_2024_GRC_PJ_Book_Final, Chico PID #133380 (page 57):

   a. Please provide a cost-benefit analysis comparing replacement or repair of individual HVAC units as they fail, versus replacing all 11 HVAC units.
   Response: The units were installed in 2001 and the industry expectation for useful life of an HVAC unit is 15-25 years. Replacing at failure runs the risk of making parts of the Chico office uninhabitable during summer months in which temperatures regularly exceed 100 degrees. Failure may also lead to violation of Cal OSHA Code of Regulations, Title 8, section 3396 "Heat Illness Prevention in Indoor Places of Employment", which went into effect on July 23, 2024.

   b. Please provide evidence that Cal Water has consulted with more than two HVAC contractors regarding its statement "factory parts are no longer manufactured and aftermarket parts for these units are not readily available."
   Response: Cal Water has not consulted with more than two HVAC contractors regarding the statement above. The units were installed in 2001 and the industry expectation for useful life of an HVAC unit is 15-25 years.

9. Reference NVR_2024_GRC_PJ_Book_Final, Chico PID #133381 (page 57):

   During the October 4, 2024 field visit, Cal Advocates noted that the leaks were in specific locations in the office. Has Cal Water performed a cost-benefit analysis on repairing a localized area of the roof versus replacing the entire roof of the building?

   Response: No cost-benefit analysis has been performed. Leaks have been repaired as they arise, however they continue to occur with increased frequency as the roof is reaching the end of its useful lifespan (installed in 2001).

10. Reference NVR_2024_GRC_PJ_Book_Final, Chico PID # 133382 (page 58):

a. Please provide a cost-benefit analysis of the proposed Solar EV charger versus continuing to charge the electric vehicle with current infrastructure.
Response: The Chico district office currently has one single handle charging station. The current planned addition to electric vehicle fleet over the next three years is two vehicles, for a total of three. More will be added in later years as the fleet ages and needs to be replaced. The solar charger can be rapidly deployed without the need for permitting, construction, nor electrical work. An onboard battery will store energy not used during daylight hours; this site averages 223 sunny days per year. The charger fits in a standard parking stall and could be relocated if needed.

Based on recent projects, the cost and timeline for architectural and engineering drawings, permitting, construction, purchase of chargers and installation are better suited for larger multi-charger installations. Electrical service upgrades by PG&E to support EV chargers are now required to be dedicated and separately metered with all projected charging stations installed. This requires installation of a unique transformer by PG&E, then power distribution switchgear by the company. These costs coupled with those for trenching, conduit, electrical distribution, footings for charging stations, bollards, and the charging stations are not well-suited for small installations. While PG&E will help expedite the design, approval, and installation of any new electrical service for EV chargers, it is still expected to take approximately 8-12 months.

Cost estimates from similar projects installing electric vehicle charging stations	
Architectural & Engineering for permit	**$50K**
Construction up to 6 chargers	**$286K**
Including trenching, conduit, bollards, power distribution switchgear	
Permitting/Install	**8-12 months**
EV chargers – Level 2	**$16K each**
Solar charger – Level 2	**$92K (with 2 handles)**

In situations where multiple EV chargers need be installed, this approach would make sense. However, with the minimal planned addition to the electric fleet for the Chico district at this time, installation of a solar charger is a useful and cost-effective interim step to help support the EV vehicle charging needs for the next couple of years.

b. Does the Chico District plan to purchase new electric vehicles in the 2024 GRC? If so, how many?
Response: The plan is to add two electric vehicles to the fleet over the next three years, bringing the total to three. Additional vehicles will be added in the future as the fleet ages and requires replacements.

11. Reference NVR_2024_GRC_PJ_Book_Final, Oroville PID# 133122 Station 11 Rebuild (page 77).

iv. Please provide detailed records for the past five years (2020-2024) of insufficient pumping capacity/inadequate service to meet demand at Station 11. Records may include but are not limited to operations and maintenance records, vendors' quotes, and internal communications.
Response: Cal Water does not have records of insufficient pumping at station 11. During the construction/consolidation of Stations 001 and 003 in 2021, Station 011 was the sole supplier of the 435 zone. In case of a power or equipment failure, supply into the 435 zone would have been immediately severed, requiring the mobilization of alternative manual means to move water into the upper zone such as portable booster(s). Pump failures can be mitigated with multiple pump assets of similar capacity and capability but power outages due to planned and unplanned emergencies may still cause supply outages. Stations 003 and 011 do not have onsite auxiliary power generation therefore they may not be able to pump water during a local or widespread power outage or electrical equipment failure.

a. Please show Zone 435 on the High Fire Threat District Map.
Response: Please see CONFIDENTIAL KN3-010 Attachment 6_Q11.b._Oroville_FireThreatMap_435pz.

12. Reference NVR_2024_GRC_PJ_Book_Final, Oroville PID# 133124 (Chlorine System) (pages 90-93):

    v. Please provide Station 15's monthly ground water readings for PFAS from January 2023 through November 2024.
    Response: This station is a surface water treatment plant. There is no groundwater at this location. All surface water tested has been Non-Detect for PFAS.

a. In the past six years (2019-2024), please provide maintenance records documenting times when Station 15 experienced failures that caused or required the station to be taken offline.

    i. How long did each shutdown occur?
    Response: Please see KN3-010 Attachment 7_Q12.b.i.-ii._Oroville_Treatment Plant Shutdowns.

    ii. Please explain how Cal Water provided service to customers when the shutdowns occurred (such as with a standby station, or other method).
    Response: Please see KN3-010 Attachment 7_Q12.b.i.-ii._Oroville_Treatment Plant Shutdowns.

b. Please provide a cost-benefit analysis of the recommended solution (Alternative 2, In-Kind Replacement of Disinfection System) compared to the "do nothing" alternative, as described on page 91.
Response: The project costs (direct costs) for replacing the chlorine generation system in kind are $613,444.06. The benefits of replacing the chlorine generation system include reducing the frequency of maintenance, repairs and downtime. There would be less manual dilution by Operations staff and better operator safety, if they are not handling chemicals. The project would help ensure high water quality and future plant operational performance.

For the "do nothing" alternative, there are multiple maintenance and repair costs associated with the existing onsite hypochlorite generation system, to keep it running and the water treatment plant providing reliable and high-quality water to our customers. In the past year, the aging on-site hypochlorite generation system has been down for maintenance or repairs more than 20 times, with the system going offline two or three times per month in the summer, when water demand is higher. Depending on the issue, the system could be down from several hours to several weeks, especially if a certain material or part that needs to be replaced has a long lead time. This results in additional labor needed by the Operations staff to manually dilute the sodium hypochlorite in the tanks to match the same hypochlorite concentration, produced by the on-site generation system. This alternative would leave the water treatment plant susceptible to more shutdowns and possible failures, which could leave customers without water, as there are also contaminant issues with the secondary source (groundwater).

13. Reference NVR_2024_GRC_PJ_Book_Final, Oroville PID# 133125 Sediment Basin Pipeline Improvement (pages 95-99):

Please provide a cost-benefit analysis of the recommended solution compared to the do nothing alternative, as discussed on pages 96-98.

Response: The project costs (direct costs) for modifying the sedimentation basin's drainage system are $404,692.12. The benefits of this project include allowing for full flow through the drain to be able to speed up the sedimentation basin cleaning process and thus reducing the timeframe that the treatment plant will be out of service to perform this maintenance. Because there are limited times that the treatment plant can be taken out of service, if the operations team can shorten the sedimentation basin cleaning process, then this will leave time to perform other critical maintenance on the plant, such as cleaning of the filters, tank maintenance, and pump replacements. In addition, improving the drainage system would decrease the potential of flooding, which keeps our customers downhill safe, and improves the safety of our District staff. Keeping up with maintenance on the water treatment plant overall will ensure that the plant will operate optimally and for a long time, for the benefit of our customers.

For the "do nothing" alternative, there are substantial labor costs associated with the inefficient sludge removal process of the sedimentation basins, as well as the loss of water supply during the extended water treatment plant shut down. The basins, and subsequently the entire water treatment plant, need to be shut down for cleaning. Currently, cleaning of the basins requires a minimum of seven employees, some of which need to be borrowed from other Districts, for an entire day to perform and monitor the cleaning. Water and sediment can back up at the existing sedimentation basin outlet drain during the cleaning process, which requires constant oversight to prevent flooding to the neighbors. Work needs to be stopped, and the outlet cleared regularly as well, which slows down the cleaning process. Per a recent camera investigation, there is major root intrusion within the first 350 feet of outlet pipeline, which also slows down the work. Due to the lengthy time to perform the sedimentation basin cleaning, this takes up most of the limited window of time available for the plant shutdown, consequently deferring other critical maintenance. If this other maintenance cannot occur, this could increase the risk of water outages and decrease water quality over time.

14. Reference NVR_2024_GRC_PJ_Book_Final, Oroville PID# 132914 (page 157):

During the field visit on October 4, 2024, Cal Water staff mentioned that permission from a property owner would be needed to install a connection that would be in the residence's driveway. Please provide evidence demonstrating that Cal Water has requested and received permission from the property owner to install the connection, if applicable.

Response: Cal Water is not seeking an agreement with the property owner whose driveway would be crossed when utilizing a hydrant-to-tank emergency interconnect with South Feather Water and Power's drinking water system. Cal Water is seeking an agreement with South Feather Water and Power to allow us to construct a permanent blow-off on their main at the mouth of the alley to prevent the need to cross the neighbor's driveway, increasing safety in the emergency interconnection operations. A permanent blowoff would prevent the need to drive over the interconnection hose (which places strain on the hydrant on one side of the connection and the wharfhead on Cal Water's side), protecting facilities of both water systems. All discussions with South Feather Water and Power regarding this endeavor, while friendly and neighborly, have been verbal. Further discussion will continue in early 2025.

15. Reference NVR_2024_GRC_PJ_Book_Final, Oroville PID# 133121 Terrace Dr. New PRV (page 158):

    a. Please provide a record of all customer complaints from 2020-2024 related to low water pressure in the highest part of Zone 470.
    Response: Please see KN3-010 Attachment 8_Q15.a._Oroville Water Quality Complaints 2020 - 12.12.2024

        vi. Are there any safety risks and concerns associated with pressure level dropping below 40 psi? If so, please provide supporting documents stating the safety concerns.
        Response: Please see KN3-010 Attachment 9_Q15.b._General Order 103A (Pages 30 and 31). General Order 103-A, Section VII, 6 A as well as California Water Works Standards in Title 22, Section 64602 (b) require that water systems provide a minimum operating pressure be not less than 40 psi. Low pressures may present a public health concern for potable water systems by allowing backpressure and back siphonage backflow as outlined in AWWA M14 Manual, Backflow Prevention and Cross-Connection Control Recommended Practices. Maintaining adequate pressure protects public health by reducing the potential of cross-connections to introduce non-potable material into the drinking water system either through cracks, breaks, or joints in the distribution system or a direct connection. Additionally, from a safety standpoint, fire hydrants and suppression systems (sprinklers) are designed and operated based on the availability of flow and pressure. Water systems fluctuate with demand and usage so targeting a water system operating pressure of 40 psi ensures that the appurtenances will function properly with a pressure drop to the absolute minimum of 20 psi. Having pressure above 40 psi ensures the proper functionality of systems and may reduce response time by avoiding the need of using onsite fire pumps or mobilizing pumper trucks.

16. Reference WIL_2024_GRC_PJ_Book_Final, Willows PID# 132714 (page 45):

a. Please provide records, including inspection reports, images, or other documentation, of repairs currently needed in the Station 4 building.

Response: Please refer to CONFIDENTIAL KN3-010 Attachment 10_Q16.a._ Roof Hatch Leak and CONFIDENTIAL KN3-010 Attachment 11_Q16.a._ Pump House Condition

b. Please provide documentation showing the timeline for Station 4 pump maintenance that requires widening of the skylight.

Response:

Timeline for WIL-W-004-01

Task Number	Task Name	Finish Month	Finish Year
Task 1	Preliminary Design	01	2026
Task 2	Bidding and Procurement	02	2026
Task 3	Pull Pump	03	2026
Task 4	Well Rehab	03	2026
Task 5	Well Assessment	03	2026
Task 6	Install New Pump	04	2026
Task 7	Start Up and Testing	05	2026
Task 8	Final Close Out	06	2026

California Water Service is proposing to widen the skylight to provide adequate spacing between the pumping equipment and the roof structure to prevent potential damage. The roof hatch has an opening of approximately 26"x26"; see Manhole Detail on Page 1, upper left corner, of CONFIDENTIAL KN3-010 Attachment 12_Q16.b._WIL 004-01 - Pump Building Drawing - 1929. The motor diameter of the pump for WIL 004-01 is 21.69", leaving about two inches of clearance on each side. These tight fit risks damaging the roof rafters. Please see CONFIDENTIAL KN3-010 Attachment 13_Q16.b._WIL 004-01 - Motor Dimensions 2016. California Water Service has proposed replacing the pump and motor at WIL 004-01 in the 2024 GRC due to 'Overall Plant Efficiency' score dropping from 56.7 to 52.4 (Fair to Poor). The project is scheduled for 2026. In 2026, Cal Water plans to standardize our well pump design by replacing the existing pump head with the Flowserve Type W head, which has a diameter of 23.5". This leaves approximately 1-1/4" of clearance on each side, posing a risk of damaging the roof rafters. Please see CONFIDENTIAL KN3-010 Attachment 14_Q16.b._Flwsrv Type W Heads - Dimension. Please see CONFIDENTIAL KN3-010 Attachment 15_Q16.b._WIL 004-01 - PUMP INSTALL – 2016 and CONFIDENTIAL KN3-010 Attachment 16_Q16.b._WIL 004-01 - PUMP INSTALL PT.2 - 2016 for further information on the current space constraints inside the pump building.

END RESPONSE

Attachment 4-3:
A.21-07-002 2021 GRC Chico District Project
Justification Book

CAPITAL PROJECT JUSTIFICATION

Chico District

2021 GENERAL RATE CASE

A.21-07-____ (For Test Year 2023)

July 2021

California Water Service

Quality. Service. Value.

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Table of Contents

Section A. Operating District Overview 6
District Summary 7
Chico District 2021 GRC Capital Improvement Summary 7
Chico Project Justification Book Structure 8
Chico Project Justification Threshold 9
Chico Location Factor 9
Service Area Terminology 9
Section B. Programmatic Justifications 11
Pipeline Replacement Program 12
Meter Replacement Program 36
PID # 123963, 123964… Flowmeter Replacements 40
Section C. Specific Justifications 44
PID # 123900 Well PFAS Treatment Station 7 45
PID # 123938 Well Carbon Tetrachloride Treatment Station 51 53
PID # 123979 Rebuild Station 50 60
PID # 124068 Wildfire - 475 Zone Bruce Road New Main 66
PID # 124236 Routine Panelboard Replacement Station 32 72
PID # 124251 Water Supply & Facilities Master Plan 76
PID # 124797 Wildfire - Station 64 Pump Storage Facility 92
PID # 125758 RTU and Flowmeter on PRVs 98
Section D. Cost Summary Table 108
Section E. Supply Demand Report 123

Table 1. Capital Budget Summary – Chico District

End Year	Project ID	Description	Direct Cost[a]	Inserted [b]
2022	123963	CH 2022 Flowmeter Replacement	$310,877	X
2022	125139	CH 2022 Sample Site	$7,888	X[(d)]
2022	123803	CH 2022 Conrol Valve Overhauls	$22,784	X[(d)]
2022	123202	CH Tank Exterior Ladder Lifelines	$25,394	X[(d)]
2022	123990	CH 2022 Customer Meter Vault Lids	$28,892	
2022	124212	CH 2022 Hydrants for City	$32,711	
2022	124971	CH 2022 SB 1398 Service Replacemnts	$46,446	X[(d)]
2022	124202	CH 2022 ADDITIONAL DUMP TRUCK	$98,343	
2022	124227	CH Routine GAC Changeouts 2022	$160,151	
2022	123683	CH 065-PT1 - Pressure Vessel Rplcmn	$292,423	X[(d)]
2022	124068	CH Wildfire 475 Zone Bruce Rd Main	$424,135	
2022	125758	CH RTU & Flowmeter on PRVs	$490,621	X
2022	CHD0900_2022	Meter Replacement Program	$188,556	X
2022	104MRP22	CH 2022 Main Replacement Program	$4,253,687	X
2022	124060	CH 081-C Replace Pump & Motor	$71,811	X[(d)]
2022	124057	CH 029-01 Replace Pump & Motor	$83,047	X[(d)]
2022	124061	CH 064-01 - Replace Pump & Motor	$83,047	X[(d)]
2022	125424	CH 2022 Physical Security Upgrades	$139,647	X[(c)]
2022	123722	CH 2022 Vehicle Replacement Program	$40,210	X[(d)]
2022	104UNSCH_22	CH 2022 Unscheduled	$1,654,810	X[(d)]
2022	104-NON-SP_22	CH Non Specific 2022	$695,929	X[(d)]
2023	123808	CH 2023 Control Valve Overhauls	$23,484	
2023	123964	CH 2023 Flowmeter Replacement	$328,530	X
2023	123992	CH 2023 Customer Meter Vault Lids	$29,615	
2023	124219	CH 2023 Hydrants for City	$33,529	
2023	124992	CH 2023 Analyzers Replacement	$61,343	X[(d)]
2023	123541	CH 064-PT1 - Pressure Vessel Rehab	$82,957	X[(d)]
2023	123723	CH 2023 Vehicle Replacemnt Program	$96,207	X[(d)]
2023	124344	Chico Reliability Study	$144,529	
2023	123979	CH 50 Station Rebuild - Design	$171,699	
2023	124234	CH Routine GAC Changeouts 2023	$234,249	
2023	124251	Chico WSFMP	$323,208	X
2023	123938	CH 51 Install GAC Treatment	$1,090,731	X
2023	CHD0900_2023	Meter Replacement Program	$193,270	X
2023	104MRP23	CH 2023 Main Replacement Program	$4,360,030	X
2023	124059	CH 041-01 Replace Pump & Motor	$84,486	X[(d)]
2023	124055	CH 027-01 Replace Pump & Motor	$85,123	X[(d)]
2023	123167	CH 080-01 - Replace Pump & Motor	$85,123	X[(d)]
2023	125425	CH 2023 Physical Security Upgrades	$151,823	X[(c)]

End Year	Project ID	Description	Direct Cost[a]	Inserted [b]
2023	104UNSCH_23	CH 2023 Unscheduled	$1,696,180	X[d]
2023	104-NON-SP_23	CH Non Specific 2023	$713,207	X[d]
2024	125431	CH-HC 2024 Analyzer Replacement	$11,349	X[d]
2024	123809	2024 Control Valve Overhaul CH	$24,931	X[d]
2024	123966	CH 2024 Flowmeter Replacement	$353,166	X
2024	124241	CH New gas monitors	$6,504	
2024	124997	CH 2024 Analyzers Replacement	$11,349	X[d]
2024	123994	CH 2024 Customer Meter Vault Lids	$30,355	
2024	124222	CH 2024 Hydrants for City	$34,367	
2024	123704	CH 066-PT1 - Pressure Vessel Rehab	$85,031	X[d]
2024	124198	CH 2024 ADDITIONAL TRUCK	$105,409	
2024	124237	CH Routine GAC Changeouts 2024	$240,072	
2024	124211	CH 54 New Generator and ATS	$296,314	
2024	124236	CH 32 Panelboard Replacement	$304,920	X
2024	124797	CH 64 Wildfire Pmp Storage - Design	$352,220	X
2024	123900	CH 7 Install GAC Treatment	$1,264,436	X
2024	CHD0900_2024	Meter Replacement Program	$198,102	X
2024	104MRP24	CH 2024 Main Replacement Program	$4,469,030	X
2024	125426	CH 2024 Physical Security Upgrades	$94,831	X[c]
2024	123724	CH 2024 Vehicle Replacement Progrm	$291,505	X[d]
2024	104UNSCH_24	CH 2024 Unscheduled	$1,738,584	X[d]
2024	104-NON-SP_24	CH Non Specific 2024	$731,137	X[d]
Total	**61**		**$29,784,344**	

Notes:

(a) Direct costs include escalation, but exclude construction overhead and AFUDC.

(b) Only projects above the District threshold of $300,000 direct cost are presented in this book with either a specific or programmatic justifications (see Section A for additional discussion). Projects not denoted as being inserted can be found in the Chico Report on the Results of Operation book.

(c) Due to confidentiality concerns, justifications for Physical Security projects are include separately within the Physical Security Project justification book.

(d) Project presented in the Common Plant Issues justification book.

Section A.

Operating District Overview

District Overview

District Summary

Cal Water's Chico District (District) was formed in 1926 with the purchase of the Chico Water Supply Company, Chico-Vecino Water Company, and the C.C. White Water Company. The system contains over 380 miles of pipelines, eight storage tanks (approximately 3.3 million gallons in total storage), and six booster pumps. The District also has an additional 10 wells that are inactive. Customers in Chico are served groundwater from 55 active wells, providing an average of 20.2 million gallons per day to meet the demands of approximately 109,723 customers (see Section E *Supply Demand Report* for additional details and analysis). Historical and forecasted water demands for the District are presented in Figure 1 below based on the findings of the 2020 *Urban Water Management Plan* (UWMP).

In addition, Cal Water began serving Hamilton City in 1962. Hamilton City customers are served from three active wells and has a total pipeline length of approximately 7.7 miles.

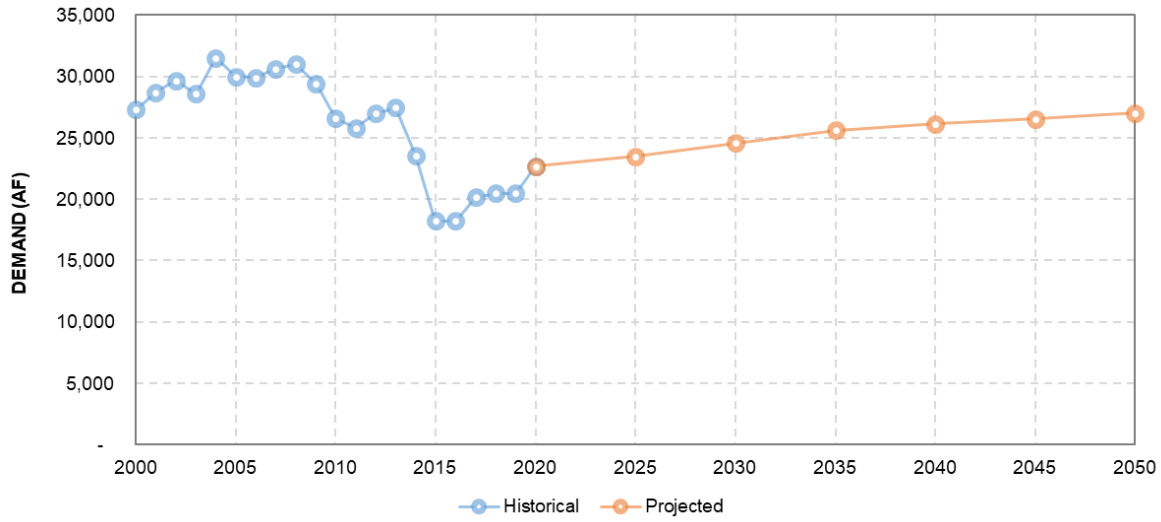


Figure 1 – Chico District Historic and Forecasted Customer Demand

Chico District 2021 GRC Capital Improvement Summary

For the 2021 GRC, the District will focus on pipeline replacement, wildfire projects (various types of projects designed to mitigate the high risk associated with wildfire in the District), and water treatment projects at several of its well sites. Owing to the impending water quality regulations regarding per- and polyfluoroalkyl substances (PFAS), as well as current contaminant levels regarding tetrachloride, the District will be focusing a significant portion of its 2021 GRC proposed budget on treating these contaminants in its available groundwater water supply. In addition, there will be projects to address panelboard replacements needs, a Water Supply Facilities Master Plan (WSFMP) and Water Supply Reliability Study (WSRS) to better understand long-term needs and available water supplies, as well as routine flowmeter, pump, and vehicle replacements.

Chico Project Justification Book Structure

The Chico Project Justification (PJ) book is separated into two key sections: (1) programmatic justifications (Section B), and (2) individual specific project justifications (Section C). Programmatic projects are those which are part of a larger company wide capital investment strategy and which have an additional supporting justification outside of the Chico PJ book in the Common Plant Issues justification book (see subsection below for complete listing). Specific project justifications are those unique district projects for which an individual detailed project justification presents the necessity and supporting documents for the capital project. Generally, specific project justifications are projects which are not part of any ongoing companywide programs.

Programmatic Justifications

The following is a complete listing of all programmatic justifications covered in the Common Plant Issues justification book:

- Flowmeter Replacements
- Vehicle Replacements
- Control Valve Overhaul and Replacement
- Water Quality Sample Stations
- SB 1398 Service Replacement Program
- Pump and Motors
- Wildfire Hardening
- Meter Replacements
- Customer Meter Vault Lids
- Cathodic Protection
- Tank Retrofits
- Tank Coating
- Pressure Vessel Replacement
- Water Quality Analyzers

Not all programs are applicable to every district and only additional detail beyond the Common Plant Issues justification book is presented in this PJ book for programs that are over the district threshold (see section below for addition details on the Chico District threshold).

Justification Presentation Format

Programmatic and specific justifications in this PJ book are presented in the following general format:

- **Overview/Problem Statement:** A brief introduction providing any background and/or summary of the needs for the project.
- **Project Justification:** This section identifies the deficiencies and any supporting analysis or details supporting the need for improvement project.
- **Alternative Analysis:** Description of approaches to address the current deficiencies, which always includes a "*Do Nothing*" alternative (i.e. maintain existing conditions).
- **Recommended Solution** Identification and reasoning for the optimum solution to the current deficiencies.
- **Detailed Project Scope:** This section provides a more detailed breakdown of the recommended solution, including permitting challenges, potential construction considerations, and customer awareness.

- **Customer Benefits:** The intent of this section is to make clear how customers directly benefit from the recommended project to address the deficiencies previously identified.
- **Attachments:** All supporting documents, figures, data, maps, reports, budgets, and cost information are presented at the end of the justification write up.

In addition, some projects reference critical reports or studies that have been located at the end of the PJ book in Section F Background Reports given the document size. This was intended to avoid having supporting documents that are of significant length (generally greater than 50 pages) being located in the middle of the PJ book and making it difficult for the reader to find specific justifications or read through the PJ book.

Chico Project Justification Threshold

Detailed written justifications have been provided for all programmatic and specific projects greater than $300,000 direct cost in order to demonstrate the necessity of the capital investment proposed for the District in the 2021 GRC. This threshold was selected as the most appropriate dollar amount to ensure that all major capital projects in the District are presented in sufficient detail to the CPUC and customers for review. Budgeting and cost details for all projects in the District are available for review in the relevant Results of Operation Report.

Chico Location Factor

Location factors are a vital tool in cost engineering in order to provide a way to evaluate relative costs between two geographic locations.[1] Cal Water has incorporated a location factor into its standard cost estimating practices since first presented to the Commission in the 2018 GRC and as described in the Common Plant Issues justification book. The use of location factors ensures that costs developed for a particular district can more accurately reflect the economic environment of that district and thereby improve the confidence in the cost estimates Cal Water presents to the Commission and its customers. For the Chico District, Cal Water has assigned no location factor change (i.e. markup of 0%) over baseline cost estimates developed from Cal Water's Cost Catalogue (see Section D) and vendor quotes. Cal Water believes the baseline costs developed and cost quotes from vendors are applicable as is for Chico.

Service Area Terminology

"Ratemaking areas," "operating districts," and other terminology used throughout this project justification book is defined here for clarity. A "ratemaking area" has a fixed definition and consists of the geographic areas that have a common revenue requirement, as historically approved by the CPUC. The terms "district" or "operating district," however, no longer have a fixed definition, but are generally used to refer to the group of water systems whose operations are overseen by one management group.[2]

[1] AACE, No. 28-R-03 *Developing Locations Factors by Factoring – As Applied in Architecture & Engineering, And Engineering, Procurement & Construction* (2006)
[2] Cal Water has twenty-four (24) operating districts. See Common Plant book for additional discussion.

Chico is considered both an operating district and a ratemaking area.

Section B.

Programmatic Justifications

Details on the overall programs presented within this section are included in the Common Plant Issues justification book as they are companywide programs affecting multiple districts.

District – Chico
Pipeline Replacement Program

Overview

Cal Water is proposing to replace 38,703-ft of pipeline within the Chico District (District) during the 2022 to 2024 rate cycle in order to decrease the break rate and reduce risk exposure to Cal Water and its customers. This length amounts to an average percent replacement rate throughout the cycle of 0.60% per year. Pipeline projects identified for this program were selected utilizing a risk prioritization model, as well as input from operations managers and other key stakeholders. Cal Water is proposing an incremental increase in the overall pipeline replacement program from the 2018 General Rate Case (GRC) application from 0.55% to 0.60%.

Program Justification

This program is necessary to ensure that pipelines are being proactively replaced and not waiting until complete failure that could have significant consequences and impact on customers. This puts Chico's replacement rate at 0.60% year replacement cycle in the 2021 GRC, which is still below the industry recommended replacement rate of between 1% and 1.6% per year.[3] However, given the competing priorities within Chico (e.g. water treatment projects), Cal Water believes that a 0.60% replacement is the best alternative to continue delivery a high quality reliable source of water to customers for the future.

Details of the pipeline assessment criteria and candidate selection can be found in Common Plant Issues justification book and a summary of the pipeline replacement program for the District is presented below in Table 1.

Table 2. Chico District Pipeline Replacement Program for 2021 GRC

PID	Year	Total District Footage (ft)	Average Replacement Length (ft)	Average Replacement Rate	Unit Cost [(a)] ($/ft)	Direct Cost[(b)]
104MRP22	2022		12,901	0.60%		$4,253,687
104MRP23	2023	2,150,129	12,901	0.60%	$285.30	$4,360,030
104MRP24	2024		12,901	0.60%		$4,469,030

Notes:

(a) Unit cost average for 2020

(b) Assumes escalation of 2.5% per year and 10% contingencies above unit cost (see attached Cost Estimates for details)

[3] Utah State University, *Water Main Break Rates in the USA and Canada: A Comprehensive Study* (March 2018)

Selection Methodology

The Chico distribution system is comprised of roughly 407.2 miles of pipeline and the distribution of the risk associated with these pipelines can be seen the risk matrix presented in Figure 1. This risk assessment is based on an individual asset determination, considering the consequence of failure (i.e. what is the impact on customers and company if this pipeline leaks or breaks) and probability of failure (i.e. how likely will this pipeline leak or break given its age, material, and other site specific conditions). Additional details on risk analysis for the pipeline replacement program is available in the Common Plant Issues justification book. The conditions of these pipelines were then mapped in a GIS layer, as presented in Attachment A, and, in meeting with District operators, engineers, and water quality staff, as well as other key stakeholders potential pipeline projects were then identified. Based on this analysis, the projects presented in Attachment B were selected for consideration in the 2021 GRC.

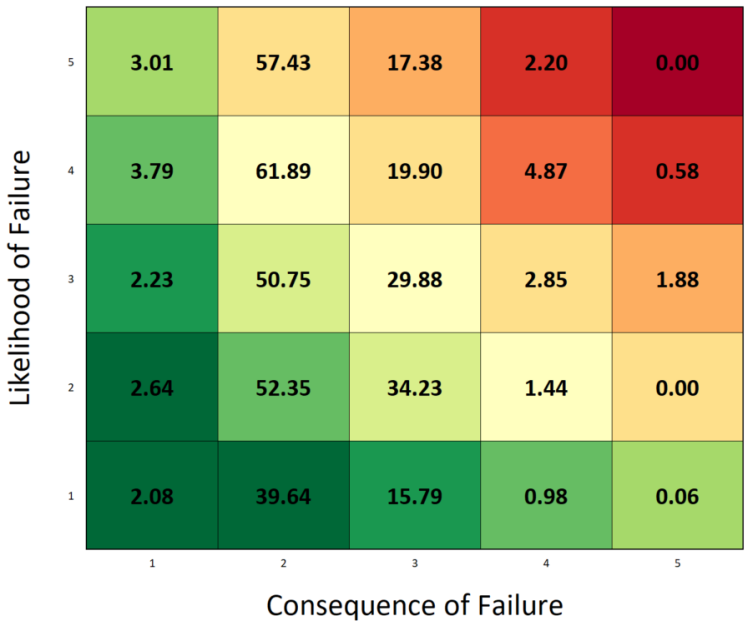


Figure 2 – Chico District Pipeline Risk Assessment Matrix
(number in each category represents number of miles with that overall risk assessment)

Summary

Cal Water is proposing to replace a total of 38,703 feet of pipeline in the 2022 to 2024 rate cycle for the Chico District. The average replacement rate will be 0.60% per year. The pipelines selected utilizing the prioritization model and input form the operations manager are designed to decrease the break rate and reduce risk exposure to Cal Water and its customers.

Project Attachments

Cost Estimate

Attachment A – Chico Main Replacement Candidate Map
Attachment B – Pipelines Replacement Schematics

104MRP22 Cost Estimate

Capital Project Cost Estimate

Project No. : 104MRP22
Description CH 2022 Main Replacement Program
District / Department: Chico
Project Start Date: 01/01/2022
Project Completion Date: 12/31/2022
Prepared By: dblanusa
Date Initiated: 09/14/2020
Base Year: 2020
Sub-Total: $4,048,721
Direct Cost: $4,253,687

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
REPLACE MAIN PIPELINE	[LF]	12901	$285.30	$3,680,655.30	Common Plant Book B.a
10% CONTINGENCY	[EA]	1	$368,065.53	$368,065.53	Common Plant Book B.a

Sub-total = $4,048,720.83
Direct Cost = $4,253,687.32

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

104MRP23 Cost Estimate

Capital Project Cost Estimate

Project No. : 104MRP23
Description CH 2023 Main Replacement Program
District / Department: Chico
Project Start Date: 01/01/2023
Project Completion Date: 12/31/2023
Prepared By: dblanusa
Date Initiated: 09/14/2020
Base Year: 2020
Sub-Total: $4,048,721
Direct Cost: $4,360,030

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
REPLACE MAIN PIPELINE	[LF]	12901	$285.30	$3,680,655.30	Common Plant Book B.a
10% CONTINGENCY	[EA]	1	$368,065.53	$368,065.53	Common Plant Book B.a

Sub-total = $4,048,720.83
Direct Cost = $4,360,029.52

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

104MRP24 Cost Estimate

Capital Project Cost Estimate

Project No. :	104MRP24
Description	CH 2024 Main Replacement Program
District / Department:	Chico
Project Start Date:	01/01/2024
Project Completion Date:	12/31/2024
Prepared By:	dblanusa
Date Initiated:	09/14/2020
Base Year:	2020
Sub-Total:	$4,048,721
Direct Cost:	$4,469,030

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
REPLACE MAIN PIPELINE	[LF]	12901	$285.30	$3,680,655.30	Common Plant Book B.a
10% CONTINGENCY	[EA]	1	$368,065.53	$368,065.53	Common Plant Book B.a

Sub-total =	$4,048,720.83
Direct Cost =	$4,469,030.20

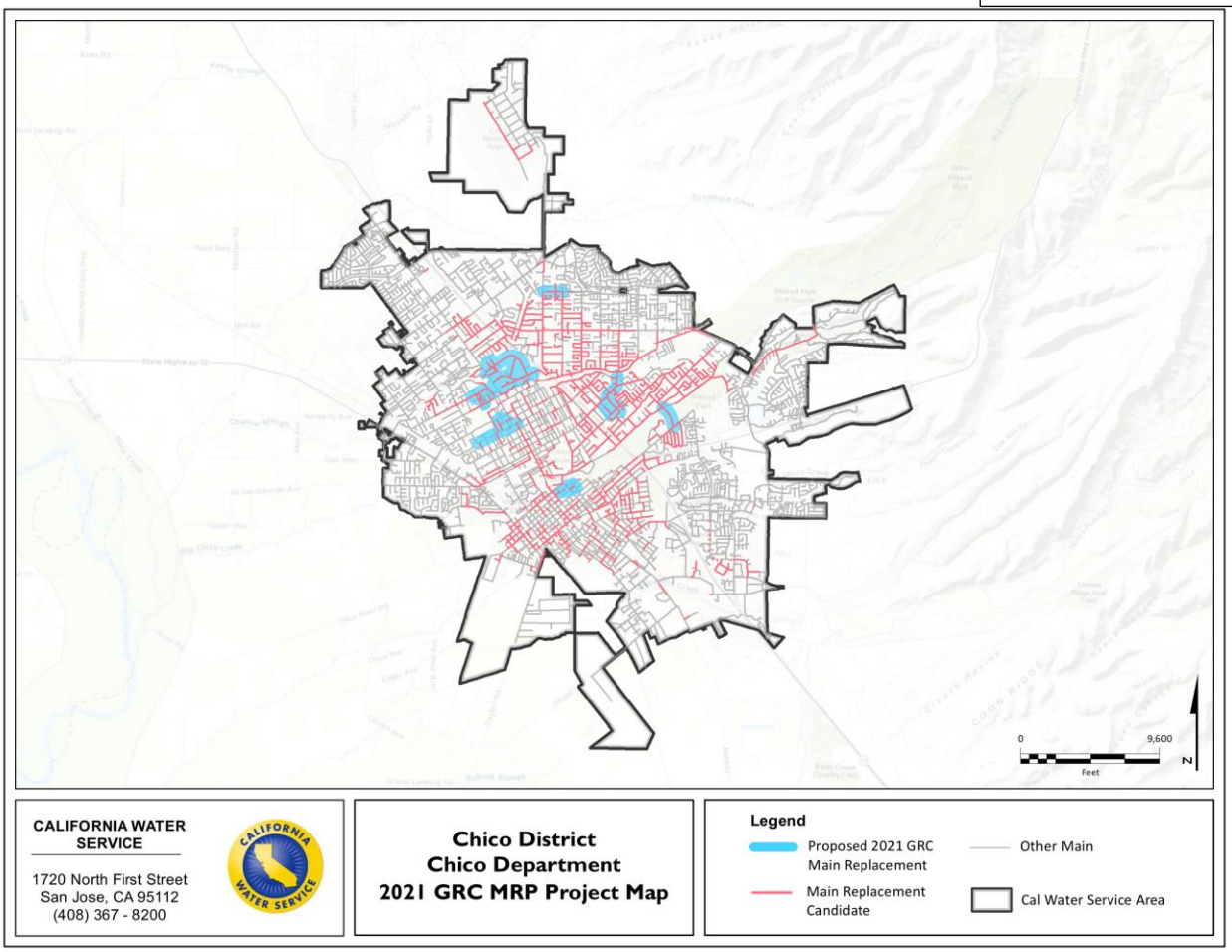
Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

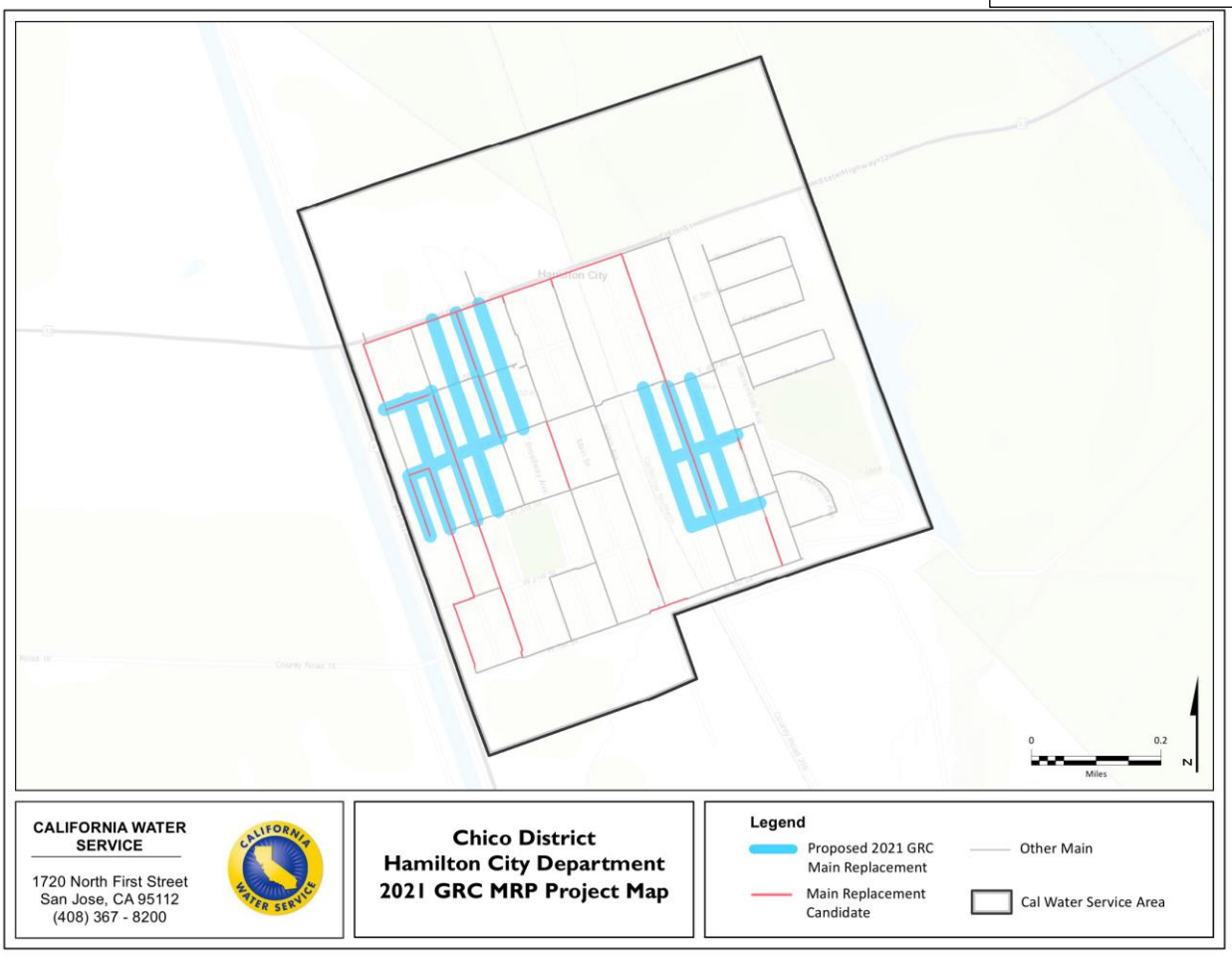
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

104MRP22, 104MRP23… Attachments



Attachment A
PID: 104MRP22, 104MRP23…



Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-18B2
Budget Year: 2022

Number of Leaks: 1	Install Footage: 3145 ft
Likelihood of Failure (LOF): High	Retirement Footage: 1054 ft
Consequence of Failure (COF): Medium-High	Financial Department: Hamilton City
Business Risk Exposure (BRE): High	Water System: Hamilton City

COF Factors

Secondary Road
Local Road
Alley
School
Landslide Hazard
Pipe Size Score = 3
Land Use: 4
Soil: CL_GW_ML

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 162.5 325 650
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

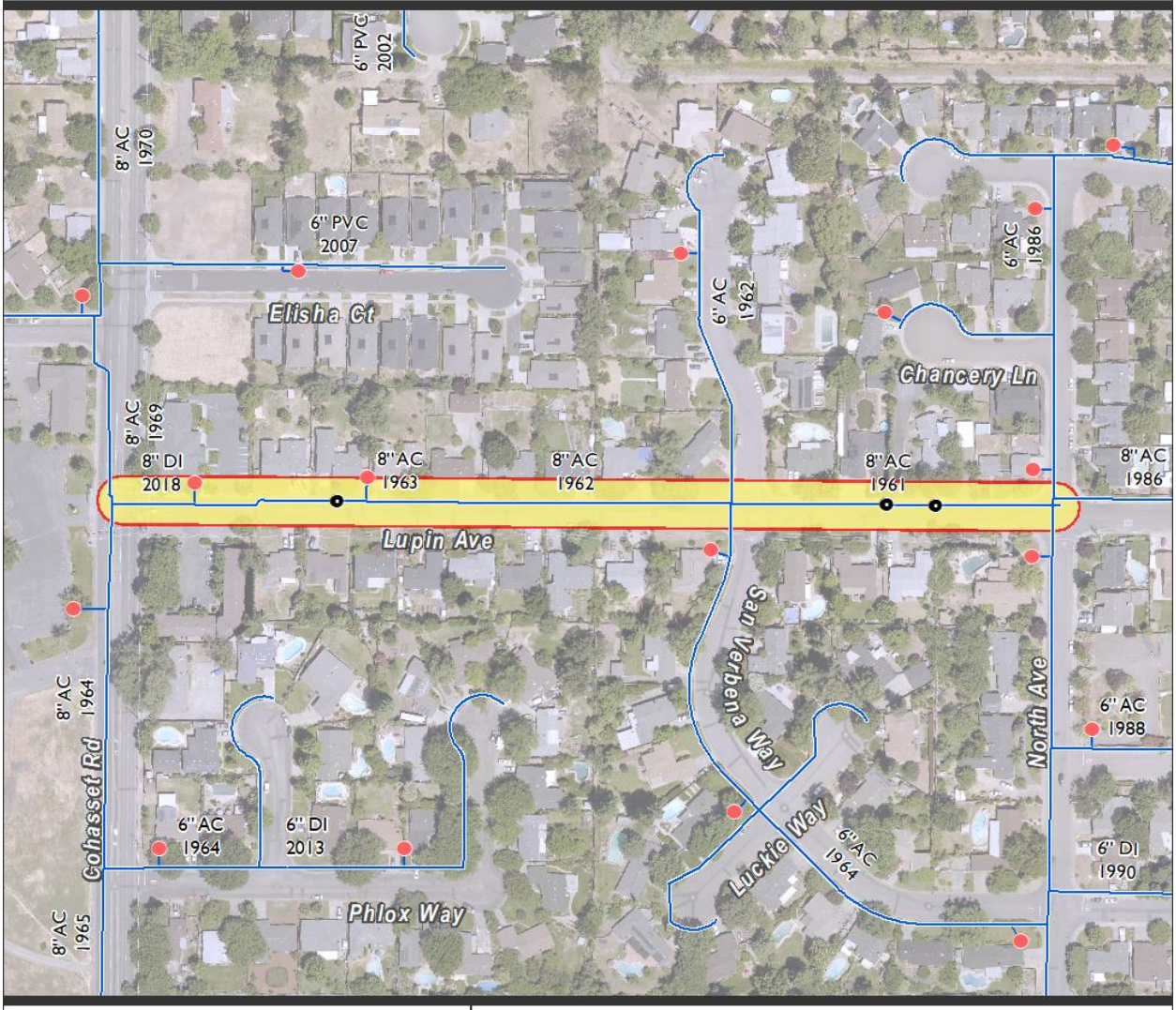
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-18F
Budget Year: 2022

Number of Leaks: 4
Likelihood of Failure (LOF): High
Consequence of Failure (COF): Low-Medium
Business Risk Exposure (BRE): Medium

Install Footage: 1327 ft
Retirement Footage: 1327 ft
Financial Department: Chico
Water System: Chico



COF Factors

Secondary Road
Local Road
Landslide Hazard
Pipe Size Score = 4
Land Use: 4
Soil: CL_ML

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

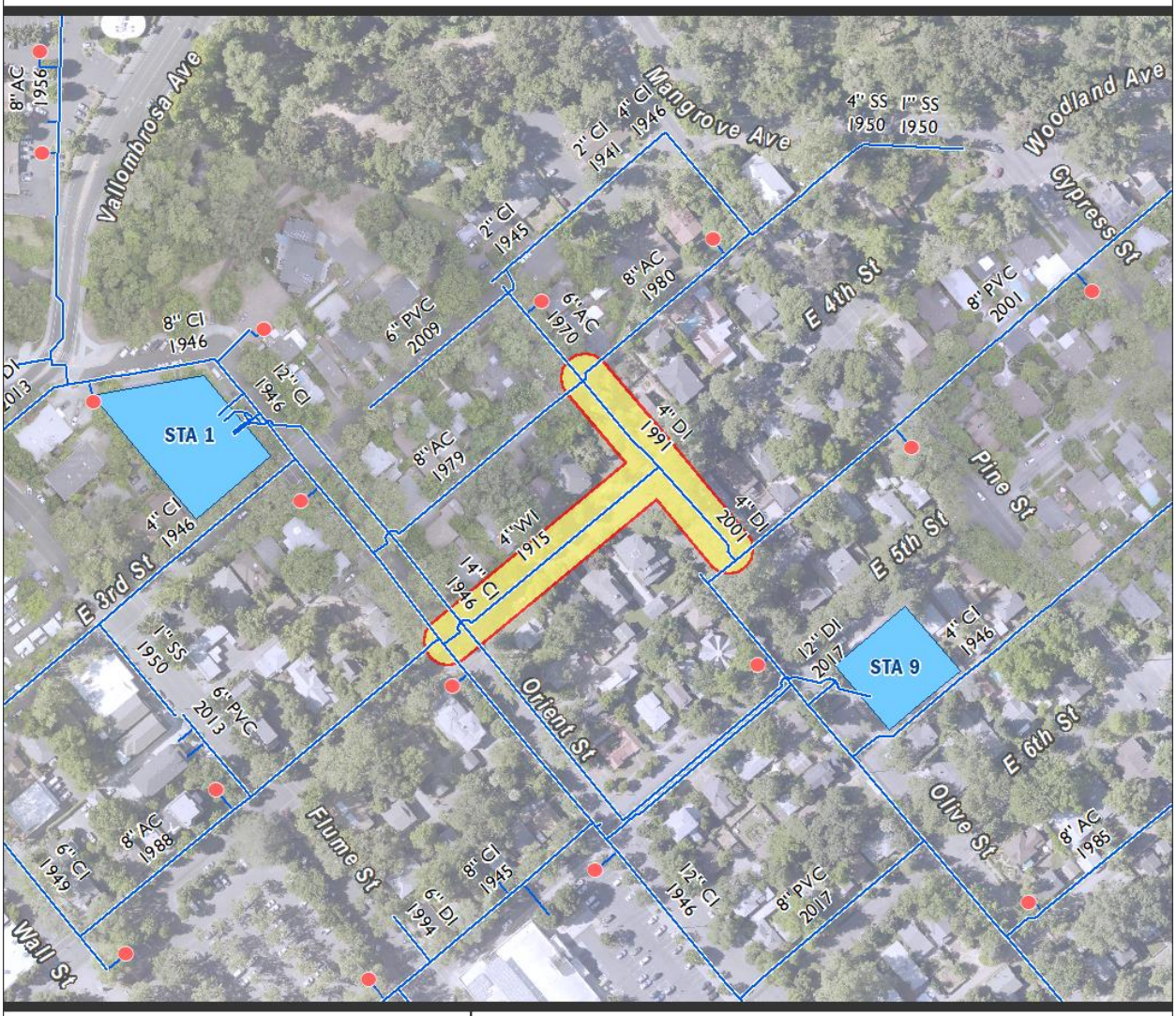
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-18K
Budget Year: 2022

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
695 ft
Retirement Footage:
695 ft
Financial Department:
Chico
Water System:
Chico



COF Factors
Local Road
Pipe Size Score = 2
Land Use: 3
Soil: SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

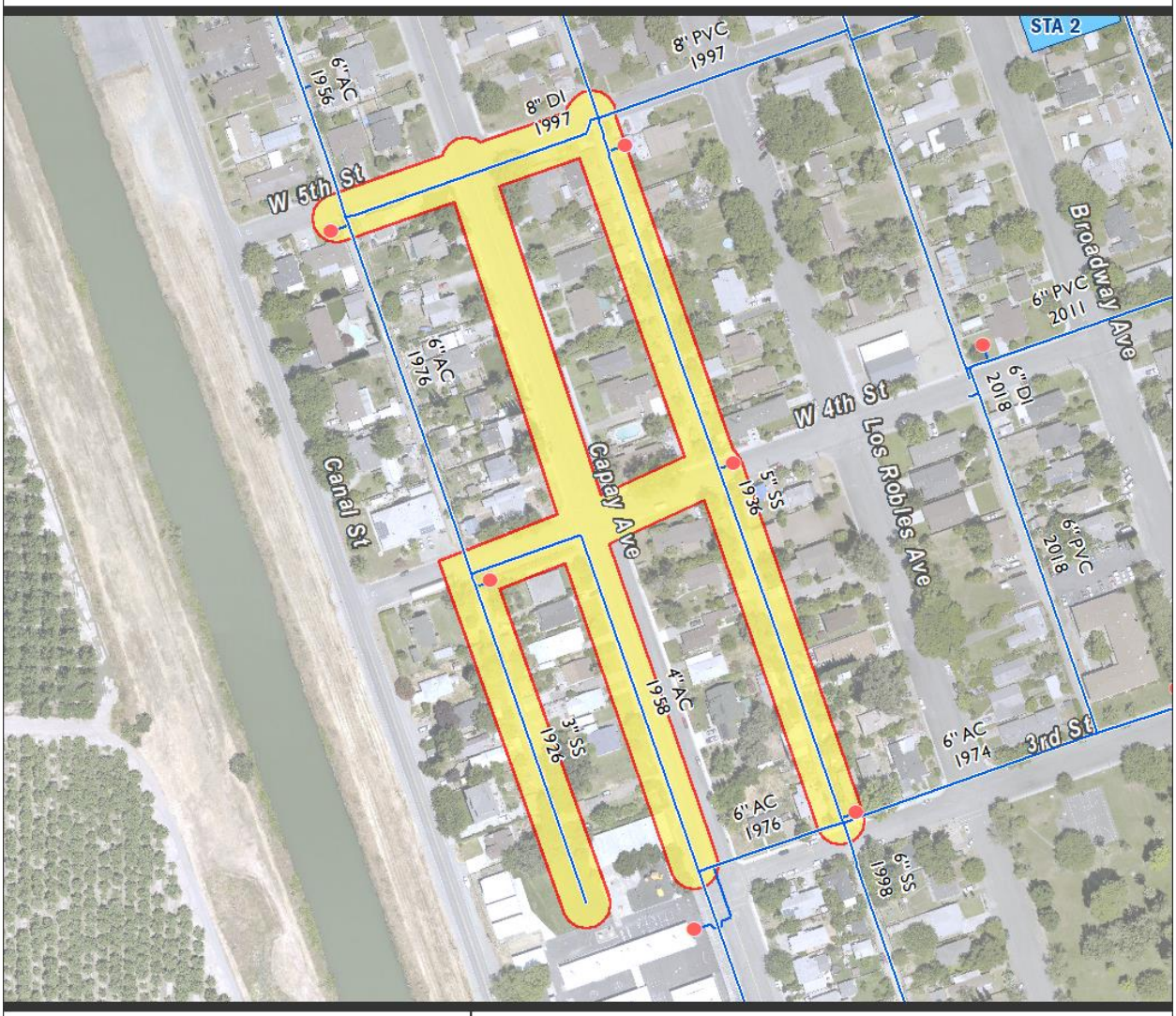
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-18N1
Budget Year: 2022

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
2439 ft
Retirement Footage:
2772 ft
Financial Department:
Hamilton City
Water System:
Hamilton City



COF Factors
Local Road
Alley
School
Pipe Size Score = 4
Land Use: 4
Soil: CL_ML

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 115 230 460
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-18T
Budget Year: 2022

Number of Leaks: 1	Install Footage: 829 ft
Likelihood of Failure (LOF): High	Retirement Footage: 829 ft
Consequence of Failure (COF): Low-Medium	Financial Department: Chico
Business Risk Exposure (BRE): Medium	Water System: Chico

COF Factors

Local Road
Pipe Size Score = 2
Land Use: 5
Soil: SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

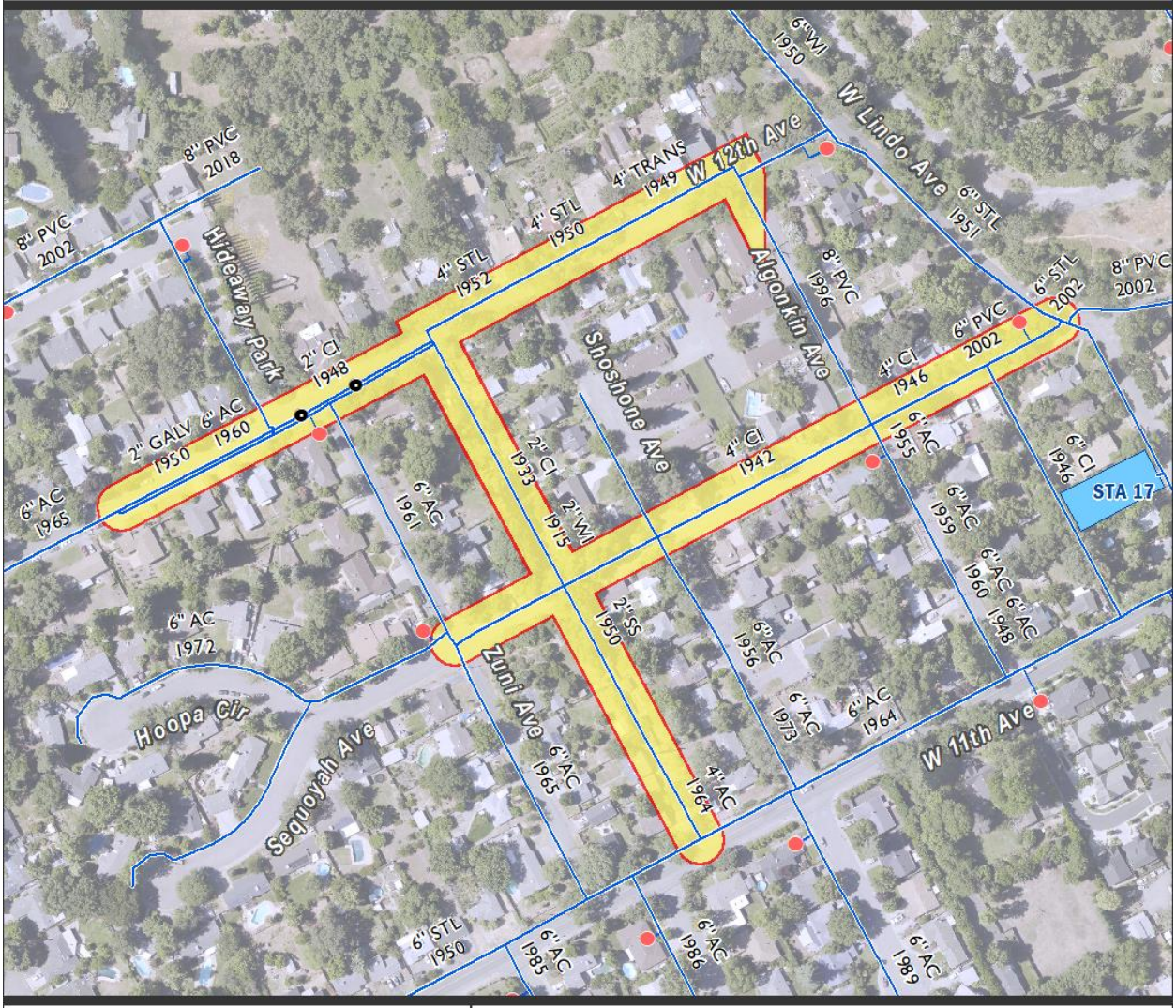
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-18U
Budget Year: 2022

Number of Leaks: 2
Likelihood of Failure (LOF): High
Consequence of Failure (COF): Medium
Business Risk Exposure (BRE): Medium-High

Install Footage: 2139 ft
Retirement Footage: 2997 ft
Financial Department: Chico
Water System: Chico



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 3
Land Use: 3
Soil: SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 115 230 460
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

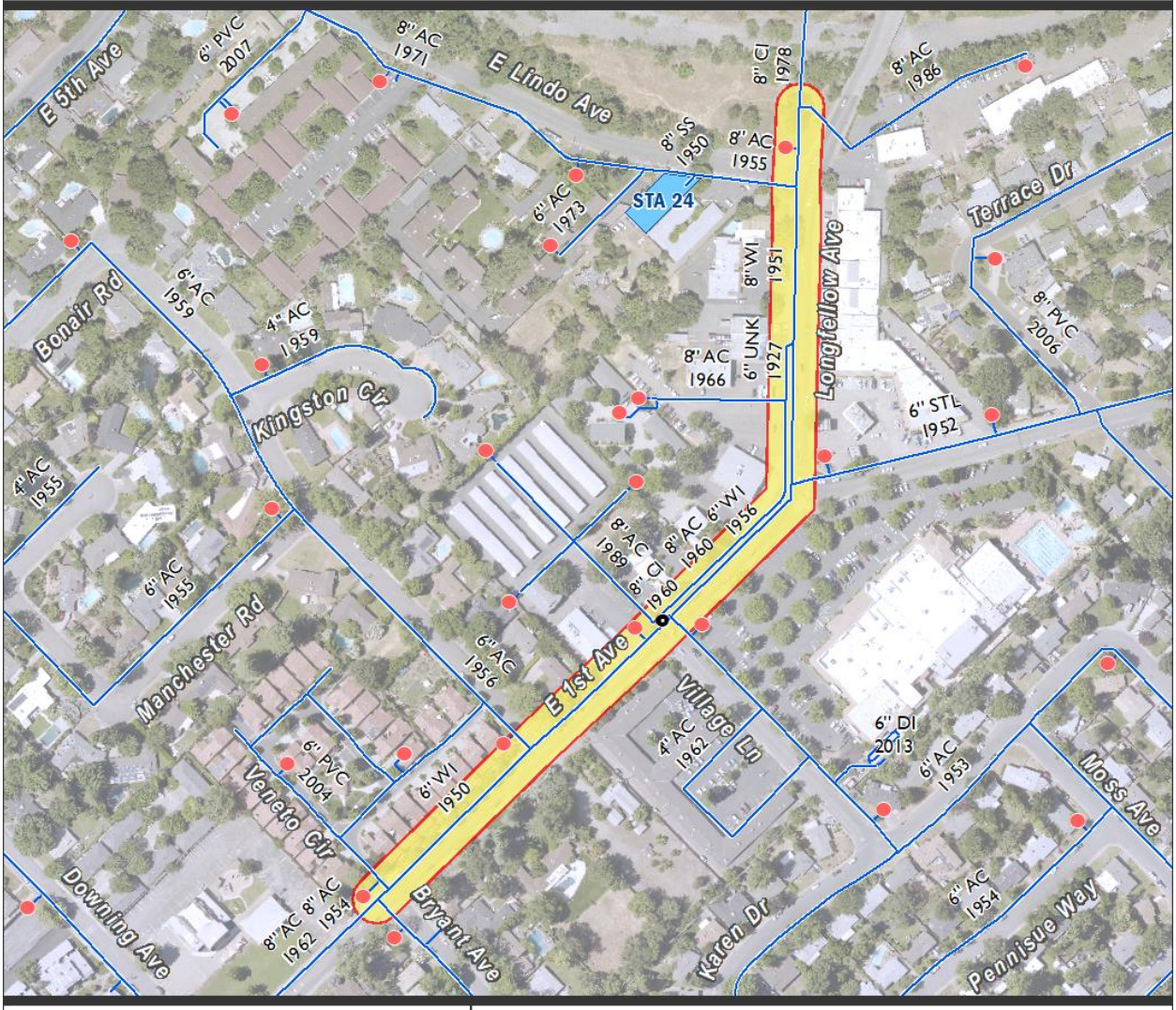
CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21A
Budget Year: 2023

Number of Leaks: 1	Install Footage: 1749 ft
Likelihood of Failure (LOF): High	Retirement Footage: 1749 ft
Consequence of Failure (COF): Medium	Financial Department: Chico
Business Risk Exposure (BRE): Medium-High	Water System: Chico



COF Factors

Secondary Road
Local Road
Water Body or Stream
Low Fire Threat
Pipe Size Score = 4
Land Use: 4
Soil: CL_GM_GP_ML_SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 137.5 275 550
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

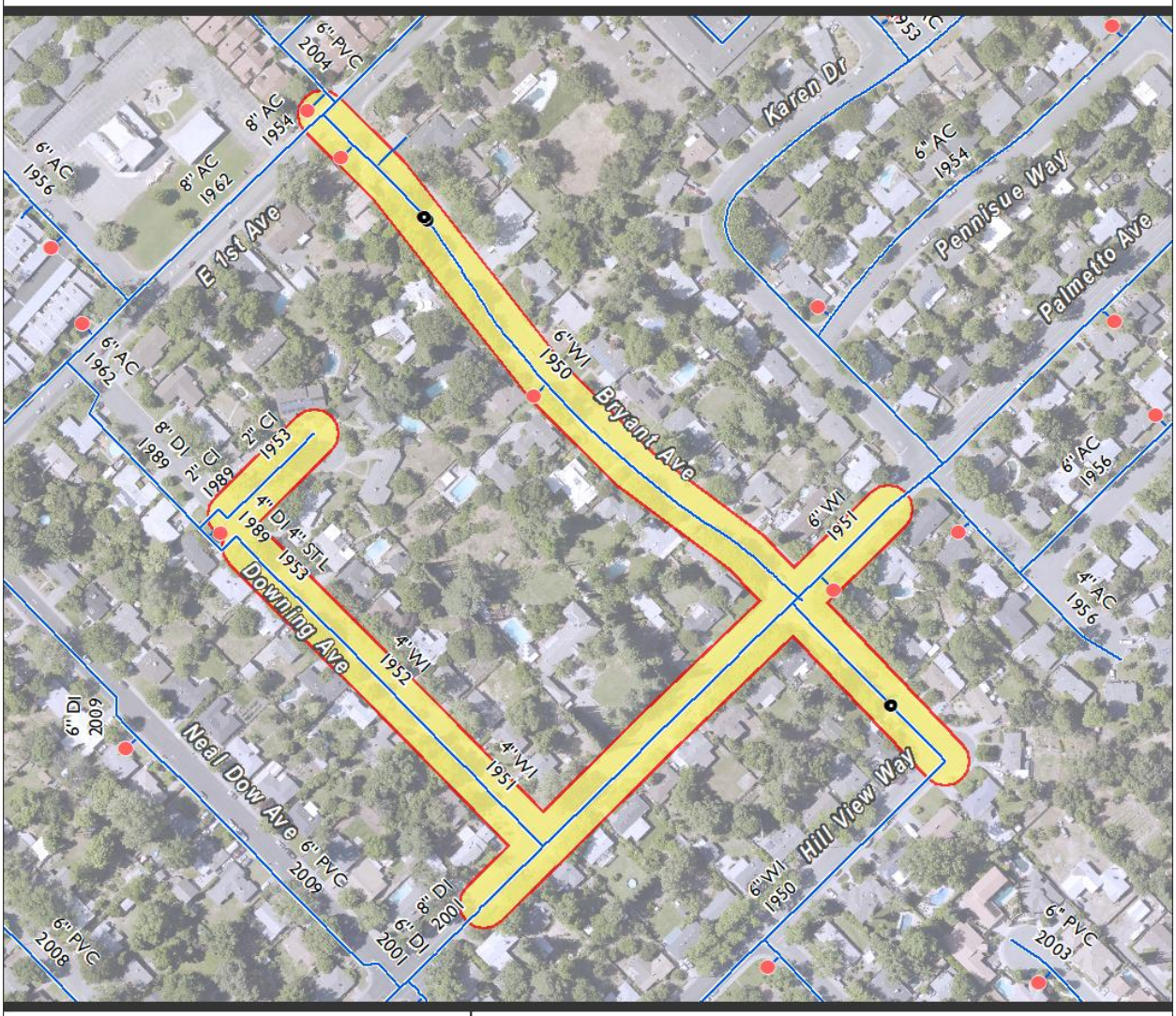
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21B
Budget Year: 2023

Number of Leaks: 3
Likelihood of Failure (LOF): High
Consequence of Failure (COF): Low-Medium
Business Risk Exposure (BRE): Medium

Install Footage: 3216 ft
Retirement Footage: 3216 ft
Financial Department: Chico
Water System: Chico



COF Factors

Secondary Road
Local Road
Pipe Size Score = 3
Land Use: 4
Soil: SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 120 240 480
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

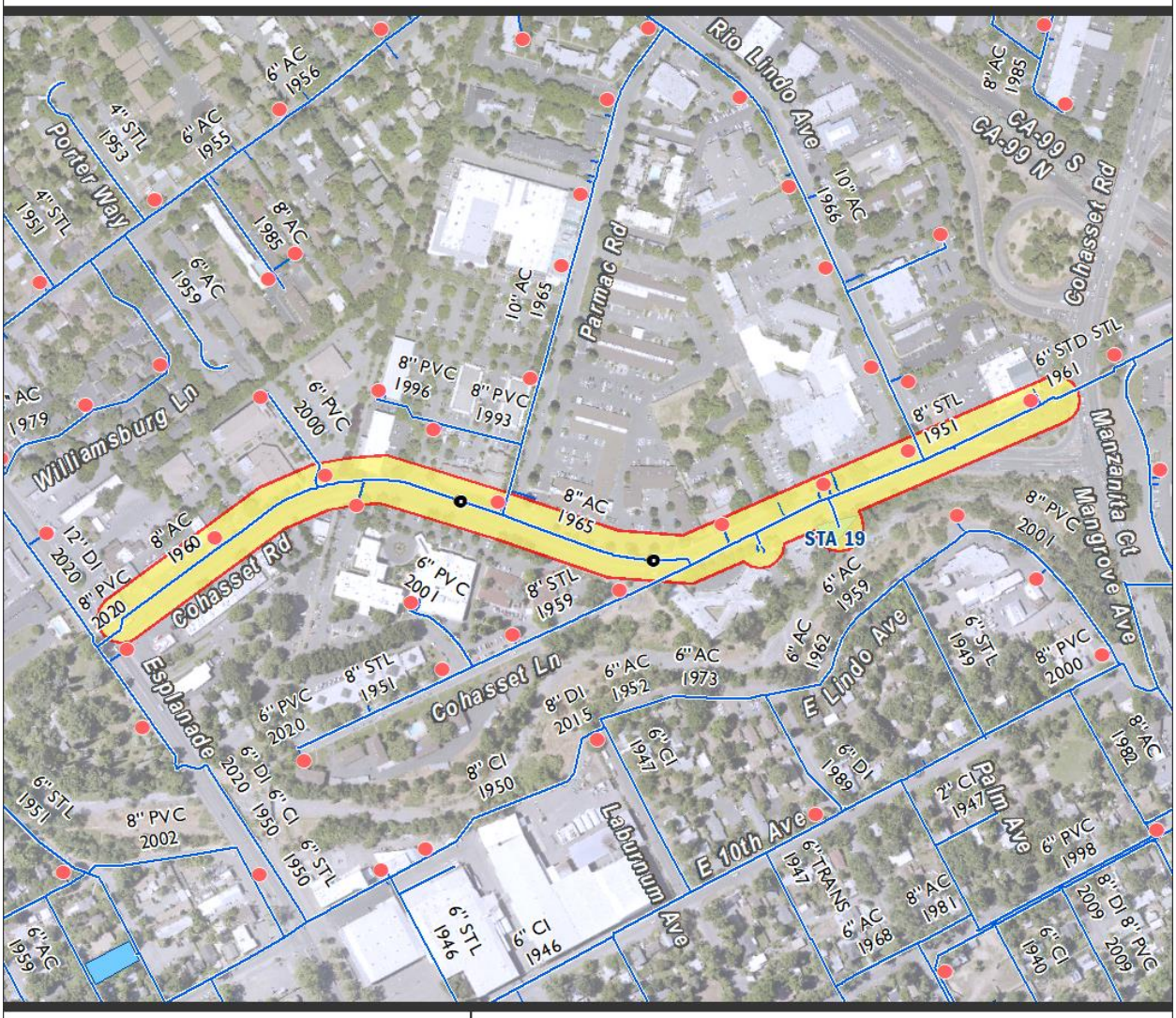
CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21C
Budget Year: 2024

Number of Leaks: 2	Install Footage: 3056 ft
Likelihood of Failure (LOF): High	Retirement Footage: 3056 ft
Consequence of Failure (COF): Medium-High	Financial Department: Chico
Business Risk Exposure (BRE): High	Water System: Chico



COF Factors

- Local Road
- Backyard Easement
- Healthcare Facility
- Water Body or Stream
- Wetland
- Landslide Hazard
- Pipe Size Score = 4
- Land Use: 5
- Soil: SC_SM_SW

- Proposed Project Area
- Existing Main
- Mainline Leak (Proposed Project)
- Existing Hydrant
- Existing Station

N

0 220 440 880
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

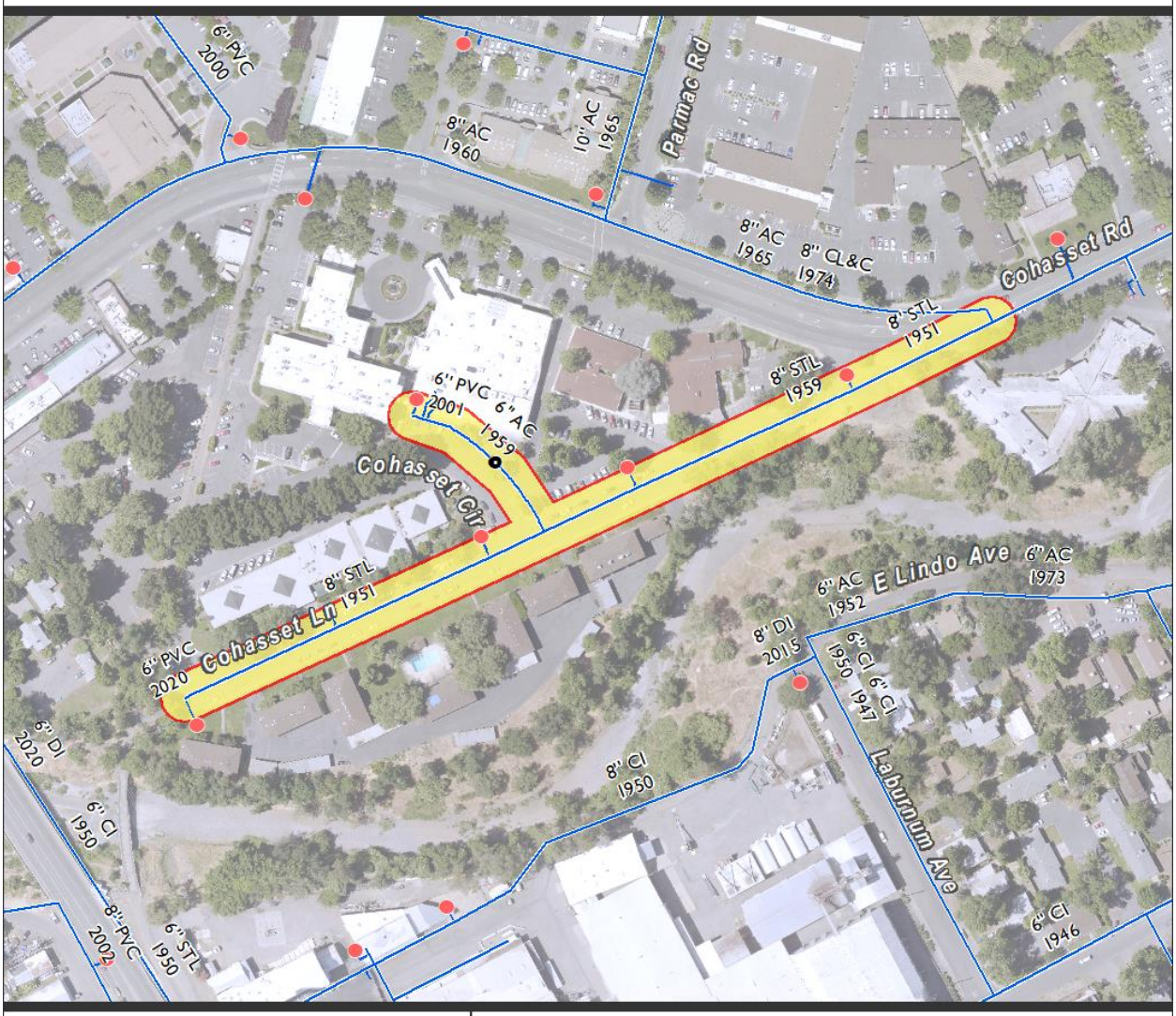
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21D
Budget Year: 2024

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
1496 ft
Retirement Footage:
1496 ft
Financial Department:
Chico
Water System:
Chico



COF Factors

Local Road
Healthcare Facility
Water Body or Stream
Moderate Fire Threat
Landslide Hazard
Pipe Size Score = 4
Land Use: 4
Soil: SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

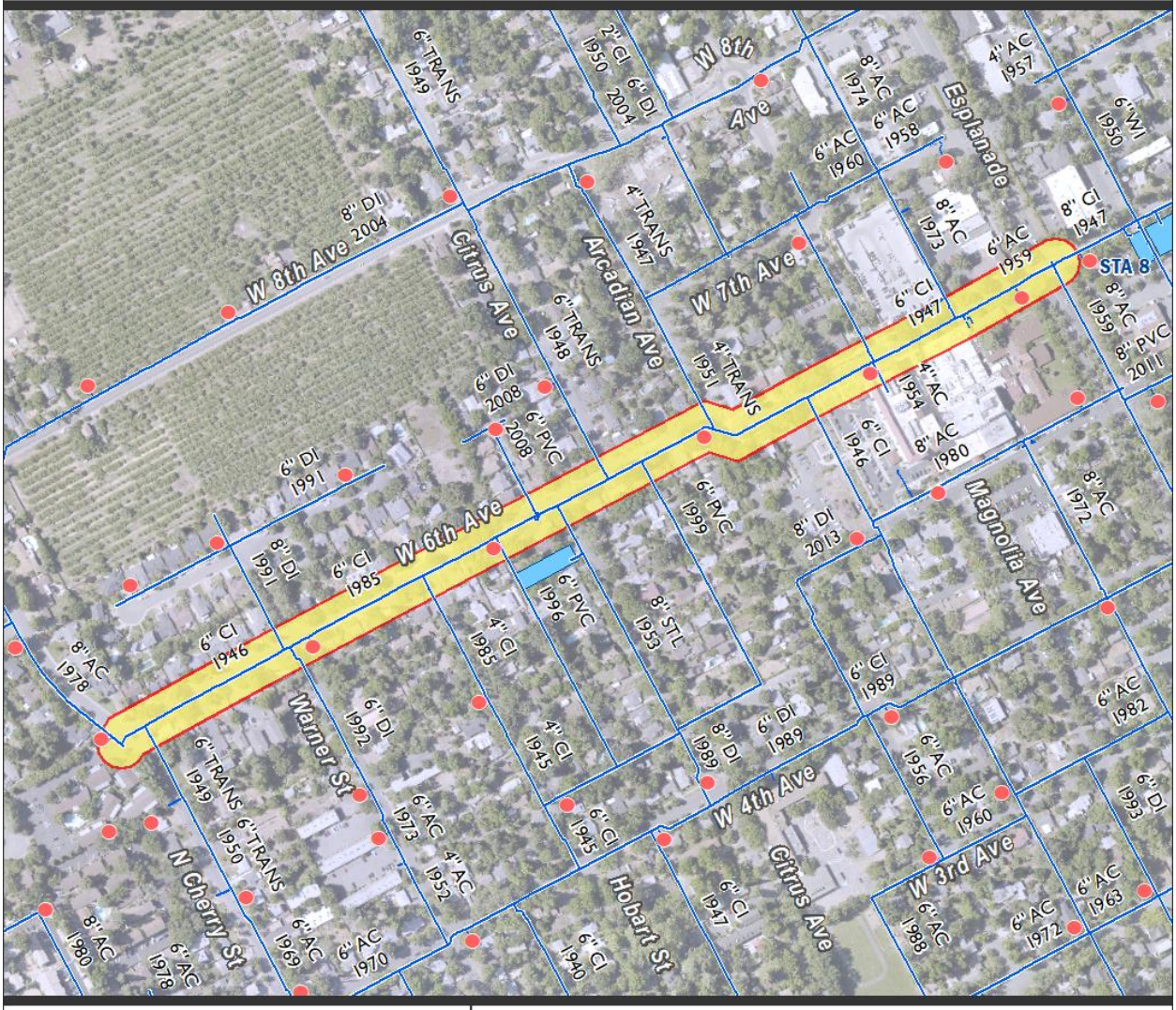
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21E
Budget Year: 2024

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
3019 ft
Retirement Footage:
3019 ft
Financial Department:
Chico
Water System:
Chico



COF Factors

Secondary Road
Local Road
Pipe Size Score = 3
Land Use: 4
Soil: CL_ML

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

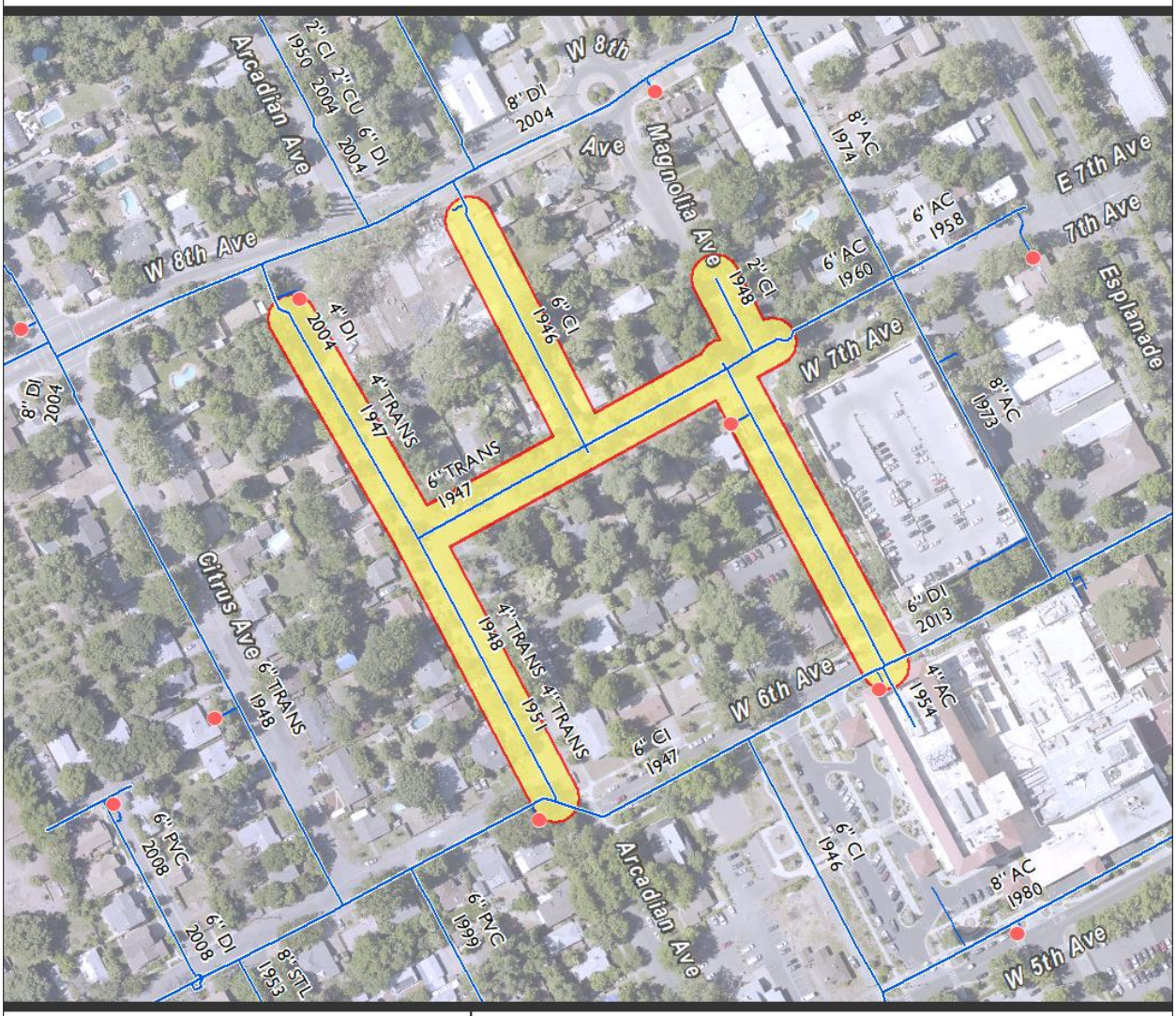
CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21F
Budget Year: 2024

Number of Leaks: 0	Install Footage: 2276 ft
Likelihood of Failure (LOF): High	Retirement Footage: 2276 ft
Consequence of Failure (COF): Low-Medium	Financial Department: Chico
Business Risk Exposure (BRE): Medium	Water System: Chico



COF Factors

Local Road
Alley
Pipe Size Score = 3
Land Use: 4
Soil: CL_ML

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21G
Budget Year: 2024

Number of Leaks: 0	Install Footage: 1601 ft
Likelihood of Failure (LOF): High	Retirement Footage: 1601 ft
Consequence of Failure (COF): Medium-High	Financial Department: Chico
Business Risk Exposure (BRE): High	Water System: Chico

COF Factors

- Secondary Road
- Local Road
- Backyard Easement
- Water Body or Stream
- Wetland
- High Fire Threat
- Landslide Hazard
- Pipe Size Score = 4
- Land Use: 4
- Soil: CL_GC_GM_GP_ML_SC_SM_SW

- Proposed Project Area
- Existing Main
- Mainline Leak (Proposed Project)
- Existing Hydrant
- Existing Station

N

0 130 260 520
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

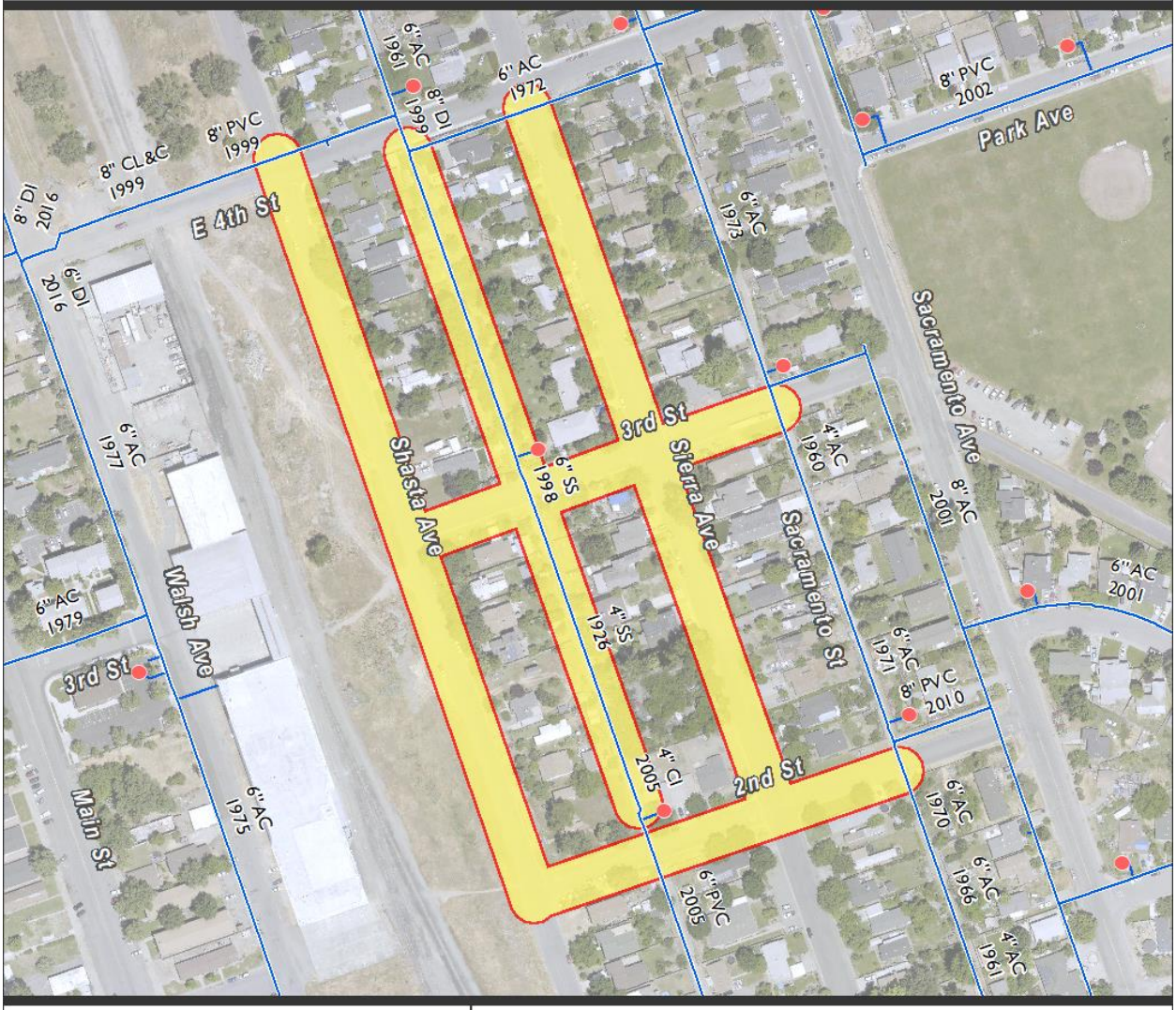
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21J
Budget Year: 2023

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
3515 ft
Retirement Footage:
1058 ft
Financial Department:
Hamilton City
Water System:
Hamilton City



COF Factors
Local Road
Alley
Pipe Size Score = 2
Land Use: 4
Soil: CL_GW_ML

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 115 230 460
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

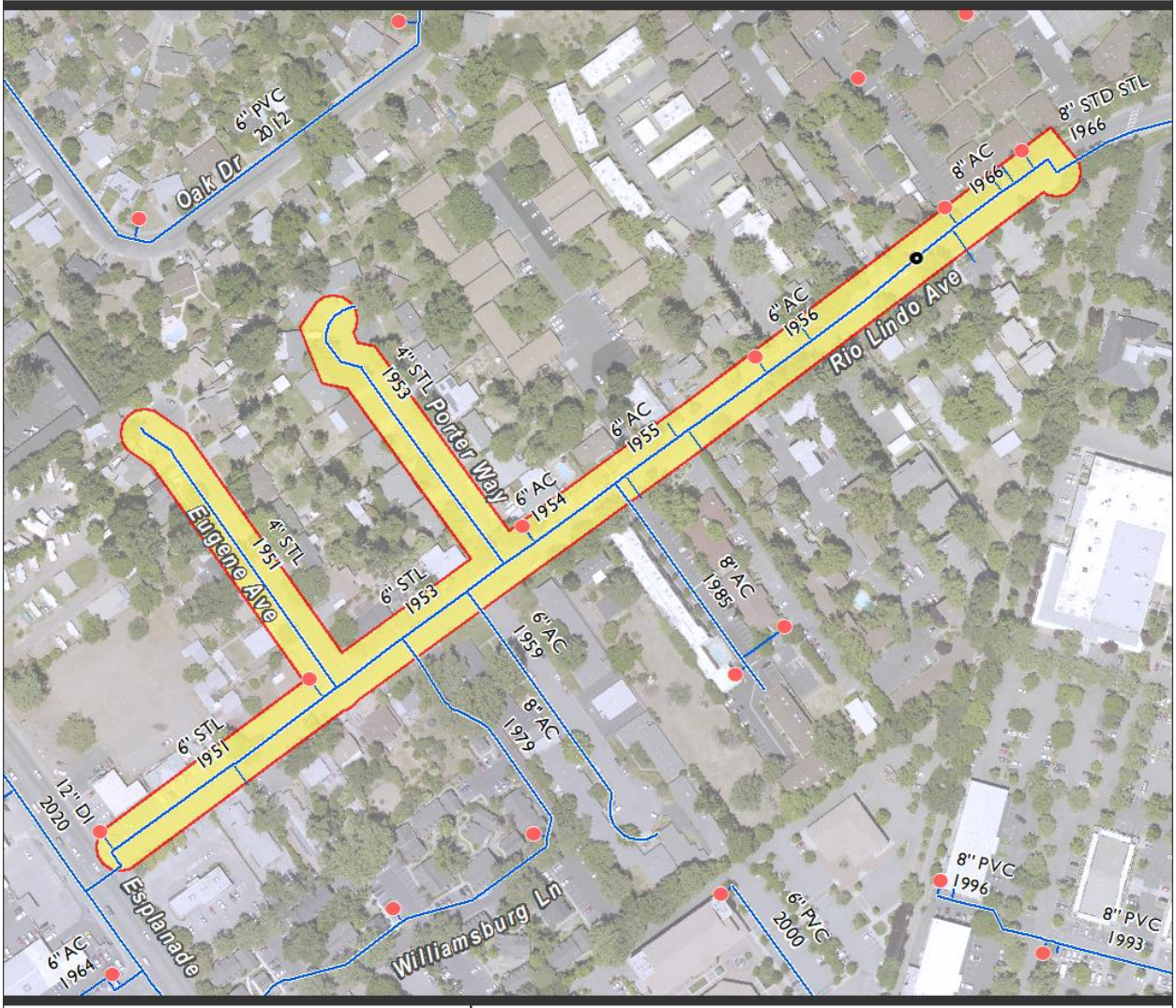
CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21Q
Budget Year: 2023

Number of Leaks: 1	Install Footage: 2773 ft
Likelihood of Failure (LOF): High	Retirement Footage: 2773 ft
Consequence of Failure (COF): Low-Medium	Financial Department: Chico
Business Risk Exposure (BRE): Medium	Water System: Chico



COF Factors

Local Road
Pipe Size Score = 4
Land Use: 4
Soil: CL_ML_SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 115 230 460
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

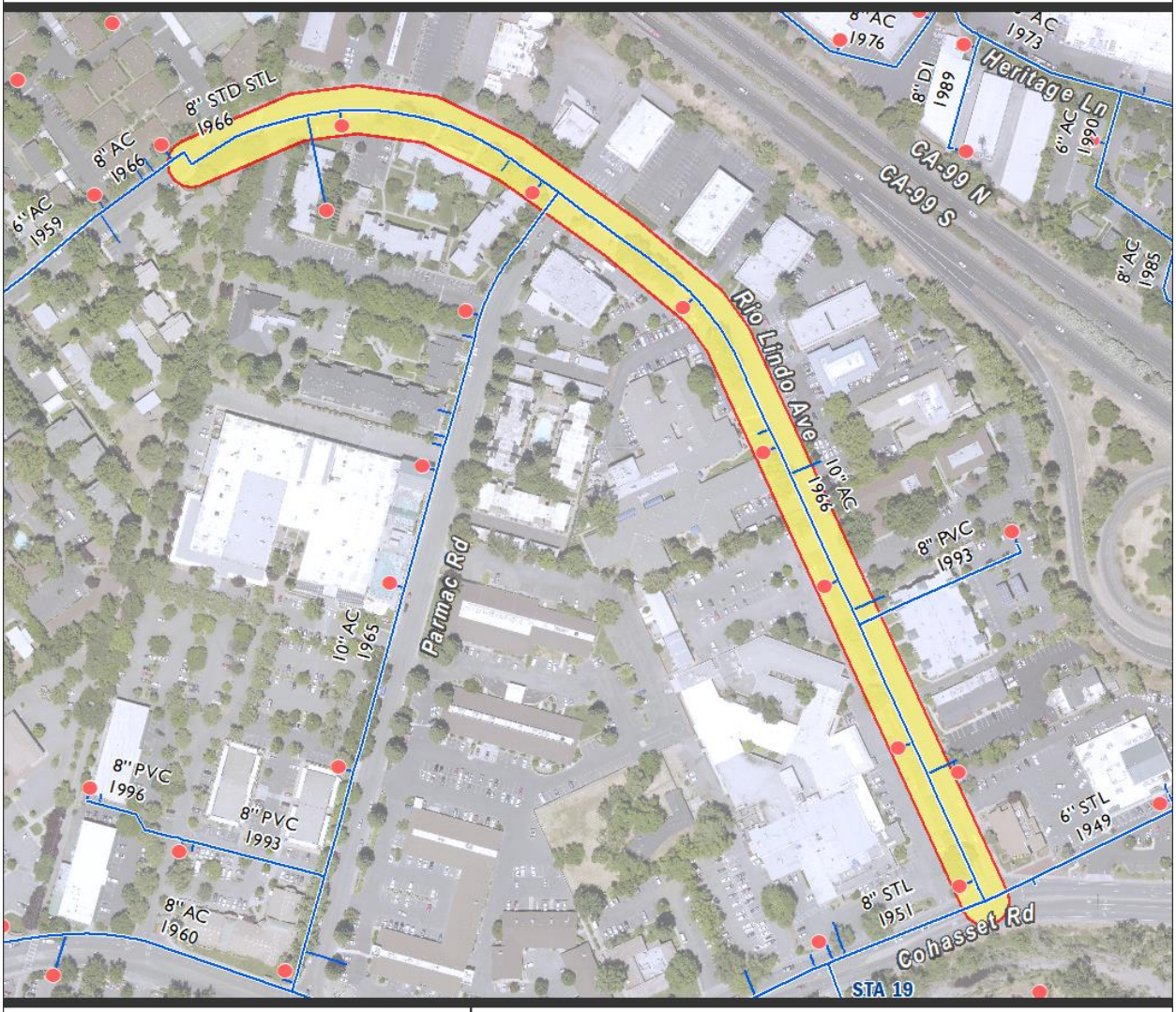
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21R
Budget Year: 2023

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
2170 ft
Retirement Footage:
2170 ft
Financial Department:
Chico
Water System:
Chico



COF Factors
Local Road
Healthcare Facility
Water Body or Stream
Pipe Size Score = 4
Land Use: 4
Soil: CL_ML_SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 130 260 520
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

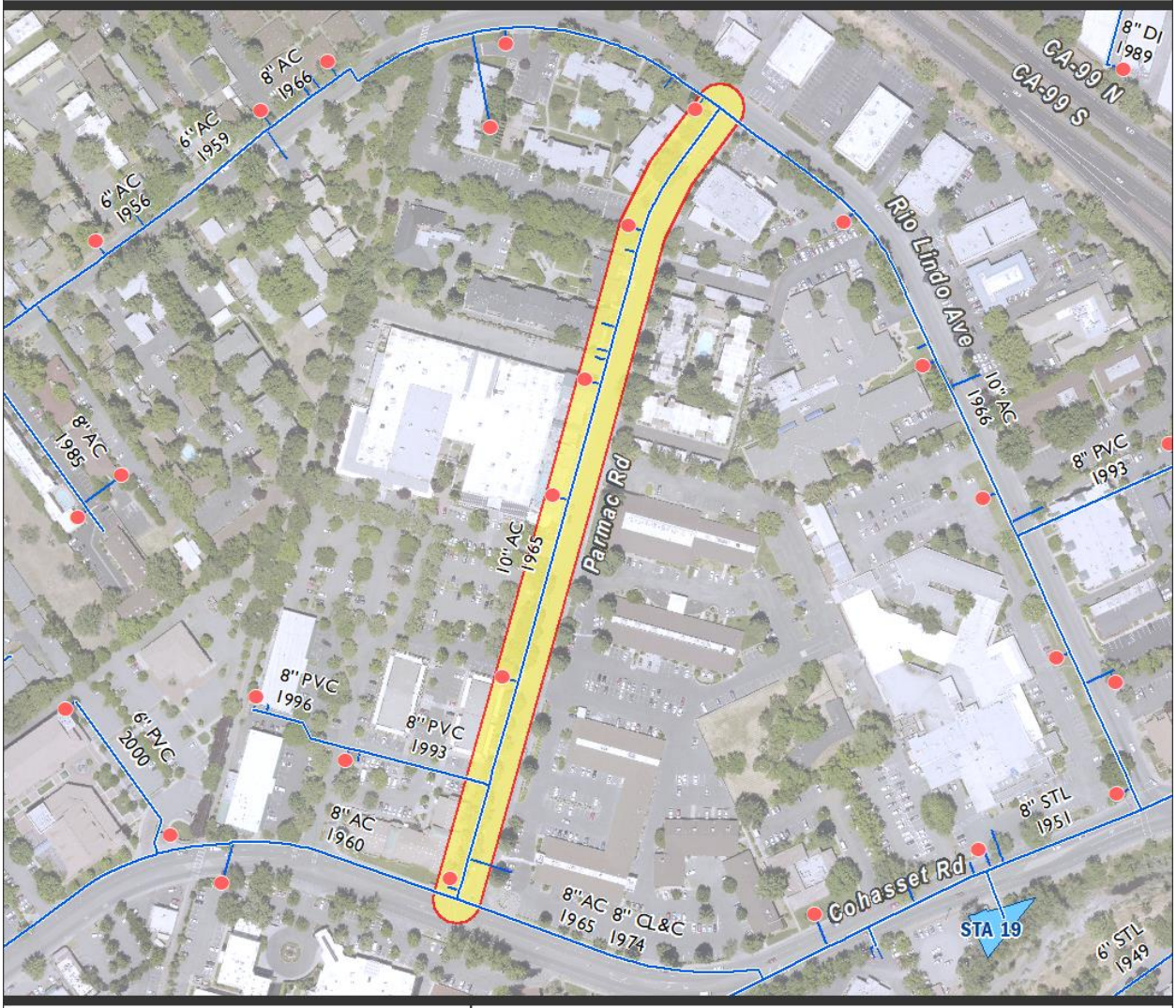
Attachment B
PID: 104MRP22, 104MRP23…

Chico

Map ID: CH-21S
Budget Year: 2024

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
1486 ft
Retirement Footage:
1486 ft
Financial Department:
Chico
Water System:
Chico



COF Factors
Local Road
Healthcare Facility
Pipe Size Score = 4
Land Use: 4
Soil: CL_ML_SC_SM_SW

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 135 270 540
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

District – Chico
Meter Replacement Program

Description of Evaluation Criteria

The criteria which triggered the need for the small and large meter replacements are government mandate (CPUC General Order 103) and the routine programmatic replacement of large meters that have reached the end of their useful life cycle. More details on the Cal Water's evaluation criteria and alternatives analysis can be found in the Common Plant Issues justification book.

Detailed Project Scope

The Specific 0900 Small Meter Replacement Program (see Table 1) is the routine removal and replacement of 5/8"-2" meters in order to comply with CPUC General Order 103. General Order 103 mandates meters be tested or replaced based on age criteria.

The Specific 0900 Large Meter Replacement Program is the routine removal and replacement of obsolete meters that have reached the end of their useful life cycle. The program provides for the routine programmatic replacement of 3" and larger meters on a 20 year replacement cycle.

Table 1. Meter Replacement Program - Chico District

PID	Direct Cost	Year
CHD0900	$185,086	2022
	$189,713	2023
	$194,456	2024

Customer Benefits

The benefit to the customer is the accurate billing and equitable distribution of the costs of providing water service through accurate water meters to all of our customers.

Project Attachments

Cost Estimate

CHD0900_2022 Cost Estimate

Capital Project Cost Estimate

Project No. : CHD0900_2022
Description Meter Replacement Program
District / Department: Chico
Project Start Date: 01/01/22
Project Completion Date: 12/31/22
Prepared By: mstevanus
Date Initiated: 01/01/2020
Base Year: 2020
Direct Cost: $188,556

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
(A) SMALL METER REPLACEMENT, 5/8"	EA	460	$117.94	$54,254.28	Cost Catalog No. G.2
(B) SMALL METER REPLACEMENT, 3/4"-1"	EA	288	$210.37	$60,586.60	Cost Catalog No. G.2
(C) SMALL METER REPLACEMENT, 1.5"	EA	33	$582.07	$19,208.32	Cost Catalog No. G.2
(D) SMALL METER REPLACEMENT, 2"	EA	71	$732.72	$52,023.05	Cost Catalog No. G.2
(E) LARGE METER REPLACEMENT, 3"	EA	6	$3,568.50	$21,410.99	Cost Catalog No. G.2
(F) LARGE METER REPLACEMENT, 4"	EA	2	$6,605.97	$13,211.95	Cost Catalog No. G.2
(G) LARGE METER REPLACEMENT, 6"	EA	1	$10,662.08	$10,662.08	Cost Catalog No. G.2

Direct Cost = $188,556.18

Notes:

1. Unit Costs are fully loaded with 15% overhead.
2. Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

CHD0900_2023 Cost Estimate

Capital Project Cost Estimate

Project No. : CHD0900_2023
Description Meter Replacement Program
District / Department: Chico
Project Start Date: 01/01/23
Project Completion Date: 12/31/23
Prepared By: mstevanus
Date Initiated: 01/01/2020
Base Year: 2020
Direct Cost: $193,270

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
(A) SMALL METER REPLACEMENT, 5/8"	EA	460	$120.89	$55,610.64	Cost Catalog No. G.2
(B) SMALL METER REPLACEMENT, 3/4"-1"	EA	288	$215.63	$62,101.26	Cost Catalog No. G.2
(C) SMALL METER REPLACEMENT, 1.5"	EA	33	$596.62	$19,688.52	Cost Catalog No. G.2
(D) SMALL METER REPLACEMENT, 2"	EA	71	$751.04	$53,323.63	Cost Catalog No. G.2
(E) LARGE METER REPLACEMENT, 3"	EA	6	$3,657.71	$21,946.27	Cost Catalog No. G.2
(F) LARGE METER REPLACEMENT, 4"	EA	2	$6,771.12	$13,542.24	Cost Catalog No. G.2
(G) LARGE METER REPLACEMENT, 6"	EA	1	$10,928.63	$10,928.63	Cost Catalog No. G.2

Direct Cost = $193,270.08

Notes:

1. Unit Costs are fully loaded with 15% overhead.
2. Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

CHD0900_2024 Cost Estimate

Capital Project Cost Estimate

Project No. : CHD0900_2024
Description Meter Replacement Program
District / Department: Chico
Project Start Date: 01/01/24
Project Completion Date: 12/31/24
Prepared By: mstevanus
Date Initiated: 01/01/2020
Base Year: 2020
Direct Cost: $198,102

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
(A) SMALL METER REPLACEMENT, 5/8"	EA	460	$123.92	$57,000.91	Cost Catalog No. G.2
(B) SMALL METER REPLACEMENT, 3/4"-1"	EA	288	$221.02	$63,653.79	Cost Catalog No. G.2
(C) SMALL METER REPLACEMENT, 1.5"	EA	33	$611.54	$20,180.74	Cost Catalog No. G.2
(D) SMALL METER REPLACEMENT, 2"	EA	71	$769.81	$54,656.72	Cost Catalog No. G.2
(E) LARGE METER REPLACEMENT, 3"	EA	6	$3,749.15	$22,494.92	Cost Catalog No. G.2
(F) LARGE METER REPLACEMENT, 4"	EA	2	$6,940.40	$13,880.80	Cost Catalog No. G.2
(G) LARGE METER REPLACEMENT, 6"	EA	1	$11,201.85	$11,201.85	Cost Catalog No. G.2

Direct Cost = $198,101.83

Notes:

1. Unit Costs are fully loaded with 15% overhead.
2. Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

District – Chico
PID # 123963, 123964…
Flowmeter Replacements

Overview

Flowmeters are tested and calibrated annually, and are repaired when they cannot hold their calibration. When repairs are no longer cost effective, the flowmeter must be replaced. Flowmeters are also replaced when they become obsolete and do not meet functional requirements, such as providing an accurate signal to SCADA for real time monitoring and tracking. Data provided by flowmeters is beneficial in daily operations and for troubleshooting of the distribution system, leak detection, fire flows, etc. Reliable and accurate flowmeters validate the efficiency of the pump when checked against the power consumption from the power utility meter. Accurate production reporting information is valuable in the creation of energy policy and energy planning.

Flowmeters are recommended for replacement when they (1) fail, (2) function erratically and will not hold calibration, and (3) when they become technically obsolescent. More details regarding Cal Water's evaluation criteria and condition assessment can be found in the Common Plant Issues justification book.

Within the 2021 GRC, Cal Water plans on replacing unserviceable flowmeters or those that have experienced significant deterioration resulting in a failure to meet code and design capacity in the Chico District as outlined in Table 1.

Table 1. Flowmeter Replacement Program – Chico District

PID	Direct Cost	Year
123963	$326,975	2022
123964	$345,031	2023
123966	$370,080	2024

Customer Benefits

Effective and accurate meters help sustain better energy policy, planning, and implementation, and regular operation. This steady flow of accurate information helps to provide a better service to our customers by keeping our production and distribution systems running in optimal condition with minimal downtime.

Project Attachments

Cost Estimates

123963 Cost Estimate

Capital Project Cost Estimate

Project No. : 123963
Description CH 2022 Flow meter Replacement
District / Department: Chico
Project Start Date: 01/15/2022
Project Completion Date: 12/18/2022
Prepared By: cgueldner
Date Initiated: 09/01/2020
Base Year: 2020
Sub-Total: $295,897
Direct Cost: $310,877

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTRACTOR COST	[EA]	1	$128,333.31	$128,333.31	Cost Catalog No. G.3
DESGN	CW-LABOR-PROJ DESIGN - ENG [HR]	280	$121.41	$33,994.80	Labor SKU
ELECT ENG	CW-Elect Eng LABOR [HR]	280	$121.41	$33,994.80	Labor SKU
FIELD LBR	CW-LABOR-FIELD LABOR [HR]	280	$75.29	$21,081.20	Labor SKU
FIELD MGR	CW-LABOR-FIELD MGR/SUPV [HR]	28	$107.03	$2,996.84	Labor SKU
FLOWMETER	8in Magmeter [EA]	7	$5,183.54	$36,284.78	Cost Catalog No. C.6-3
10% CONTINGENCY	[EA]	1	$39,210.90	$39,210.90	Cost Catalog No. G.3

Sub-total = $295,896.63
Direct Cost = $310,876.58

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123964 Cost Estimate

Capital Project Cost Estimate

Project No. : 123964
Description CH 2023 Flow meter Replacement
District / Department: Chico
Project Start Date: 01/15/2023
Project Completion Date: 12/18/2023
Prepared By: cgueldner
Date Initiated: 09/01/2020
Base Year: 2020
Sub-Total: $305,073
Direct Cost: $328,530

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTRACTOR COST	[EA]	1	$136,333.31	$136,333.31	Cost Catalog No. G.3
DESGN	CW-LABOR-PROJ DESIGN - ENG [HR]	280	$121.41	$33,994.80	Labor SKU
ELECT ENG	CW-Elect Eng LABOR [HR]	280	$121.41	$33,994.80	Labor SKU
FIELD LBR	CW-LABOR-FIELD LABOR [HR]	280	$75.29	$21,081.20	Labor SKU
FIELD MGR	CW-LABOR-FIELD MGR/SUPV [HR]	28	$107.03	$2,996.84	Labor SKU
FLOWMETER	8in Magmeter [EA]	7	$5,183.54	$36,284.78	Cost Catalog No. C.6-3
10% CONTINGENCY	[EA]	1	$40,387.20	$40,387.20	Cost Catalog No. G.3

Sub-total = $305,072.93
Direct Cost = $328,530.05

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123966 Cost Estimate

Capital Project Cost Estimate

Project No. : 123966
Description CH 2024 Flow meter Replacement
District / Department: Chico
Project Start Date: 01/15/2024
Project Completion Date: 12/18/2024
Prepared By: cgueldner
Date Initiated: 09/01/2020
Base Year: 2020
Sub-Total: $319,951
Direct Cost: $353,166

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTRACTOR COST	[EA]	1	$150,000.00	$150,000.00	Cost Catalog No. G.3
DESGN	CW-LABOR-PROJ DESIGN - ENG [HR]	280	$121.41	$33,994.80	Labor SKU
ELECT ENG	CW-Elect Eng LABOR [HR]	280	$121.41	$33,994.80	Labor SKU
FIELD LBR	CW-LABOR-FIELD LABOR [HR]	280	$75.29	$21,081.20	Labor SKU
FIELD MGR	CW-LABOR-FIELD MGR/SUPV [HR]	28	$107.03	$2,996.84	Labor SKU
FLOWMETER	8in Magmeter [EA]	7	$5,183.54	$36,284.78	Cost Catalog No. C.6-3
10% CONTINGENCY	[EA]	1	$41,598.80	$41,598.80	Cost Catalog No. G.3

Sub-total = $319,951.22
Direct Cost = $353,166.24

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

Section C.

Specific Justifications

District – Chico
PID # 123900
Well PFAS Treatment Station 7

Problem Statement

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), GenX, and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. PFOA and PFOS have been the most extensively produced and studied of the PFAS group of chemicals. PFOA and PFOS are very persistent in the environment and in the human body; they don't break down and they can accumulate over time. There is evidence that exposure to PFAS can lead to adverse human health effects. PFAS regulations are actively being developed at both the federal level by the United States Environmental Protection Agency (USEPA) and state level by the State Water Resources Control Board Division of Drinking Water (DDW):

- 2019 the USEPA released a PFAS Action Plan that describes several efforts the USEPA is taking to regulate PFAS.
- February 2020, USEPA has proposed to regulate both PFOA and PFOS under the Safe Drinking Water Act (SDWA).
- USEAP is currently developing toxicity values, or oral reference doses (RfDs)[4], for PFAS chemicals GenX[5] and PFBS, which could lead to the regulation of these PFAS group chemicals in drinking water, as well.

State Level:

- In August 2019, DDW established notification limits (NLs) of 6.5 parts per trillion (ppt) for PFOA and 5.1 ppt for PFOS. NLs require Cal Water to report exceedances to the governing board and DDW and are urged to report this information to customers.[6]
- On February 6, 2020, the DDW announced response levels (RLs) of 10 ppt for PFOA and 40 ppt for PFOS. Under a new California law (Assembly Bill 756), if a water system finds that the PFOA or PFOS concentration exceeds a RL, the system is required to take the water source out of service, provide treatment, or notify their customers in writing. Water systems are also required to take several other measures to communicate the test results to the public.[7]

[4] A reference dose is an estimate of the amount of a chemical a person can ingest daily over a lifetime (chronic RfD) or less (subchronic RfD) that is unlikely to lead to adverse health effects.
[5] hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt
[6] https://www.waterboards.ca.gov/press_room/press_releases/2019/pr082319_pfoa_pfos_guidelines_news_release.pdf
[7] https://www.waterboards.ca.gov/press_room/press_releases/2020/pr02062020_pfoa_pfos_response_levels.pdf

- In August 2019, the DDW requested that California Office of Environmental Health and Hazard Assessment (OEHHA) develop public health goals (PHGs) for PFOA and PFOS as the next step in developing regulatory standards. In California, maximum containment levels (MCLs) in drinking water are set as close to the PHGs as is technologically and financially feasible. Other PFAS chemicals may be considered for PHG and MCL development.

The groundwater from Station 7 in the Chico District (District) has been found to contain PFOS at levels that exceed current DDW NLs and RLs (Figure 1). There is currently no treatment installed at Station 7 that can remove PFAS. To avoid PFAS RL and NL exceedances, the well has been shut off and is not actively producing water.

Project Justification

The District is supplied solely by groundwater wells. The 2021 *Well Infrastructure Renewal Program* report assessed 70% of the District's wells as requiring mitigation or replacement within the next 5 years (see Common Plant Issues justification book for additional details on the Well Renewal program). The report states rehabilitation as the lowest cost option and addressing water quality issues should be prioritized in the short term to ensure water production reliability. Allowing a well to become inactive, for example due to postponement of water quality treatment, increases the potential for bacteriological growth and associated corrosion on the well casing and perforations. Prolonged periods of inactivity might jeopardize the ability to utilize the well's production capacity in the future. Several upgrades were made to Station 7 to bring the station facilities up to code and specifications in 2017. As a result, available space for treatment equipment would allow the assets to function and prolong their lifespan so they are useable now and to meet future demand.

Due to PFOS levels exceeding the RL at Station 7, the well cannot be turned on unless treatment is installed. The addition of this well into the current system operations will provide reliability for the 350 zone in the event other wells are lost due to equipment failure or any contaminant exceedance.

Alternative Analysis

1. Install PFAS Treatment at Station 7
    - An industry standard treatment for PFAS is granular activated carbon (GAC). GAC has been demonstrated to not only remove PFOA and PFOS, but many other PFAS chemicals as well, including GenX and PFBS.
    - GAC is the most established treatment technology for PFAS, however, anion exchange (IX) has more recently been demonstrated to efficiently remove PFAS, as well. There are multiple factors that need to be considered before selecting the optimum PFAS treatment for any given well. Source water quality, beyond PFAS, and the associated treatment objectives require consideration. GAC is included for this proposal due to its successful installation at previous Cal Water sites, and the costs of IX and GAC at this phase of planning are very similar.
    - This proposed solution will allow Station 7 to continue to supply water to the Chico system and support system supply while staying compliant with current and known future water quality regulations.

2. Install New Well
    - The existing well could be destroyed and a new well could be installed to replace it. However, since multiple wells in the water system are affected by groundwater constituents that require treatment, this has the potential to be more costly if the new well needs treatment in addition to the well installation investment.

3. Do Nothing
    - The DDW is in the process of establishing legally enforceable regulatory standards for PFOA and PFOS. Standards will require PFAS treatment soon after being promulgated for all active wells that are not able to comply with MCLs. In California, drinking water quality must comply with regulations during the first quarter of the calendar year after MCLs are promulgated. There is not an additional compliance period for a system to plan treatment in California. Therefore, without treatment installed at Station 7, it is anticipated the well will not be able to be used to meet water demands after the state establishes PFAS standards.
    - Allowing a well to become inactive increases the potential for bacteriological growth and associated corrosion on the well casing and perforations. Prolonged periods of inactivity could jeopardize the ability to utilize the well's production capacity in the future.

Recommended Solution

The recommend solution is to install a new treatment facility for PFAS removal at Station 7. Either IX or GAC are expected to be effective. The costs of IX and GAC at this phase of planning are very similar. For budgetary purposes, GAC was selected because Cal Water has recently installed several GAC projects and more reliable cost estimates can be provided at this stage of planning.

Detailed Project Scope

- Perform a rapid small-scale column test with third party to confirm treatment specifications.
- Procure two 12-foot-diameter vessels for lead-lag operation (design based on 20 minutes of empty-bed contact time required to remove PFC).
- Construct treatment foundation and anchor vessels – foundation size to be determined by third party after review of soils report and vessel shop drawings.
- Install 8-inch-diameter station piping, fittings and storm drain connection.
- Install flow meter, pressure transducers, hydraulic enclosure, SCADA, and relocate chemical injection.
- Install carbon media and collect water quality samples.

Customer Benefits

The proposed project will enable the Chico District to keep Station 7 as a water supply well and ensure that there will be adequate water supplies to serve customer needs. Additionally, the proposed treatment will ensure public health is protected when the well is in operation by removing PFAS which, without treatment, is present at concentrations that exceed the existing NL, RL, and anticipated future MCLs.

Project Attachments

Figure 1 – PFOS Concentrations at Station 7

Cost Estimates

Attachment A – VIS 77 Quote

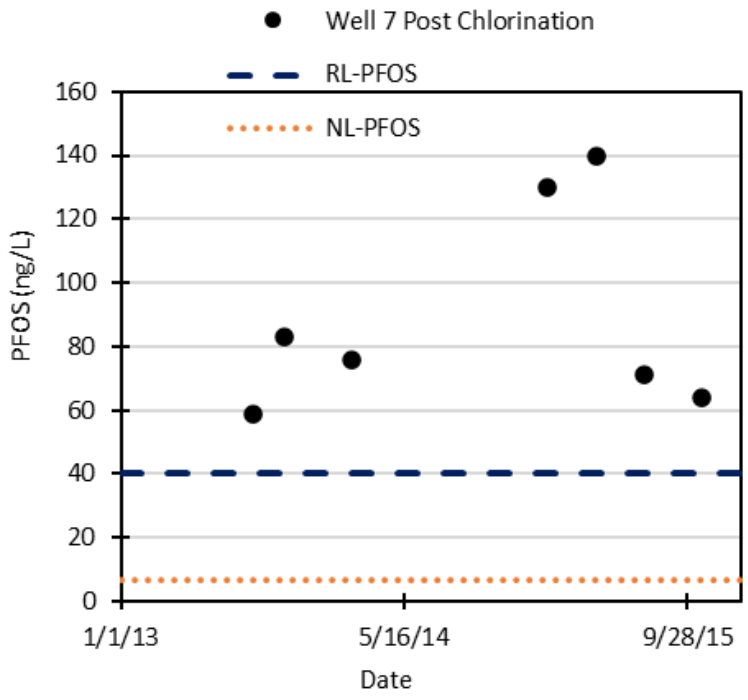


Figure 1 – PFOS Concentrations at Station 7

123900 Cost Estimate

Capital Project Cost Estimate

Project No. : 123900
Description CH 7 Install GAC Treatment
District / Department: Chico
Project Start Date: 01/01/2023
Project Completion Date: 03/31/2024
Prepared By: bgodfrey
Date Initiated: 08/31/2020
Base Year: 2020
Sub-Total: $1,168,313
Direct Cost: $1,264,436

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CATCH BASIN	36in x 36in CB [EA]	1	$33,724.64	$33,724.64	Cost Catalog No. F.9-1
CEQA CONSULTANT	Initial Study-PartialScope[LS]	1	$11,875.90	$11,875.90	Cost Catalog No. E.1-3
CONST. MANAGEMENT AND SPECIAL INSPECTION - 5%	[EA]	1	$45,736.48	$45,736.48	Engineer's Estimate
CONTROL VALVE	8in dia [EA]	1	$10,243.99	$10,243.99	Cost Catalog No. C.3-3
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	90	$107.03	$9,632.70	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	100	$97.22	$9,722.00	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	748	$121.41	$90,814.68	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	130	$93.13	$12,106.90	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	80	$89.85	$7,188.00	Labor SKU
CWS ENG LABOR	CW-SCADA Prog LABOR [HR]	8	$143.13	$1,145.04	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	5	$121.41	$607.05	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
DRAINAGE PIPING	On-site, Drainage Pipe [FT]	150	$414.04	$62,106.00	Cost Catalog No. F.8-1
ELECTRICAL INSTALLATION	[EA]	1	$30,590.00	$30,590.00	Engineer's Estimate
FLOWMETER	8in Magmeter [EA]	1	$5,183.54	$5,183.54	Cost Catalog No. C.6-3
GAC FOUNDATION	Treatment System [EA]	1	$66,442.33	$66,442.33	Cost Catalog No. A.14-4
GAC VESSELS	1 Train, 12in Dia GAC(PFAS)[EA]	1	$475,000.00	$475,000.00	Cost Catalog No. A.23-3
NPDES PERMIT	NPDES Permit [LS]	1	$2,443.40	$2,443.40	Cost Catalog No. F.3-1
OFFLOAD AND SET VESSELS	[EA]	1	$21,400.00	$21,400.00	Engineer's Estimate
PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
STATION PIPING	[EA]	1	$151,690.00	$151,690.00	Engineer's Estimate
STRUCTURAL ENG	Treatment Facility [EA]	1	$3,038.00	$3,038.00	Cost Catalog No. E.4-3
CONTINGENCY - 10%	[EA]	1	$106,210.26	$106,210.26	Engineer's Estimate

Sub-total = $1,168,312.86
Direct Cost = $1,264,436.22

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123900 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123900
District	Chico

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 21,400.00	1	2020	$ 21,400.00	Offload and set vessels	VIS 77 Quote
2	$ 151,690.00	1	2020	$ 151,690.00	Station Piping	VIS 77 Quote
3	$ 30,590.00	1	2020	$ 30,590.00	Electrical	VIS 77 Quote

rev. 3/2018

Exhibit A: VIS 77 GAC Treatment Bid List

Item	Description	Qty	Unit	Unit Price	Total Cost
1.	**Mobilization**				
1.1	Mobilization, Demobilization, site clean-up and restoration. Pricing shall include coordination of the Owner supplied 3rd Party Special Inspection(s) and picking up Owner provided equipment from the CWS field yard (Not including GAC Vessels)	1	LS	LS	10950 00
2.	**Demo, Removal, Relocate and Abandonment**				
2.1	Demo and remove existing aboveground well discharge piping and associated appurtenances per Drawing No. VIS 6324. Pricing shall include removing the existing meter box near this location.	1	LS	LS	5700 00
2.2	Demo and remove existing trees and bushes in conflict with the proposed improvements as shown on Drawing No. VIS 6324. Contractor shall backfill the root zones per the recommendation of the project's Preliminary Soils Report.	1	LS	LS	37,820 00
2.3	Demo existing 8" & 12" AC piping in conflict with the proposed GAC Foundation, future Generator foundation, and proposed storm drain facilities per Drawing No. VIS-6324.	1	LS	LS	4000 00
2.4	Demo existing irrigation service, backflow device, and associated plumbing in conflict with the proposed vessel foundation.	1	LS	LS	2320 00
2.5	Demo and remove existing Chemical enclosure. Chemical Equipment to be removed by Owner prior to Contractor Mobilization.	1	LS	LS	3030 00
2.6	Abandon existing 6" DI blowoff piping and blowoff assembly. Remove existing valve can and lid at blowoff assembly and backfill.	1	LS	LS	2320 00
2.7	Demo existing sprinkler control valves, vault, and associated sprinkler piping in conflict with the proposed improvements. Sprinkler control valves and associated sprinkler lines to be relocated by Contractor outside of the location of the proposed improvements.	1	LS	LS	5940 00
3.	**Foundations**				
3.1	Construct Treatment Vessel Foundation and associated concrete apron per Drawing No. VIS-6325. Foundation preparation shall be per the requirements of the project's Preliminary Soils Report. Contractor shall coordinate 3rd Party Inspections with the Owner's Special Inspector. Required Inspections include Foundation Preparation, Subgrade Compaction, Rebar placement, Concrete placement and sampling.	1	LS	LS	65250 00
4.	**Treatment Vessels**				
4.1	Offload, set, and anchor GAC Treatment Vessels and associated valve tree. Contractor shall assemble piping from Vessel Supplier to connect the valve tree to the GAC Vessels. Contractor shall coordinate the delivery of the GAC equipment with the Owner. Contractor shall coordinate 3rd Party Inspections for vessel anchorage with the Owner's Special Inspector.	1	LS	LS	21400 00
5.	**Station Piping**				
5.1	Furnish and install all station piping per Drawing No. VIS-6324. Pricing shall include all valves, fittings, pipe supports, thrust blocks, valve cans/covers, tracer wire, service(s), sample ports/stations, ground penetration protections, taps, and associated appurtenances per the contract drawings. Price shall include painting all above ground piping "CWS Grouse Tan" per Owner's ASPS No. 28.	1	LS	LS	151690 00
5.2	Install Owner supplied 10" Toshiba magmeter per Drawing No. VIS-6324.	1	LS	LS	2050 00
5.3	Furnish and install chemical injection probe and enclosure per Drawing No. VIS-6324.	1	LS	LS	2710 00
5.4	Pressure Test and Disinfect new potable water piping and GAC Treatment Vessels per Cal Water Specifications.	1	LS	LS	6790 00
6.	**Storm Drain Improvements**				
6.1	Furnish and install 2'x2' catch basin per Drawing No. VIS-6234.	1	LS	LS	5840 00
6.2	Furnish and install 12" PVC Drain line per Drawing No. VIS-6234.	1	LS	LS	6980 00
6.3	Furnish and install 48" diameter Storm Drain Manhole over existing storm drain line per Drawing No. VIS-6324.	1	LS	LS	14190 00

Attachment A
PID: 123900

rev. 3/2018

Exhibit A: VIS 77 GAC Treatment Bid List

Item	Description	Qty	Unit	Unit Price	Total Cost
7	**Electrical**				
7.1	Furnish and install all electrical conduits, wires, pull boxes, equipment, and associated appurtenances shown on the project's Electrical Drawings	1	LS	LS	30590
7.2	Install Owner supplied Pressure transducers (3 total) in Pump Building per the project's Electrical Drawings.	1	LS	LS	4530
7.3	Install Owner supplied Flow display transmitter in panelboard per the project's Electrical Drawings.	1	LS	LS	1620
7.4	Relocate the Chemical Feed tubing per the project's Electrical Drawings	1	LS	LS	3970
8.	**Site Fencing**				
8.1	Install approximately 215 LF of 6' tall chain-link fence with privacy slats per Drawing No. VIS-6324.	1	LS	LS	15820
8.2	Install four (4) each 6' tall by 3' wide chain-link single gate(s) with privacy slats per Drawing No. VIS-6324.	1	LS	LS	3240
8.3	Install one (1) 6' tall by 16' wide chain-link double gate with privacy slats per Drawing No. VIS-6324.	1	LS	LS	1620
8.4	Install one (1) 6' tall by 12' wide single chain-link single gate with privacy slats per Drawing No. VIS-6324.	1	LS	LS	1620
9	**Misc. Site Improvements**				
9.1	Construct 18' wide x 9.5 deep concrete drive approach per Drawing No. VIS-6325.	1	LS	LS	26,170
9.2	Construct 6'x6' chain-link chemical enclosure with privacy slats and shade awning per Drawing No. VIS-6324. Price shall include wood base filled with river rock.	1	LS	LS	9,100
9.3	Install ¾" crushed rock in areas disturbed by construction per Drawing No. VIS-6324.	1	LS	LS	18,020
10	**Startup and Commissioning**				
10.1	Startup and Commissioning of all electrical and piping components shown on the Contract Drawings	1	LS	LS	1820
11	**Payment Bond**				
11.1	Payment Bond for Bid List items 1 through 10	1	LS	LS	970
				PROJECT TOTAL:	468,060

District – Chico
PID # 123938
Well Carbon Tetrachloride Treatment Station 51

Problem Statement

Widespread use of carbon tetrachloride to make refrigerants and propellants for aerosol cans, as a dry cleaning agent, and other manufactured uses has been largely discontinued.[8] The United States Environmental Protection Agency (USEPA) set the carbon tetrachloride maximum containment level (MCL) at 5 µg/L. In California, the MCL was established at 0.5 µg/L by the State Water Resources Control Board Division of Drinking Water (DDW). The MCL of 0.5 µg/L corresponds to the carbon tetrachloride limit of detection in water.

The groundwater from Station 51 in the Chico District (District) has been found to contain carbon tetrachloride at levels greater than the MCL (Figure 1). There is currently no treatment installed at Station 51 that can remove carbon tetrachloride. To avoid a violation of the carbon tetrachloride MCL, the well at Station 51 has been shut off and is not actively producing water.

Project Justification

The District is supplied solely by groundwater wells. The 2021 *Well Infrastructure Renewal Program* report assessed 70% of the District's wells as requiring mitigation or replacement within the next five years (see Common Plant Issues justification book for additional details on the Well Renewal program). The report states rehabilitation as the lowest cost option and addressing water quality issues should be prioritized in the short term to ensure water production reliability. Allowing a well to become inactive, for example due to postponement of water quality treatment, increases the potential for bacteriological growth and associated corrosion on the well casing and perforations. Prolonged periods of inactivity might jeopardize the ability to utilize the well's production capacity in the future.

Due to carbon tetrachloride levels exceeding the MCL at Station 51, the well cannot be turned on unless treatment is installed. The reactivation of this well into the current system operations will provide reliability for the 350 zone in the event other wells are lost due to equipment failure or any contaminant exceedance or during maintenance. Station 51 serves an area that would be isolated during maintenance work on interzonal mains, for example. Therefore, to ensure that the Chico system can provide safe water to its customers that does not violate the legally enforceable carbon tetrachloride MCL, carbon tetrachloride treatment needs to be installed at Station 51. The ability to keep the well and assets operational with treatment, will prolong their lifespan so they are useable now and to meet future demand.

[8] Agency for Toxic Substances and Disease Registry (ATSDR). Toxicological Profile for Carbon tetrachloride (Update). Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1994.

Alternative Analysis

1. Install Carbon Tetrachloride Treatment at Station 51
   - An industry standard treatment for carbon tetrachloride is granular activated carbon (GAC). GAC has been demonstrated to remove carbon tetrachloride to non-detectable levels, which is necessary since the MCL is set at the carbon tetrachloride detection limit.
   - This proposed solution will allow Station 51 to continue to supply water to the Chico system and support system supply while staying compliant with water quality regulations.

2. Install New Well
   - The existing well could be destroyed and a new well could be installed to replace it. However, since multiple wells in the water system are affected by groundwater constituents that require treatment, this has the potential to be more costly if the new well needs treatment in addition to the well installation investment.

3. Do Nothing
   - Allowing a well to become inactive increases the potential for bacteriological growth and associated corrosion on the well casing and perforations. Prolonged periods of inactivity could jeopardize the ability to utilize the well's production capacity in the future.

Recommended Solution

The recommend solution is to install a GAC adsorption system to treat carbon tetrachloride at Station 51.

Detailed Project Scope

- Install GAC Vessels and related Site Improvements.
- Modify station piping.
- Install flow meter, pressure transducer and related electrical improvements.
- Install control valve.
- Install chlorine analyzer.

Customer Benefits

The proposed project will enable the Chico District to keep Station 51 as a water supply well and ensure that there will be adequate water supplies to serve customer needs. Additionally, the proposed treatment will ensure public health is protected by complying with the carbon tetrachloride MCL.

Project Attachments

Figure 1 – Carbon Tetrachloride Concentrations at Station 51

Cost Estimates

Attachment A – VIS 77 Quote

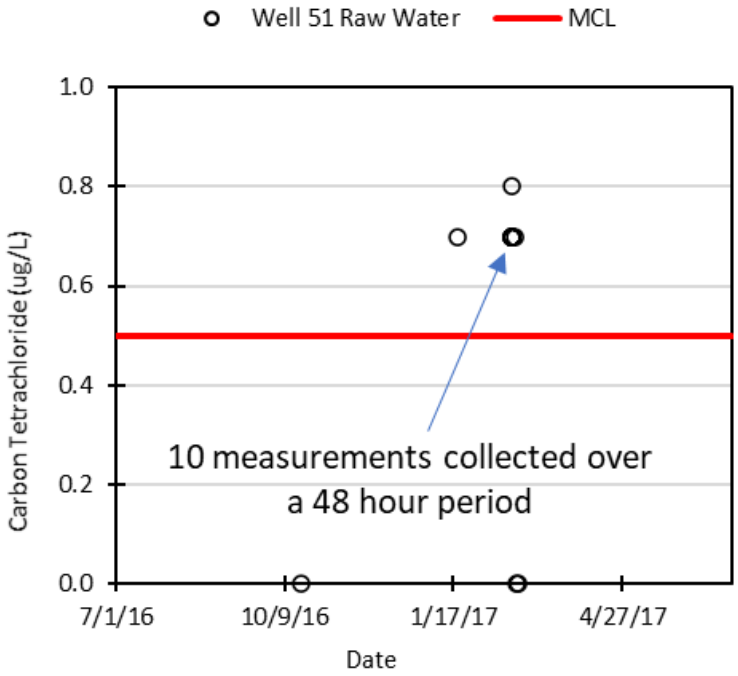


Figure 1 – Carbon Tetrachloride Concentrations at Station 51

123938 Cost Estimate

Capital Project Cost Estimate

Project No. : 123938
Description CH 51 Install GAC Treatment
District / Department: Chico
Project Start Date: 01/01/2022
Project Completion Date: 03/31/2023
Prepared By: bgodfrey
Date Initiated: 09/01/2020
Base Year: 2020
Sub-Total: $1,033,008
Direct Cost: $1,090,731

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CEQA CONSULTANT	Initial Study-PartialScope[LS]	1	$11,875.90	$11,875.90	Cost Catalog No. E.1-3
CONST. MANAGEMENT AND SPECIAL INSPECTIONS - 5%	[EA]	1	$40,439.64	$40,439.64	Engineer's Estimate
CONTROL VALVE	8in dia [EA]	1	$10,243.99	$10,243.99	Cost Catalog No. C.3-3
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	90	$107.03	$9,632.70	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	100	$97.22	$9,722.00	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	748	$121.41	$90,814.68	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	130	$93.13	$12,106.90	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	80	$89.85	$7,188.00	Labor SKU
CWS ENG LABOR	CW-SCADA Prog LABOR [HR]	8	$143.13	$1,145.04	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	5	$121.41	$607.05	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
DRAINAGE PIPING	On-site, Drainage Pipe [FT]	80	$414.04	$33,123.20	Cost Catalog No. F.8-1
ELECTRICAL INSTALLATION	[EA]	1	$30,590.00	$30,590.00	Engineer's Estimate
FLOWMETER	8in Magmeter [EA]	1	$5,183.54	$5,183.54	Cost Catalog No. C.6-3
GAC FOUNDATION	Treatment System [EA]	1	$66,442.33	$66,442.33	Cost Catalog No. A.14-4
GAC VESSELS	1 Train, 12in Dia GAC [EA]	1	$420,000.00	$420,000.00	Cost Catalog No. A.23-2
NPDES PERMIT	NPDES Permit [LS]	1	$2,443.40	$2,443.40	Cost Catalog No. F.3-1
OFFLOAD AND SET VESSELS	[EA]	1	$21,400.00	$21,400.00	Engineer's Estimate
PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
STATION PIPING	[EA]	1	$151,690.00	$151,690.00	Engineer's Estimate
STRUCTURAL ENG	Treatment Facility [EA]	1	$3,038.00	$3,038.00	Cost Catalog No. E.4-3
CONTINGENCY - 10%	[EA]	1	$93,909.83	$93,909.83	Engineer's Estimate

Sub-total = $1,033,008.15
Direct Cost = $1,090,730.73

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123938 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123938
District	Chico

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 21,400.00	1	2020	$ 21,400.00	Offload and set vessels	VIS 77 Quote
2	$ 151,690.00	1	2020	$ 151,690.00	Station Piping	VIS 77 Quote
3	$ 30,590.00	1	2020	$ 30,590.00	Electrical	VIS 77 Quote

rev. 3/2018

Exhibit A: VIS 77 GAC Treatment Bid List

Item	Description	Qty	Unit	Unit Price	Total Cost
1.	**Mobilization**				
1.1	Mobilization, Demobilization, site clean-up and restoration. Pricing shall include coordination of the Owner supplied 3rd Party Special Inspection(s) and picking up Owner provided equipment from the CWS field yard (Not including GAC Vessels)	1	LS	LS	10950 00
2.	**Demo, Removal, Relocate and Abandonment**				
2.1	Demo and remove existing aboveground well discharge piping and associated appurtenances per Drawing No. VIS 6324. Pricing shall include removing the existing meter box near this location.	1	LS	LS	5700 00
2.2	Demo and remove existing trees and bushes in conflict with the proposed improvements as shown on Drawing No. VIS 6324. Contractor shall backfill the root zones per the recommendation of the project's Preliminary Soils Report.	1	LS	LS	37,820 00
2.3	Demo existing 8" & 12" AC piping in conflict with the proposed GAC Foundation, future Generator foundation, and proposed storm drain facilities per Drawing No. VIS-6324.	1	LS	LS	4000 00
2.4	Demo existing irrigation service, backflow device, and associated plumbing in conflict with the proposed vessel foundation.	1	LS	LS	2320 00
2.5	Demo and remove existing Chemical enclosure. Chemical Equipment to be removed by Owner prior to Contractor Mobilization.	1	LS	LS	3030 00
2.6	Abandon existing 6" DI blowoff piping and blowoff assembly. Remove existing valve can and lid at blowoff assembly and backfill.	1	LS	LS	2320 00
2.7	Demo existing sprinkler control valves, vault, and associated sprinkler piping in conflict with the proposed improvements. Sprinkler control valves and associated sprinkler lines to be relocated by Contractor outside of the location of the proposed improvements.	1	LS	LS	5940 00
3.	**Foundations**				
3.1	Construct Treatment Vessel Foundation and associated concrete apron per Drawing No. VIS-6325. Foundation preparation shall be per the requirements of the project's Preliminary Soils Report. Contractor shall coordinate 3rd Party Inspections with the Owner's Special Inspector. Required Inspections include Foundation Preparation, Subgrade Compaction, Rebar placement, Concrete placement and sampling.	1	LS	LS	65250 00
4.	**Treatment Vessels**				
4.1	Offload, set, and anchor GAC Treatment Vessels and associated valve tree. Contractor shall assemble piping from Vessel Supplier to connect the valve tree to the GAC Vessels. Contractor shall coordinate the delivery of the GAC equipment with the Owner. Contractor shall coordinate 3rd Party Inspections for vessel anchorage with the Owner's Special Inspector.	1	LS	LS	21400 00
5.	**Station Piping**				
5.1	Furnish and install all station piping per Drawing No. VIS-6324. Pricing shall include all valves, fittings, pipe supports, thrust blocks, valve cans/covers, tracer wire, service(s), sample ports/stations, ground penetration protections, taps, and associated appurtenances per the contract drawings. Price shall include painting all above ground piping "CWS Grouse Tan" per Owner's ASPS No. 28.	1	LS	LS	151690 00
5.2	Install Owner supplied 10" Toshiba magmeter per Drawing No. VIS-6324.	1	LS	LS	2050 00
5.3	Furnish and install chemical injection probe and enclosure per Drawing No. VIS-6324.	1	LS	LS	2710 00
5.4	Pressure Test and Disinfect new potable water piping and GAC Treatment Vessels per Cal Water Specifications.	1	LS	LS	6790 00
6.	**Storm Drain Improvements**				
6.1	Furnish and install 2'x2' catch basin per Drawing No. VIS-6234.	1	LS	LS	5840 00
6.2	Furnish and install 12" PVC Drain line per Drawing No. VIS-6234.	1	LS	LS	6980 00
6.3	Furnish and install 48" diameter Storm Drain Manhole over existing storm drain line per Drawing No. VIS-6324.	1	LS	LS	14190 00

Attachment A
PID: 123938

rev. 3/2018

Exhibit A: VIS 77 GAC Treatment Bid List

Item	Description	Qty	Unit	Unit Price	Total Cost
7	**Electrical**				
7.1	Furnish and install all electrical conduits, wires, pull boxes, equipment, and associated appurtenances shown on the project's Electrical Drawings	1	LS	LS	30590
7.2	Install Owner supplied Pressure transducers (3 total) in Pump Building per the project's Electrical Drawings.	1	LS	LS	4530
7.3	Install Owner supplied Flow display transmitter in panelboard per the project's Electrical Drawings.	1	LS	LS	1620
7.4	Relocate the Chemical Feed tubing per the project's Electrical Drawings	1	LS	LS	3970
8.	**Site Fencing**				
8.1	Install approximately 215 LF of 6' tall chain-link fence with privacy slats per Drawing No. VIS-6324.	1	LS	LS	15820
8.2	Install four (4) each 6' tall by 3' wide chain-link single gate(s) with privacy slats per Drawing No. VIS-6324.	1	LS	LS	3240
8.3	Install one (1) 6' tall by 16' wide chain-link double gate with privacy slats per Drawing No. VIS-6324.	1	LS	LS	1620
8.4	Install one (1) 6' tall by 12' wide single chain-link single gate with privacy slats per Drawing No. VIS-6324.	1	LS	LS	1620
9	**Misc. Site Improvements**				
9.1	Construct 18' wide x 9.5 deep concrete drive approach per Drawing No. VIS-6325.	1	LS	LS	26,170
9.2	Construct 6'x6' chain-link chemical enclosure with privacy slats and shade awning per Drawing No. VIS-6324. Price shall include wood base filled with river rock.	1	LS	LS	9,100
9.3	Install ¾" crushed rock in areas disturbed by construction per Drawing No. VIS-6324.	1	LS	LS	18,020
10	**Startup and Commissioning**				
10.1	Startup and Commissioning of all electrical and piping components shown on the Contract Drawings	1	LS	LS	1820
11	**Payment Bond**				
11.1	Payment Bond for Bid List items 1 through 10	1	LS	LS	970
				PROJECT TOTAL:	468,060

District – Chico
PID # 123979
Rebuild Station 50

Problem Statement

The existing panelboard at Chico Station 50 was installed in 1973 and is approaching 50 years in service. Additionally, it contains water tubing for hydraulic devices, which is a safety hazard in the event of potential leaks or water sprays coming in contact with live electrical equipment. The station is slated for piping modifications, roof replacement, and electrical equipment replacement based on condition, performance, and remaining useful life.

Station 50 components are recommended for replacement due to the following:

- Multiple upgrades are needed to the electrical components in the existing panelboard, including the starter, motor breaker, and main breaker.
- The size of the existing enclosure will not be able to accommodate the replacement equipment.
- An electrical service upgrade will also enable Cal Water to comply with PG&E's current standards, and make it easier to obtain emergency and routine maintenance parts (the electrical equipment dates back to the original station construction obtaining parts can be challenging).
- The existing panelboard is housed in the pump building with a roof that leaks during rain events. Water leakage through the roof presents a potential safety hazard and operation disruption if it were to contact with live equipment.
- Flowmeter replacement is recommended due to aging infrastructure and becoming technically obsolete.

Project Justification

The well located at Station 50 supplies approximately 850 gallons per minute (gpm) to the 475 zone. The *2020 CH Water Supply-Demand Analysis* report (see Section E for details) states that the 475 zone is dependent on five wells for supply and pump capacity. If the largest supply well in the 475 zone goes out of service (firm supply capacity), there would be a peak hour demand (PHD) deficit between July and September. The report identified a PHD deficit of 910 gpm during the maximum month of August. The PHD deficit shows the importance of this station and inability to meet the operational demands if this station were to go offline as it provides reliability to the 475 zone.

The station was constructed in 1973 with pumping facilities including a well, booster pump, 40,000 gallon basin, and surge tank. The booster pump and surge tank have since been removed, and the basin is no longer in service at the station. A 150 kW generator was installed in 2016 to prevent power outages at the station during emergencies and therefore ensure uninterrupted water supply to the customers within the station's service due to its importance.

Piping modifications to relocate the chlorine injection outside, similar to other stations, will mitigate potential safety risks inherent with it being inside the station building. Replacement of the flowmeter with an aboveground flowmeter will ensure an accurate signal for real-time monitoring and tracking. Data provided by flowmeters is beneficial in the daily operations for troubleshooting of the distribution system, leak detection, fire flows, etc. Construction of all these components in the same project is recommended to be completed concurrently to minimize station down time and reduce contractor costs.

Alternative Analysis

1. Replace Station 50 Components Independently As Needed
    - This approach is considered to be inefficient since both the chlorine injection and flowmeter replacement require piping modifications and construction equipment mobilization is required for all improvements.
    - To avoid potential emergency situations, Cal Water adamantly pursues a proactive approach to keep all necessary assets in fair working condition. Due to the station's criticality, reliability facilities such as Station 50 must be adequately maintained.

2. Do Nothing
    - This approach leaves Station 50 at risk for safety hazards to Cal Water staff and potential operational failure.

Recommended Solution

Replace panelboard and roof, relocate chlorine injection point and modify station piping and fencing as needed. For the 2021 General Rate Case (GRC) application, Cal Water is proposing to complete only the design and permitting of the recommended solution given the significant number of unknowns, design challenges, and timing required to complete the design and secure all the necessary permits. Moreover, this approach will enable Cal Water to present a final design as part of the 2024 GRC with a more accurate final project cost and schedule to complete. Design and permitting costs for this project are presented in the attachments below. Total cost for this project, including design and permitting, is estimated to be approximately $500,000 - $900,000.

Detailed Project Scope

The scope for the 2021 GRC includes:

- Perform survey, design, and secure all permits.

The proposed scope for the 2024 GRC includes:

- Replace electrical panelboard.
- Replace building roof.
- Perform piping modifications.
- Relocate chlorine injection point.
- Install aboveground flowmeter.
- Install hydraulic enclosure.

- Modify fencing.

Customer Benefits

Replacement of Station 50 components will allow continued operation of the well. Customers will benefit from a more reliable and up-to-date water system.

Project Attachments

Figure 1 – Existing Panelboard
Figure 2 – Existing Flowmeter
Figure 3 – Proposed Station 50 Improvements – Inside Building
Figure 4 – Proposed Station 50 Improvements – Outside Building

Cost Estimates

Figure 1 – Existing Panelboard

Figure 2 – Existing Flowmeter

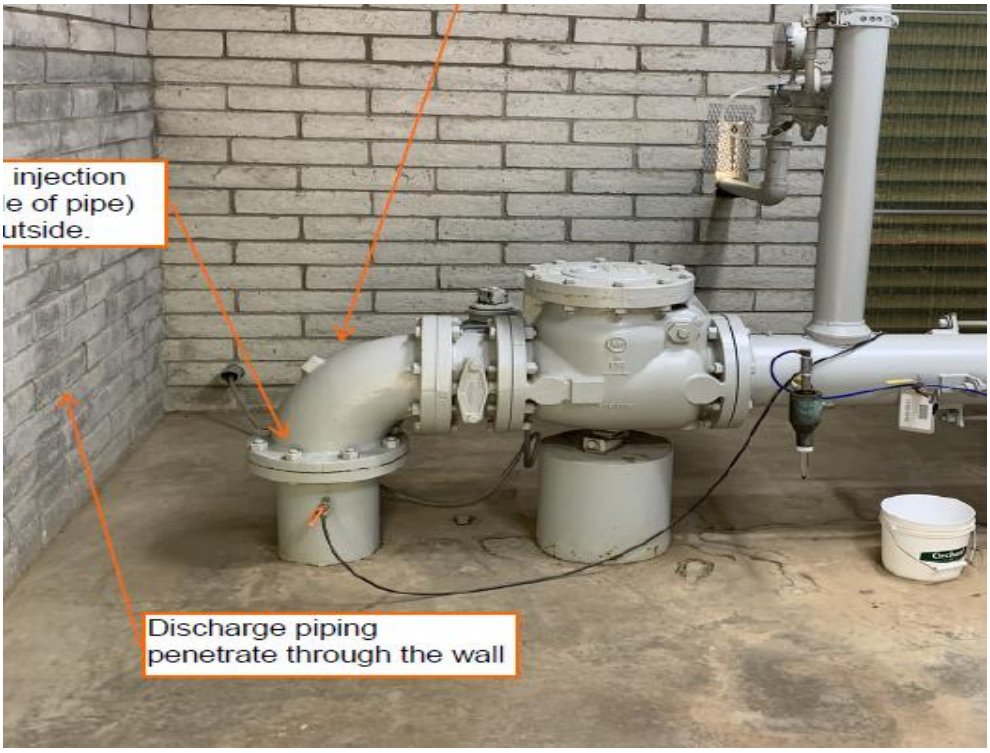


Figure 3 – Proposed Station 50 Improvements – Inside Building

Figure 4 – Proposed Station 50 Improvements – Outside Building

123979 Cost Estimate

Capital Project Cost Estimate

Project No. : 123979
Description CH 50 Station Rebuild - Design
District / Department: Chico
Project Start Date: 01/01/2023
Project Completion Date: 12/31/2023
Prepared By: bgodfrey
Date Initiated: 09/01/2020
Base Year: 2020
Sub-Total: $159,440
Direct Cost: $171,699

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CITY PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	80	$107.03	$8,562.40	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	130	$97.22	$12,638.60	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	300	$121.41	$36,423.00	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	160	$93.13	$14,900.80	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	300	$121.41	$36,423.00	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	40	$89.85	$3,594.00	Labor SKU
SCADA PM LABOR	CW-SCADA Prog LABOR [HR]	8	$143.13	$1,145.04	Labor SKU
SCADA TECH LABOR	CW-SCADA Tech LABOR [HR]	4	$89.85	$359.40	Labor SKU
STRUCTURAL ENG	DesignforEquipmentFoundatn[EA]	1	$932.06	$932.06	Cost Catalog No. E.4-1
UTILITY COST	Utility Cost [LS]	1	$11,332.83	$11,332.83	Cost Catalog No. B.4-1
CONTINGENCY - 20%	[EA]	1	$26,573.34	$26,573.34	Engineer's Estimate

Sub-total = $159,440.02
Direct Cost = $171,699.46

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

District – Chico
PID # 124068
Wildfire - 475 Zone Bruce Road New Main

Problem Statement

The southern section of the 475 zone is generally isolated from the northern section. On Bruce Road, between Humboldt Drive and Native Oaks Drive, there is a single pipeline connecting the north and south ends of the 475 zone. If this section of pipeline is offline for any reason, the northern and southern sections of this zone will lose connectivity. The northeastern area of Chico has a very high wildfire risk, and the system will be vulnerable to not meeting demands during a wildfire event if this pipeline is out of service.

Addressing grid limitations along Bruce Road was identified in the 2020 *California Water Service Wildfire Risk Assessment* report as a critical project necessary to ensure a reliable source of water to customers and provide the necessary fire capacity required to mitigate wildfire impacts.

Project Justification

As a result of recent wildfire events and the likelihood that wildfires will increase in both frequency and intensity in the near future as a result of climate change, it was necessary for Cal Water to conduct a thorough evaluation of its systems' fire protection.[9] In 2019, Cal Water evaluated the capacity and capability of all its current infrastructure and stations in the event of a wildfire and proposed a number of measures necessary to mitigate the potential risks. The results of this analysis were compiled into the 2020 *California Water Service Wildfire Risk Assessment,* which is described in more detail in the Common Plant Issues justification book. These measures were identified as especially critical and time sensitive for wildfire hardening.

A new pipeline is currently in design to cross Little Chico Creek to create a loop from the south end of the 475 zone to the north end on Notre Dame Blvd. This will improve the reliability of the system to connect both ends of this zone. However, on Bruce Road between Humboldt Drive and Native Oaks Drive, a single 12-inch pipeline is currently in place. Installing another approximately 600 feet of main at this location will improve reliability connecting the north and south end of the 475 zone. This new pipeline will supplement the Little Chico Creek crossing project that was identified in the 2020 *California Water Service Wildfire Risk Assessment* report to increase reliability in the zone.

Station wells 65-01 and 76-01 produce approximately 1200 and 1300 gallons per minute, respectively. Typically both wells do not supply the zone at the same time, except while filling storage tanks in the zone. Since both wells are main contributors to the 750,000 gallon tank storage at Station 82 on Native Oaks Drive, it is important for the connectivity to remain in-place in the event the existing section of pipeline is

[9] USGS. *Wildland Fire Science – Supporting Wildland Fire and Land Management*. (2019)

taken offline. The Station 82 storage tank is critical to firefighting preparedness in the east part of the system.

This main installation will enhance operational reliability by increasing the 475 zone connectivity in the event other mains, such as along Bruce Road, are out of service for maintenance or well stations in other parts of the zone are offline. The greater zone connectivity will allow Cal Water the more effectively provide water to customers in the zone. Additionally, this portion of the water system is located near extreme wildfire threat areas near Bidwell Park and along State Highway 32. Given the wildfire risk at this location, it is important that Cal Water addresses the existing grid limitations in order to increase reliability for wildfire demand.

Alternative Analysis

1. Install a new parallel main along Bruce Road.
    - Install approximately 600 feet of 12-inch main along Bruce Road.
    - This main installation will enhance operational reliability by increasing the 475 zone connectivity in the event other mains, such as along Bruce Road, are out of service for maintenance or well stations in other parts of the zone are offline.

2. Install a booster pump at Station 79.
    - The installation of a booster pump at Station 79 would provide supplemental demand plus fire flow with the largest well in the 475 zone south of Little Chico Creek out of service. Although this would support demand in the southern 475 zone, it would not enhance the connectivity between the north and south parts of the 475 zone nor fully utilize the existing infrastructure.

3. Do Nothing
    - Given the wildfire threat and available solution to alleviate a restricted pipeline grid, a do nothing approach is less desirable to Cal Water since it poses a greater challenge to meet fire flow demands. To avoid potential emergency situations, Cal Water pursues a proactive approach to ensure system reliability.

Recommended Solution

Install approximately 600 feet of 12-inch main along Bruce Road from Humboldt Drive to Native Oak Drive.

Detailed Project Scope

- Install approximately 600 feet of 12-inch main along Bruce Road from Humboldt Drive to Native Oak Drive.
- Tie-in to existing main.

Customer Benefits

Addressing grid limitations along Bruce Road was identified as a critical infrastructure need as part of the 2020 *California Water Service Wildfire Risk Assessment* in order to ensure a reliable source of high quality water is available to customers and that there is adequate fire protection available in the 475 zone.

Project Attachments

Figure 1 – Site Map

Cost Estimates

Attachment A – Bid Form

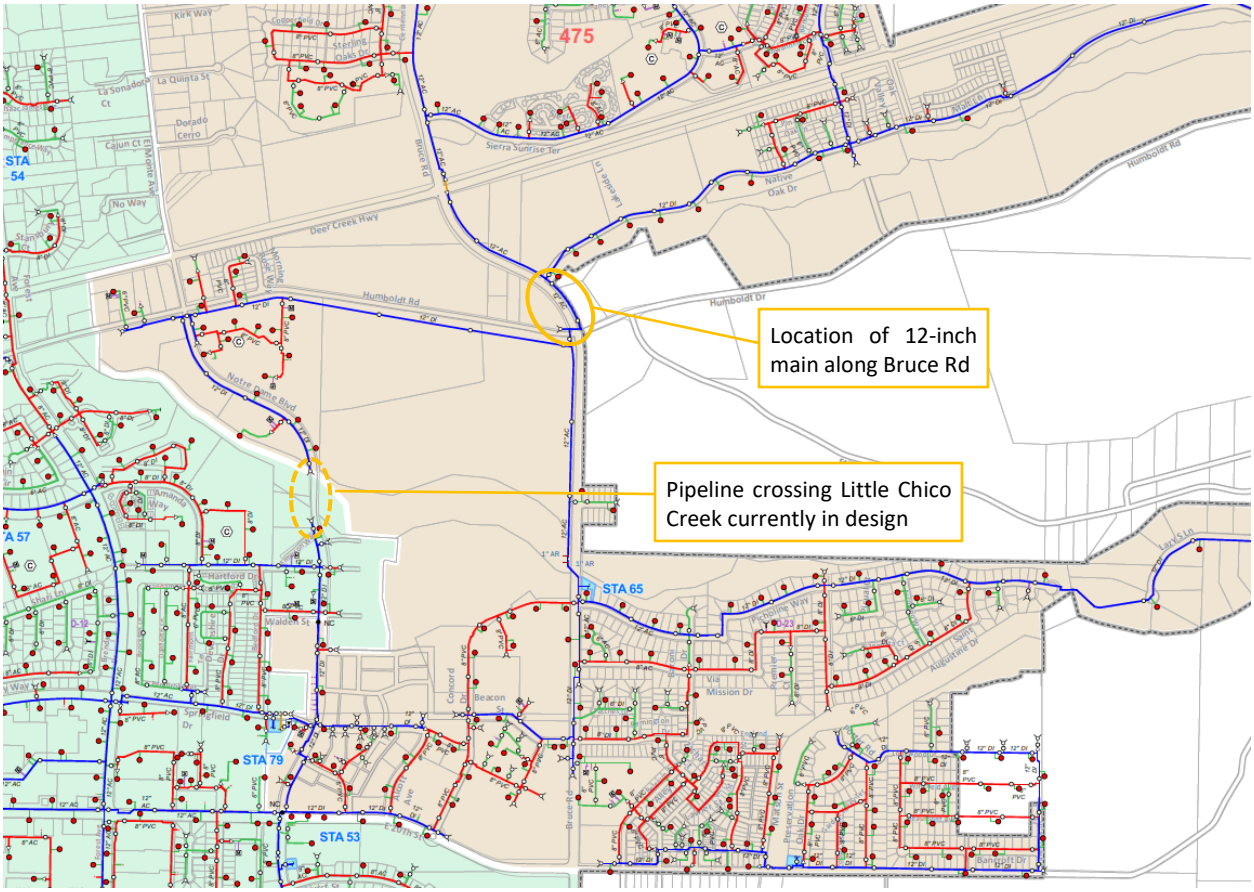


Figure 1 – Site Map

124068 Cost Estimate

Capital Project Cost Estimate

Project No. : 124068
Description CH Wildfire 475 Zone Bruce Rd Main
District / Department: Chico
Project Start Date: 01/01/2022
Project Completion Date: 12/31/2022
Prepared By: bgodfrey
Date Initiated: 09/02/2020
Base Year: 2020
Sub-Total: $403,698
Direct Cost: $424,135

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
12" DI MAIN (STREET)	Street Piping-CH-ModCmplx [FT]	585	$320.40	$187,434.00	Cost Catalog No. A.8-20
CONSTRUCTION MGMT AND SPECIAL INSPECTION - 10%	[EA]	1	$30,302.58	$30,302.58	Engineer's Estimate
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	50	$107.03	$5,351.50	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	467	$121.41	$56,698.47	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	249	$93.13	$23,189.37	Labor SKU
ENCROACHMENT PERMIT	Encroachment Permit [LS]	1	$4,040.71	$4,040.71	Cost Catalog No. F.1-3
PAVEMENT STRUCTURE	Concrete [FT]	120	$209.24	$25,108.80	Cost Catalog No. F.10-1
TIE-IN TO EXISTING MAIN	[EA]	2	$3,000.00	$6,000.00	Engineer's Estimate
TOPOGRAPHIC SURVEY	Pipeline Alignment(<2000ft)[LS]	1	$7,525.27	$7,525.27	Cost Catalog No. E.6-12
TRAFFIC CONTROL	Traffic Control (Simple) [LS]	1	$20,254.57	$20,254.57	Cost Catalog No. F.5-1
WQ PM LABOR	CW-WQ Proj MGR LABOR [HR]	9	$121.41	$1,092.69	Labor SKU
CONTINGENCY - 10%	[EA]	1	$36,699.80	$36,699.80	Engineer's Estimate

Sub-total = $403,697.76
Direct Cost = $424,135.18

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

124068 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	124068
District	Chico

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 3,000.00	2	2020	$ 6,000.00	Tie-in to Existing Main	Attachment A - Bid# 120374

Attachment A
PID: 124068

124068 Attachments

CONSTRUCTION®
SINCE 1958

	California Water Service Company - San Jose (Main Office)	**Contact:**	Confirmatory
ss:	1720 North First Street	**Phone:**	(408) 367-8200
	San Jose, CA 95112 USA	**Fax:**	
:t Name:	Amber Lynn Estates	**Bid Number:**	120374
:t Location:	Morseman, Ave, Chico	**Bid Date:**	6/30/2020

lley Construction Co., Inc. is pleased to offer the following quotation for the above referenced project. Further clarification regarding nstallation of Labor, equipment and materials is contained herein.

#	Item Description	Estimated Quantity	Unit	Unit Price	T
	12" DIP	1,510.00	LF	$148.00	$
	8" PVC C-900(Includes 100'-8"DR-14)	3,095.00	LF	$94.00	$
	6" PVC C-900	515.00	LF	$87.00	
	1" Short Services	49.00	EACH	$1,700.00	
	1" Long Services-Common	44.00	EACH	$2,000.00	
	1" Long Services	3.00	EACH	$2,500.00	
	Fire Hydrant Connection (6")	5.00	EACH	$9,200.00	
	8" CL&C Double Offset	4.00	EACH	$10,400.00	
	1" Long Services-Common Trch Off Ex Main	12.00	EACH	$4,100.00	
	1" Long Services- Paid By Off Ex Main	1.00	EACH	$4,800.00	
	Tie-ins To Ex Mains	2.00	EACH	$3,000.00	

Total Bid Price: $885

des all testing & flushing as needed.
ng, permits, grading and grubbing by others.
g is good for 60 days.
g included on bid items # 9 and # 10 only.
ngineering bid item # 11- All excavation, backfill & materials to be supplied by others.

PTED:

ove prices, specifications and conditions are satisfactory and reby accepted.

: _____

ture:

CONFIRMED:

West Valley Construction Company Inc.

Authorized Signature:

District – Chico
PID # 124236
Routine Panelboard Replacement Station 32

Problem Statement

The electrical equipment at Chico Station 32 is under consideration for replacement due to the following factors:

- The panelboard at Station 32 was installed in the 1960's.
- The panelboard is damaged due to rust and beginning to deteriorate.
- Hydraulic lines are present inside the switchgear enclosure creating unsafe conditions and an electrical shock hazard.
- Screws and bolts on the panelboard doors and covers are worn, rusted, and irreparable. Accessing the panelboard is a challenge during maintenance.
- The panelboard sits directly on the building floor, which can be an issue if there are any water leaks from the pump in the building.

Project Justification

A typical electrical panelboard at a pump station houses most, if not all, of the equipment and components required to run the pumps, as well as any additional features at the station. Upon installation, most electrical equipment begins to deteriorate due to absorption of moisture, daily temperature cycles, collection of dust, condensation, mechanical wear of circuit breaker contacts and contactors, weakening of operating springs, deterioration of insulating materials, and rusting of switchgear enclosures. Although the panelboard undergoes routine maintenance over the course of its life, repairs and modifications become more frequent and costly over time. Therefore, renovating electrical distribution systems is essential to deliver reliable power to the loads.

Station 32 is a well station with one (1) 75 horsepower well pump. The majority of electrical equipment that powers and controls the booster pumps at this station was installed approximately 60 years ago and is in poor condition.

The scope of the panelboard replacement at Station 32 is to design and install a new electrical panelboard to house the controls for the station's well pump motor and monitoring equipment for the station to remain operational. The new panelboard design will follow the general Cal Water current code compliant electrical panel model, and will include all necessary electrical equipment used to control and monitor the pump. It will also allow for the full replacement of electrical components within the existing panelboard that require repair or upgrade. In addition, the new panelboard will be designed with a full enclosure, mounted on a slightly raised concrete pad.

Alternative Analysis

1. Do Nothing

- If something were to fail, the do nothing approach leaves Cal Water customers at risk of low pressure or loss of supply.

Recommended Solution

Replace the existing panelboard at Station 32.

Detailed Project Scope

- Demolish existing panelboard.
- Install new panelboard.

Customer Benefits

A new panelboard would provide a safer, code compliant, and reliable operational system. It will also greatly reduce any downtime for repairs, allow for any necessary expansion, and ensure consistent, sufficient supply to the customers in its service area.

Project Attachments

Figure 1 – Existing Panelboard
Figure 2 – Well Pump
Figure 3 – Water Leak near Panelboard
Figure 4 – Rust inside Panelboard

Cost Estimates

Figure 1 – Existing Panelboard

Figure 2 – Well Pump

Figure 3 – Water Leak near Panelboard

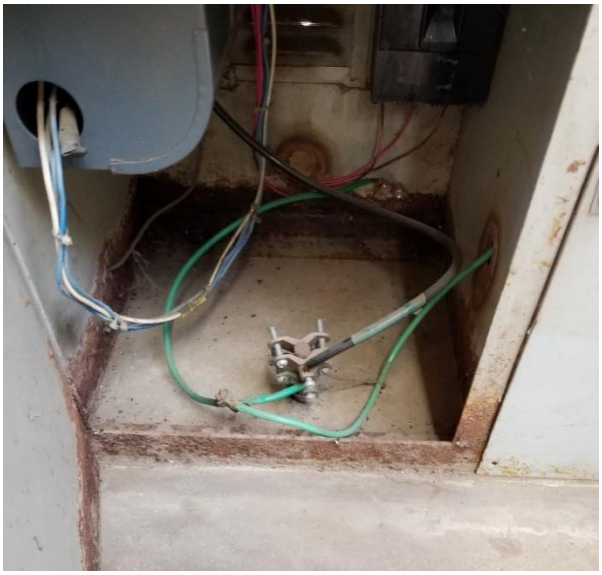


Figure 4 – Rust inside Panelboard

124236 Cost Estimate

Capital Project Cost Estimate

Project No. : 124236
Description CH 32 Panelboard Replacement
District / Department: Chico
Project Start Date: 01/01/2024
Project Completion Date: 12/30/2024
Prepared By: hadada
Date Initiated: 09/08/2020
Base Year: 2020
Sub-Total: $276,242
Direct Cost: $304,920

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CITY PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	50	$107.03	$5,351.50	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	120	$97.22	$11,666.40	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	161	$93.13	$14,993.93	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	321	$121.41	$38,972.61	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	40	$89.85	$3,594.00	Labor SKU
ELEC PANELBOARD	200 Amp [EA]	1	$41,931.04	$41,931.04	Cost Catalog No. D.3-1
ELECTRICAL WORK	100-200 A, Outdoor Pnlbrd [LS]	1	$81,824.00	$81,824.00	Cost Catalog No. B.3-1
MISC ELEC EQUIP AND MATERIALS	Hydraulic Enclosure [EA]	1	$7,435.35	$7,435.35	Cost Catalog No. D.7-1
PANELBOARD FOUNDATION	Equipment [EA]	1	$5,049.09	$5,049.09	Cost Catalog No. A.14-1
RTU PANEL	RTU Panel/Radio Panel [EA]	1	$6,766.23	$6,766.23	Cost Catalog No. D.5-1
SCADA PACK	SCADA Pack [EA]	1	$2,765.44	$2,765.44	Cost Catalog No. D.6-1
SCADA PM LABOR	CW-SCADA Prog LABOR [HR]	8	$143.13	$1,145.04	Labor SKU
SPECIAL INSPECTION 5%	[EA]	1	$10,814.18	$10,814.18	Engineer's Estimate
STRUCTURAL ENG	DesignforEquipmentFoundatn[EA]	1	$932.06	$932.06	Cost Catalog No. E.4-1
UTILITY COST	Utility Cost [LS]	1	$11,332.83	$11,332.83	Cost Catalog No. B.4-1
CONTINGENCY 10%	[EA]	1	$25,112.92	$25,112.92	Engineer's Estimate

Sub-total = $276,242.17
Direct Cost = $304,919.57

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

District – Chico
PID # 124251
Water Supply & Facilities Master Plan

Problem Statement

Cal Water's Water Resources group requires technical support to assist with the development of a California Public Utilities Commission (CPUC) mandated Water Supply and Facility Master Plan (WSFMP) for the Chico-Hamilton City District (District). The WSFMP will provide internal and external stakeholders with an assessment of the District's existing infrastructure and general direction on potential mid- and long-term infrastructure needs to assist Cal Water with maintaining and improving long-term operational reliability.

Project Justification

Ultimately, it is the responsibility of the water retailer to ensure a reliable water supply for their customers. In 2002, Cal Water began development of WSFMPs for its districts to (1) develop the necessary tools (e.g., hydraulic model) to assess operational reliability and (2) identify the necessary additional infrastructure required to maintain long-term operational reliability. In 2008, the CPUC began requiring WSFMPs for each Cal Water district and that these plans be periodically updated. Cal Water has begun this process and is planning to update the WSFMP for the Chico-Hamilton City District in 2023.

Alternative Analysis

1. Utilize In-House Resources
    - Cal Water could rely solely on its limited in-house staff, however these resources are not sufficient to develop the WSFMP and perform the other critical activities within Cal Water that they are responsible for. Additionally, while the development of the WSFMP is a large undertaking, once developed, the resources necessary to support it are expected to diminish over time. Thus, it would be inefficient for Cal Water to hire additional specialized resources necessary to support this temporary effort.

2. Do Nothing
    - The do nothing alternative was not acceptable given that the CPUC requires Cal Water to submit a long-term WSFMP as part of GRC applications for the Chico-Hamilton City District and the current WSFMP is now more than 13 years old.

Recommended Solution

Cal Water proposes to use outside consultants to assist with the development of a WSFMP to (1) assess the operational reliability of the Chico-Hamilton City system and (2) identify necessary additional infrastructure to maintain that reliability based on available supplies and projected demands.

Detailed Project Scope

The WSFMP will identify necessary additional infrastructure to maintain reliability based on available supplies and projected demands. The plans will incorporate data and information from numerous other studies and internal Cal Water programs including:

- Urban Water Management Plans (UWMP)
- Demand Management Programs and Plans
- Climate Change Assessments
- Vulnerability Assessments
- Supply Reliability Assessments
- Asset Condition Assessment
- Main Replacement Projects (MRP)
- Well Replacement Projects (WRP)
- Current 9 year Capital Improvement Plan (CIP)
- Current 3 year GRC

With the assistance of Cal Water staff, the consultant will perform necessary work to develop a report with the following contents:

- **Purpose and objectives of plan** including Cal Water's requirements and uses and CPUC requirements.
- **Overview of the existing system** including a description of the supply sources, treatment facilities, storage, conveyance and distribution facilities including maps and schematics.
- **Current and projected water demands** including a summary of historic, existing and projected demands from Cal Water's Long-Range Demand Forecasting, Water Sales Forecasting and Conservation Planning Report.
- **Existing and planned groundwater resources** including (a) wells and plans for rehabilitation or replacement and (b) summary of water quality, requirements for treatment, existing treatment facilities and plans for improving or replacing.
- **Existing and planned surface water resources** including a description of existing surface water sources that Cal Water has rights to with and an analysis of variability of quantity availability linked to drought and other factors and expected changes in supply quantity due to various factors.
- **Existing and planned water treatment plant facilities** including a summary of raw water quality, requirements for treatment, adequacy of existing treatment facilities and plans for improving or replacing treatment facilities.
- **Other existing and planned water resources** including a description of the status of existing recycled water uses, the availability of treated water from existing wastewater collection and treatment systems, and the potential for developing feasible non-potable and indirect potable uses.

- **Integrated Supply Plan** that includes a description of future supply alternatives, assessment of those alternatives, and selected plan with supporting rationale.
- **Planning and design criteria** with (a) comprehensive listing of all key criteria (e.g., maximum day flow) used for selecting and sizing facilities, selection of materials and equipment and (b) description of criteria used for developing prioritized ranking of projects and method for weighting, comparing and ranking projects.
- **Hydraulic model** will be updated or developed, as appropriate, to aid in the assessment of the distribution systems ability to meet future dynamics and the analysis necessary to prepare the CIP.
- **Facilities assessment** will summarize relevant information on system facilities conditions provided by Asset Management Program, including the MRP and WRP.
- **Evaluation of existing water system** describing improvements required and prioritized using criteria and weightings.
- **Proposed future water system** describing improvements required and prioritized using criteria and weightings.
- **Recommended additions to CIP** describing all cost estimating data and methods used and specific means for updating these to ensure consistency with Cal Water data and methods for project cost estimating and reasonable accuracy.

Customer Benefits

Proper operational reliability planning is essential to water retailers seeking the most reliable, cost-effective source(s) to deliver water to their customers. Updating the WSFMPs will ensure that (1) operational reliability challenges are more fully identified and analyzed and (2) the process for identifying, developing and/or securing these facilities is appropriate, which will further Cal Water's commitment to its customers to provide safe, affordable, and reliable supplies. To do this effectively, Cal Water must retain the expertise necessary to understand and address the complex issues associated with the development of the plans and the identified projects.

Project Attachments

Cost Estimates

Attachment A – *Technical Memorandum For the Justification of Water Supply & Facility Master Plan Project Costs 2021 GRC Filing*

124251 Cost Estimate

Capital Project Cost Estimate

Project No. : 124251
Description Chico WSFMP
District / Department: Chico
Project Start Date: 01/01/2023
Project Completion Date: 09/30/2023
Prepared By: mstorms
Date Initiated: 09/09/2020
Base Year: 2020
Sub-Total: $300,131
Direct Cost: $323,208

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONSULTANCY COST	[EA]	1	$200,000.00	$200,000.00	Engineer's Estimate
WTR RES ENG	CW-Wtr Res Eng LABOR [HR]	600	$121.41	$72,846.00	Labor SKU
CONTINGENCY (10%)	[EA]	1	$27,284.60	$27,284.60	Engineer's Estimate

Sub-total = $300,130.60
Direct Cost = $323,207.77

Notes:
1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

124251 Cost Basis Worksheet

Cost Basis Worksheet

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 200,000.00	1	2020	$ 200,000.00	Consultancy Cost	WSFMP Cost Basis Memo

CALIFORNIA WATER SERVICE

Technical Memorandum

For the Justification of Water Supply & Facility Master Plan Project Costs
2021 GRC Filing

Introduction

Cal Water's Water Resources Group requires technical support to assist with the development of a California Public Utilities Commission (CPUC) mandated Water Supply and Facility Master Plans (WSFMPs) for its districts. These plans provide internal and external stakeholders with an assessment of the districts' existing infrastructure and general direction on potential mid- and long-term infrastructure needs.

Cal Water utilizes consultants to aid in the preparation and development of WSFMPs. Consultancy costs vary based on the size and complexity of each district's water system. As such, a singular cost basis would not be appropriate when estimating the costs for WSFMP projects. This technical memorandum outlines the methodology employed by Cal Water's Water Resources Group in estimating the consultancy costs for each Cal Water service territory due for a WSFMP update in the 2021 General Rate Case (GRC) cycle.

Methodology

Cal Water districts were grouped into one of three categories (see Table 1 below) based on system size and complexity. These groupings were the result of discussions among the Water Resources Group and past experience with each of the systems. Based on these groupings, direct costs were determined based on consultancy costs from past WSFMP projects.

Table 1 – WSFMP Cost Category by District

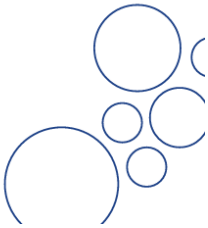
PID	District	Cost Category
124250	Antelope Valley	Low
124251	Chico-Hamilton	High
124253	Dixon	Moderate
124255	Dominguez	High
124256	East Los Angeles	High
124257	Hermosa Redondo	High
124258	Kern River Valley	Low
124261	Livermore	High
124263	Marysville	Low
124264	Oroville	Low
124265	Palos Verdes	High
124266	Redwood Valley	Low
124267	Stockton	Moderate
124268	Visalia	High
124271	Westlake	Moderate

Table 2 below describes the three projects used as the basis for estimated costs. Corroborating information for these costs is included in the appendix of this technical memorandum.

Table 2 – WSFMP Cost Basis by Cost Category

Cost Category	Associated Consultancy Cost	Cost Basis
Low	$80,000	116514 – Willows WSFMP
Moderate	$140,000	98402 – Los Altos Suburban WSFMP
High	$200,000*	9768 – Mid-Peninsula WSFMP
**Adjusted to accommodate reduced need*		

Those districts in the "Low" and "Moderate" cost category closely align with the size and complexity of the Willows and Los Altos Suburban districts. More complex districts (and complexity can stem from both system operations and regional supply issues) will require a more robust analysis from consultants. The Mid-Peninsula WSFMP is an example of how costs from a WSFMP project can exceed those found in Willows or Los Altos. However, costs are not expected to approach the costs from the Mid-Peninsula WSFMP from 2005 as Cal Water has become more familiar with WSFMP requirements and has existing models and information in place that were not available in 2005. Based on the level of effort from the Willows and Los Altos Suburban WSFMPs, Cal Water expects to see consultancy costs near $200,000 for its larger and more complex districts.



Attachment A
PID: 124251

Engineers...Working Wonders With Water®

Proposal for the Willows District
Water Supply & Facilities Master Plan

Appendix C – Proposed Budget

ESTIMATED LEVEL OF EFFORT AND FEE

WATER SUPPLY FACILITIES MASTER PLAN

California Water Service Company - Willows District

Task	Job Code	Task Description	CAROLLO										
			Project Manager Tim Loper	PIC & Technical Review Inge Wiersema	Project Engineer Matt Huang	Planning Support Mike Wetterau	GIS Riley Powers	Administrative Assistant	TOTAL LABOR HOURS	SUBTOTAL LABOR COST	REPRODUCTION TRAVEL	TOTAL Other Direct Costs	TOTAL
		Billing Rate	$295	$295	$225	$175	$140	$120					
1		PROJECT MANAGEMENT & MEETINGS	28	2	22	10	0	4	66	$16,030	$4,000	$4,000	$20,030
	1.1	Project Management and Coordination (max. 5	10	0	0	0	0	4	14	$3,430	$0	$0	$3,430
	1.2	Kickoff Meeting (1)	6	0	8	2	0	0	16	$3,920	$2,000	$2,000	$5,920
	1.3	Project Conference Calls/WebMeetings (3)	6	0	6	6	0	0	18	$4,170	$0	$0	$4,170
	1.4	Report Review Meeting (1)	6	2	8	2	0	0	18	$4,510	$2,000	$2,000	$6,510
2		DATA GATHERING AND REVIEW	1	1	4	12	2	1	23	$4,440	$0	$0	$4,440
	2.1	Data Gathering	1	0	2	4	0	0	7	$1,298	$0	$0	$1,298
	2.2	Task Documentation: Ch2 - District Background	1	1	4	8	2	1	17	$3,143	$0	$0	$3,143
3		EXISTING WATER SYSTEM	2	1	6	16	8	1	34	$6,275	$0	$0	$6,275
	3.1	System Description	1	0	2	8	0	0	11	$2,145	$0	$0	$2,145
	3.2	Task Documentation: Ch 3 - Existing Water System	1	1	4	8	8	1	23	$4,130	$0	$0	$4,130
4		WATER DEMANDS	1	1	6	16	6	1	31	$5,700	$0	$0	$5,700
	4.1	Update Water Demands	1	0	2	8	4	0	15	$2,558	$0	$0	$2,558
	4.2	Task Documentation: Ch 4 - Water Demands	1	1	4	8	2	1	17	$3,143	$0	$0	$3,143
5		SUPPLY SOURCES	2	1	8	22	2	1	36	$6,788	$0	$0	$6,788
	5.1	Existing Water Supplies	1	0	2	6	0	0	9	$1,648	$0	$0	$1,648
	5.2	Future Water Supplies	1	0	2	8	0	0	11	$1,998	$0	$0	$1,998
	5.3	Task Documentation: Ch 5 - Supply Sources	1	1	4	8	2	1	17	$3,143	$0	$0	$3,143
6		WATER SYSTEM EVALUATION	3	2	10	25	6	1	50	$9,535	$0	$0	$9,535
	6.1	Performance Design Criteria	1	1	2	0	0	0	4	$1,040	$0	$0	$1,040
	6.3	Storage Analysis	1	0	2	8	0	0	11	$1,998	$0	$0	$1,998
	6.4	Pumping Analysis	1	0	2	8	0	0	11	$1,998	$0	$0	$1,998
	6.5	Task Documentation: Ch 6 - System Evaluation	1	1	4	12	6	1	25	$4,550	$0	$0	$4,550
7		ASSET MANAGEMENT PROGRAMS	1	1	8	0	2	1	13	$2,790	$0	$0	$2,790
	7.1	Asset Management Programs	1	0	4	0	0	0	5	$1,048	$0	$0	$1,048
	7.2	Task Documentation: Ch 7: Asset Management	1	1	4	0	2	1	9	$1,743	$0	$0	$1,743
8		PLAN RECOMMENDATIONS & CIP	2	1	8	28	2	1	42	$7,985	$0	$0	$7,985
	8.1	Current (2018) GRC Projects	1	0	2	8	0	0	11	$1,998	$0	$0	$1,998
	8.2	Plan Recommendations	1	0	4	8	0	0	13	$2,448	$0	$0	$2,448
	8.3	Task Documentation: Ch 8: Plan Recommendat	1	1	2	12	2	1	19	$3,540	$0	$0	$3,540
9		WATER SUPPLY & FACILITY MASTER PLAN	4	8	12	34	12	14	84	$15,310	$500	$500	$15,810
	9.1	Draft Master Plan Report and Appendices	2	4	8	20	8	8	50	$9,150	$0	$0	$9,150
	9.2	Final Master Plan Report and Appendices	2	2	4	16	4	6	34	$6,160	$500	$500	$6,660
		TOTAL	44	16	86	168	40	25	379	$74,903	$4,500	$4,500	$79,403

Fee estimate is based on 2019 billing rates.

9/3/2019: 12:39 PM

Attachment A
PID: 124251

Attachment A
PID: 124251

WEST YOST
ASSOCIATES

April 22, 2020 SENT VIA: EMAIL

Mr. Michael Bolzowski
California Water Service
1720 North First Street
San Jose, CA 95112

SUBJECT: Amendment 2 to Preparation of an Updated Water Supply and Facilities Master Plan for the Los Altos Suburban District

Dear Michael,

At the request of California Water Service (Cal Water), West Yost Associates (West Yost) has prepared the following amendment to provide additional engineering services related to the preparation of the Los Altos Suburban District Water Supply and Facilities Master Plan (WS&FMP) Project (Project).

At the request of Cal Water, the following additional services were performed to complete the draft report:

- revised draft report to include 2019 historical system data;
- updated draft report with revised water demands and demand projection methodology;
- revised the system capacity analysis methodology significantly;
- reviewed calculations developed by Cal Water to develop revised capacity methodology;
- revised the CIP chapter significantly to better reflect the evaluation categories and identify triggers;
- attended a meeting with Cal Water staff on February 18th to discuss the system capacity analysis methodology and CIP chapter; and,
- provided additional PM time because the project was expected to be completed by December 2019 but is still ongoing.

The following scope of services provides descriptions for the tasks necessary to complete Cal Water's requested amendment for the proposed Project.

1001 Galaxy Way, Suite 310 Concord, CA 94520 Phone 925.949.5800 Fax 925.949.5845 westyost.com

Attachment A
PID: 124251

SCOPE OF SERVICES

The proposed amendment to the following Project tasks is described below:

Task 5. Water System Evaluation

Task 8. Prepare WS&FMP

Task 9. Project Management and Meetings

Task 5. Water System Evaluation

Update Chapter 6 to incorporate Cal Water comments from draft report, including the following:

- bring forward analysis tables from Appendix F to Chapter 6;
- add more detailed descriptions of the methods used to evaluate system deficiencies, as needed, to accompany tables;
- convert chapter tables to consist units (MG/year, MGD); and,
- prepare revised version of Chapter 6 for final Cal Water review and comment.

Task 8. Prepare WS&FMP

Update chapters to incorporate comments received from Cal Water on draft report and comments on screen-check final for Chapter 6, including the following:

- incorporating text changes requested by Cal Water;
- addressing comments to clarify text, as requested by Cal Water;
- re-format large tables to 8-1/2 x 11 portrait or 11 x 17 landscape for better printing (Tables ES-1, 3-4, 3-6, 8-1, 8-2, Appendix 8A-1 and 8A-2);
- incorporate additional information provided by Cal Water in response to requests in draft report text;
- update appendix references and appendices to letter designations (A, B, C, etc.); and,
- reconcile any remaining questions with Cal Water.

Prepare check-print final for Cal Water review. Once the check-print final is approved, and after shelter-in-place orders are lifted, prepare and submit two hard copies of the final report to Cal Water.

Task 8. Deliverables:

- original text format (MS Word)
- PDF version formatted for two-sided printing
- tables, figures and worksheets (MS Word, MS Excel)
- all root work-level and derivation files (MS Excel, DBF, etc.)

Attachment A
PID: 124251

Task 9. Project Management and Meetings

- coordination with Cal Water in finalizing the WS&FMP
- prepare final project invoice

PROJECT BUDGET

The total budget for the current scope of services is $120,713. The cost for additional work requested is $17,937, as summarized in Table 1, and the requested amended total budget is $138,650.

West Yost will perform all work on a time and materials basis based on our 2020 Billing Rate Schedule (included as Attachment A) and will not exceed the estimated cost of the amendment without written authorization. If additional budget is required to complete work associated with this amendment, we will not perform work in excess of the budgeted amount without the Cal Water's authorization.

Table 1. Summary of Requested Project Budget Augmentation, dollars

Task	Original Budget, dollars	Estimated, hours	Estimated, dollars	Revised Budget, dollars
Task 5. Water System Evaluation	28,565	22	4,250	32,815
Task 8. Prepare WS&FMP	23,166	61	11,327	34,493
Task 9. Project Management and Meetings	11,379	8	2,360	13,739
Total Contract Amount	**$120,713**	**92**	**$17,937**	**$138,650**

SCHEDULE

West Yost will begin work upon written notice to proceed from Cal Water. We will submit revised draft Chapter 6 within two weeks of notice to proceed, check print final within one week of receipt of Chapter 6 final comments, and final report (electronic) within one week of approval of check print final. Two hard copies of the report will be delivered once shelter-in-place restrictions are removed.

Please contact me if you have any questions or need additional information.

Sincerely,

WEST YOST ASSOCIATES

Polly L. Boissevain

Polly Boissevain, PE
Engineering Manager

Attachment A: 2020 West Yost Associates Billing Rate Schedule

Attachment A
PID: 124251

ATTACHMENT A

2020 West Yost Associates Billing Rate Schedule

Attachment A
PID: 124251

WEST YOST ASSOCIATES

2020 Billing Rate Schedule

(Effective January 1, 2020 through December 31, 2020) *

POSITIONS	LABOR CHARGES (DOLLARS PER HR)
ENGINEERING	
Principal/Vice President	$298
Engineering/Scientist/Geologist Manager I / II	$283 / $295
Principal Engineer/Scientist/Geologist I / II	$257 / $272
Senior Engineer/Scientist/Geologist I / II	$230 / $241
Associate Engineer/Scientist/Geologist I / II	$198 / $212
Engineer/Scientist/Geologist I / II	$160 / $185
Engineering Aide	$92
Administrative I / II / III / IV	$81 / $102 / $123 / $135
ENGINEERING TECHNOLOGY	
Engineering Tech Manager I / II	$291 / $294
Principal Tech Specialist I / II	$268 / $279
Senior Tech Specialist I / II	$245 / $256
Senior GIS Analyst	$224
GIS Analyst	$211
Technical Specialist I / II / III / IV	$156 / $178 / $200 / $223
Cross Connection Specialist I / II / III / IV	$117 / $127 / $143 / $159
CAD Manager	$178
CAD Designer I / II	$138 / $155
CONSTRUCTION MANAGEMENT	
Senior Construction Manager	$289
Construction Manager I / II / III / IV	$174 / $186 / $198 / $251
Resident Inspector (Prevailing Wage Groups 4 / 3 / 2 / 1)	$152 / $169 / $188 / $196
Apprentice Inspector	$138
CM Administrative I / II	$74 / $99
Field Services	$196

- Hourly rates include Technology and Communication charges such as general and CAD computer, software, telephone, routine in-house copies/prints, postage, miscellaneous supplies, and other incidental project expenses.
- Outside Services such as vendor reproductions, prints, shipping, and major West Yost reproduction efforts, as well as Engineering Supplies, etc. will be billed at actual cost plus 15%.
- Mileage will be billed at the current Federal Rate and Travel will be billed at cost.
- Subconsultants will be billed at actual cost plus 10%.
- Expert witness, research, technical review, analysis, preparation and meetings billed at 150% of standard hourly rates. Expert witness testimony and depositions billed at 200% of standard hourly rates.
- A Finance Charge of 1.5% per month (an Annual Rate of 18%) on the unpaid balance will be added to invoice amounts if not paid within 45 days from the date of the invoice.

* This schedule is updated annually

Attachment A
PID: 124251

WEST YOST ASSOCIATES

2020 Billing Rate Schedule (continued)

(Effective January 1, 2020 through December 31, 2020) *

Equipment Charges

EQUIPMENT	BILLING RATES
Gas Detector	$80/day
Hydrant Pressure Gauge	$10/day
Hydrant Pressure Recorder, Standard	$40/day
Hydrant Pressure Recorder, Impulse (Transient)	$55/day
Trimble GPS – Geo 7x	$220/day
Vehicle	$10/hour
Water Flow Probe Meter	$20/day
Water Quality Multimeter	$185/day
Well Sounder	$30/day

* This schedule is updated annually

Attachment A
PID: 124251

Purchase Order

CWS Jim Simunovich

OPEN — Dispatch via Print

Purchase Order	Date	Revision	Page
CWSCO 0000030337	10/20/2005		1
Payment Terms	**Freight Terms**		**Ship Via**
NET 10	N/A		N/A
Buyer	**Phone**		**Currency**
Simunovich, Jim			USD

Ship To: Mid Peninsula Field Office
345 NORTH DELAWARE STREET
SAN MATEO CA 94401

Bill To: 1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598

CALIFORNIA WATER SERVICE CO.
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598
Phone: 408-367-8200
Fax: 408-392-9797

Vendor: 0000001085
CDM INC.
PO BOX 25354 DEPT 33
SANTA ANA CA 92799-3354

Tax Exempt? N **Tax Exempt** **Replenishment Option:** Standard

Line-Sch	Item/Description	Vendor Item-ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	DEVELOP A WATER SUPPLY AND FACILITY MASTER PLAN		1.00	AMT	390,000.00	390,000.00	04/26/2006

Schedule Total 390,000.00

CWS Item ID: **Item Total** 390,000.00

PROVIDE PROFESSIONAL SERVICES TO DEVELOP A WATER SUPPLY AND FACILITY MASTER PLAN AND FULLY FUNCTIONAL, DYNAMICALLY CALIBRATED COMPUTERIZED HYDRAULIC MODELS FOR MID PENINSULA, BAYSHORE DISTRICT.

ALL WORK TO BE DONE PER YOUR CONTRACT DATED SEPTEMBER 9, 2005 AND AGREEMENT DATED SEPTEMBER 12, 2005.

THE ACCOMPANYING TERMS AND CONDITIONS ARE INCORPORATED IN THIS AGREEMENT AND SUPERSEDE ANY CONFLICTING TERMS IN THIS PURCHASE ORDER OR PREVIOUSLY AGREED TO TERMS BY THE PARTIES. (ENGINEERING)

Total PO Amount 390,000.00

Distribution of Charges

Line-Schd	Dst	Requisition	Account	Dept	BU-IN	DstBy	Amt-Only	Project-ID	Proj-Stat	Activity-ID
1 - 1	1	0000016146	103000	116		A	Y	00009768	OPEN	3030_F_1
1 - 1	2	0000016146	103000	116		A	Y	00012559	OPEN	3434_A_1

	Unauthorized	

District – Chico
PID # 124797
Wildfire - Station 64 Pump Storage Facility

Problem Statement

A pump storage facility in the Chico District 400 zone was identified in the 2020 *California Water Service Wildfire Risk Assessment* report as a critical project necessary to ensure a reliable source of water to customers and provide the necessary fire capacity required to mitigate wildfire impacts.

Project Justification

As a result of recent wildfire events and the likelihood that wildfires will increase in both frequency and intensity in the near future as a result of climate change, it was necessary for Cal Water to conduct a thorough evaluation of its systems' fire protection.[10] In 2019, Cal Water evaluated the capacity and capability of all its current infrastructure and stations in the event of a wildfire and proposed a number of measures necessary to mitigate the potential risks. The results of this analysis were compiled into the 2020 *California Water Service Wildfire Risk Assessment,* which is described in more detail in the Common Plant Issues justification book. These measures were identified as especially critical and time sensitive for wildfire hardening.

The purpose of the project is to meet demand plus 2,000 gallons per minute (gpm) fire flow for two (2) hours assuming the largest well within the zone is out of service. There are two (2) wells within the 400 zone, 44-01 and 64-01, which produce approximately 550 gpm and 700 gpm, respectively. In the event fire flow demand is needed, the proposed pump storage facility will support the demand utilizing the water storage and two (2) 1,000 gpm booster pumps.

A land purchase is required due to a lack of available space for the proposed improvements at existing station properties within the 400 zone. Approximately 100 feet x 100 feet of land is needed for the pump storage facility and is addressed in separate funding project. The land purchase is tentatively planned for a portion of land adjacent to existing Station 64 in the 400 zone, which will allow Cal Water to take advantage of existing infrastructure (Figure 1). The facility would be built and equipped with a 500,000 gallon water storage tank, two (2) booster pumps, a surge tank, station panel board, and electrical and station piping.

The size of the proposed tank was determined based on site conditions and assumed freeboard requirements and operational volume needs. The tank has been preliminarily sized at 52 feet in diameter with a 32 foot height, which provides adequate freeboard (Figure 2). Proposed tank capacity is estimated at 405,000 gallons (+/-), pending seismic analysis and site constraints to be confirmed during final design.

[10] USGS. *Wildland Fire Science – Supporting Wildland Fire and Land Management*. (2019)

Alternative Analysis

1. Install new pump storage facility.
    - Install ground level storage tank and booster pumps within the 400 zone to meet demand plus 2,000 gpm fire flow for 2 hours assuming largest well within the zone is out of service.

2. Install new main to supplement and meet fire flow requirement in the 400 zone from the main system.
    - This option would entail installation of a parallel transmission main to the single 12-inch main along Cohasset Road that conveys water from the main system up to the north part of the system. It would be approximately 1.6 miles of new main and be installed in two phases due to the higher cost associated. Due to the extended completion time compared to a new pump storage facility, this option is less desirable since the area will be more vulnerable to wildfire risk.

3. Do Nothing
    - Doing nothing does not address emergency risk in the area and would leave water system and customers vulnerable during emergencies such as wildfire.

Recommended Solution

Install ground level storage tank and booster pumps within the 400 zone. For the 2021 General Rate Case (GRC) application, Cal Water is proposing to complete only the design and permitting of the recommended solution given the significant number of unknowns, design challenges, and timing required to complete the design and secure all the necessary permits. Moreover, this approach will enable Cal Water to present a final design as part of the 2024 GRC with a more accurate final project cost and schedule to complete. Design and permitting costs for this project are presented in the attachments below. Total cost for this project, including design and permitting, is estimated to be approximately $2,300,000 - $3,500,000.

Detailed Project Scope

The scope for the 2021 GRC includes:

- Perform survey, design, and secure all permits.

The proposed scope for the 2024 GRC includes:

- Build new 500,000 gallon welded steel tank.
- Equip tank with flex-tend connections, control valves, level instrumentation, cathodic protection, and SCADA equipment.
- Install two booster pumps with variable frequency drive.
- Install surge tank.
- Install station piping and drain.
- Install electrical improvements.

Customer Benefits

A pump storage facility was identified as a critical infrastructure need as part of the 2020 *California Water Service Wildfire Risk Assessment* in order to ensure a reliable source of high quality water is available to customers and that there is adequate fire protection available in the 400 zone.

Project Attachments

Figure 1 – Preliminary Site Map
Figure 2 – Freeboard Calculation

Cost Estimates

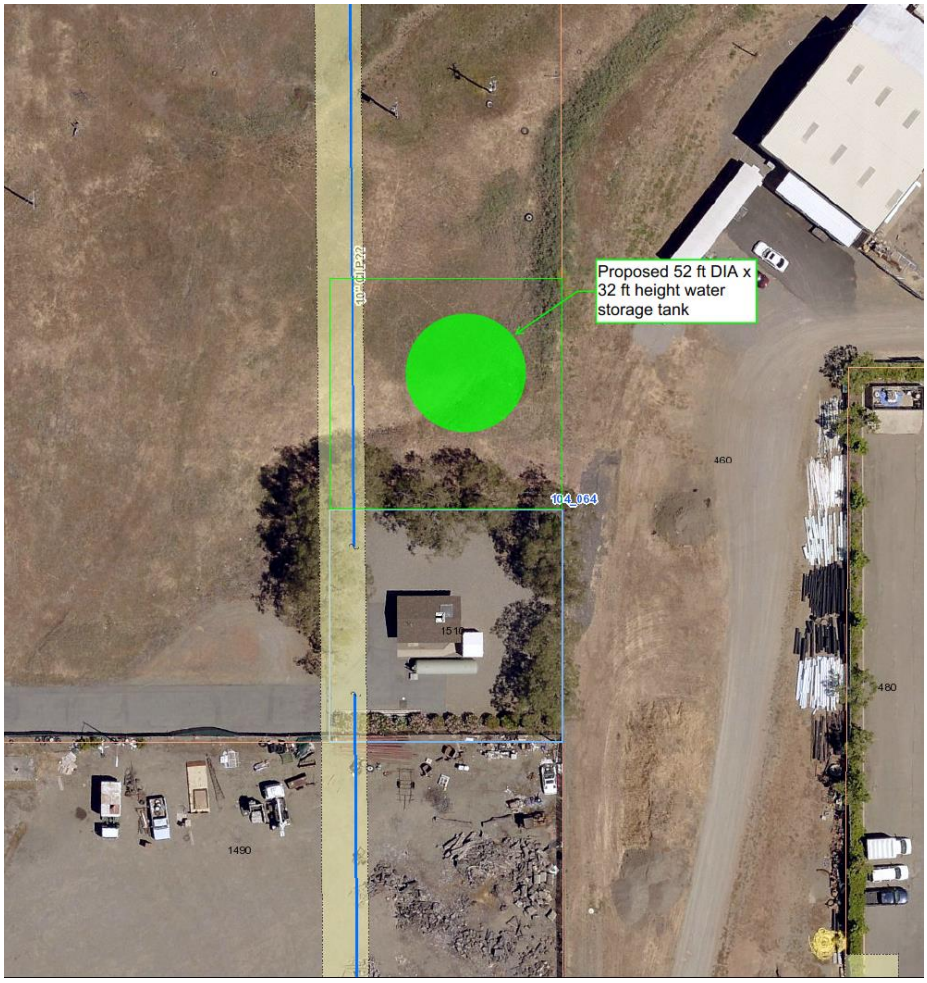


Figure 1 – Preliminary Site Map

D100-05 FREEBOARD REQUIREMENT

Seismic Use Group	III		Page 103			
Importance Factor, Ie	1.5		Table 24, Page 103			
Acceleration Parameters*						
Ss	1.964	g	Figure 7, Page 109			
Si	0.7	g	Figure 8, Page 111			
Site Class	Class D		Table 25, Page 122			
Site Coeff						
Fa	1.2		Table 26, Page 126			
Fv	1.5		Table 27, Page 126			
Sms = FaSs	2.3568		Page 127			
Sm1 = FvS1	1.05		Page 127			
SDS = U*Sms	1.5712		Page 128	where U = 2/3		
SD1 = U*Sm1	0.7		Page 128			
TL	12	sec	Figure 19, Page 130			
Tc = 2*Pi*((D)/3.68gtanh(3.68H/D)			Page 143			
Tank Diameter, D	52	ft	Volume	54,123	ft3	
Tank Height, H	32.0	ft		404,842	gal	
Overflow Height	25.5	ft				
Tc	4.20	sec				
Sloshing Wave Height	d =	0.5DAf	Page 152			
For Seismic Use Group III						
Af = KSD1/ Tc	if Tc <= TL		0.250073			
Af = KSD1Tl / Tc^2	if Tc > TL					
Sloshing Wave Height	d =	0.5DAf		6.5	ft	
FREEBOARD REQUIRED	**6.5**	**FT**				

*Could be obtained either from the noted figures+tables or USGS Software. Link: http://earthq

REQUIRED INPUTS

Figure 2 – Freeboard Calculation

124797 Cost Estimate

Capital Project Cost Estimate

Project No. : 124797
Description CH 64 Wildfire Pmp Storage - Design
District / Department: Chico
Project Start Date: 01/01/2023
Project Completion Date: 12/31/2024
Prepared By: bgodfrey
Date Initiated: 09/24/2020
Base Year: 2020
Sub-Total: $323,033
Direct Cost: $352,220

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
BUILDING PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CEQA CONSULTANT	Initial Study - Typical [LS]	1	$22,575.03	$22,575.03	Cost Catalog No. E.1-1
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	50	$107.03	$5,351.50	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	50	$97.22	$4,861.00	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	790	$121.41	$95,913.90	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	420	$93.13	$39,114.60	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	371	$121.41	$45,043.11	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	41	$121.41	$4,977.81	Labor SKU
CWS OPERATIONS ENGINEERING	CW-Oper Eng LABOR [HR]	40	$121.41	$4,856.40	Labor SKU
CWS SCADA PROG LABOR	CW-SCADA Prog LABOR [HR]	24	$143.13	$3,435.12	Labor SKU
CWS SCADA TECH LABOR	CW-SCADA Tech LABOR [HR]	50	$89.85	$4,492.50	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	3	$121.41	$364.23	Labor SKU
GEOTECHNICAL REPORT	2 Borings [LS]	1	$8,387.63	$8,387.63	Cost Catalog No. E.8-1
NPDES PERMIT FEE	NPDES Permit [LS]	1	$2,443.40	$2,443.40	Cost Catalog No. F.3-1
SITE SURVEY	Topography Survey [LS]	1	$5,760.92	$5,760.92	Cost Catalog No. E.6-9
STRUCTURAL ENG PANELBOARD	DesignforEquipmentFoundatn[EA]	1	$932.06	$932.06	Cost Catalog No. E.4-1
STRUCTURAL ENG PUMP	DesignforEquipmentFoundatn[EA]	2	$932.06	$1,864.12	Cost Catalog No. E.4-1
STRUCTURAL ENG SURGE TANK	DesignforEquipmentFoundatn[EA]	1	$932.06	$932.06	Cost Catalog No. E.4-1
UTILITY COST	Utility Cost [LS]	1	$11,332.83	$11,332.83	Cost Catalog No. B.4-1
CONTINGENCY - 20%	[EA]	1	$53,838.75	$53,838.75	Engineer's Estimate

Sub-total = $323,032.52
Direct Cost = $352,219.50

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

District – Chico
PID # 125758
RTU and Flowmeter on PRVs

Problem Statement

As part of the 2015 GRC Settlement four existing pressure reducing valve (PRV) sites were approved for installation of flowmeters, necessary monitoring and control equipment, and additional infrastructure. The site locations include (1) PRV located at Station 79 and three PRV sites located outside of, but in close proximity to, (2) PRV site near Manzanita Avenue, (3) PRV site near East 20th Street, and (4) PRV site near Hooker Oak Avenue. Due to multiple project setbacks, the proposed flowmeter, RTU, and electrical installations have not been completed. The challenges have been a combination of unforeseen increases to original project cost estimates paired with an uncommon set of project oversight difficulties.

Project challenges:

- The original estimate for the project, while written for four PRV sites, only accounts for one RTU panel and its accompanying components and accessories. This error, as well as the difference between the estimate and actual cost of the outdoor-rated service pedestals and RTU panels resulted in an increase to the cost of the project.
- Due to the sensitive locations of three of the four sites (i.e. within in the public right-of-way), significant labor time was exhausted in researching and interacting with various entities, including multiple property owners, the City of Chico, and Pacific Gas and Electric Company (PG&E). Some of the requirements for permits included traffic control plans, easements and encroachment permits.
- The project was mistakenly not included as a carry-over project in the 2018 GRC Settlement.
- The project went to the Cal Water Capital Program Management Committee (CPMC) in 2019 to request additional funding; however, it was not completed by the required funding date. Therefore, direction at following CPMC meeting in 2021 was to resubmit this project as part of the 2021 GRC budget.

Project Justification

The existing PRVs were installed in conjunction with significant operational changes including a pressure zone split. Installing flowmeters, RTUs, and accompanying electrical improvements at these locations would enable the Chico District to effectively monitor and control the flow and pressure across the zones. With the pedestals already purchased, and installation complete at one site, it is the Cal Water's intent to continue with the installations as planned. The monitoring of these PRVs is essential for efficient system operations.

Alternative Analysis

1. Do Nothing
    - If something were to fail, the do nothing approach leaves Cal Water customers at risk of low pressure or loss of supply.

Recommended Solution

Continue installation of the remaining instrumentation and RTUs at the three remaining PRV sites.

Detailed Project Scope

- Install electrical panels.
- Install antennas and radios.
- Install RTUs and flowmeters.
- Install pressure transducers.
- Install valve limit switches.

Customer Benefits

Customers will benefit from improved operational efficiencies and improved reliability for operational control.

Project Attachments

Cost Estimate

Attachment A – Control Valve Limit Switch Quote
Attachment B – Flowmeters and Transmitters Quote
Attachment C – Tesco Radios Quote
Attachment D – RTU & Flowmeter Install Quote
Attachment E – Pressure Transmitters Quote
Attachment F – Antenna Quote

125758 Cost Estimate

Capital Project Cost Estimate

Project No. : 125758
Description CH RTU & Flow meter on PRVs
District / Department: Chico
Project Start Date: 01/03/2022
Project Completion Date: 12/30/2022
Prepared By: mmacatiag
Date Initiated: 01/12/2021
Base Year: 2021
Sub-Total: $466,980
Direct Cost: $490,621

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
ANTENNA	[EA]	3	$462.77	$1,388.31	Engineer's Estimate
CITY PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	24	$107.03	$2,568.72	Labor SKU
CWS DISTRICT LABOR	CW-SCADA Prog LABOR [HR]	24	$143.13	$3,435.12	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	120	$97.22	$11,666.40	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	640	$121.41	$77,702.40	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	50	$89.85	$4,492.50	Labor SKU
CWS ENG LABOR	CW-Eng Tech LABOR [HR]	390	$89.85	$35,041.50	Labor SKU
FLOWMETERS	[EA]	3	$5,922.87	$17,768.61	Engineer's Estimate
METER & RTU PANEL	100-200 Amp [EA]	4	$16,000.00	$64,000.00	Cost Catalog No. C.3-1
PRESSURE TRANSMITTERS	[EA]	8	$708.82	$5,670.56	Engineer's Estimate
RADIO	[EA]	3	$960.00	$2,880.00	Engineer's Estimate
RTU AND FLOWMETER INSTALLATION	[EA]	4	$36,442.50	$145,770.00	Engineer's Estimate
SCADA PACK 574	SCADA Pack [EA]	3	$5,364.24	$16,092.72	Cost Catalog No. D.6-1
TESCO RADIOS	[EA]	4	$1,036.00	$4,144.00	Engineer's Estimate
UTLITY COST	Utility Cost [LS]	3	$6,685.45	$20,056.34	Cost Catalog No. B.4-1
VALVE LIMIT SWITCHES	[EA]	4	$1,322.00	$5,288.00	Engineer's Estimate
CONTINGENCY (10%)	[EA]	1	$42,459.31	$42,459.31	Engineer's Estimate

Sub-total = $466,980.04
Direct Cost = $490,620.99

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

125758 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	125758
District	Chico

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 1,322.00	4	2020	$ 5,288.00	Valve Limit Switches	Attachment A
2	$ 5,922.87	3	2020	$ 17,768.61	Flowmeters	Attachment B
3	$ 1,036.00	4	2020	$ 4,144.00	Tesco Radio	Attachment C
4	$ 145,770.00	1	2020	$ 145,770.00	RTU & Flowmeter Install	Attachment D
5	$ 700.00	8	2019	$ 5,667.20	Pressure Transmitters	Attachment E
6	$ 960.00	3	2020	$ 2,880.00	Radio	?
7	$ 462.77	3	2020	$ 1,388.31	Antenna	?

125758 Attachments

Attachment A
PID: 125758

Contract Change Order

Date: 12/8/2020

Owner **Cal Water**

Project: **Cal Water Station 79**

Project Number: 19-6345
Contract Date: 12/8/2020
Change Order Number: 1

Subcontract Change Order Number: CO #1

The Contract Agreement is hereby amended to add the attached scope of work.
The Contract Budget is hereby changed by the amount indicated below.
All other Contract terms and conditions remain unchanged.
The Contract is hereby revised by the following items:

CO	Item #	Description	Amount
CO#1	1	Limit Switch	$1,322.00

The Contract Value will be changed by this Subcontract Change Order in the amount of $1,322.00

OWNER	CONTRACTOR
Name	Chico Electric, Inc
Address	36 W. Eaton Road
Address #2	Chico , CA 95973
By: _____	**By:** _____
Signature: _____	**Signature:** _____
Date: _____	**Date:** _____

Attachment B
PID: 125758

JENSEN INSTRUMENT COMPANY
of Northern California, Inc.

QUOTATION

Date: 11/19/20
Quote #: 1MMCAL11190A
Lead Time: 6 WEEKS

TO: California Water Service
Attn: Mandy Macatiag

FOB:		REFERENCE		TERMS
Jobsite		Rosemount Magnetic Flow meter for Chico Manzanita PRV RTU		Net 30 Days
Item #	**Qty:**	**Part Number / Description**	**Unit Price**	**Line Total**
1	1.00	Rosemount 8705TSA080C1M0G1DWR05 magnetic flow meter, 6", Teflon liner, 304SS body, CS 150# ANSI flanges, 316SS electrodes, (2) 316SS grounding rings , IP68 submergence rated with 50 feet of integral potted cable, 0.25% accuracy, NSF 61	4120.71	4120.71
2	1.00	Rosemount 8712EMR1A1M4DA1AX remote magnetic flow meter transmitter, 110 VAC input power, 4-20 ma and pulse outputs, HART, NEMA 4X, LCD display with operator interface, local rete meter and totalizer, (2) solid state outputs, DA1 ground fault detection Diagnostics	1802.16	1802.16
		NOTE: Please note this quote does not include sales tax or freight.		
			TOTAL:	5922.87

Please address all correspondence and orders to:
Micromotion, Inc.
77 Winchester Circle
Boulder, CO 80301

831 Mitten Road, Suite 205 Burlingame, CA 94010 P 650-312-1527 F 650-312-1761

Attachment C
PID: 125758

Purchase Order

Dispatch via E-Mail

Purchase Order	Date	Revision	Page
CWSCO 0000098627	11/08/2016		1
Payment Terms	**Freight Terms**		**Ship Via**
N30	PREPAY & ADD		BST METHOD
Buyer	**Phone**		**Currency**
Donovan,David (REMOVED)			USD

CALIFORNIA WATER SERVICE CO.
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598
Phone: 408-367-8200
Fax: 408-392-9797

Ship To: General Office
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598

Supplier: 0000006622
TESSCO, INC.
11126 MCCORMICK RD.
HUNT VALLEY MD 21031-1494
Fax: 410-527-0005

Bill To: accountspayable@calwater.com
OR
PO Box 49033
San Jose CA 95161-9033

Tax Exempt? N **Tax Exempt** **Replenishment Option:** Standard

Line-Sch	Item/Description	Vendor Item-ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	98729 Radios only	565923	4.00	EA	1,036.00	4,144.00	11/22/2016

Schedule Total 4,144.00

CWS Item ID: **Item Total** 4,144.00

PER THE ATTACHED QUOTATION

PURCHASE ORDER TOTAL PRICE DOES NOT INCLUDE APPLICABLE SALES TAX.

Total PO Amount 4,144.00

PLEASE SIGN AND EMAIL TO PURCHASEORDER@CALWATER.COM OR FAX PURCHASE ORDER TO (408) 392-9797 PRIOR TO SHIPPING GOODS OR COMMENCING SERVICE

	Unauthorized	

Attachment D
PID: 125758

CHICO ELECTRIC
ENERGY PROVIDERS & MANAGERS

Electrical Contractors & Service
Solar Energy
Ag Services

Bid Proposal

DATE: **1/13/2021**

TO: **California Water Service**
1720 North Frist St
San Jose, CA 95112

PROJECT: **Manzanita Ave RUT Installation**

CONTACT: **Mandy Macatiag**

We propose to furnish labor and material necessary for the electrical installation of the above referenced project. This scope of work represents our interpretation of the scope of work specifically indicated by Mandy Macatiag on Drawing #CH-5671 dated 4/14/17. Due to current price fluctuations this price is only guaranteed for (30) days.

Base Bid $40,770

Description	Incurred Cost (CH79)	Contractor Quote for Manzanita	(Estimate based on Manzanita) Hooker Oak	E20th St	Total Amount
Contractor	$ 10,000	$ 40,770	$ 50,000	$ 45,000	$145,770

PROPOSAL INTENT:

- Install New RTU

INCLUSIONS:

- RTU provided by CW
- Provide and install New Vault and Cover w/ Ladder and Safety Up
- Provide and install ladder w/ Safety Up for Existing Vault
- Provide and install New concrete pad for RTU
- Provide and install all conduit and wiring per Drawing CH-5671 – Table 1 104-CRV-005 Conduit and Ground Rod Schedule
- Provide and install New Racking for RTU Support
- Provide and install New riser w/ weather head for Antenna

EXCLUSIONS:

- RTU provided by Cal Water
- Permit and Plan Review Fees
- PG&E Secondary Conduit Installation
- Antenna provided by Cal Water
- 8" Flow Meter provided by Cal Water
- Sump Pump provided by Cal Water

www.chicoelectric.com
36 W. Eaton Road • Chico, CA 95973-0149 • (530) 891-1933 • FAX (530) 891- 6749
California License #454345

Attachment E
PID: 125758

CHICO ELECTRIC
ENERGY PROVIDERS & MANAGERS

Electrical Contractors & Service
Solar Energy
Ag Services

Bid Proposal

DATE: **11/6/2019**

TO: **California Water Service Company**
1720 North First St
San Jose, CA 95112

PROJECT: **Cal Water Station 79**

CONTACT: **Rosemarie Guzman**

We propose to furnish labor and material necessary for the electrical installation of the above referenced project. This scope of work represents our interpretation of the scope of work specifically indicated on the electrical drawings provided to Chico Electric dated 8/31/09 (CH-5183). Due to current price fluctuations this price is only guaranteed for (30) days.

Base Bid **$5600** **= 8 x $700**

INCLUSIONS:

- Provide and install excavation, sand and backfill for all trenches required for conduit called out below within this bid proposal.
- Provide and install 1" PVC with GRC Risor in PB1, from existing PB1 to Existing Valve Vault
  - Fill (2) Belden for Signals
- Provide and install 1" PVC with GRC Risor in PB1, from existing PB1 to Existing Valve Vault
  - Fill (2) #12 AWG Conductors
  - Fill (1) #12 Ground
- Provide and install 1" PVC with GRC Risor in PB1, from existing PB1 to Existing Valve Vault
  - Fill (2) #12 AWG Conductors
- Provide and install 1" PVC with GRC Risor in PB1, from existing PB1 to Existing Valve Vault
  - Fill (1) Pull rope for future use
- Provide and install the following from PB1 to PanelBoard
  - (2) Belden for Signals
  - (4) #12 AWG Conductors
  - (1) #12 Ground

EXCLUSIONS:

- Costs Incurred for Expedited Equipment Delivery
- All conductor terminations to be done by others
- Any Overtime required to complete the job at an Accelerated Rate

www.chicoelectric.com
36 W. Eaton Road • Chico, CA 95973-0149 • (530) 891-1933 • FAX (530) 891- 6749
California License #454345

Attachment F
PID: 125758

End 2 End Technologies
60 Sycamore Street W.
St. Paul, MN 55117

Quote

Date	Quote #
1/18/2021	8993

Ship To
California Water Service Co Attn: Adam Soulliere Project Name: Chico,Manzanita RTU on PRV 2222 Martin Luther King Jr. Pkwy Chico, CA 95928

P.O. No.	Market	End Dest	End State

Item	MPN	Description	Quantity	U/M	Rate	Amount
ANT SCALA TY 900	TY900	YAGI ANTENNA, 12 dBi GAIN, 890-960 MHz, N-FEMALE CONNECTOR	1		260.80	260.80T
C20100091	C20100091	Hanger Kit, 3/8", LMR400 No Hardware, 10 pak	1		18.73	18.73T
CON TMC-EZ-400-NMHX	TMC-EZ-400-NMH-X	EZ400NMHX N, (M), STRAIGHT, LMR-400, CRIMP, NON-SOLDER	2		14.18	28.36T
POLY ISB-50HN-C2	IS-B50HN-C2	POLYPHASER 125-1000 MHz general coverage bulkhead mnt. protector. 50,000 amps surge. <800uJ throughput energy. Power based on frequency. N female connectors.	1		80.65	80.65T
C20105484	C20105484	Standard Ground Kit, (3/8" coax)	1		21.84	21.84T
MDS 03-4125A04	03-4125A04	DIN RAIL MNT KIT FOR SD RADIOS, INETS, INET II & ENTRANET ACCESS POINT	1		14.00	14.00T
LMR-400-DB	LMR-400-DB	3/8" LMR400 Flooded	50	ft	1.25	62.50T
					0.00%	0.00

Unless specifically listed in the above quote, system integration, testing and programming is not included, nor does it include miscellaneous hardware for the installation of transceivers, multiplexers, feedlines, & antennas. Also, unless specifically listed, quote does not include site surveys, path profiles or coverage analysis. Quoted prices include one-year in-plant warranty. Terms are Net 30 unless otherwise stated. Prices do not include applicable sales tax which will be added or freight which can be billed separately. This quote is good for 30 days. Pricing may be subject to change dependent on end user information.

Email
orders@e2etechinc.com

Phone #
(620) 626-6800

Website
www.e2etechinc.com

Fax #
(620) 626-5281

Total $486.88

Section D.

Cost Summary Table

Section A - Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.1-1	Well Drill	16" CBS, Rock [FT]	FT	752.64	
A.1-2	Well Drill	16"/18" CBS [FT]	FT	718.43	
A.1-3	Well Drill	20" CBS [FT]	FT	647.10	
A.1-4	Well Drill	8"/10" CBS [FT]	FT	782.87	
A.2-1	Well Drill	16"/18" HSLA [FT]	FT	853.60	
A.2-2	Well Drill	18" SS [FT]	FT	1,101	
A.2-3	Well Drill	10"/12" SS Casing [FT]	FT	867.97	
A.3-1	Well Drill	16" (CBS & SS) [FT]	FT	795.86	
A.3-2	Well Drill	18" (CBS & SS) [FT]	FT	1,028	
A.3-3	Well Drill	16" (HSLA & SS) [FT]	FT	1,218	
A.3-4	Well Drill	12" (HSLA & SS) [FT]	FT	1,118	
A.4-1	NPDES Compliance	Simple Scope [LS]	LS	5,910	
A.4-2	NPDES Compliance	Typical Scope [LS]	LS	14,368	
A.4-3	NPDES Compliance	Complex Scope [LS]	LS	28,283	
A.5-1	NPDES Compliance	Treatment System [LS]	LS	130,003	
A.6-1	Sound Curtain	Sound Curtain [EA Side]	EA	27,104	
A.7-1	AquiferTesting	Zone Specific [EA Zone]	EA	13,657	
A.8-1	Station Piping	Well [LS]	LS	153,766	
A.8-2	Station Piping	Tank Station [LS]	LS	229,968	
A.8-3	Station Piping	Complex Station [LS]	LS	254,706	
A.8-4	Station Piping	Hydropneumatic Tank [LS]	LS	21,530	
A.8-5	Station Piping	Treatment Facility - Complex Scope	LS	263,881	
A.8-6	Station Piping	Existing Station, New Well (short run) [LS]	LS	38,409	
A.8-7	Street Piping	Street Piping (See Section A1)	FT		
A.9-1	Block Building	New Building Less Than 1,000 SF	SF	312.75	
A.10-1	Landscape	Typical Scope [LS]	LS	7,306	
A.10-2	Landscape	Complex Scope [LS]	LS	27,669	
A.11-1	Block Wall	6' H Wall [FT]	FT	225.45	
A.11-2	Block Wall	6-8' H Wall [FT]	FT	219.19	
A.11-3	Block Wall	8' H Wall with Stucco [FT]	FT	410.55	
A.12-1	Fence & Gate	6'-H Chain Link FT]	FT	43.90	
A.12-1	Fence & Gate	6' H Chain Link - 100' x 100' Lot [LS]	EA	17,559	
A.12-2	Fence & Gate	7'-8' H Chain Link [FT]	FT	60.19	
A.12-2	Fence & Gate	7-8' H Chain Link - 100' x 100' Lot [LS]	EA	24,075	
A.12-3	Fence & Gate	6'-8' H Iron Fence [FT]	FT	201.29	
A12.4	Fence & Gate	6'-8' H Redwood Fence [FT]	FT	47.99	
A.13-1	Driveway & App	Asphalt [SF]	SF	14.60	
A.13-1	Driveway & App	Asphalt - 16' W x 50' L [EA]	EA	11,677	
A.13-2	Driveway & App	Concrete [SF]	SF	20.72	
A.13-2	Driveway & App	Concrete - 16' W x 50' L [EA]	EA	16,576	
A.14-1	Foundation	Equipment [EA]	EA	5,049	
A.14-2	Foundation	Hydro.Tank, 2500 gal [EA]	EA	12,997	

Section A - Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.14-3	Foundation	Hydro.Tank, 5000 gal [EA]	EA	14,231	
A.14-4	Foundation	Treatment System [EA]	EA	66,442	
A.14-5	Foundation	Well Foundation [EA]	EA	5,705	
A.14-6	Foundation	Hydro Tank, 10,000 gal [EA}	EA	21,288	
A.14-7	Foundation	Hydro Tank, 500 gal [EA]	EA	2,755	
A.14-8	Foundation	Hydro Tank, greater than 10,000 [EA]	EA	61,983	
A.15-1	Maintenance Area	4" depth [SF]	SF	3.87	
A.15-1	Maintenance Area	4" depth 50' x 50' lot [LS]	EA	9,669.63	
A.15-1	Maintenance Area	4" depth 100' x 100' lot [LS]	EA	38,678.53	
A.15-1	Maintenance Area	4" depth 150' x 150' lot [LS]	EA	87,026.68	
A.16-1	Chemical Facility	Injection System with Enclosure [LS]	LS	22,742	
A.16-2	Chemical Facility	Chemical Enclosure [LS]	LS	16,749	
A.17-1	Asphalt Paving	R&R Paving [SF]	SF	12.61	
A.18-1	Storage Tank - Welded Stl	300K Gal [GAL]	GAL	1.56	
A.18-2	Storage Tank - Welded Stl	500-750K Gal [GAL]	GAL	0.86	
A.18-3	Storage Tank - Welded Stl	1.0-1.5M Gal [GAL]	GAL	0.69	
A.18-4	Storage Tank - Welded Stl	2.5-3M Gal [GAL]	GAL	0.57	
A.19-3	Storage Tank - Bolted Stl	50K Gal [GAL]	GAL	2.34	
A.19-4	Storage Tank - Bolted Stl	100K Gal [GAL]	GAL	1.49	
A.19-5	Storage Tank - Bolted Stl	125-150k Gal [GAL]	GAL	1.89	
A.19-6	Storage Tank - Bolted Stl	350k Gal [GAL]	GAL	0.95	
A.20-5	Tideflex Mixing System	TMS Installation [LS]	LS	24,286	
A.20-6	Active Mixing	Pax with Dosing & Install [LS]	LS	171,657	
A.20-7	Active Mixing	Pax and Installation [LS]	LS	101,635	
A.21-1	Chloramination	Design/Build System with Block Building [LS]	LS	343,265	
A.21-2	Chloramination	System with Shelter [LS]	LS	261,037	
A.21-3	Chloramination	Chloramination System [LS]	LS	115,109	
A.23-2	GAC Treatment	1 Train, 12' Dia GAC [EA]	LS	420,000	
A.23-3	GAC Treatment	1 Train, 12' Dia GAC (PFAS) [EA]	LS	475,000	
A.24-3	16" DI Pipe	16" DI TR Flex [FT]	FT	240.11	
A.25-2	CL&C Pipe	6" CL&C/10"Casing, Open Trench [FT]	FT	336	
A.25-3	CL&C Pipe	18" CL&C/30"Casing, Open Trench [FT]	FT	968	
A.26-1	Pipe Additional Depth Cost	Below 4' Pipe Depth [FT]	FT	70.17	
A.27-1	6" Fire Hydrant	Reconnect, Short Run [EA]	EA	7,550	
A.27-2	6" Fire Hydrant	Reconnect, Long Run [EA]	EA	10,932	
A.27-3	6" Fire Hydrant	New Install [EA]	EA	9,183	
A.29-1	Control Valve Install	Inside Vault [LS]	LS	44,811	
A.29-2	Control Valve Install	Inside Vault - Complex Work [LS]	LS	117,973	
A.30-1	Hydro Tank Install	HydroTank Install [LS]	LS	38,638	
A.30-2	Hydro Tank Controls Install	Hydropneumatic Tank Controls Installation [LS]	LS	19,825	

Section A - Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.31-1	Retaining Wall	3-4' H Wooden Wall[FT]	FT	58.06	
A.31-2	Retaining Wall	4'-6' H Block Wall [FT]	FT	238.62	
A.31-3	Retaining Wall	9'H Concrete Retaining Wall [FT]	FT	1,453	
A.31-4	Retaining Wall	4'H Keystone Wall [FT]	FT	2,024	
A.31-5	Retaining Wall	6'H Wooden Retaining Wall [FT]	FT	696.35	
A.31-6	Retaining Wall	9'H Wooden Retaining Wall [FT]	FT	1,668	
A.33-X	Tank Retrofits	Please refer to Section A2			
A.34-1	Flowmeter Install	Flowmeter above ground [LS]	LS	21,358.44	
A.34-2	Flowmeter Install	Flowmeter and Vault Replace [LS]	LS	14,178.14	
A.34-3	Flowmeter Install	New Flowmeter and Vault [LS]	LS	58,540.33	

Section A1 - Contractor Cost (Street Piping)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.8-7	Street Piping	Street Piping - AV - Standard [FT]	FT	236.00	
A.8-8	Street Piping	Street Piping - AV - Mod Complex [FT]	FT	354.00	
A.8-9	Street Piping	Street Piping - AV - Complex [FT]	FT	472.00	
A.8-10	Street Piping	Street Piping - BK - Standard [FT]	FT	308.00	
A.8-11	Street Piping	Street Piping - BK - Mod Complex [FT]	FT	462.00	
A.8-12	Street Piping	Street Piping - BK - Complex [FT]	FT	616.00	
A.8-13	Street Piping	Street Piping - BAY - Standard [FT]	FT	348.00	
A.8-14	Street Piping	Street Piping - BAY - Mod Complex [FT]	FT	522.00	
A.8-15	Street Piping	Street Piping - BAY - Complex [FT]	FT	696.00	
A.8-16	Street Piping	Street Piping - BG - Standard [FT]	FT	406.40	
A.8-17	Street Piping	Street Piping - BG - Mod Complex [FT]	FT	609.60	
A.8-18	Street Piping	Street Piping - BG - Complex [FT]	FT	812.80	
A.8-19	Street Piping	Street Piping - CH - Standard [FT]	FT	213.60	
A.8-20	Street Piping	Street Piping - CH - Mod Complex [FT]	FT	320.40	
A.8-21	Street Piping	Street Piping - CH - Complex [FT]	FT	427.20	
A.8-22	Street Piping	Street Piping - DIX - Standard [FT]	FT	335.20	
A.8-23	Street Piping	Street Piping - DIX - Mod Complex [FT]	FT	502.80	
A.8-24	Street Piping	Street Piping - DIX - Complex [FT]	FT	670.40	
A.8-25	Street Piping	Street Piping - DOM - Standard [FT]	FT	328.00	
A.8-26	Street Piping	Street Piping - DOM - Mod Complex [FT]	FT	492.00	
A.8-27	Street Piping	Street Piping - DOM - Complex [FT]	FT	656.00	
A.8-28	Street Piping	Street Piping - ELA - Standard [FT]	FT	324.80	
A.8-29	Street Piping	Street Piping - ELA - Mod Complex [FT]	FT	487.20	
A.8-30	Street Piping	Street Piping - ELA - Complex [FT]	FT	649.60	
A.8-31	Street Piping	Street Piping - HR - Standard [FT]	FT	290.40	
A.8-32	Street Piping	Street Piping - HR - Mod Complex [FT]	FT	435.60	
A.8-33	Street Piping	Street Piping - HR - Complex [FT]	FT	580.80	
A.8-34	Street Piping	Street Piping - KRV - Standard [FT]	FT	163.20	
A.8-35	Street Piping	Street Piping - KRV - Mod Complex [FT]	FT	244.80	
A.8-36	Street Piping	Street Piping - KRV - Complex [FT]	FT	326.40	
A.8-37	Street Piping	Street Piping - KC - Standard [FT]	FT	384.80	
A.8-38	Street Piping	Street Piping - KC - Mod Complex [FT]	FT	577.20	
A.8-39	Street Piping	Street Piping - KC - Complex [FT]	FT	769.60	
A.8-40	Street Piping	Street Piping - LAS - Standard [FT]	FT	374.40	
A.8-41	Street Piping	Street Piping - LAS - Mod Complex [FT]	FT	561.60	
A.8-42	Street Piping	Street Piping - LAS - Complex [FT]	FT	748.80	
A.8-43	Street Piping	Street Piping - LIV - Standard [FT]	FT	531.20	
A.8-44	Street Piping	Street Piping - LIV - Mod Complex [FT]	FT	796.80	
A.8-45	Street Piping	Street Piping - LIV - Complex [FT]	FT	1062	
A.8-46	Street Piping	Street Piping - MRL - Standard [FT]	FT	345.60	
A.8-47	Street Piping	Street Piping - MRL - Mod Complex [FT]	FT	518.40	
A.8-48	Street Piping	Street Piping - MRL - Complex [FT]	FT	691.20	

Section A1 - Contractor Cost (Street Piping)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.8-49	Street Piping	Street Piping - ORO - Standard [FT]	FT	265.60	
A.8-50	Street Piping	Street Piping - ORO - Mod Complex [FT]	FT	398.40	
A.8-51	Street Piping	Street Piping - ORO - Complex [FT]	FT	531.20	
A.8-52	Street Piping	Street Piping - PV - Standard [FT]	FT	469.60	
A.8-53	Street Piping	Street Piping - PV - Mod Complex [FT]	FT	704.40	
A.8-54	Street Piping	Street Piping - PV - Complex [FT]	FT	939.20	
A.8-55	Street Piping	Street Piping - RDV - Standard [FT]	FT	348.00	
A.8-56	Street Piping	Street Piping - RDV - Mod Complex [FT]	FT	522.00	
A.8-57	Street Piping	Street Piping - RDV - Complex [FT]	FT	696.00	
A.8-58	Street Piping	Street Piping - SLN - Standard [FT]	FT	316.80	
A.8-59	Street Piping	Street Piping - SLN - Mod Complex [FT]	FT	475.20	
A.8-60	Street Piping	Street Piping - SLN - Complex [FT]	FT	633.60	
A.8-61	Street Piping	Street Piping - SEL - Standard [FT]	FT	219.20	
A.8-62	Street Piping	Street Piping - SEL - Mod Complex [FT]	FT	328.80	
A.8-63	Street Piping	Street Piping - SEL - Complex [FT]	FT	438.40	
A.8-64	Street Piping	Street Piping - STK - Standard [FT]	FT	344.00	
A.8-65	Street Piping	Street Piping - STK - Mod Complex [FT]	FT	516.00	
A.8-66	Street Piping	Street Piping - STK - Complex [FT]	FT	688.00	
A.8-67	Street Piping	Street Piping - VIS - Standard [FT]	FT	219.20	
A.8-68	Street Piping	Street Piping - VIS - Mod Complex [FT]	FT	328.80	
A.8-69	Street Piping	Street Piping - VIS - Complex [FT]	FT	438.40	
A.8-70	Street Piping	Street Piping - WLK - Standard [FT]	FT	683.20	
A.8-71	Street Piping	Street Piping - WLK - Mod Complex [FT]	FT	1,025	
A.8-72	Street Piping	Street Piping - WLK - Complex [FT]	FT	1,366.40	
A.8-73	Street Piping	Street Piping - WIL - Standard [FT]	FT	270.40	
A.8-74	Street Piping	Street Piping - WIL - Mod Complex [FT]	FT	405.60	
A.8-75	Street Piping	Street Piping - WIL - Complex [FT]	FT	540.80	

Section A2 - Contractor Cost (Tank Retrofits)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.33-2	Tank Retrofit	30" Manway [EA]	EA	7,908	
A.33-3	Tank Retrofit	24" Cupola Vent [EA]	EA	6,320	
A.33-4	Tank Retrofit	36" Cupola Vent [EA]	EA	7,660	
A.33-5	Tank Retrofit	48" Cupola Vent [EA]	EA	9,175	
A.33-6	Tank Retrofit	Flush Cleanout [EA]	EA	8,767	
A.33-7	Tank Retrofit	Ladder (steel perm top 8') [8FT]	8 FT	1,777	
A.33-8	Tank Retrofit	Ladder (steel perm 30'-36')	EA	4,893	
A.33-9	Tank Retrofit	Ladder (steel perm 22'-28')	EA	4,340	
A.33-10	Tank Retrofit	Ladder (steel perm 14'-20')	EA	2,971	
A.33-11	Tank Retrofit	12" Overflow Welded Flange [EA]	EA	5,010	
A.33-12	Tank Retrofit	8" Overflow Welded Flange [EA]	EA	4,544	
A.33-13	Tank Retrofit	6" Overflow Welded Flange [EA]	EA	3,845	
A.33-14	Tank Retrofit	4" Overflow Welded Flange [EA]	EA	2,971	
A.33-15	Tank Retrofit	Roof Hatch (30"x30" steel) [EA]	EA	4,456	
A.33-16	Tank Retrofit	Roof Hatch (39"x39" steel) [EA]	EA	5,359	
A.33-17	Tank Retrofit	Roof Hatch (24"x24" steel) [EA]	EA	3,816	
A.33-18	Tank Retrofit	Ladder Saf-T-Climb (30-36 FT) [EA]	EA	4,194	
A.33-19	Tank Retrofit	Ladder Saf-T-Climb (22-28 FT) [EA]	EA	3,583	
A.33-20	Tank Retrofit	Ladder Saf-T-Climb (14-20 FT) [EA]	EA	2,942	
A.33-21	Tank Retrofit	Replace Wellded Hinge for Roof Hatch [EA]	EA	655.34	
A.33-22	Tank Retrofit	Handhole Doubler Plate [EA]	EA	320.39	
A.33-23	Tank Retrofit	2" Threaded Weld-O-Let Coupling [EA]	EA	932.04	
A.33-24	Tank Retrofit	1" Threaded Weld-O-Let Coupling [EA]	EA	771.85	
A.33-25	Tank Retrofit	Anti-climb Door [EA]	EA	3,451	
A.33-26	Tank Retrofit	Welded Hinge for Anti-Climb Door [EA]	EA	349.52	
A.33-27	Tank Retrofit	Safety Railing with OSHA Self-Close Gates [EA]	EA	5,505	
A.33-28	Tank Retrofit	Safety Railing (Moderate) [EA]	EA	4,587	
A.33-29	Tank Retrofit	Single Roof D-ring/tie-off [EA]	EA	467.50	
A.33-30	Tank Retrofit	Four Roof D-Rings [EA]	EA	961.17	
A.33-31	Tank Retrofit	Rafter Replacement [EA]	EA	1075	
A.33-32	Tank Retrofit	Rafter Repair (3' section) [EA]	EA	712.14	
A.33-33	Tank Retrofit	12" Inlet/Outlet Nozzle [EA]	EA	1,704	
A.33-34	Tank Retrofit	8" Inlet/Outlet Nozzle [EA]	EA	1,573	
A.33-35	Tank Retrofit	6" Inlet/Outlet Nozzle [EA]	EA	1,398	
A.33-36	Tank Retrofit	Cupola Vent Doubler Plate [EA]	EA	3,173	
A.33-37	Tank Retrofit	5-inch Handhole [EA]	EA	446.25	
A.33-38	Tank Retrofit	Relocation of hatch & interior ladder [EA]	EA	1,785	
A.33-39	Tank Retrofit	CP Junction Box Relocation [EA]	EA	2,366	
A.33-40	Tank Retrofit	Overflow pipe replacement [EA]	EA	24,480	
A.33-41	Tank Retrofit	Berm Replacement [LF]	EA	25.81	

Section A2 - Contractor Cost (Tank Retrofits)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.33-42	Tank Retrofit	Roof drains [EA]	EA	1,128	
A.33-43	Tank Retrofit	Earthquake Rods [EA]	EA	172.04	
A.33-44	Tank Retrofit	20' Tank Ext. Lifeline (one-off) [EA]	EA	3,732	
A.33-45	Tank Retrofit	20' Tank Ext. Lifeline (on-site) [EA]	EA	3,222	
A.33-46	Tank Retrofit	40' Tank Ext. Lifeline (one-off) [EA]	EA	3,910	
A.33-47	Tank Retrofit	40' Tank Ext. Lifeline (on-site) [EA]	EA	3,400	
A.33-48	Tank Retrofit	CP System (IC) [EA]	EA	9,108	
A.33-49	Tank Retrofit	CP System (galv) [EA]	EA	8,441	

Section B - Electrical Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
B.1-1	Electrical Installation	New Well Station [LS]	LS	122,034	
B.1-2	Electrical Installation	Complex Station / Pumped Storage Facility [LS]	LS	145,405	
B.1-3	Electrical Installation	Treatment Facility [LS]	LS	319,041	
B.2-1	Electrical Installation	Gen Set w/ Foundation, 15-80 KW [LS]	LS	52,994	
B.2-2	Electrical Installation	Gen Set, 100-125 KW [LS]	LS	59,649	
B.2-3	Electrical Installation	Gen Set w/ Foundation, 150-300 KW [LS]	LS	62,781	
B.2-5	Electrical Installation	Gen Set w/ Foundation. 350-400 KW [LS]	LS	93,275	
B.3-1	Electrical Installation	100-200 A, Outdoor Panelboard [LS]	LS	81,824	
B.3-2	Electrical Installation	400 A, Outdoor Panelboard [LS]	LS	125,736	
B.3-3	Electrical Installation	600 A, Outdoor Panelboard [LS]	LS	139,116	
B.3-4	Electrical Installation	800 A, Outdoor Panelboard [LS]	LS	158,901	
B.3-5	Electrical Installation	200 A, Indoor Panelboard [LS]	LS	66,430	
B.3-6	Electrical Installation	600 A, Indoor Panelboard [LS]	LS	137,732	
B.3-7	Electrical Installation	400 A, Indoor Panelboard [LS]	LS	118,380	
B.3-8	Electrical Installation	100 A, Outdoor Panelboard [LS]	LS	94,305	
B.4-1	Electrical Installation	Utility Cost [LS]	LS	11,333	
B.4-3	Electrical Installation	Tank Level Transducers [LS]	LS	12,242	
B.4-4	Electrical Installation	Pump Upgrade [LS]	LS	27,552	
B.4-5	Electrical Installation	Pump Upgrade (horizontal) [LS]	LS	11,820	
B.4-6	Electrical Installation	RTU [LS]	LS	10,156	
B.5-4	Electrical Installation	VFD Install [EA]	LS	14,642	

Section C - Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
C.1-1	Acoustical Shelter	4'x5'x3'H [EA]	EA	3,398	
C.1-2	Acoustical Shelter	4'x4'x8'H [EA]	EA	9,086	
C.1-3	Acoustical Shelter	5'x5'x8'H [EA]	EA	14,003	
C.1-4	Acoustical Shelter	6'x6'x8'H [EA]	EA	17,432	
C.1-5	Acoustical Shelter	6'x6'x12'H [EA]	EA	26,593	
C.1-6	Acoustical Shelter	4'x7'x3'H [EA]	EA	11,379	
C.1-7	Acoustical Shelter	6'x6'x9'H [EA]	EA	19,506	
C.2-1	Hydropneumatic Tank	1,600-1,700 gal [EA]	EA	21,625	
C.2-2	Hydropneumatic Tank	2,000-2,800 gal [EA]	EA	25,897	
C.2-3	Hydropneumatic Tank	3,200 gal [EA]	EA	28,844	
C.2-4	Hydropneumatic Tank	5,000 gal [EA]	EA	37,817	
C.2-5	Hydropneumatic Tank	5,800 gal [EA]	EA	42,932	
C.2-6	Hydropneumatic Tank	10,000 gal [EA]	EA	48,982	
C.2-7	Hydropneumatic Tank	500 gal [EA]	EA	16,837	
C.2-8	Hydropneumatic Tank	25,000 gal [EA]	EA	199,042	
C.2-9	Hydropneumatic Tank	12,500 gal [EA]	EA	133,020	
C.2-10	Hydropneumatic Tank	6,275 gal [EA]	EA	93,057	
C.3-1	Control Valve	3" dia, well service [EA]	EA	2,990	
C.3-2	Control Valve	6" dia [EA]	EA	6,017	
C.3-3	Control Valve	8" dia [EA]	EA	10,244	
C.3-4	Control Valve	10" dia [EA]	EA	11,568	
C.3-5	Control Valve	12" dia [EA]	EA	15,577	
C.3-6	Control Valve	16" dia [EA]	EA	25,742	
C.3-7	Control Valve	4" and <4" Control Valve [EA]	EA	4,160	
C.3-8	Control Valve	14" dia [EA]	EA	27,819	
C.4-1	Hydropneumatic Tank Controls	Hydropneumatic Tank Cla-Valve Controls [EA]	EA	2,655	
C.4-2	Hydropneumatic Tank Controls	Hydropneumatic Tank Sight Glass & Electrodes [EA]	EA	1,936	
C.4-3	Hydropneumatic Tank Controls	Hydropneumatic Tank Pressure Diff. Trasmitter [EA]	EA	1,844	
C.5-1	Well Pump	250 HP - Top Drive [EA]	EA	106,340	
C.5-2	Well Pump	200 HP - Top Drive [EA]	EA	108,571	
C.5-3	Well Pump	150 HP - Top Drive [EA]	EA	94,162	
C.5-4	Well Pump	125 HP - Top Drive [EA]	EA	92,944	
C.5-5	Well Pump	60-75 HP - Top Drive [EA]	EA	64,694	
C.5-6	Well Pump	200 HP - Sub [EA]	EA	137,954	
C.5-7	Well Pump	125 HP - Sub [EA]	EA	134,936	
C.5-8	Well Pump	50 HP - Sub [EA]	EA	46,924	
C.5-9	Well Pump	15-25 HP - Sub [EA]	EA	23,423	
C.5-10	Well Pump	25-30 HP - Top Drive [EA]	EA	41,686	
C.5-11	Well Pump	100 HP - Top Drive [EA]	EA	64,156	

Section C - Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
C.5-12	Well Pump	5-10 HP - Sub [EA]	EA	18,301	
C.5-13	Well Pump	60-75 HP - Sub [EA]	EA	56,409	
C.5-14	Well Pump	40-50 HP - Top Drive [EA]	EA	57,110	
C.5-15	Well Pump	30-40 HP - Sub [EA]	EA	33,848	
C.5-16	Well Pump	400 HP - Top Drive [EA]	EA	160,439	
C.6-1	Flowmeter	Data Industrial [EA]	EA	2,904	
C.6-2	Flowmeter	6" Magmeter [EA]	EA	4,877	
C.6-3	Flowmeter	8" Magmeter [EA]	EA	5,184	
C.6-4	Flowmeter	12" Magmeter [EA]	EA	8,402	
C.6-5	Flowmeter	2" Magmeter [EA]	EA	3,393	
C.6-6	Flowmeter	10" Magmeter [EA]	EA	8,571	
C.6-7	Flowmeter	16" Magmeter [EA]	EA	10,913	
C.6-8	Flowmeter	24" Magmeter [EA]	EA	12,229	
C.7-1	Booster Pump	7.5 hp [EA]	EA	23,249	
C.7-2	Booster Pump	20 - 40 hp [EA]	EA	33,797	
C.7-3	Booster Pump	50 hp [EA]	EA	35,592	
C.7-4	Booster Pump	75 -100 hp [EA]	EA	54,054	
C.7-5	Booster Pump	125 hp [EA]	EA	55,437	
C.7-6	Booster Pump	250 hp [EA]	EA	71,237	
C.7-8	Booster Pump	20"X120" Suction Can [EA]	EA	9,907	
C.8-1	Flex-Tend	Double Ball EBAA, 8" dia [EA]	EA	4,318	
C.8-2	Flex-Tend	Double Ball EBAA, 10" dia [EA]	EA	5,943	
C.8-3	Flex-Tend	Double Ball EBAA, 12 " dia [EA]	EA	8,577	
C.8-4	Flex-Tend	Double Ball EBAA, 16" dia [EA]	EA	11,685	
C.8-5	Flex-Tend	Double Ball EBAA, 18"dia [EA]	EA	14,891	
C.8-6	Flex-Tend	Double Ball EBAA, 6" and <6"dia [EA]	EA	2,724	
C.10	Static Mixer	Wafer type [EA]	EA	6,264	
C.11-1	Sand Separator	850 gpm [EA]	EA	25,794	
C.11-3	Sand Separator	225-525 gpm [EA]	EA	21,969	
C.11-4	Sand Separator	Pump Protection Separator	EA	13,572	
C.11-2	Sand Separator	400 - 550 gpm [EA]	EA	8,266	
C.12-1	Nitrate Analyzer	Unit [EA]	EA	22,316	
C.12-2	Chlorine Analyzer	Chlorine Analyzer Unit [EA]	EA	5,770	
C.17-1	Vault	4.5'x6'x4' [LS]	LS	7,395	
C.17-2	Vault	4'x6'x4' [LS]	LS	4,074	
C.17-3	Vault	4'x4'x4' [LS]	LS	2,746	
C.17-4	Vault	6'x6'x4' [LS]	LS	2,849	
C.17-5	Vault	4'x5'x5' [LS]	LS	5,179	
C.17-6	Vault	Vault, Lid/Ladder [EA]	EA	7,062	
C.18-1	Chemical Shed	Tuff Shed	LS	3,109	

Section C - Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
C.20-1	Ion Exchange System	<600 GPM [LS]	LS	542,167	
C.20-2	Ion Exchange System	>600 GPM [LS]	LS	602,974	
C.20-3	Ion Exchange System	>1100 GPM [LS]	LS	930,165	

Section D - Electrical Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
D.1-1	Gen Set w/ ATS	350-400 KW [EA]	EA	99,241	
D.1-2	Gen Set w/ ATS	300 KW [EA]	EA	106,300	
D.1-3	Gen Set w/ ATS	250 KW [EA]	EA	88,065	
D.1-4	Gen Set w/ ATS	200 KW [EA]	EA	65,018	
D.1-5	Gen Set w/ ATS	125-150 KW [EA]	EA	58,205	
D.1-6	Gen Set w/ ATS	100 KW [EA]	EA	53,851	
D.1-7	Gen Set w/ ATS	50-80 KW [EA]	EA	46,245	
D.1-8	Gen Set w/ ATS	450 KW [EA]	EA	127,794	
D.1-9	Gen Set w/ ATS	>50 KW [EA]	EA	31,991	
D.2-1	Air Compressor	Air Compressor [EA]	EA	1,724	
D.3-1	Elec Panelboard	200 Amp [EA]	EA	41,931	
D.3-2	Elec Panelboard	400 Amp[EA]	EA	59,146	
D.3-3	Elec Panelboard	600 Amp [EA]	EA	68,506	
D.3-4	Elec Panelboard	800 Amp [EA]	EA	84,477	
D.3-5	Elec Panelboard	1200 Amp [EA]	EA	326,563	
D.3-6	Elec Panelboard	Panelboard Sunshade [EA]	EA	2,783	
D.4-1	Metering Panel	Meter Panel, 100 - 200A [EA]	EA	13,131	
D.4-2	Metering Panel	Meter Panel 400 - 600A [EA]	EA	17,347	
D.4-4	Metering Panel	Meter Panel, 800A with ATS [EA]	EA	38,384	
D.5-1	SCADA	RTU Panel/Radio Panel [EA]	EA	6,766	
D.6-1	SCADA	SCADA Pack [EA]	EA	2,765	
D.6-2	SCADA	Orbit LN Radio [EA]	EA	947.84	
D.6-3	SCADA	SCADA Antenna [EA]	EA	392.35	
D.6-4	SCADA	SCADA Tower for Antenna [EA]	EA	6,717	
D.6-5	SCADA	SCADA RTU UPS [EA]	EA	2,314	
D.7-1	Hydraulic Enclosure	Hydraulic Enclosure [EA]	EA	7,435	
D.8-1	Transducer	Pressure Transducer [EA]	EA	790.6286122	
D.8-2	Transducer	Tank Level Transducer [EA]	EA	2671.637502	
D.8-3	Transducer	Well Level Transducer [EA]	EA	1,226	
D.9-1	VFD	VFD, 75 HP [EA]	EA	7,683	
D.9-2	VFD	VFD, 100 HP [EA]	EA	10,987	

Section E - Consultant Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
E.1-1	CEQA Consultant	Initial Study - Typical [LS]	LS	22,575	
E.1-2	CEQA Consultant	Initial Study - Complicated Scope [LS]	LS	50,021	
E.1-3	CEQA Consultant	Initial Study - Partial Scope [LS]	LS	11,876	
E.2-1	Well Consultant	Construction/Design Services [LS]	LS	86,456	
E.2-2	Well Consultant	Geohydrologic Investigation [LS]	LS	71,798	
E.2-3	Well Consultant	Drilling Inspection [LS]	LS	39,466	
E.2-4	Well Consultant	Well Sealing and Testing [LS]	LS	14,975	
E.3-2	Surge Analysis	Complex Scope of Work [LS]	LS	12,978	
E.4-1	Structural Eng	Design for Equipment Foundation [EA]	EA	932.06	
E.4-2	Structural Eng	Design for Block Building [EA]	EA	5,786	
E.4-3	Structural Eng	Treatment Facility [EA]	EA	1,519	
E.4-4	Structural Eng	Seismic Capacity Design Review [EA]	EA	7,297	
E.6-9	Site Survey	Topography Survey [LS]	LS	5,761	
E.6-10	Site Survey	Topography with Staking [LS]	LS	6,958	
E.6-11	Site Survey	Topography with Legal Description [LS]	LS	8,396	
E.6-12	Site Survey	Pipeline Alignment (<2000') [LS]	LS	7,525	
E.6-13	Site Survey	Complex (>2,000' pipeline or 2+ days) [LS]	LS	11,238	
E.7-1	Biological /Cultural Assess	Cultural Literature Review [LS]	LS	8,338	
E.7-2	Biological /Cultural Assess	Prelim Survey [LS]	LS	2,936	
E.7-3	Biological /Cultural Assess	Acoustical Survey [LS]	LS	3,897	
E.7-4	Biological /Cultural Assess	Focused Survey [LS]	LS	6,348	
E.7-5	Biological /Cultural Assess	On-site Monitoring [LS]	LS	20,753	
E.7-6	Biological /Cultural Assess	On-Site Monitoring (Complex Scope) [LS]	LS	57,234	
E.8-1	Geotech Report	2 Borings [LS]	LS	8,388	
E.8-2	Geotech Report	4 Borings [LS]	LS	10,343	
E.8-3	Geotech Report	4 Deep Borings/Complex Scope [LS]	LS	16,604.84	

Section F - Other Cost					
Cost Basis	Item	Description [Unit]	Unit	SKU Unit Cost, $	Note
F.1-1	City Permit Fee	CUP Permit [LS]	LS	17,566	
F.1-2	City Permit Fee	Building Permit [LS]	LS	6,556	
F.1-3	City Permit Fee	Encroachment Permit [LS]	LS	4,041	
F.2-1	WQ Testing	WQ Testing for New Well [LS]	LS	72,419	
F.3-2	NPDES Permit Fee	NPDES Permit [LS]	LS	2,443	
F.4-1	Air Quality Permit fee	Air Quality Permit fee [LS]	LS	2,192	
F.5-1	Traffic Control	Traffic Control (Simple Scope) [LS]	LS	20,255	
F.5-2	Traffic Control	Traffic Control Complex Scope [LS]	LS	81,658	
F.7-1	On-Site Grading	Excavation-Embankment [CF]	CF	0.95	
F.7-2	On-Site Grading	Minor Excave/Embank [LS]	LS	7,116	
F.7-3	On-Site Grading	Excave/Embank, Tank Site [LS]	LS	37,950	
F.7-4	On-Site Grading	Import-Export [CF]	CF	1.39	
F.8-1	Drainage Piping	On-site, Drainage Pipe [FT]	FT	414.04	
F.9-1	Catch Basin	36" x 36" CB [EA]	EA	33,725	
F.9-2	Catch Basin	24" x 24" CB [EA]	EA	18,369	
F.10-1	Curb and Gutter	Concrete [FT]	FT	209.24	

Section E.

Supply Demand Report

CALIFORNIA WATER SERVICE
1720 North First Street
San Jose, CA 95112-4598 *Tel:* (408) 367-8200

Water Supply-Demand Analysis Report

Water System: 104-Chico

Updated: January 7, 2021

The Supply-Demand Analysis is an inventory of water production and pump assets for the Cal Water Chico and Hamilton City Water Systems that provide direct and indirect sources of supply to meet customer demands in accordance with CPUC General Order 103-A and CCR Title 22 Waterworks Standards. This report provides an outline of the methodology built into Supply-Demand Analysis Tool (herein referred to as "tool") used to determine the results of the system analysis based on a combination of regulatory requirements, professional consultant recommendations, and industry standard practices, including those from the American Water Works Association (AWWA) and American Society of Civil Engineers (ASCE). Additional alternative analyses may be conducted using the tool for a variety of situations as part of individual project justifications.

Analysis Methodology

Determining Production Capacities

Capacities are determined from the aggregate of individual production capacities of all contributing active assets (e.g. wells, booster pumps and control valves). Individual production capacities are determined from electronically-stored flowmeter data (i.e. SCADA) where available, using the latest calculated full year non-zero average; if no SCADA data is available, the rated design capacity is used. Interzonal control valves are assigned a flow rate matching flow velocities of 5-7 feet per second where flow metering and SCADA data are not available. All production rates were verified by water system staff for accuracy and adjusted where necessary. The following are supply capacity definitions used in this analysis and the tool:

- **Supply Capacity:** Sources of supply such as wells, surface water treatment plants, and interconnections. Zone supplies include interzonal valves and pumps.
- **Supply & Pump Capacity:** Sources of supply plus booster pumps at storage sites.
- **Firm Capacities:** Sum total of supply or pump capacity minus the largest contributing asset. This may be a single well, booster pump, interconnection valve etc., not the entire station. This approach is based on industry standard practice to ensure water system can reliably meet customer demands in the event of equipment failure, and is strongly encouraged by USEPA,

FEMA, Ten State Standards, AWWA, Water Environmental Research Foundation (WERF) and state requirements.[11,12]

- **Tank Storage Capacity:** Nominal capacity of storage tanks. Actual usable or effective capacity is determined by facility specific physical and operational constraints.

Each supply & pump asset can be attributed to a respective zone, however, the total capacity of all contributing assets cannot always be quantified due to lack of flow metering. This applies particularly to zones floated by tanks or supplied exclusively via unmetered control valves. These zones may then be consolidated into District Metered Areas (DMA) as listed in Appendix A. DMAs were identified in the Chico system but not necessary to conduct the analysis.

Allocating Demand per Zone or DMA

Demand per zone is determined using the latest full year (2019 for this report) billing records overlaid on maps of the distribution system pressure zones and adjusted based on max day demand as recorded from production records. Each customer service and the monthly amount metered/billed is attributed to the pressure zone it lies within or is closest to and a percentage of total system demand is calculated for each zone. By allocating the ratio of demand billed per zone for the entire system, the analyses can be done for an individual zone, group of zones (DMA) or the entire system.

Determining Factors for Demands and Storage Needs

The max day demand (MDD) is the amount of water utilized by customers during the highest day of use as recorded in the last 10 years or calculated per the performance criteria and respective requirements. For zone-specific applied criteria, a ratio of the total is used. The ratio is obtained by the sum of customer metered (for each zone or DMA) divided by the total amount billed for each month in the system which is used as a multiplier with the system-wide MDD. The peak hour demand (PHD) level of service requirement is a 1.5 multiplier of the MDD. The storage requirement in this analysis is calculated for a 4-hour duration of PHD that cannot be met by supply capacity.

Performance Criteria/Level of Service

Performance criteria used to maintain a regulatory required and operational adequate level of service.

[11] FEMA, Water Supply System and Evaluation Methods Volume I: Water Supply System Concepts (October 2008)
[12] USEPA, 600/R-11/054 Planning for an Emergency Drinking Water Supply (June 2011)

Item	General Description	Reference
System Demand	Water system shall meet the max day demand using sources of supply with the largest source out of service. Peak hour demand shall be met using the sources of supply and storage reserves for a period of 4 hours.	General Order 103 § II.2.B.(3)(b) Title 22, Chapter 16: Waterworks Standards § 64554
Zone Demand	Each zone shall meet the respective max day demand using sources and interzonal supply with the largest supply out of service. Peak hour demand shall be met using the sources of supply and storage reserves a period of 4 hours.	General Order 103 § II.2.B.(3)(b) Title 22, Chapter 16: Waterworks Standards § 64554
Storage	Storage shall be adequate to provide the 4 hours of booster pumping or gravity flow necessary to meet peak hour demands that are not met by sources or interzonal supplies plus emergency and fire storage.	AWWA M42 Cal Water Design Guidelines
Other Criteria Not Built Into Tool Analyses		
Total Storage	Sum of Operational Storage, Fire Storage, and Emergency Storage outlined below.	
Operational Storage	Storage to provide 4 hours of booster pumping or gravity flow necessary to meet peak hour demands that are not met by sources or interzonal supplies.	Title 22, Chapter 16: Waterworks Standards § 64554
Fire Flow (General)	Minimum: 1,000 gpm for 1 hour (residential < 3.6 Ksqft)	General Order 103 § VI.1.A AWWA M31 California Fire Code (CFC)
Fire Flow (Local Agency)	1,000 gpm for 2 hrs (Single-Family Residential) 1,750 gpm for 2 hrs (Duplex and Single-Story Business) 2,000 gpm for 2 hrs (Multi-Residential, Light Commercial and Industrial) 2,500 gpm for 2 hrs (Multi-Residential ≥ 3 Stories, Heavy Commercial and Industrial)	Butte County Improvement Standards Fire Standards, General Requirements 13.03-1 and 13.03-3
Fire Flow (Local Agency)	1,500 gpm for 4 hrs (Residential) 1,500 gpm for 6 hrs (R-M Zone and Dense Residential) 2,500 gpm for 10 hrs (Commercial and Industrial)	County of Glenn Public Improvement Standards Ch 670, Sec 090
Fire Storage	Maximum: 0.12 MG (residential) 0.21 MG (residential > 3.5 Ksqft) 0.72 MG (commercial)	General Order 103 § VI.1.A AWWA M42
Emergency Storage	Storage to provide supply to the system in the event of a widespread power outage or similar event. Minimum: 6 hours of MDD (25%)	AWWA M19

CALIFORNIA WATER SERVICE
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Water District Information: Chico

Located in Butte and Glenn Counties, the Chico District consists of two water systems, Chico and Hamilton City. The District provides drinking water to approximately 109,723 customers through 30,153 service connections between the two systems in the cities of Chico and Hamilton City, respectively. The source of water supply to meet the needs of customers in both systems is provided entirely by groundwater wells located throughout the areas. Currently, no alternative sources of supply exist with standby or emergency connections in either system. The District consists of a total of 58 active wells and seven storage tanks at booster pumping and storage stations. The Chico distribution system is hydraulically divided up into nine pressure zones whereas Hamilton City is a single pressure zone.

System	Services	Customers	Supply	Storage/Boosters
Chico	29,283	104,908	55 Groundwater Wells	7 (4.55 MG total) storage tanks at 5 booster stations and 2 elevated sites.
Hamilton City	634	2,607	3 Groundwater Wells	None

Supply Capacity:	**44,467**	gpm
Supply & Pump Capacity:	**52,267**	gpm
Tank Storage Capacity:	**4.55**	MG

MDD and PHD Level of Service Analysis Results

The MDD and PHD are compared to supply capacities to identify deficiencies.

System Wide

System	Month of Max Demand	Firm Supply Capacity (gpm)	MDD (gpm)	Firm Supply & Pump Capacity (gpm)	PHD (gpm)
Chico	August	41,234	30,066	48,704	45,098
Hamilton City	August	899	811	899	1,217

RED: Capacity is less than MDD/PHD.

As a whole, the Chico system meets the MDD and PHD demand requirements. Hamilton City meets the MDD requirement but the available firm supply & pump capacity is inadequate to meet the PHD. In case of a pumping asset outage, low pressure issues can be experienced during peak demand times.

By Zones (Chico System)

Zone	Month of Max Demand	Firm Supply Capacity (gpm)	MDD (gpm)	Firm Supply & Pump Capacity (gpm)	PHD (gpm)
325	September	50	289	50	434
350	August	17,824	13,790	21,524	20,686
385	August	17,971	11,465	19,971	17,197
395	August	50	130	50	194
400	August	539	389	539	583
425	September	50	246	50	368
475	August	3,641	3,034	3,641	4,552
635	September	1,600	538	1,600	807
795	August	400	206	400	309

RED: Capacity is less than MDD/PHD.

In the 325, 395, and 425 zones, the available firm supply and supply & pump capacities are inadequate to meet the MDD and PHD; however, the 395 and 425 zones have emergency alternatives that can supply these small zones from adjacent pressure zones during outages or repairs. The 400 and 475 zones show deficits in meeting the PHD.

- 325, 395 and 425: Each zone is supplied via two parallel PRVs from the respectively higher pressure zone. The PRVs branch off a single distribution main and are housed in the same vault. If the larger PRV, distribution main, or vault fail, this could result in not meeting max day or peaking causing supply/pressure issues. Moreover, the deficiencies listed in the table correspond to firm capacities that are based on estimates for the flow through the smaller 2" PRV and it is likely that the estimated value is conservative. Alternatively, backup or emergency supplies to the 395 and 425 zones are available through interzonal normally closed or check valves.

- 400: This zone has only two wells; if the larger producing asset is out of service, the zone may experience pressure issues during peak demand periods. There are operational strategies that could provide supply from the 385 zone during such events following some improvements on the distribution system within the 385 zone.

- 475: This zone is dependent on five wells for supply & pump capacity. If any of the wells go out of service, there would be a PHD deficit; however, operational storage from the 0.75 MG tank storage at Station 82 and 1 MG tank storage at Station 66 could augment PHD.

A summary report of these results is provided in Appendix B (Zone Summary Report).

Appendix A

District Metered Areas

DMA+	DMA’	Pressure Zones
475+		795
		635
	475’	475
		425
		395

Appendix B

Zone Summary Report

Max Day Demand and Peak Hour Demand Level of Service

CALIFORNIA WATER SERVICE
Operations Engineering 1720 North First Street
San Jose, CA 95112-4598

District-Wide Table Summary of Supply-Demand Analysis Report by System/Zone
Max Day Demand (MDD) and Peak Hour Demand (PHD) Levels Of Service (LOS)

District: 104-Chico

Date of Analysis: January-2021
Demand Data Used: 2019 MDD: (10-Year Analysis)
Production Data Used: 2019 Avg Production or Last 5-Year Tests
Consumption Allocation: 2019 Service Connections

District Summary Table (gpm)

Sys	Zone	Max Month	Supply Capacity	Firm Supply	MDD	Surplus (Deficit)	Firm Supply & Pump	PHD	PHD Surplus (Deficit)	Storage Needed (MG)	Storage Avail (MG)	Surplus (Deficit) (MG)	Notes
CH	System	Aug	42,904	41,234	30,066	11,169	48,704	45,098	3,606	0.927	4.550	3.623	
CH	325	Sept	830	50	289	(239)	50	434	(384)	0.092	0.000	(0.092)	
CH	350	Aug	19,524	17,824	13,790	4,034	21,524	20,686	839	0.687	0.800	0.113	
CH	385	Aug	19,279	17,971	11,465	6,506	19,971	17,197	2,774	-	1.500	-	
CH	395	Aug	490	50	130	(80)	50	194	(144)	0.035	0.000	(0.035)	
CH	400	Aug	1,246	539	389	151	539	583	(44)	0.010	0.000	(0.010)	
CH	425	Sept	830	50	246	(196)	50	368	(318)	0.076	0.000	(0.076)	
CH	475	Aug	4,848	3,641	3,034	607	3,641	4,552	(910)	0.219	0.750	0.531	
CH	635	Sept	2,200	1,600	538	1,062	1,600	807	793	-	1.000	-	
CH	795	Aug	800	400	206	194	400	309	91	-	0.500	-	
HAM	System	Aug	1,563	899	811	88	899	1,217	(318)	0.076	0.000	(0.076)	
HAM	290	Aug	1,563	899	811	88	899	1,217	(318)	0.076	0.000	(0.076)	

California Water Service Company

Chico District Project Justification Book
2021 General Rate Case

www.calwater.com

Attachment 4-4:
CWS's Response to DR KN3-007 (All Capital Project II)

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Date: **October 29, 2024** Re: **KN3-007** Subj: **All Capital Project II**	Request Received from CPUC: **October 22, 2024** Requested Due Date: **October 29, 2024**

Comments:

- **Response provided by Engineering.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **KN3-007 Attachment #1 – Project list**

Data Requests and Responses

1. Using the attached excel file based on CWS' updated response to KN3-003 sent by Patrick Alexander on 9/16/2024, "Attachment 1_w start dates_copy," please provide three additional columns on the spreadsheet:

    i. The first column detailing whether the project (PID) has received funding in a previous GRC.
    Response: Please see Column J of KN3-007 Attachment 1. For this Column, Cal Water is interpreting the question to be whether the project has been authorized, as many different interpretations can be applied to "funding." Additionally, Cal Water is noting "Advice Letter" if the project was last authorized as an advice letter by the CPUC.

    Please also note that the original list provided by Cal Water included the proposed year for its Unscheduled replacement projects for Palos Verdes Column B. The years for these cells have been updated and are highlighted in green.

    ii. The second column detailing the additional amount of funding needed in GRC A.24-07-003.
    Response: Please see Column K of KN3-007 Attachment 1 for the "incremental" amount proposed in the 2024 GRC compared to what was authorized in a previous GRC. Please note Cal Water is still in the process of confirming whether roughly five dozen out of the over 2,400 total projects were authorized in a previous GRC, and if so, what the incremental amount is being proposed for these projects. The cells for these projects are highlighted in orange.

    iii. The third column providing an explanation of the need for additional funding and/or where to find the justification in the application.
    Response: Please see Column L for the explanation for any additional incremental amount requested exceeding $5k for several hundred projects. Cal Water will update this request as information becomes available.

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Date: **November 7, 2024** Re: **KN3-007** Subj: **All Capital Project II**	Request Received from CPUC: **October 22, 2024** Requested Due Date: **October 29, 2024** **Updated response provided: November 8,2024** **Updated response provided:November 27, 2024**

Comments:

- **Updated response provided by Engineering. Note updates in blue and green font.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - ~~**KN3-007 Attachment #1 – Project list**~~
  - **KN3-007 Attachment #3 – Project list with updated fields (in green highlights)**
  - **KN3-007 Attachment #2 - Additional Justifications**
  - **KN3-007 Attachment #4 – Remaining Justifications**

Data Requests and Responses

1. Using the attached excel file based on CWS' updated response to KN3-003 sent by Patrick Alexander on 9/16/2024, "Attachment 1_w start dates_copy," please provide three additional columns on the spreadsheet:

   i. The first column detailing whether the project (PID) has received funding in a previous GRC.
   Response: Please see Column J of KN3-007 Attachment 1. For this Column, Cal Water is interpreting the question to be whether the project has been authorized, as many different interpretations can be applied to "funding." Additionally, Cal Water is noting "Advice Letter" if the project was last authorized as an advice letter by the CPUC.
   Attachment #3 contains updated information for the remaining 21 projects referenced below. The updated fields are highlighted in green.

   Please also note that the original list provided by Cal Water included the proposed year for its Unscheduled replacement projects for Palos Verdes Column B. The years for these cells have been updated and are highlighted in green.

   ii. The second column detailing the additional amount of funding needed in GRC A.24-07-003.
   Response: Please see Column K of KN3-007 Attachment 1 for the "incremental" amount proposed in the 2024 GRC compared to what was authorized in a previous GRC. ~~Please note Cal Water is still in the process of confirming whether roughly five two dozen out of the over 2,400 total projects were authorized in a previous GRC, and if so, what the incremental amount is being proposed for these projects. The cells for these projects are highlighted in orange.~~

   iii. The third column providing an explanation of the need for additional funding and/or where to find the justification in the application.
   Response: Please see Column L for the explanation for any additional incremental amount requested exceeding $5k for several hundred projects. Cal Water will update this request as information becomes available.

   Justifications for those projects with incremental increases more than district thresholds are provided in Attachment #2 - Additional Justifications and Attachment #4. All other justifications are provided in ~~Attachment #1_KN3_007_Q1_Projects List,~~ Attachment #3, Column L. Justifications added from the prior submittal have the cell in column L filled in blue.

LIST OF ATTACHMENTS FOR CHAPTER 6

	Attachment #	Description
1	Attachment 6-1	CWS Response to DR KN3-011

Attachment 6-1:
CWS's Response to DR KN3-01

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

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Date: **December 19, 2024** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #1 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**
  - **Attachment #2 – KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan**

- **Attachment #3 – KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test**
- **Attachment #4 – KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted**
- **Attachment #5 – KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo**
- **Attachment #6 – KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices**
- **Attachment #7 – KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test**
- **Attachment #8 – CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email**
- **Attachment #9 – KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report**
- **Attachment #10 – KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test**
- **Attachment #11 – KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report**
- **Attachment #12 – CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District**
- **Attachment #13 – KN3-011 Attachment 13_2.a**
- **Attachment #14 – KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan**
- **Attachment #15 – KN3-11 Attachment 15_3.a_Control Valve Asset Data**
- **Attachment #16 – KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

vibrations typically indicate problems with the pump downhole. If not addressed, this will eventually lead to premature equipment failure.

- **132243 – SLN 067-01 has a known motor overheating issue. Excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. [See "CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District"]**

g. Does Cal Water have warranties with pumping equipment vendors or manufacturers that potentially apply in cases where the pump fails while still in "excellent" or "good" condition?
Response: Manufacturer typically provide only a 1 year warranty if the pump was pit tested prior to release. The warranty only covers manufacturing defects such as the pump not meeting specification parameters. Operational failures in which efficiency falls are not covered by warranty.

h. For any pump replacement projects (e.g.,PID 132161, PID 132151, PID 132112, PID 132223, PID 133256, PID 132248, PID 132251, PID 132254) with a Last Pump Date before 2022 why does the pumping equipments need to be replaced in the 2024 GRC if it has not been pumped since 2022?
Response: 'Last Pump Date' refers to the year in which the hydraulic performance test was performed, not when the pump was last operated. Cal Water's Hydraulic Testing Program performs test pumps on an annual or bi-annual basis depending on horsepower. Refer to Section 4 – 'Failure Modes and Condition Assessment - Low OPE' on page 9 of 12 of "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan".

i. Are any of the 88 pump units listed in Attachment B associated with "standby" or "inactive" stations?
Response: None of the pump units listed in Attachment B are designated as "standby" or "inactive." However, VIS 201-01 (132255) is actually a typo, and the correct location should be VIS 201-02, which is active and requires replacement due to low operational efficiency (OPE).

j. Has Cal Water experienced a supply chain and/or labor issues with pump and motor replacements for planned and unplanned projects? If so, what is the purchase order lead time?
Response: Current market conditions do not indicate supply chains issues with procuring new pump and motor equipment. Typical lead times on new pumping equipment range from 4-to- 22 weeks depending on the style of pump.
Contactor labor availability is limited but not unusual due to the high impact market of this industry.

k. For the 88 pumps to be replaced, please populate the attached Excel file labeled "Attachment 1-Pumps and Motor", Tab "Requested Replacement." Please provide a breakdown of the average cost of the replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as vendor invoices, as-built, bids, proposal documents, or internal communications.
To be provided in a subsequent response.

l. Please use the attached Excel file Attachment 1-Pump and Motor, Tab "Historical Replacement" to assist in providing the historical replacements from 2014 to November 30th, 2024. Please provide a breakdown of the average cost of the replacements, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as the general ledger, vendor invoices, as-built, bids, proposal documents, or internal communications.
To be provided in a subsequent response.

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    To be provided in a subsequent response.

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    To be provided in a subsequent response.

    g. Are any of the CPS to be replaced associated with "standby" or "inactive" stations?
    Response: No.

3. Refer to project justification book "Common Plant Overview_2024_Final" Section Control Valve Overhaul and Replacement (p. 304-306).

   a. Please populate the risk assessment matrix using attached Excel file Attachment 3-Control Valve Overhaul and Replacement," tabs "Overhaul Rating" and "Replacement Rating" to provide the detailed breakdown.
   Response: Cal Water has modified its criticality analysis from what was submitted in the 2018 GRC filing and no longer records and analyzes the criticality of assets using the list shown in the "Overhaul Rating" and "Replacement Rating" tabs. The results from that analysis were recorded in Cal Water's Asset Management database; however, they are not consistent with our current practice as defined in the Strategic Asset Management Plan. For the valves where we have recorded the data, we have adjusted the criticality scores to be in line with our current program as defined in the Strategic Asset Management Plan. Please see "KN3-11 Attachment 15_3.a_Control Valve Asset Data". Cal Water is actively working on updating its criticality scores for all assets.
   Cal Water has not developed its list of valves that are planned for overhaul or replacement in the 2025 to 2027 years. Those are normally issued at the beginning of the year from Cal Water's asset management system based on the schedule shown in the asset plan.

   b. Using Cal Water's Control Valve risk assessment matrix, what is the lowest possible ranking score?
   Response: In terms of risk of failure, or criticality, 5.

   c. Using Cal Water's Control Valve risk assessment matrix, what is the highest possible ranking score?
   Response: In terms of risk of failure, or criticality, 1

   d. Is risk of failure to critical customers considered in the control valve risk assessment matrix?
   Response: No.

   e. If risk of failure to critical customers is considered in the control valve risk assessment matrix, please describe how that risk is factored into the final risk score. Please describe in detail (numerically and in words), where applicable.
   Response: Please refer to the response to 3.d.

   f. Provide a breakdown of the total number of control valves in each ranking across Cal Water's entire water system, from highest possible rank to lowest possible rank in Excel file "DR KN3-011 Attachment 3," tab "Total Ranking."
   Response: The condition scoring records are not available and are being built in Q1 2025. The 5-year overhaul cycle is used to assess the serviceability of the valves and they are replaced as necessary.

   g. Provide the annual number of control valve replacements and overhauls performed for each district for the past five years (2020-2024) in Excel file "DR KN3-011 Attachment 3." Please use tab "Historical Overhaul" for control valve overhauls and tab "Historical

Replacement" for control valve replacements.
Response : Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

h. Provide the annual number of control valve replacements and overhauls performed for each district between 2025-2027 in Excel file "DR KN3-011 Attachment 3." Please use tab "Future Overhaul" for control valve overhauls and tab "Future Replacement" for control valve replacements.
Response: Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

i. Refer to the project description concerning "Payback Period" under the category "Financial Efficiency." Page Common Plant PJ – 305 states "[i]f the old valve was to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures."

4. Describe the methodology Cal Water used to calculate the potential cost of a control valve failure event.
Response: Typically, Cal Water does not track the cost of repair for each incident. However, there have been incidents where Cal Water paid damage claims due to control valve failures. While not typical, one claim was as high as $1.9M due to a control valve failure that flooded a building.

i. Is the potential cost of a control valve failure event assumed to be the same for every control valve?
Response: In our current model, yes.

ii. If the estimated potential cost is not the same for every potential control valve failure, please describe in detail the factors that influence the estimated cost.
Response: Please refer to the response to 3.i.ii.

iii. In the last five years (2019- 2023), please provide the actual recorded cost of control valve failures.
Response: Cal Water does not track the costs for control valve failures in any one account. Damage claims are also not normally classified by the cause of failure; however, Cal Water has attributed the event above to a control valve failure.

iv. Please explain in detail how Cal Water determines the cost of overhaul and replacement of control valve failures is less cost effective than performing a regular overhaul and replacing older control valves. Please also provide evidence to support the analysis. This includes but is not limited to any vendor invoices, as-built, bids, proposal, or internal communications.
Response: Cal Water determines if a valve can be overhauled first prior to planning a replacement. In the common plant justification on page 306, Cal Water states "*Cal Water will try to overhaul all valves where the body of the valve is in good condition, the valve meets certain minimum requirements such as being epoxy coated, the valve is in a suitable location*

Commented [ME1]: Can we explain what the word "Open" means in the attachment. I assume it means that the project is still open and the final count of valves to be replaced hasn't been determined.

Commented [AZ2R1]: @Alexander, Patrick we confirmed with Jan Kooy, it means the project is still open

where it can be easily maintained, and the vault is sized properly where it can be maintained. If the valve does not meet these requirements and is in need of repair, Cal Water will evaluate if a replacement project will improve these conditions significantly before planning a replacement project. Otherwise, Cal Water will plan to overhaul the valve and plan for a future redesign of the system to more permanently resolve the issues." **It is the valve's condition that determines if it can be overhauled, not the cost effectiveness.**

b. Are any of the control valve overhaul and replacement associated with "standby" or "inactive" stations?
Response: No.

5. Refer to project justification book "Common Plant Overview_2024_Final" Service Line Replacement Program (pp. 370-380):

    a. Please provide the Excel file for all figures and tables in the referenced section for Service Line Replacement Program.
    To be provided in a subsequent response.

    b. Reference Figure 7 on Common Plant PJ-377. Please provide the estimated work schedule for the number of annual service line replacements from 2025-2027. Please provide supporting documents for the proposed replacement schedule, such as any vendor invoices, bids, proposal, or internal communications.
    To be provided in a subsequent response.

    c. Cal Water states that its Bakersfield District "owns and is responsible for approximately 76,100 services within its service boundaries" (p. 370). Please explain why Cal Water considers the Service Line Replacement Program to be a common plant project, given that it is limited to the Bakersfield How does Cal Water define common plant project when it affects only one district?

    To be provided in a subsequent response.

        i. Does Cal Water have any other proposed annual service line replacement for other districts besides Bakersfield?
        To be provided in a subsequent response.

    d. Cal Water states that "[to] offset this increase in program cost, the [Bakersfield] District will be reducing its pipeline replacement program from 0.7% during the 2021 GRC period to 0.5% for the 2024 GRC period only" (p. 370).

        i. Please show how this reduction is done in the RO model and provide supporting analysis for this cost calculation.
        To be provided in a subsequent response.

        ii. Has Cal Water performed a cost-benefit analysis of the reduction in its Pipeline Replacement Program to account for the Service Replacement Program?
        To be provided in a subsequent response.

    e. Cal Water states that Alternative 2: Replace Services Reactively & Ad hoc includes managing the service line as customers experience an issue (pp. 377-378).

    Please provide a cost benefit analysis comparing Alternative 2's management of service lines as customers experience issues to the proposed Alternative 3: Programmatic Service Line Replacement annual replacement method.

    To be provided in a subsequent response.

    f. Cal Water states that there has been an increase in plastic service line failures (p. 373). Please provide a list of plastic service line failures in the Bakersfield District from 2015-2024, with supporting documentation such as vendor invoices, as-built, bids, proposals, or internal communications.

        i. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks involving

plastic service lines in the last five years (2020-2024).
To be provided in a subsequent response.

ii. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks NOT involving plastic service lines in the last five years (2020-2024).
To be provided in a subsequent response.

iii. Please provide 1) the average concentration of chlorine disinfectant to which plastic service lines in the Bakersfield District would have ongoing exposure, and 2) if known, average seasonal temperature range of water flowing to Bakersfield District service lines.
To be provided in a subsequent response.

g. Please provide the historical service line replacement and cost data for the Bakersfield District from 2014 – 2024, as requested in Attachment 5, Service Replacement, tabs "Summary of Service Replaced" and "Plastic Service Replaced"
To be provided in a subsequent response.

h. Of the 76,100 service connections in the Bakersfield District, how many or what percentage of the service lines does Cal Water propose to replace in its Alternative 3 Programmatic Replacement from 2025-2027? For each year, please provide the number of services to be replaced, cost per replacement, and total cost.
To be provided in a subsequent response.

i. For responses to questions 4.h and 4.i, please provide a cost breakdown that includes cost of materials, labor, and equipment. Please provide evidence supporting the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
Response to be provided.

j. Please provide a detailed explanation for any increase or decrease in the cost-of-service line replacement between the periods 2021-2024 and 2025-2027.
To be provided in a subsequent response.

6. Regarding the Motor Control Center (MCC)/panelboard replacements Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pp. 423-424):

    a. Provide the inspection and maintenance records in Excel format for the existing panelboards for the past 10 years (2015 - November 30, 2024). If inspection/maintenance records are not available, provide an explanation.
    To be provided in a subsequent response.

    b. Provide the annual maintenance and repair costs (general ledger in Excel format) for the past 10 years (2015 - November 30, 2024) including all supporting documentation (e.g., invoices). If the records are not available, please explain.

    To be provided in a subsequent response.

7. Regarding the proposed Generator Replacement Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pg. PJ-453 to PJ-454):

   a. In Excel format, provide the inspection and maintenance records, including the CPUC ranking and assement matrix, for the existing generators for the past 10 years (2015-November 30, 2024). If inspection/maintenance records are not available, provide an explanation. Please identify the proposed generator replacement in 2024 GRC with their PID.
   To be provided in a subsequent response.

   b. Provide the annual maintenance, repair, and replacement costs (general ledger) of Cal Water's generators for the past 10 years (2015 - November 30, 2024). This includes all supporting documentation (e.g., invoices). If the records are not available, please explain.
   To be provided in a subsequent response.

   c. For the following projects, if Cal Water is proposing a fixed generator. Please provide a detailed cost-benefit analysis and explanation for the replacement to be a fixed generator rather than a portable generator for the following projects and any new proposed generator projects.
   To be provided in a subsequent response.

PID	District	Project Name	Project Locations	Direct Costs
132561	Bakersfield	BK 2026 - Genset Replacements	BK 162 Genset Replacement BK 176 Genset Replacement	$2,307,426.75
132564	Chico	CH 2026 - Genset Replacement	CH 032 Genset Replacement CH 066 Genset Replacement	$1,413,512.48

   d. Please provide a list of all proposed generator replacements in each district, in Excel format. Please include the following information:

      i. Detailed explanation of the need for the proposed generator or MCC replacement.
      To be provided in a subsequent response.

      ii. Whether the proposed generator is in a High Fire Threat District, and if so, a map showing the location of the proposed generator.
      To be provided in a subsequent response.

      iii. Schedule for generator purchase and completion of installation.
      To be provided in a subsequent response.

      iv.

   e. Please refer to D. 24-03-042 for the following questions:

      i. Cal Water proposed to install a permanent generator at Station 23 in the Visalia District under PID 123954. Please provide record of completion. The records

includes but not limited to receipts, vendor invoices, as-built, or internal communications.
To be provided in a subsequent response.

ii. Cal Water proposed to replace a generator at Station 71 in the Stockton District under PID 124311. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
To be provided in a subsequent response.

END PARTIAL RESPONSE

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

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Date: **December 23, 2024** **Partial Response #1 sent December 19, 2024** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #2 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**
  - **Attachment #2 – KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan**

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- **Attachment #17 – KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors**
- **Attachment #18 – KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **Attachment #19 – KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **Attachment #20 – KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **Attachment #21 – KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **Attachment #22 – KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **Attachment #23 – KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **Attachment #24 – KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **Attachment #25 – KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **Attachment #26 – KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **Attachment #27 – KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **Attachment #28 – KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **Attachment #29 – KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **Attachment #30 – KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **Attachment #31 – KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **Attachment #32 – Attachment #17 – KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **Attachment #33 – KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **Attachment #34 – KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **Attachment #35 – KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **Attachment #36 – KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **Attachment #37 – KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **Attachment #38 – KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **Attachment #39 – KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **Attachment #40 – KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **Attachment #41 – KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **Attachment #42 – KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **Attachment #43 – KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **Attachment #44 – KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **Attachment #45 – KN3-011 Attachment 45_1.k_C.7-2 111-134065**

- **Attachment #46 – KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **Attachment #47 – KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **Attachment #48 – KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **Attachment #49 – KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **Attachment #50 – KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **Attachment #51 – KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **Attachment #52 – KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **Attachment #53 – KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **Attachment #54 – KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **Attachment #55 – KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **Attachment #56 – KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **Attachment #57 – KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **Attachment #58 – KN3-011 Attachment 58_1.k_C.7-3 111-162062**
- **Attachment #59 – KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data**
- **Attachment #60 – KN3-011 Attachment 60_1.k_C.7-3 114-152172**
- **Attachment #61 – KN3-011 Attachment 61_1.k_C.7-3 116-134003**
- **Attachment #62 – KN3-011 Attachment 62_1.k_C.7-3 116-152438A**
- **Attachment #63 – KN3-011 Attachment 63_1.k_C.7-3 116-152438B**
- **Attachment #64 – KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data**
- **Attachment #65 – KN3-011 Attachment 65_1.k_C.7-3 123-158159**
- **Attachment #66 – KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data**
- **Attachment #67 – KN3-011 Attachment 67_1.k_C.7-4 101-161192**
- **Attachment #68 – KN3-011 Attachment 68_1.k_C.7-4 103-139232**
- **Attachment #69 – KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data**
- **Attachment #70 – KN3-011 Attachment 70_1.k_C.7-4 108-133173**
- **Attachment #71 – KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data**
- **Attachment #72 – KN3-011 Attachment 72_1.k_C.7-4 111-153636**
- **Attachment #73 – KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data**
- **Attachment #74 – KN3-011 Attachment 74_1.k_C.7-4 114-152770**
- **Attachment #75 – KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data**
- **Attachment #76 – KN3-011 Attachment 76_1.k_C.7-4 116-145345**
- **Attachment #77 – KN3-011 Attachment 77_1.k_C.7-4 118-163640**
- **Attachment #78 – KN3-011 Attachment 78_1.k_C.7-4 119-136664**
- **Attachment #79 – KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data**
- **Attachment #80 – KN3-011 Attachment 80_1.k_C.7-4 128-159233**
- **Attachment #81 – KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data**
- **Attachment #82 – KN3-011 Attachment 82_1.k_C.7-5 102-137283**
- **Attachment #83 – KN3-011 Attachment 83_1.k_C.7-5 113-150270**
- **Attachment #84 – KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data**
- **Attachment #85 – KN3-011 Attachment 85_1.k_C.7-5 114-150819**
- **Attachment #86 – KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data**
- **Attachment #87 – KN3-011 Attachment 87_1.k_C.7-6 101-157160**
- **Attachment #88 – KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data**
- **Attachment #89 – KN3-011 Attachment 89_1.k_C.7-6 102-153268**
- **Attachment #90 – KN3-011 Attachment 90_1.k_C.7-7 102-148376**
- **Attachment #91 – KN3-011 Attachment 91_1.k_C.5 Well Pump**
- **Attachment #92 – KN3-011 Attachment 92_1.k_C.5-11 120-137793**
- **Attachment #93 – KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data**

- **Attachment #94 – KN3-011 Attachment 94_1.k_C.5-11 120-143709**
- **Attachment #95 – KN3-011 Attachment 95_1.k_C.5-11 120-143711**
- **Attachment #96 – KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data**
- **Attachment #97 – KN3-011 Attachment 97_1.k_C.5-11 120-163217**
- **Attachment #98 – KN3-011 Attachment 98_1.k_C.5-11 120-165911**
- **Attachment #99 – KN3-011 Attachment 99_1.k_C.5-11 120-169118**
- **Attachment #100 – KN3-011 Attachment 100_1.k_C.5-11 128-145221**
- **Attachment #101 – KN3-011 Attachment 101_1.k_C.5-13 104-136978**
- **Attachment #102 – KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data**
- **Attachment #103 – KN3-011 Attachment 103_1.k_C.5-13 111-140907**
- **Attachment #104 – KN3-011 Attachment 104_1.k_C.5-14 120-132879**
- **Attachment #105 – KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data**
- **Attachment #106 – KN3-011 Attachment 106_1.k_C.5-14 120-159181**
- **Attachment #107 – KN3-011 Attachment 107_1.k_C.5-14 120-149719**
- **Attachment #108 – KN3-011 Attachment 108_1.k_C.5-15 120-150618**
- **Attachment #109 – KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data**
- **Attachment #110 – KN3-011 Attachment 110_1.k_C.5-15 134-160056**
- **Attachment #111 – KN3-011 Attachment 111_1.k_C.5-16 128-141937**
- **Attachment #112 – KN3-011 Attachment 112_1.k_C.5-2 101-138075**
- **Attachment #113 – KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data**
- **Attachment #114 – KN3-011 Attachment 114_1.k_C.5-2 120-143426**
- **Attachment #115 – KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data**
- **Attachment #116 – KN3-011 Attachment 116_1.k_C.5-3 120-152749**
- **Attachment #117 – KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data**
- **Attachment #118 – KN3-011 Attachment 118_1.k_C.5-4 120-147114**
- **Attachment #119 – KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data**
- **Attachment #120 – KN3-011 Attachment 120_1.k_C.5-5 114-132921**
- **Attachment #121 – KN3-011 Attachment 121_1.k_C.5-5 117-136325**
- **Attachment #122 – KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data**
- **Attachment #123 – KN3-011 Attachment 123_1.k_C.5-5 119-142076**
- **Attachment #124 – KN3-011 Attachment 124_1.k_C.5-5 120-144864**
- **Attachment #125 – KN3-011 Attachment 125_1.k_C.5-5 120-152746**
- **Attachment #126 – KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data**
- **Attachment #127 – KN3-011 Attachment 127_1.k_C.5-5 120-152747**
- **Attachment #128 – KN3-011 Attachment 128_1.k_C.5-5 120-152748**
- **Attachment #129 – KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data**
- **Attachment #130 – KN3-011 Attachment 130_1.k_C.5-5 120-153531**
- **Attachment #131 – KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data**
- **Attachment #132 – KN3-011 Attachment 132_1.k_C.5-5 120-156680**
- **Attachment #133 – KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data**
- **Attachment #134 – KN3-011 Attachment 134_1.k_C.5-5 120-159180**
- **Attachment #135 – KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data**
- **Attachment #136 – KN3-011 Attachment 136_1.k_C.5-5 120-160355**
- **Attachment #137 – KN3-011 Attachment 137_1.k_C.5-5 120-163022**
- **Attachment #138 – KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data**
- **Attachment #139 – KN3-011 Attachment 139_1.k_C.5-5 120-163642**
- **Attachment #140 – KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data**
- **Attachment #141 – KN3-011 Attachment 141_1.k_C.5-5 120-163648**

- **Attachment #142 – KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data**
- **Attachment #143 – KN3-011 Attachment 143_1.k_C.5-6 120-152160**
- **Attachment #144 – KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data**
- **Attachment #145 – KN3-011 Attachment 145_1.k_C.5-8 120-143244**
- **Attachment #146 – KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data**
- **Attachment #147 – KN3-011 Attachment 147_1.k_C.5-8 120-152745**
- **Attachment #148 – KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data**
- **Attachment #149 – KN3-011 Attachment 149_1.k_C.5-9 102-151068**
- **Attachment #150 – KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **Attachment #151 – KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **Attachment #152 – KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **Attachment #153 – KN3-011 Attachment 153_1.k_C.5-9 120-144028**
- **Attachment #154 – KN3-011 Attachment 154_4.a._Active Services & Survivor Curves**
- **Attachment #155 – KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material**
- **Attachment #156 – KN3-011 Attachment 156_4.a._Service Program Cost Estimate**
- **Attachment #157 – KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis**
- **Attachment #158 – KN3-011 Attachment 158_5.a_BG-002 2021**
- **Attachment #159 – KN3-011 Attachment 159_5.a_BG-040 2020**
- **Attachment #160 – KN3-011 Attachment 160_5.a_BG-040 2022**
- **Attachment #161 – KN3-011 Attachment 161_5.a_CH-005 2016**
- **Attachment #162 – KN3-011 Attachment 162_5.a_CH-005 2019**
- **Attachment #163 – KN3-011 Attachment 163_5.a_CH-005 2023**
- **Attachment #164 – KN3-011 Attachment 164_5.a_CH-018 2015**
- **Attachment #165 – KN3-011 Attachment 165_5.a_CH-018 2019**
- **Attachment #166 – KN3-011 Attachment 166_5.a_CH-065 2016**
- **Attachment #167 – KN3-011 Attachment 167_5.a_CH-065 2024**
- **Attachment #168 – KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
- **Attachment #169 – KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
- **Attachment #170 – KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
- **Attachment #171 – KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
- **Attachment #172 – KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
- **Attachment #173 – KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
- **Attachment #174 – KN3-011 Attachment 174_5.a_DOM-279 well 2018**
- **Attachment #175 – KN3-011 Attachment 175_5.a_DOM-279 well 2024**
- **Attachment #176 – KN3-011 Attachment 176_5.a_KRV-009 2015**
- **Attachment #177 – KN3-011 Attachment 177_5.a_KRV-009 2022**
- **Attachment #178 – KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
- **Attachment #179 – KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
- **Attachment #180 – KN3-011 Attachment 180_5.a_LAS-013 2017**
- **Attachment #181 – KN3KN3-011 Attachment 181_5.a_LAS-013 2022**
- **Attachment #182 – KN3KN3-011 Attachment 182_5.a_LAS-017 2018**
- **Attachment #183 – KN3KN3-011 Attachment 183_5.a_LAS-017 2022**
- **Attachment #184 – KN3KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
- **Attachment #185 – KN3KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
- **Attachment #186 – KN3KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
- **Attachment #187 – KN3KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
- **Attachment #188 – KN3KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**

- Attachment #189 – KN3KN3-011 Attachment 189_5.a_LAS-104-PB01 2022
- Attachment #190 – KN3KN3-011 Attachment 190_5.a_LAS-104-PB02 2018
- Attachment #191 – KN3KN3-011 Attachment 191_5.a_LAS-104-PB02 2022
- Attachment #192 – KN3KN3-011 Attachment 192_5.a_LAS-113 2019
- Attachment #193 – KN3-011 Attachment 193_5.a_LAS-113 2022
- Attachment #194 – KN3-011 Attachment 194_5.a_LAS-121 2016
- Attachment #195 – KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021
- Attachment #196 – KN3-011 Attachment 196_5.a_LAS-121 WELL 2021
- Attachment #197 – KN3-011 Attachment 197_5.a_LIV-020 2017 2
- Attachment #198 – KN3-011 Attachment 198_5.a_LIV-020 2017
- Attachment #199 – KN3-011 Attachment 199_5.a_LIV-020 2023
- Attachment #200 – KN3-011 Attachment 200_5.a_LIV-024 2017
- Attachment #201 – KN3-011 Attachment 201_5.a_LIV-024 2021
- Attachment #202 – KN3-011 Attachment 202_5.a_MRL-015 2017
- Attachment #203 – KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023
- Attachment #204 – KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023
- Attachment #205 – KN3-011 Attachment 205_5.a_MSHA-004 2024
- Attachment #206 – KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018
- Attachment #207 – KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018
- Attachment #208 – KN3-011 Attachment 208_5.a_MSHA-006 1 2016
- Attachment #209 – KN3-011 Attachment 209_5.a_MSHA-006 2 2016
- Attachment #210 – KN3-011 Attachment 210_5.a_MSHA-006 2020
- Attachment #211 – KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023
- Attachment #212 – KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023
- Attachment #213 – KN3-011 Attachment 213_5.a_SC-114 2015
- Attachment #214 – KN3-011 Attachment 214_5.a_SC-114 2018
- Attachment #215 – KN3-011 Attachment 215_5.a_SC-114 2023
- Attachment #216 – KN3-011 Attachment 216_5.a_SLN-019 2020
- Attachment #217 – KN3-011 Attachment 217_5.a_SLN-060 2019
- Attachment #218 – KN3-011 Attachment 218_5.a_SLN-060 2023
- Attachment #219 – KN3-011 Attachment 219_5.a_SLN-106 2019
- Attachment #220 – KN3-011 Attachment 220_5.a_SM-029 2015
- Attachment #221 – KN3-011 Attachment 221_5.a_SM-029 2019
- Attachment #222 – KN3-011 Attachment 222_5.a_SM-029 2021
- Attachment #223 – KN3-011 Attachment 223_5.a_SM-029 2024
- Attachment #224 – KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016
- Attachment #225 – KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016
- Attachment #226 – KN3-011 Attachment 226_5.a_SMTN-015 2023
- Attachment #227 – KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016
- Attachment #228 – KN3-011 Attachment 228_5.a_STK-036 2016
- Attachment #229 – KN3-011 Attachment 229_5.a_STK-036 2019
- Attachment #230 – KN3-011 Attachment 230_5.a_STK-036 2023
- Attachment #231 – KN3-011 Attachment 231_5.a_STK-060 2017
- Attachment #232 – KN3-011 Attachment 232_5.a_STK-060 2023
- Attachment #233 – KN3-011 Attachment 233_5.a_WLK-001 2017
- Attachment #234 – KN3-011 Attachment 234_5.a_WLK-001 2020
- Attachment #235 – KN3-011 Attachment 235_5.a_WLK-001 2023
- Attachment #236 – KN3-011 Attachment 236_5.a_WLK-010 2016

- **Attachment #237 – KN3-011 Attachment 237_5.a_WLK-010 2019**
- **Attachment #238 – KN3-011 Attachment 238_5.a_WLK-010 2024**
- **Attachment #239 – KN3-011 Attachment 239_6.a_Generator Condition Assessment**
- **Attachment #240 – KN3-011 Attachment 240_6.a_ BK 162 2013**
- **Attachment #241 – KN3-011 Attachment 241_6.a_ BK 162 Gen service**
- **Attachment #242 – KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
- **Attachment #243 – KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
- **Attachment #244 – KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
- **Attachment #245 – KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
- **Attachment #246 – KN3-011 Attachment 246_6.a_ BK 162 PM**
- **Attachment #247 – KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
- **Attachment #248 – KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
- **Attachment #249 – KN3-011 Attachment 249_6.a_ BK162Genset**
- **Attachment #250 – KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
- **Attachment #251 – KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
- **Attachment #252 – KN3-011 Attachment 252_6.a_ BK176 Gen PM**
- **Attachment #253 – KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
- **Attachment #254 – KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
- **Attachment #255 – KN3-011 Attachment 255_6.a_ CH 032 2019 service**
- **Attachment #256 – KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
- **Attachment #257 – KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
- **Attachment #258 – KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
- **Attachment #259 – KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
- **Attachment #260 – KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
- **Attachment #261 – KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
- **Attachment #262 – KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
- **Attachment #263 – KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
- **Attachment #264 – KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
- **Attachment #265 – KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
- **Attachment #266 – KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
- **Attachment #267 – KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
- **Attachment #268 – KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
- **Attachment #269 – KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**
- **Attachment #270 – KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019**
- **Attachment #271 – KN3-011 Attachment 271_6.a_ CH 032 Genset**
- **Attachment #272 – KN3-011 Attachment 272_6.a_ CH 032 Genset2021services**
- **Attachment #273 – KN3-011 Attachment 273_6.a_ CH 032 inspection GE**
- **Attachment #274 – KN3-011 Attachment 274_6.a_ CH 032 load bank GE**
- **Attachment #275 – KN3-011 Attachment 275_6.a_ CH 032 oil sample GE**
- **Attachment #276 – KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023**
- **Attachment #277 – KN3-011 Attachment 277_6.a_ CH 032 PM**
- **Attachment #278 – KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018**

- Attachment #279 – KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- Attachment #280 – KN3-011 Attachment 280_6.a_ CH 032 waste
- Attachment #281 – KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- Attachment #282 – KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- Attachment #283 – KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- Attachment #284 – KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- Attachment #285 – KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- Attachment #286 – KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- Attachment #287 – KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- Attachment #288 – KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- Attachment #289 – KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- Attachment #290 – KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- Attachment #291 – KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- Attachment #292 – KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- Attachment #293 – KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- Attachment #294 – KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- Attachment #295 – KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- Attachment #296 – KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- Attachment #297 – KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- Attachment #298 – KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- Attachment #299 – KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- Attachment #300 – KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- Attachment #301 – KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- Attachment #302 – KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- Attachment #303 – KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- Attachment #304 – KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- Attachment #305 – KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- Attachment #306 – KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- Attachment #307 – KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- Attachment #308 – KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- Attachment #309 – KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- Attachment #310 – KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- Attachment #311 – KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- Attachment #312 – KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- Attachment #313 – KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- Attachment #314 – KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- Attachment #315 – KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- Attachment #316 – KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- Attachment #317 – KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- Attachment #318 – KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024

- **Attachment #319 – KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **Attachment #320 – KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **Attachment #321 – KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **Attachment #322 – KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **Attachment #323 – KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **Attachment #324 – KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **Attachment #325 – KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **Attachment #326 – KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **Attachment #327 – KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **Attachment #328 – KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **Attachment #329 – KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **Attachment #330 – KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **Attachment #331 – KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **Attachment #332 – KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **Attachment #333 – KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **Attachment #334 – KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **Attachment #335 – KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**
- **Attachment #336 – KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC**
- **Attachment #337 – KN3-011 Attachment 337_6.d.ii_Chico Generators**
- **Attachment #338 – KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator**
- **Attachment #339 – KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

vibrations typically indicate problems with the pump downhole. If not addressed, this will eventually lead to premature equipment failure.

- **132243 – SLN 067-01 has a known motor overheating issue. Excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. [See "CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District"]**

g. Does Cal Water have warranties with pumping equipment vendors or manufacturers that potentially apply in cases where the pump fails while still in "excellent" or "good" condition?
Response: Manufacturer typically provide only a 1 year warranty if the pump was pit tested prior to release. The warranty only covers manufacturing defects such as the pump not meeting specification parameters. Operational failures in which efficiency falls are not covered by warranty.

h. For any pump replacement projects (e.g.,PID 132161, PID 132151, PID 132112, PID 132223, PID 133256, PID 132248, PID 132251, PID 132254) with a Last Pump Date before 2022 why does the pumping equipments need to be replaced in the 2024 GRC if it has not been pumped since 2022?
Response: 'Last Pump Date' refers to the year in which the hydraulic performance test was performed, not when the pump was last operated. Cal Water's Hydraulic Testing Program performs test pumps on an annual or bi-annual basis depending on horsepower. Refer to Section 4 – 'Failure Modes and Condition Assessment - Low OPE' on page 9 of 12 of "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan".

i. Are any of the 88 pump units listed in Attachment B associated with "standby" or "inactive" stations?
Response: None of the pump units listed in Attachment B are designated as "standby" or "inactive." However, VIS 201-01 (132255) is actually a typo, and the correct location should be VIS 201-02, which is active and requires replacement due to low operational efficiency (OPE).

j. Has Cal Water experienced a supply chain and/or labor issues with pump and motor replacements for planned and unplanned projects? If so, what is the purchase order lead time?
Response: Current market conditions do not indicate supply chains issues with procuring new pump and motor equipment. Typical lead times on new pumping equipment range from 4-to- 22 weeks depending on the style of pump.
Contactor labor availability is limited but not unusual due to the high impact market of this industry.

k. For the 88 pumps to be replaced, please populate the attached Excel file labeled "Attachment 1-Pumps and Motor", Tab "Requested Replacement." Please provide a breakdown of the average cost of the replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: See filled out "Requested Replacement" Tab under "KN3-011

Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors". Cal Water has also provided the cost catalog supporting documentation for its unit costs for well pumps and booster pumps. Please refer to the following attachments:

- **KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **KN3-011 Attachment 58_1.k_C.7-3 111-162062**

- KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data
- KN3-011 Attachment 60_1.k_C.7-3 114-152172
- KN3-011 Attachment 61_1.k_C.7-3 116-134003
- KN3-011 Attachment 62_1.k_C.7-3 116-152438A
- KN3-011 Attachment 63_1.k_C.7-3 116-152438B
- KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data
- KN3-011 Attachment 65_1.k_C.7-3 123-158159
- KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data
- KN3-011 Attachment 67_1.k_C.7-4 101-161192
- KN3-011 Attachment 68_1.k_C.7-4 103-139232
- KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data
- KN3-011 Attachment 70_1.k_C.7-4 108-133173
- KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data
- KN3-011 Attachment 72_1.k_C.7-4 111-153636
- KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data
- KN3-011 Attachment 74_1.k_C.7-4 114-152770
- KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data
- KN3-011 Attachment 76_1.k_C.7-4 116-145345
- KN3-011 Attachment 77_1.k_C.7-4 118-163640
- KN3-011 Attachment 78_1.k_C.7-4 119-136664
- KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data
- KN3-011 Attachment 80_1.k_C.7-4 128-159233
- KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data
- KN3-011 Attachment 82_1.k_C.7-5 102-137283
- KN3-011 Attachment 83_1.k_C.7-5 113-150270
- KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data
- KN3-011 Attachment 85_1.k_C.7-5 114-150819
- KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data
- KN3-011 Attachment 87_1.k_C.7-6 101-157160
- KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data
- KN3-011 Attachment 89_1.k_C.7-6 102-153268
- KN3-011 Attachment 90_1.k_C.7-7 102-148376
- KN3-011 Attachment 91_1.k_C.5 Well Pump
- KN3-011 Attachment 92_1.k_C.5-11 120-137793
- KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data
- KN3-011 Attachment 94_1.k_C.5-11 120-143709

- KN3-011 Attachment 95_1.k_C.5-11 120-143711
- KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data
- KN3-011 Attachment 97_1.k_C.5-11 120-163217
- KN3-011 Attachment 98_1.k_C.5-11 120-165911
- KN3-011 Attachment 99_1.k_C.5-11 120-169118
- KN3-011 Attachment 100_1.k_C.5-11 128-145221
- KN3-011 Attachment 101_1.k_C.5-13 104-136978
- KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data
- KN3-011 Attachment 103_1.k_C.5-13 111-140907

- KN3-011 Attachment 104_1.k_C.5-14 120-132879
- KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data
- KN3-011 Attachment 106_1.k_C.5-14 120-159181
- KN3-011 Attachment 107_1.k_C.5-14 120-149719
- KN3-011 Attachment 108_1.k_C.5-15 120-150618
- KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data
- KN3-011 Attachment 110_1.k_C.5-15 134-160056
- KN3-011 Attachment 111_1.k_C.5-16 128-141937
- KN3-011 Attachment 112_1.k_C.5-2 101-138075
- KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data
- KN3-011 Attachment 114_1.k_C.5-2 120-143426
- KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data
- KN3-011 Attachment 116_1.k_C.5-3 120-152749
- KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data
- KN3-011 Attachment 118_1.k_C.5-4 120-147114
- KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data
- KN3-011 Attachment 120_1.k_C.5-5 114-132921
- KN3-011 Attachment 121_1.k_C.5-5 117-136325
- KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data
- KN3-011 Attachment 123_1.k_C.5-5 119-142076
- KN3-011 Attachment 124_1.k_C.5-5 120-144864
- KN3-011 Attachment 125_1.k_C.5-5 120-152746
- KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data
- KN3-011 Attachment 127_1.k_C.5-5 120-152747
- KN3-011 Attachment 128_1.k_C.5-5 120-152748
- KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data
- KN3-011 Attachment 130_1.k_C.5-5 120-153531
- KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data
- KN3-011 Attachment 132_1.k_C.5-5 120-156680
- KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data
- KN3-011 Attachment 134_1.k_C.5-5 120-159180
- KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data
- KN3-011 Attachment 136_1.k_C.5-5 120-160355
- KN3-011 Attachment 137_1.k_C.5-5 120-163022
- KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data
- KN3-011 Attachment 139_1.k_C.5-5 120-163642
- KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data
- KN3-011 Attachment 141_1.k_C.5-5 120-163648
- KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data
- KN3-011 Attachment 143_1.k_C.5-6 120-152160
- KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data
- KN3-011 Attachment 145_1.k_C.5-8 120-143244
- KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data
- KN3-011 Attachment 147_1.k_C.5-8 120-152745
- KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data
- KN3-011 Attachment 149_1.k_C.5-9 102-151068

- **KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **KN3-011 Attachment 153_1.k_C.5-9 120-144028**

An explanation of how to read the cost catalog workbook was provided on slide 4 of the common plant tour presentation to Cal Advocates on Sept 3rd, 2024.
~~**To be provided in a subsequent response.**~~

l. Please use the attached Excel file Attachment 1-Pump and Motor, Tab "Historical Replacement" to assist in providing the historical replacements from 2014 to November 30th, 2024. Please provide a breakdown of the average cost of the replacements, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as the general ledger, vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: Please find "Historical Replacement" Tab under "KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors"
~~**To be provided in a subsequent response.**~~

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    To be provided in a subsequent response.

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    To be provided in a subsequent response.

    g. Are any of the CPS to be replaced associated with "standby" or "inactive" stations?
    Response: No.

3. Refer to project justification book "Common Plant Overview_2024_Final" Section Control Valve Overhaul and Replacement (p. 304-306).

   a. Please populate the risk assessment matrix using attached Excel file Attachment 3-Control Valve Overhaul and Replacement," tabs "Overhaul Rating" and "Replacement Rating" to provide the detailed breakdown.
   Response: Cal Water has modified its criticality analysis from what was submitted in the 2018 GRC filing and no longer records and analyzes the criticality of assets using the list shown in the "Overhaul Rating" and "Replacement Rating" tabs. The results from that analysis were recorded in Cal Water's Asset Management database; however, they are not consistent with our current practice as defined in the Strategic Asset Management Plan. For the valves where we have recorded the data, we have adjusted the criticality scores to be in line with our current program as defined in the Strategic Asset Management Plan. Please see "KN3-11 Attachment 15_3.a_Control Valve Asset Data". Cal Water is actively working on updating its criticality scores for all assets.
   Cal Water has not developed its list of valves that are planned for overhaul or replacement in the 2025 to 2027 years. Those are normally issued at the beginning of the year from Cal Water's asset management system based on the schedule shown in the asset plan.

   b. Using Cal Water's Control Valve risk assessment matrix, what is the lowest possible ranking score?
   Response: In terms of risk of failure, or criticality, 5.

   c. Using Cal Water's Control Valve risk assessment matrix, what is the highest possible ranking score?
   Response: In terms of risk of failure, or criticality, 1

   d. Is risk of failure to critical customers considered in the control valve risk assessment matrix?
   Response: No.

   e. If risk of failure to critical customers is considered in the control valve risk assessment matrix, please describe how that risk is factored into the final risk score. Please describe in detail (numerically and in words), where applicable.
   Response: Please refer to the response to 3.d.

   f. Provide a breakdown of the total number of control valves in each ranking across Cal Water's entire water system, from highest possible rank to lowest possible rank in Excel file "DR KN3-011 Attachment 3," tab "Total Ranking."
   Response: The condition scoring records are not available and are being built in Q1 2025. The 5-year overhaul cycle is used to assess the serviceability of the valves and they are replaced as necessary.

   g. Provide the annual number of control valve replacements and overhauls performed for each district for the past five years (2020-2024) in Excel file "DR KN3-011 Attachment 3." Please use tab "Historical Overhaul" for control valve overhauls and tab "Historical

Replacement" for control valve replacements.
Response : Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

h. Provide the annual number of control valve replacements and overhauls performed for each district between 2025-2027 in Excel file "DR KN3-011 Attachment 3." Please use tab "Future Overhaul" for control valve overhauls and tab "Future Replacement" for control valve replacements.
Response: Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

i. Refer to the project description concerning "Payback Period" under the category "Financial Efficiency." Page Common Plant PJ – 305 states "[i]f the old valve was to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures."

i. Describe the methodology Cal Water used to calculate the potential cost of a control valve failure event.
Response: Typically, Cal Water does not track the cost of repair for each incident. However, there have been incidents where Cal Water paid damage claims due to control valve failures. While not typical, one claim was as high as $1.9M due to a control valve failure that flooded a building.

ii. Is the potential cost of a control valve failure event assumed to be the same for every control valve?
Response: In our current model, yes.

iii. If the estimated potential cost is not the same for every potential control valve failure, please describe in detail the factors that influence the estimated cost.
Response: Please refer to the response to 3.i.ii.

iv. In the last five years (2019- 2023), please provide the actual recorded cost of control valve failures.
Response: Cal Water does not track the costs for control valve failures in any one account. Damage claims are also not normally classified by the cause of failure; however, Cal Water has attributed the event above to a control valve failure.

v. Please explain in detail how Cal Water determines the cost of overhaul and replacement of control valve failures is less cost effective than performing a regular overhaul and replacing older control valves. Please also provide evidence to support the analysis. This includes but is not limited to any vendor invoices, as-built, bids, proposal, or internal communications.
Response: Cal Water determines if a valve can be overhauled first prior to planning a replacement. In the common plant justification on page 306, Cal Water states "*Cal Water will try to overhaul all valves where the body of*

the valve is in good condition, the valve meets certain minimum requirements such as being epoxy coated, the valve is in a suitable location where it can be easily maintained, and the vault is sized properly where it can be maintained. If the valve does not meet these requirements and is in need of repair, Cal Water will evaluate if a replacement project will improve these conditions significantly before planning a replacement project. Otherwise, Cal Water will plan to overhaul the valve and plan for a future redesign of the system to more permanently resolve the issues." **It is the valve's condition that determines if it can be overhauled, not the cost effectiveness.**

j. Are any of the control valve overhaul and replacement associated with "standby" or "inactive" stations?
Response: No.

4. Refer to project justification book "Common Plant Overview_2024_Final" Service Line Replacement Program (pp. 370-380):

   a. Please provide the Excel file for all figures and tables in the referenced section for Service Line Replacement Program.
   Partial Response #2: Please see "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves" , "KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material" , and "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for all figures and tables and supporting documents referenced in the Service Line Replacement Program justification.

   Please note the estimated number of services in the final Common Plant justification on page Common Plant PJ-381 was revised slightly down in the year 2027 from the originally analyzed numbers and costs for 2027 presented in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve", which was compiled in December 2023. Originally, the analysis in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve" in tab "Forecast & Alt Comparison" had assumed $6,747,425 (2023 dollars) in the year 2027 amounting to 392 services replaced at $17,200 each (in 2023 dollars). This was ultimately revised down in the final filing to $6,582,697 (2023 dollars) or $7,266,066 (escalated to 2027 dollars at 2.5%), amounting to approximately 383 service replacements at $17,200 each (in 2023 dollars).
   ~~**To be provided in a subsequent response.**~~

   b. Reference Figure 7 on Common Plant PJ-377. Please provide the estimated work schedule for the number of annual service line replacements from 2025-2027. Please provide supporting documents for the proposed replacement schedule, such as any vendor invoices, bids, proposal, or internal communications.
   Partial Response #2: Cal Water is proposing to complete 387, 384, and 383 services in years 2025, 2026, and 2027 respectively. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE), see "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for additional details.
   ~~**To be provided in a subsequent response.**~~

   c. Cal Water states that its Bakersfield District "owns and is responsible for approximately 76,100 services within its service boundaries" (p. 370). Please explain why Cal Water considers the Service Line Replacement Program to be a common plant project, given that it is limited to the Bakersfield How does Cal Water define common plant project when it affects only one district?
   Partial Response #2: Cal Water considers this to be a program appropriately covered in Common Plant because this program will continue over time and may be needed in other districts in the future.

   Similar to other programs in the Common Plant book, the success of this program will be evaluated based on overall system metrics, specifically break rate of service lines. If those metrics change over time, the program could be ramped up or down in Bakerfield, or expanded to other districts, in response.
   .

~~**To be provided in a subsequent response.**~~

i. Does Cal Water have any other proposed annual service line replacement for other districts besides Bakersfield?
Partial Response #2: Not at this time.

~~**To be provided in a subsequent response.**~~

d. Cal Water states that "[to] offset this increase in program cost, the [Bakersfield] District will be reducing its pipeline replacement program from 0.7% during the 2021 GRC period to 0.5% for the 2024 GRC period only" (p. 370).

i. Please show how this reduction is done in the RO model and provide supporting analysis for this cost calculation.
Partial Response #2: This reduction was done by simply entering in the dollars for replacing 0.5% of Bakersfield's pipelines into the ROM instead of 0.7% For example, in 2025 Cal Water proposes to replace 25,643 lineal feet of main at a cost of about $595/LF, and the proposed direct cost is the product of these two values plus contingency. Had Cal Water proposed a rate of 0.7% instead, the total footage would have been closer to 36,000 LF at a cost of $595/LF plus contingency. This difference (36,000 – 25,600) x $595 x (1 + 10%) is roughly $6.8M. The proposed direct cost of the 2025 Service Line replacements is $6.99M.

~~**To be provided in a subsequent response.**~~

ii. Has Cal Water performed a cost-benefit analysis of the reduction in its Pipeline Replacement Program to account for the Service Replacement Program?
Partial Response #2: Yes, Cal Water conducted a cost-benefit analysis which demonstrated that reducing the MRP program and increasing the Service Replacement Program would result in net savings of $1.8 million in capital investment. Therefore, this was determined to be the most prudent course of action for customers and the district. Please see "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details.

~~**To be provided in a subsequent response.**~~

e. Cal Water states that Alternative 2: Replace Services Reactively & Ad hoc includes managing the service line as customers experience an issue (pp. 377-378).

Please provide a cost benefit analysis comparing Alternative 2's management of service lines as customers experience issues to the proposed Alternative 3: Programmatic Service Line Replacement annual replacement method.
Partial Response #2: This analysis was presented in Table 1 on page Common Plant PJ-380 which compared the total cost over the next 25 years between Alternative # 2 and Alternative # 3. It was ultimately determined that Alternative # 3 had a reduced capital investment cost, which would save customers approximately $ 28.3 million dollars over the next 25 years, demonstrating the value of proactively planned replacement over deferred and reactive management. Additional details on this cost analysis are presented in the Excel Workbook entitled "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves".
~~**To be provided in a subsequent response.**~~

f. Cal Water states that there has been an increase in plastic service line failures (p. 373). Please provide a list of plastic service line failures in the Bakersfield District from 2015-2024, with supporting documentation such as vendor invoices, as-built, bids, proposals, or internal communications.

   i. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks involving plastic service lines in the last five years (2020-2024).
   To be provided in a subsequent response.

   ii. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks NOT involving plastic service lines in the last five years (2020-2024).
   To be provided in a subsequent response.

   iii. Please provide 1) the average concentration of chlorine disinfectant to which plastic service lines in the Bakersfield District would have ongoing exposure, and 2) if known, average seasonal temperature range of water flowing to Bakersfield District service lines.
   To be provided in a subsequent response.

g. Please provide the historical service line replacement and cost data for the Bakersfield District from 2014 – 2024, as requested in Attachment 5, Service Replacement, tabs "Summary of Service Replaced" and "Plastic Service Replaced"
To be provided in a subsequent response.

h. Of the 76,100 service connections in the Bakersfield District, how many or what percentage of the service lines does Cal Water propose to replace in its Alternative 3 Programmatic Replacement from 2025-2027? For each year, please provide the number of services to be replaced, cost per replacement, and total cost.
Partial Response #2: Please see the following table.

Year	Number of Services to be Replaced	Cost Per Replacement (Escalated)	Total Costs (Escalated)
2025	387	$18,058.38	$6,988,592.52
2026	384	$18,539.90	$7,119,321.72
2027	383	$18,971.45	$7,266,065.84

~~**To be provided in a subsequent response.**~~

i. For responses to questions 4.h and 4.i, please provide a cost breakdown that includes cost of materials, labor, and equipment. Please provide evidence supporting the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
Partial Response #2: Please see Excel Workbook entitled "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details prepared by our profession engineering consultant. This estimate is based on a unit costs estimate of $17,200

(2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE).
~~**Response to be provided.**~~

j. Please provide a detailed explanation for any increase or decrease in the cost-of-service line replacement between the periods 2021-2024 and 2025-2027.
Partial Response #2: Unit costs for proactive replacement of services in the 2024 GRC were based on 2023 estimated costs and escalated to the applicable year.
~~**To be provided in a subsequent response.**~~

5. Regarding the Motor Control Center (MCC)/panelboard replacements Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pp. 423-424):

   a. Provide the inspection and maintenance records in Excel format for the existing panelboards for the past 10 years (2015 - November 30, 2024). If inspection/maintenance records are not available, provide an explanation.
   Partial Response #2: Please see list of inspection records available for the MCCs proposed for replacement:
      - **KN3-011 Attachment 158_5.a_BG-002 2021**
      - **KN3-011 Attachment 159_5.a_BG-040 2020**
      - **KN3-011 Attachment 160_5.a_BG-040 2022**
      - **KN3-011 Attachment 161_5.a_CH-005 2016**
      - **KN3-011 Attachment 162_5.a_CH-005 2019**
      - **KN3-011 Attachment 163_5.a_CH-005 2023**
      - **KN3-011 Attachment 164_5.a_CH-018 2015**
      - **KN3-011 Attachment 165_5.a_CH-018 2019**
      - **KN3-011 Attachment 166_5.a_CH-065 2016**
      - **KN3-011 Attachment 167_5.a_CH-065 2024**
      - **KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
      - **KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
      - **KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
      - **KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
      - **KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
      - **KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
      - **KN3-011 Attachment 174_5.a_DOM-279 well 2018**
      - **KN3-011 Attachment 175_5.a_DOM-279 well 2024**
      - **KN3-011 Attachment 176_5.a_KRV-009 2015**
      - **KN3-011 Attachment 177_5.a_KRV-009 2022**
      - **KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
      - **KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
      - **KN3-011 Attachment 180_5.a_LAS-013 2017**
      - **KN3-011 Attachment 181_5.a_LAS-013 2022**
      - **KN3-011 Attachment 182_5.a_LAS-017 2018**
      - **KN3-011 Attachment 183_5.a_LAS-017 2022**
      - **KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
      - **KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
      - **KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
      - **KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
      - **KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
      - **KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
      - **KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
      - **KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
      - **KN3-011 Attachment 192_5.a_LAS-113 2019**
      - **KN3-011 Attachment 193_5.a_LAS-113 2022**
      - **KN3-011 Attachment 194_5.a_LAS-121 2016**
      - **KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
      - **KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
      - **KN3-011 Attachment 197_5.a_LIV-020 2017 2**
      - **KN3-011 Attachment 198_5.a_LIV-020 2017**

- **KN3-011 Attachment 199_5.a_LIV-020 2023**
- **KN3-011 Attachment 200_5.a_LIV-024 2017**
- **KN3-011 Attachment 201_5.a_LIV-024 2021**
- **KN3-011 Attachment 202_5.a_MRL-015 2017**
- **KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **KN3-011 Attachment 213_5.a_SC-114 2015**
- **KN3-011 Attachment 214_5.a_SC-114 2018**
- **KN3-011 Attachment 215_5.a_SC-114 2023**
- **KN3-011 Attachment 216_5.a_SLN-019 2020**
- **KN3-011 Attachment 217_5.a_SLN-060 2019**
- **KN3-011 Attachment 218_5.a_SLN-060 2023**
- **KN3-011 Attachment 219_5.a_SLN-106 2019**
- **KN3-011 Attachment 220_5.a_SM-029 2015**
- **KN3-011 Attachment 221_5.a_SM-029 2019**
- **KN3-011 Attachment 222_5.a_SM-029 2021**
- **KN3-011 Attachment 223_5.a_SM-029 2024**
- **KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **KN3-011 Attachment 228_5.a_STK-036 2016**
- **KN3-011 Attachment 229_5.a_STK-036 2019**
- **KN3-011 Attachment 230_5.a_STK-036 2023**
- **KN3-011 Attachment 231_5.a_STK-060 2017**
- **KN3-011 Attachment 232_5.a_STK-060 2023**
- **KN3-011 Attachment 233_5.a_WLK-001 2017**
- **KN3-011 Attachment 234_5.a_WLK-001 2020**
- **KN3-011 Attachment 235_5.a_WLK-001 2023**
- **KN3-011 Attachment 236_5.a_WLK-010 2016**
- **KN3-011 Attachment 237_5.a_WLK-010 2019**
- **KN3-011 Attachment 238_5.a_WLK-010 2024**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance and repair costs (general ledger in Excel format) for the past 10 years (2015 - November 30, 2024) including all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not track maintenance and repair costs associated solely with the electrical equipment. Those costs are combined with other

pumping equipment repair work in a single account.
~~**To be provided in a subsequent response.**~~

6. Regarding the proposed Generator Replacement Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pg. PJ-453 to PJ-454):

   a. In Excel format, provide the inspection and maintenance records, including the CPUC ranking and assement matrix, for the existing generators for the past 10 years (2015-November 30, 2024). If inspection/maintenance records are not available, provide an explanation. Please identify the proposed generator replacement in 2024 GRC with their PID.
   Partial Response #2: Please see below the list of inspection and maintenance records for the generators proposed for replacement. Please see the "KN3-011 Attachment 239_6.a_Generator Condition Assessment" spreadsheet for generators condition assessment.
      - **KN3-011 Attachment 240_6.a_ BK 162 2013**
      - **KN3-011 Attachment 241_6.a_ BK 162 Gen service**
      - **KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
      - **KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
      - **KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
      - **KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
      - **KN3-011 Attachment 246_6.a_ BK 162 PM**
      - **KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
      - **KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
      - **KN3-011 Attachment 249_6.a_ BK162Genset**
      - **KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
      - **KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
      - **KN3-011 Attachment 252_6.a_ BK176 Gen PM**
      - **KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
      - **KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
      - **KN3-011 Attachment 255_6.a_ CH 032 2019 service**
      - **KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
      - **KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
      - **KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
      - **KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
      - **KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
      - **KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
      - **KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
      - **KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
      - **KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
      - **KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
      - **KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
      - **KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
      - **KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
      - **KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**
      - **KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019**
      - **KN3-011 Attachment 271_6.a_ CH 032 Genset**
      - **KN3-011 Attachment 272_6.a_ CH 032 Genset2021services**

- KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- KN3-011 Attachment 277_6.a_ CH 032 PM
- KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- KN3-011 Attachment 280_6.a_ CH 032 waste
- KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024

- **KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance, repair, and replacement costs (general ledger) of Cal Water's generators for the past 10 years (2015 - November 30, 2024). This includes all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not separately track maintenance and repair costs for generators. These costs are combined with other pumping equipment.
~~**To be provided in a subsequent response.**~~

c. For the following projects, if Cal Water is proposing a fixed generator. Please provide a detailed cost-benefit analysis and explanation for the replacement to be a fixed generator rather than a portable generator for the following projects and any new proposed generator projects.
Partial Response #2: Cal Water did not perform a detailed cost-benefit analysis for the generator replacements.

The generator at BK 162 is proposed as a permanent replacement because the facility is critical to the operation of the system. The station is used to pump purchased water from KCWA into multiple zones in the northeast part of the BK system. The current permanent generator failed in 2024.

The generator at BK 176 is proposed as a permanent replacement because the facility serves a pressure system. Backup power needs to be readily available in order to continually supply the pressure system. Cal Water could not stage a portable booster pump at that location permanently.

The generator at CH 032 is proposed as a permanent generator to replace the existing permanent fixed generator due to its current condition. This well supplies a pressure system and in the event of a widespread power outage, permanent generators are needed to supply water to the system to avoid low pressure and boil water notices.

The generator at CH 66 is proposed as a permanent generator because the facility supplies a pressure system. In the event of a power failure, backup power needs to be immediately available to avoid a loss of pressure to the system. Cal Water could not permanently stage a portable.
~~**To be provided in a subsequent response.**~~

PID	District	Project Name	Project Locations	Direct Costs
132561	Bakersfield	BK 2026 - Genset Replacements	BK 162 Genset Replacement	$2,307,426.75
			BK 176 Genset Replacement	
132564	Chico	CH 2026 - Genset Replacement	CH 032 Genset Replacement	$1,413,512.48
			CH 066 Genset Replacement	

d. Please provide a list of all proposed generator replacements in each district, in Excel format. Please include the following information:

i. Detailed explanation of the need for the proposed generator or MCC replacement.
Partial Response #2: Please see attached spreadsheet "KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC".

~~**To be provided in a subsequent response.**~~

ii. Whether the proposed generator is in a High Fire Threat District, and if so, a map showing the location of the proposed generator.
Partial Response #2: See attachments "KN3-011 Attachment 337_6.d.ii_Chico Generators", "KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator", and "KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator" for the map of generators in high fire threat areas. Note that Salinas Hills is a high fire threat area; however, the Salinas system is not in a high fire threat area.

~~**To be provided in a subsequent response.**~~

iii. Schedule for generator purchase and completion of installation.
Partial Response #2:

	Purchase		Install	
Project	**Month**	**Year**	**Month**	**Year**
BK 162	8	2025	4	2027
BK 176	8	2025	4	2027
Ch 032	8	2025	5	2027
CH 066	8	2025	5	2027
DOM 232	9	2025	6	2027
SLN 016	8	2025	5	2027
SLN 033	8	2025	5	2027

WLK 001	8	2025	4	2027

~~**To be provided in a subsequent response.**~~

e. Please refer to D. 24-03-042 for the following questions:

i. Cal Water proposed to install a permanent generator at Station 23 in the Visalia District under PID 123954. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is in the construction phase. All permits have been approved, and equipment has been procured. Project is estimated to be complete in the first quarter of 2025.

~~**To be provided in a subsequent response.**~~

ii. Cal Water proposed to replace a generator at Station 71 in the Stockton District under PID 124311. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is currently in preliminary design. Equipment will be procured at a later date.

~~**To be provided in a subsequent response.**~~

END PARTIAL RESPONSE #2

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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From: **California Water Service**

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Date: **December 31, 2024** **Partial Response #2 sent December 23, 2024** **Partial Response #2 sent December 19, 2924** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #3 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 and 4 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**

- **Attachment #2 – KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan**
- **Attachment #3 – KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test**
- **Attachment #4 – KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted**
- **Attachment #5 – KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo**
- **Attachment #6 – KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices**
- **Attachment #7 – KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test**
- **Attachment #8 – CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email**
- **Attachment #9 – KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report**
- **Attachment #10 – KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test**
- **Attachment #11 – KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report**
- **Attachment #12 – CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District**
- **Attachment #13 – KN3-011 Attachment 13_2.a**
- **Attachment #14 – KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan**
- **Attachment #15 – KN3-11 Attachment 15_3.a_Control Valve Asset Data**
- **Attachment #16 – KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement**
- **Attachment #17 – KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors**
- **Attachment #18 – KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **Attachment #19 – KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **Attachment #20 – KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **Attachment #21 – KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **Attachment #22 – KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **Attachment #23 – KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **Attachment #24 – KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **Attachment #25 – KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **Attachment #26 – KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **Attachment #27 – KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **Attachment #28 – KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **Attachment #29 – KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **Attachment #30 – KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **Attachment #31 – KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **Attachment #32 – Attachment #17 – KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **Attachment #33 – KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **Attachment #34 – KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **Attachment #35 – KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **Attachment #36 – KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **Attachment #37 – KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **Attachment #38 – KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **Attachment #39 – KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **Attachment #40 – KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **Attachment #41 – KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **Attachment #42 – KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **Attachment #43 – KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **Attachment #44 – CONFIDENTIAL KN3-011 Attachment 44_1.k_C.7-2 111-134005**

- **Attachment #45 – KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **Attachment #46 – KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **Attachment #47 – KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **Attachment #48 – KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **Attachment #49 – KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **Attachment #50 – KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **Attachment #51 – KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **Attachment #52 – KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **Attachment #53 – KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **Attachment #54 – KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **Attachment #55 – KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **Attachment #56 – KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **Attachment #57 – KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **Attachment #58 – KN3-011 Attachment 58_1.k_C.7-3 111-162062**
- **Attachment #59 – KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data**
- **Attachment #60 – KN3-011 Attachment 60_1.k_C.7-3 114-152172**
- **Attachment #61 – KN3-011 Attachment 61_1.k_C.7-3 116-134003**
- **Attachment #62 – KN3-011 Attachment 62_1.k_C.7-3 116-152438A**
- **Attachment #63 – KN3-011 Attachment 63_1.k_C.7-3 116-152438B**
- **Attachment #64 – KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data**
- **Attachment #65 – KN3-011 Attachment 65_1.k_C.7-3 123-158159**
- **Attachment #66 – KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data**
- **Attachment #67 – KN3-011 Attachment 67_1.k_C.7-4 101-161192**
- **Attachment #68 – KN3-011 Attachment 68_1.k_C.7-4 103-139232**
- **Attachment #69 – KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data**
- **Attachment #70 – CONFIDENTIAL KN3-011 Attachment 70_1.k_C.7-4 108-133173**
- **Attachment #71 – KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data**
- **Attachment #72 – KN3-011 Attachment 72_1.k_C.7-4 111-153636**
- **Attachment #73 – KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data**
- **Attachment #74 – KN3-011 Attachment 74_1.k_C.7-4 114-152770**
- **Attachment #75 – KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data**
- **Attachment #76 – KN3-011 Attachment 76_1.k_C.7-4 116-145345**
- **Attachment #77 – KN3-011 Attachment 77_1.k_C.7-4 118-163640**
- **Attachment #78 – KN3-011 Attachment 78_1.k_C.7-4 119-136664**
- **Attachment #79 – KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data**
- **Attachment #80 – KN3-011 Attachment 80_1.k_C.7-4 128-159233**
- **Attachment #81 – KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data**
- **Attachment #82 – KN3-011 Attachment 82_1.k_C.7-5 102-137283**
- **Attachment #83 – KN3-011 Attachment 83_1.k_C.7-5 113-150270**
- **Attachment #84 – KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data**
- **Attachment #85 – KN3-011 Attachment 85_1.k_C.7-5 114-150819**
- **Attachment #86 – KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data**
- **Attachment #87 – KN3-011 Attachment 87_1.k_C.7-6 101-157160**
- **Attachment #88 – KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data**
- **Attachment #89 – KN3-011 Attachment 89_1.k_C.7-6 102-153268**
- **Attachment #90 – KN3-011 Attachment 90_1.k_C.7-7 102-148376**
- **Attachment #91 – KN3-011 Attachment 91_1.k_C.5 Well Pump**
- **Attachment #92 – KN3-011 Attachment 92_1.k_C.5-11 120-137793**

- **Attachment #93 – KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data**
- **Attachment #94 – KN3-011 Attachment 94_1.k_C.5-11 120-143709**
- **Attachment #95 – KN3-011 Attachment 95_1.k_C.5-11 120-143711**
- **Attachment #96 – KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data**
- **Attachment #97 – KN3-011 Attachment 97_1.k_C.5-11 120-163217**
- **Attachment #98 – KN3-011 Attachment 98_1.k_C.5-11 120-165911**
- **Attachment #99 – KN3-011 Attachment 99_1.k_C.5-11 120-169118**
- **Attachment #100 – KN3-011 Attachment 100_1.k_C.5-11 128-145221**
- **Attachment #101 – KN3-011 Attachment 101_1.k_C.5-13 104-136978**
- **Attachment #102 – KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data**
- **Attachment #103 – KN3-011 Attachment 103_1.k_C.5-13 111-140907**
- **Attachment #104 – KN3-011 Attachment 104_1.k_C.5-14 120-132879**
- **Attachment #105 – KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data**
- **Attachment #106 – KN3-011 Attachment 106_1.k_C.5-14 120-159181**
- **Attachment #107 – KN3-011 Attachment 107_1.k_C.5-14 120-149719**
- **Attachment #108 – KN3-011 Attachment 108_1.k_C.5-15 120-150618**
- **Attachment #109 – KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data**
- **Attachment #110 – KN3-011 Attachment 110_1.k_C.5-15 134-160056**
- **Attachment #111 – KN3-011 Attachment 111_1.k_C.5-16 128-141937**
- **Attachment #112 – KN3-011 Attachment 112_1.k_C.5-2 101-138075**
- **Attachment #113 – KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data**
- **Attachment #114 – KN3-011 Attachment 114_1.k_C.5-2 120-143426**
- **Attachment #115 – KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data**
- **Attachment #116 – KN3-011 Attachment 116_1.k_C.5-3 120-152749**
- **Attachment #117 – KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data**
- **Attachment #118 – KN3-011 Attachment 118_1.k_C.5-4 120-147114**
- **Attachment #119 – KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data**
- **Attachment #120 – KN3-011 Attachment 120_1.k_C.5-5 114-132921**
- **Attachment #121 – KN3-011 Attachment 121_1.k_C.5-5 117-136325**
- **Attachment #122 – KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data**
- **Attachment #123 – KN3-011 Attachment 123_1.k_C.5-5 119-142076**
- **Attachment #124 – KN3-011 Attachment 124_1.k_C.5-5 120-144864**
- **Attachment #125 – KN3-011 Attachment 125_1.k_C.5-5 120-152746**
- **Attachment #126 – KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data**
- **Attachment #127 – KN3-011 Attachment 127_1.k_C.5-5 120-152747**
- **Attachment #128 – KN3-011 Attachment 128_1.k_C.5-5 120-152748**
- **Attachment #129 – KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data**
- **Attachment #130 – KN3-011 Attachment 130_1.k_C.5-5 120-153531**
- **Attachment #131 – KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data**
- **Attachment #132 – KN3-011 Attachment 132_1.k_C.5-5 120-156680**
- **Attachment #133 – KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data**
- **Attachment #134 – KN3-011 Attachment 134_1.k_C.5-5 120-159180**
- **Attachment #135 – KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data**
- **Attachment #136 – KN3-011 Attachment 136_1.k_C.5-5 120-160355**
- **Attachment #137 – KN3-011 Attachment 137_1.k_C.5-5 120-163022**
- **Attachment #138 – KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data**
- **Attachment #139 – KN3-011 Attachment 139_1.k_C.5-5 120-163642**
- **Attachment #140 – KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data**

- **Attachment #141 – KN3-011 Attachment 141_1.k_C.5-5 120-163648**
- **Attachment #142 – KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data**
- **Attachment #143 – KN3-011 Attachment 143_1.k_C.5-6 120-152160**
- **Attachment #144 – KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data**
- **Attachment #145 – KN3-011 Attachment 145_1.k_C.5-8 120-143244**
- **Attachment #146 – KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data**
- **Attachment #147 – KN3-011 Attachment 147_1.k_C.5-8 120-152745**
- **Attachment #148 – KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data**
- **Attachment #149 – KN3-011 Attachment 149_1.k_C.5-9 102-151068**
- **Attachment #150 – KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **Attachment #151 – KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **Attachment #152 – KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **Attachment #153 – KN3-011 Attachment 153_1.k_C.5-9 120-144028**
- **Attachment #154 – KN3-011 Attachment 154_4.a._Active Services & Survivor Curves**
- **Attachment #155 – KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material**
- **Attachment #156 – KN3-011 Attachment 156_4.a._Service Program Cost Estimate**
- **Attachment #157 – KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis**
- **Attachment #158 – KN3-011 Attachment 158_5.a_BG-002 2021**
- **Attachment #159 – KN3-011 Attachment 159_5.a_BG-040 2020**
- **Attachment #160 – KN3-011 Attachment 160_5.a_BG-040 2022**
- **Attachment #161 – KN3-011 Attachment 161_5.a_CH-005 2016**
- **Attachment #162 – KN3-011 Attachment 162_5.a_CH-005 2019**
- **Attachment #163 – KN3-011 Attachment 163_5.a_CH-005 2023**
- **Attachment #164 – KN3-011 Attachment 164_5.a_CH-018 2015**
- **Attachment #165 – KN3-011 Attachment 165_5.a_CH-018 2019**
- **Attachment #166 – KN3-011 Attachment 166_5.a_CH-065 2016**
- **Attachment #167 – KN3-011 Attachment 167_5.a_CH-065 2024**
- **Attachment #168 – KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
- **Attachment #169 – KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
- **Attachment #170 – KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
- **Attachment #171 – KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
- **Attachment #172 – KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
- **Attachment #173 – KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
- **Attachment #174 – KN3-011 Attachment 174_5.a_DOM-279 well 2018**
- **Attachment #175 – KN3-011 Attachment 175_5.a_DOM-279 well 2024**
- **Attachment #176 – KN3-011 Attachment 176_5.a_KRV-009 2015**
- **Attachment #177 – KN3-011 Attachment 177_5.a_KRV-009 2022**
- **Attachment #178 – KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
- **Attachment #179 – KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
- **Attachment #180 – KN3-011 Attachment 180_5.a_LAS-013 2017**
- **Attachment #181 – KN3KN3-011 Attachment 181_5.a_LAS-013 2022**
- **Attachment #182 – KN3KN3-011 Attachment 182_5.a_LAS-017 2018**
- **Attachment #183 – KN3KN3-011 Attachment 183_5.a_LAS-017 2022**
- **Attachment #184 – KN3KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
- **Attachment #185 – KN3KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
- **Attachment #186 – KN3KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
- **Attachment #187 – KN3KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**

- **Attachment #188 – KN3KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
- **Attachment #189 – KN3KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
- **Attachment #190 – KN3KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
- **Attachment #191 – KN3KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
- **Attachment #192 – KN3KN3-011 Attachment 192_5.a_LAS-113 2019**
- **Attachment #193 – KN3-011 Attachment 193_5.a_LAS-113 2022**
- **Attachment #194 – KN3-011 Attachment 194_5.a_LAS-121 2016**
- **Attachment #195 – KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
- **Attachment #196 – KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
- **Attachment #197 – KN3-011 Attachment 197_5.a_LIV-020 2017 2**
- **Attachment #198 – KN3-011 Attachment 198_5.a_LIV-020 2017**
- **Attachment #199 – KN3-011 Attachment 199_5.a_LIV-020 2023**
- **Attachment #200 – KN3-011 Attachment 200_5.a_LIV-024 2017**
- **Attachment #201 – KN3-011 Attachment 201_5.a_LIV-024 2021**
- **Attachment #202 – KN3-011 Attachment 202_5.a_MRL-015 2017**
- **Attachment #203 – KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **Attachment #204 – KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **Attachment #205 – KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **Attachment #206 – KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **Attachment #207 – KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **Attachment #208 – CONFIDENTIAL KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **Attachment #209 – CONFIDENTIAL KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **Attachment #210 – KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **Attachment #211 – KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **Attachment #212 – KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **Attachment #213 – KN3-011 Attachment 213_5.a_SC-114 2015**
- **Attachment #214 – KN3-011 Attachment 214_5.a_SC-114 2018**
- **Attachment #215 – KN3-011 Attachment 215_5.a_SC-114 2023**
- **Attachment #216 – KN3-011 Attachment 216_5.a_SLN-019 2020**
- **Attachment #217 – KN3-011 Attachment 217_5.a_SLN-060 2019**
- **Attachment #218 – KN3-011 Attachment 218_5.a_SLN-060 2023**
- **Attachment #219 – KN3-011 Attachment 219_5.a_SLN-106 2019**
- **Attachment #220 – KN3-011 Attachment 220_5.a_SM-029 2015**
- **Attachment #221 – KN3-011 Attachment 221_5.a_SM-029 2019**
- **Attachment #222 – KN3-011 Attachment 222_5.a_SM-029 2021**
- **Attachment #223 – KN3-011 Attachment 223_5.a_SM-029 2024**
- **Attachment #224 – CONFIDENTIAL KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **Attachment #225 – CONFIDENTIAL KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **Attachment #226 – KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **Attachment #227 – CONFIDENTIAL KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **Attachment #228 – KN3-011 Attachment 228_5.a_STK-036 2016**
- **Attachment #229 – KN3-011 Attachment 229_5.a_STK-036 2019**
- **Attachment #230 – KN3-011 Attachment 230_5.a_STK-036 2023**
- **Attachment #231 – KN3-011 Attachment 231_5.a_STK-060 2017**
- **Attachment #232 – KN3-011 Attachment 232_5.a_STK-060 2023**
- **Attachment #233 – KN3-011 Attachment 233_5.a_WLK-001 2017**

- Attachment #234 – KN3-011 Attachment 234_5.a_WLK-001 2020
- Attachment #235 – KN3-011 Attachment 235_5.a_WLK-001 2023
- Attachment #236 – KN3-011 Attachment 236_5.a_WLK-010 2016
- Attachment #237 – KN3-011 Attachment 237_5.a_WLK-010 2019
- Attachment #238 – KN3-011 Attachment 238_5.a_WLK-010 2024
- Attachment #239 – KN3-011 Attachment 239_6.a_Generator Condition Assessment
- Attachment #240 – **CONFIDENTIAL** KN3-011 Attachment 240_6.a_ BK 162 2013
- Attachment #241 – **CONFIDENTIAL** KN3-011 Attachment 241_6.a_ BK 162 Gen service
- Attachment #242 – KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults
- Attachment #243 – **CONFIDENTIAL** KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131
- Attachment #244 – **CONFIDENTIAL** KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162
- Attachment #245 – **CONFIDENTIAL** KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)
- Attachment #246 – **CONFIDENTIAL** KN3-011 Attachment 246_6.a_ BK 162 PM
- Attachment #247 – KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024
- Attachment #248 – **CONFIDENTIAL** KN3-011 Attachment 248_6.a_ BK-162-GEN1PM
- Attachment #249 – **CONFIDENTIAL** KN3-011 Attachment 249_6.a_ BK162Genset
- Attachment #250 – **CONFIDENTIAL** KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827
- Attachment #251 – **CONFIDENTIAL** KN3-011 Attachment 251_6.a_ BK176 Gen PM 2
- Attachment #252 – **CONFIDENTIAL** KN3-011 Attachment 252_6.a_ BK176 Gen PM
- Attachment #253 – **CONFIDENTIAL** KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2
- Attachment #254 – **CONFIDENTIAL** KN3-011 Attachment 254_6.a_BK176 GeneratorPM
- Attachment #255 – KN3-011 Attachment 255_6.a_ CH 032 2019 service
- Attachment #256 – KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL
- Attachment #257 – KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT
- Attachment #258 – KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL
- Attachment #259 – KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE
- Attachment #260 – KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023
- Attachment #261 – KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023
- Attachment #262 – KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024
- Attachment #263 – KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE
- Attachment #264 – KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20
- Attachment #265 – KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20
- Attachment #266 – **CONFIDENTIAL** KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0
- Attachment #267 – **CONFIDENTIAL** KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0
- Attachment #268 – KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE
- Attachment #269 – KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023
- Attachment #270 – **CONFIDENTIAL** KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019

- Attachment #271 – **CONFIDENTIAL** KN3-011 Attachment 271_6.a_ CH 032 Genset
- Attachment #272 – KN3-011 Attachment 272_6.a_ CH 032 Genset2021services
- Attachment #273 – **CONFIDENTIAL** KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- Attachment #274 – KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- Attachment #275 – KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- Attachment #276 – KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- Attachment #277 – **CONFIDENTIAL** KN3-011 Attachment 277_6.a_ CH 032 PM
- Attachment #278 – **CONFIDENTIAL** KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- Attachment #279 – **CONFIDENTIAL** KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- Attachment #280 – **CONFIDENTIAL** KN3-011 Attachment 280_6.a_ CH 032 waste
- Attachment #281 – KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- Attachment #282 – KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- Attachment #283 – KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- Attachment #284 – KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- Attachment #285 – **CONFIDENTIAL** KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- Attachment #286 – **CONFIDENTIAL** KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- Attachment #287 – **CONFIDENTIAL** KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- Attachment #288 – **CONFIDENTIAL** KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- Attachment #289 – **CONFIDENTIAL** KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- Attachment #290 – **CONFIDENTIAL** KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- Attachment #291 – KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- Attachment #292 – KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- Attachment #293 – KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- Attachment #294 – KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- Attachment #295 – KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- Attachment #296 – KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- Attachment #297 – KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- Attachment #298 – KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- Attachment #299 – KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- Attachment #300 – KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- Attachment #301 – KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- Attachment #302 – KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- Attachment #303 – KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- Attachment #304 – **CONFIDENTIAL** KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- Attachment #305 – **CONFIDENTIAL** KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_A
- Attachment #306 – KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- Attachment #307 – KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)

- Attachment #308 – KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- Attachment #309 – KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- Attachment #310 – **CONFIDENTIAL** KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- Attachment #311 – **CONFIDENTIAL** KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- Attachment #312 – KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- Attachment #313 – KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- Attachment #314 – **CONFIDENTIAL** KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- Attachment #315 – KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- Attachment #316 – KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- Attachment #317 – **CONFIDENTIAL** KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- Attachment #318 – **CONFIDENTIAL** KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024
- Attachment #319 – KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020
- Attachment #320 – KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24
- Attachment #321 – KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22
- Attachment #322 – KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22
- Attachment #323 – KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22
- Attachment #324 – **CONFIDENTIAL** KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024
- Attachment #325 – KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST
- Attachment #326 – **CONFIDENTIAL** KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1
- Attachment #327 – KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020
- Attachment #328 – **CONFIDENTIAL** KN3-011 Attachment 328_6.a_ WLK 001 122035IR
- Attachment #329 – KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190
- Attachment #330 – **CONFIDENTIAL** KN3-011 Attachment 330_6.a_ WLK 001 150957ir
- Attachment #331 – **CONFIDENTIAL** KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322
- Attachment #332 – **CONFIDENTIAL** KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231
- Attachment #333 – **CONFIDENTIAL** KN3-011 Attachment 333_6.a_ WLK 001.PDF
- Attachment #334 – **CONFIDENTIAL** KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021
- Attachment #335 – **CONFIDENTIAL** KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023
- Attachment #336 – KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC
- Attachment #337 – **CONFIDENTIAL** KN3-011 Attachment 337_6.d.ii_Chico Generators
- Attachment #338 – **CONFIDENTIAL** KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator
- Attachment #339 – **CONFIDENTIAL** KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator

- **Attachment #340 – KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS**
- **Attachment #341 – KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost**
- **Attachment #342 – CONFIDENTIAL KN3-011 Attachment 342_4.f**
- **Attachment #343 – CONFIDENTIAL KN3-011 Attachment 343_4.f.i**
- **Attachment #344 – CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK**
- **Attachment #345 – CONFIDENTIAL KN3-011 Attachment 345_4.f.iii_BKNG**
- **Attachment #346 – KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

vibrations typically indicate problems with the pump downhole. If not addressed, this will eventually lead to premature equipment failure.

- **132243 – SLN 067-01 has a known motor overheating issue. Excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. [See "CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District"]**

g. Does Cal Water have warranties with pumping equipment vendors or manufacturers that potentially apply in cases where the pump fails while still in "excellent" or "good" condition?
Response: Manufacturer typically provide only a 1 year warranty if the pump was pit tested prior to release. The warranty only covers manufacturing defects such as the pump not meeting specification parameters. Operational failures in which efficiency falls are not covered by warranty.

h. For any pump replacement projects (e.g.,PID 132161, PID 132151, PID 132112, PID 132223, PID 133256, PID 132248, PID 132251, PID 132254) with a Last Pump Date before 2022 why does the pumping equipments need to be replaced in the 2024 GRC if it has not been pumped since 2022?
Response: 'Last Pump Date' refers to the year in which the hydraulic performance test was performed, not when the pump was last operated. Cal Water's Hydraulic Testing Program performs test pumps on an annual or bi-annual basis depending on horsepower. Refer to Section 4 – 'Failure Modes and Condition Assessment - Low OPE' on page 9 of 12 of "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan".

i. Are any of the 88 pump units listed in Attachment B associated with "standby" or "inactive" stations?
Response: None of the pump units listed in Attachment B are designated as "standby" or "inactive." However, VIS 201-01 (132255) is actually a typo, and the correct location should be VIS 201-02, which is active and requires replacement due to low operational efficiency (OPE).

j. Has Cal Water experienced a supply chain and/or labor issues with pump and motor replacements for planned and unplanned projects? If so, what is the purchase order lead time?
Response: Current market conditions do not indicate supply chains issues with procuring new pump and motor equipment. Typical lead times on new pumping equipment range from 4-to- 22 weeks depending on the style of pump.
Contactor labor availability is limited but not unusual due to the high impact market of this industry.

k. For the 88 pumps to be replaced, please populate the attached Excel file labeled "Attachment 1-Pumps and Motor", Tab "Requested Replacement." Please provide a breakdown of the average cost of the replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: See filled out "Requested Replacement" Tab under "KN3-011

Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors". Cal Water has also provided the cost catalog supporting documentation for its unit costs for well pumps and booster pumps. Please refer to the following attachments:

- **KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **CONFIDENTIAL KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **KN3-011 Attachment 58_1.k_C.7-3 111-162062**

- KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data
- KN3-011 Attachment 60_1.k_C.7-3 114-152172
- KN3-011 Attachment 61_1.k_C.7-3 116-134003
- KN3-011 Attachment 62_1.k_C.7-3 116-152438A
- KN3-011 Attachment 63_1.k_C.7-3 116-152438B
- KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data
- KN3-011 Attachment 65_1.k_C.7-3 123-158159
- KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data
- KN3-011 Attachment 67_1.k_C.7-4 101-161192
- KN3-011 Attachment 68_1.k_C.7-4 103-139232
- KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data
- **CONFIDENTIAL** KN3-011 Attachment 70_1.k_C.7-4 108-133173
- KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data
- KN3-011 Attachment 72_1.k_C.7-4 111-153636
- KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data
- KN3-011 Attachment 74_1.k_C.7-4 114-152770
- KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data
- KN3-011 Attachment 76_1.k_C.7-4 116-145345
- KN3-011 Attachment 77_1.k_C.7-4 118-163640
- KN3-011 Attachment 78_1.k_C.7-4 119-136664
- KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data
- KN3-011 Attachment 80_1.k_C.7-4 128-159233
- KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data
- KN3-011 Attachment 82_1.k_C.7-5 102-137283
- KN3-011 Attachment 83_1.k_C.7-5 113-150270
- KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data
- KN3-011 Attachment 85_1.k_C.7-5 114-150819
- KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data
- KN3-011 Attachment 87_1.k_C.7-6 101-157160
- KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data
- KN3-011 Attachment 89_1.k_C.7-6 102-153268
- KN3-011 Attachment 90_1.k_C.7-7 102-148376
- KN3-011 Attachment 91_1.k_C.5 Well Pump
- KN3-011 Attachment 92_1.k_C.5-11 120-137793
- KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data
- KN3-011 Attachment 94_1.k_C.5-11 120-143709

- KN3-011 Attachment 95_1.k_C.5-11 120-143711
- KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data
- KN3-011 Attachment 97_1.k_C.5-11 120-163217
- KN3-011 Attachment 98_1.k_C.5-11 120-165911
- KN3-011 Attachment 99_1.k_C.5-11 120-169118
- KN3-011 Attachment 100_1.k_C.5-11 128-145221
- KN3-011 Attachment 101_1.k_C.5-13 104-136978
- KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data
- KN3-011 Attachment 103_1.k_C.5-13 111-140907

- KN3-011 Attachment 104_1.k_C.5-14 120-132879
- KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data
- KN3-011 Attachment 106_1.k_C.5-14 120-159181
- KN3-011 Attachment 107_1.k_C.5-14 120-149719
- KN3-011 Attachment 108_1.k_C.5-15 120-150618
- KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data
- KN3-011 Attachment 110_1.k_C.5-15 134-160056
- KN3-011 Attachment 111_1.k_C.5-16 128-141937
- KN3-011 Attachment 112_1.k_C.5-2 101-138075
- KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data
- KN3-011 Attachment 114_1.k_C.5-2 120-143426
- KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data
- KN3-011 Attachment 116_1.k_C.5-3 120-152749
- KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data
- KN3-011 Attachment 118_1.k_C.5-4 120-147114
- KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data
- KN3-011 Attachment 120_1.k_C.5-5 114-132921
- KN3-011 Attachment 121_1.k_C.5-5 117-136325
- KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data
- KN3-011 Attachment 123_1.k_C.5-5 119-142076
- KN3-011 Attachment 124_1.k_C.5-5 120-144864
- KN3-011 Attachment 125_1.k_C.5-5 120-152746
- KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data
- KN3-011 Attachment 127_1.k_C.5-5 120-152747
- KN3-011 Attachment 128_1.k_C.5-5 120-152748
- KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data
- KN3-011 Attachment 130_1.k_C.5-5 120-153531
- KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data
- KN3-011 Attachment 132_1.k_C.5-5 120-156680
- KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data
- KN3-011 Attachment 134_1.k_C.5-5 120-159180
- KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data
- KN3-011 Attachment 136_1.k_C.5-5 120-160355
- KN3-011 Attachment 137_1.k_C.5-5 120-163022
- KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data
- KN3-011 Attachment 139_1.k_C.5-5 120-163642
- KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data
- KN3-011 Attachment 141_1.k_C.5-5 120-163648
- KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data
- KN3-011 Attachment 143_1.k_C.5-6 120-152160
- KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data
- KN3-011 Attachment 145_1.k_C.5-8 120-143244
- KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data
- KN3-011 Attachment 147_1.k_C.5-8 120-152745
- KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data
- KN3-011 Attachment 149_1.k_C.5-9 102-151068

- **KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **KN3-011 Attachment 153_1.k_C.5-9 120-144028**

An explanation of how to read the cost catalog workbook was provided on slide 4 of the common plant tour presentation to Cal Advocates on Sept 3rd, 2024.
~~**To be provided in a subsequent response.**~~

l. Please use the attached Excel file Attachment 1-Pump and Motor, Tab "Historical Replacement" to assist in providing the historical replacements from 2014 to November 30th, 2024. Please provide a breakdown of the average cost of the replacements, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as the general ledger, vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: Please find "Historical Replacement" Tab under "KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors"
~~**To be provided in a subsequent response.**~~

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: Please see tab Historical CPC Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS".
    ~~**To be provided in a subsequent response.**~~

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: The unit costs for the proposed cathodic protection projects in this rate case were derived from a vendor quote. Please see tab Future CPS Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS". Please refer to "KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost" for supporting evidence.
    ~~**To be provided in a subsequent response.**~~

g. Are any of the CPS to be replaced associated with “standby” or “inactive” stations?
Response: No.

3. Refer to project justification book "Common Plant Overview_2024_Final" Section Control Valve Overhaul and Replacement (p. 304-306).

   a. Please populate the risk assessment matrix using attached Excel file Attachment 3-Control Valve Overhaul and Replacement," tabs "Overhaul Rating" and "Replacement Rating" to provide the detailed breakdown.
   Response: Cal Water has modified its criticality analysis from what was submitted in the 2018 GRC filing and no longer records and analyzes the criticality of assets using the list shown in the "Overhaul Rating" and "Replacement Rating" tabs. The results from that analysis were recorded in Cal Water's Asset Management database; however, they are not consistent with our current practice as defined in the Strategic Asset Management Plan. For the valves where we have recorded the data, we have adjusted the criticality scores to be in line with our current program as defined in the Strategic Asset Management Plan. Please see "KN3-11 Attachment 15_3.a_Control Valve Asset Data". Cal Water is actively working on updating its criticality scores for all assets.
   Cal Water has not developed its list of valves that are planned for overhaul or replacement in the 2025 to 2027 years. Those are normally issued at the beginning of the year from Cal Water's asset management system based on the schedule shown in the asset plan.

   b. Using Cal Water's Control Valve risk assessment matrix, what is the lowest possible ranking score?
   Response: In terms of risk of failure, or criticality, 5.

   c. Using Cal Water's Control Valve risk assessment matrix, what is the highest possible ranking score?
   Response: In terms of risk of failure, or criticality, 1

   d. Is risk of failure to critical customers considered in the control valve risk assessment matrix?
   Response: No.

   e. If risk of failure to critical customers is considered in the control valve risk assessment matrix, please describe how that risk is factored into the final risk score. Please describe in detail (numerically and in words), where applicable.
   Response: Please refer to the response to 3.d.

   f. Provide a breakdown of the total number of control valves in each ranking across Cal Water's entire water system, from highest possible rank to lowest possible rank in Excel file "DR KN3-011 Attachment 3," tab "Total Ranking."
   Response: The condition scoring records are not available and are being built in Q1 2025. The 5-year overhaul cycle is used to assess the serviceability of the valves and they are replaced as necessary.

   g. Provide the annual number of control valve replacements and overhauls performed for each district for the past five years (2020-2024) in Excel file "DR KN3-011 Attachment 3." Please use tab "Historical Overhaul" for control valve overhauls and tab "Historical

Replacement" for control valve replacements.
Response : Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

h. Provide the annual number of control valve replacements and overhauls performed for each district between 2025-2027 in Excel file "DR KN3-011 Attachment 3." Please use tab "Future Overhaul" for control valve overhauls and tab "Future Replacement" for control valve replacements.
Response: Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

i. Refer to the project description concerning "Payback Period" under the category "Financial Efficiency." Page Common Plant PJ – 305 states "[i]f the old valve was to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures."

i. Describe the methodology Cal Water used to calculate the potential cost of a control valve failure event.
Response: Typically, Cal Water does not track the cost of repair for each incident. However, there have been incidents where Cal Water paid damage claims due to control valve failures. While not typical, one claim was as high as $1.9M due to a control valve failure that flooded a building.

ii. Is the potential cost of a control valve failure event assumed to be the same for every control valve?
Response: In our current model, yes.

iii. If the estimated potential cost is not the same for every potential control valve failure, please describe in detail the factors that influence the estimated cost.
Response: Please refer to the response to 3.i.ii.

iv. In the last five years (2019- 2023), please provide the actual recorded cost of control valve failures.
Response: Cal Water does not track the costs for control valve failures in any one account. Damage claims are also not normally classified by the cause of failure; however, Cal Water has attributed the event above to a control valve failure.

v. Please explain in detail how Cal Water determines the cost of overhaul and replacement of control valve failures is less cost effective than performing a regular overhaul and replacing older control valves. Please also provide evidence to support the analysis. This includes but is not limited to any vendor invoices, as-built, bids, proposal, or internal communications.
Response: Cal Water determines if a valve can be overhauled first prior to planning a replacement. In the common plant justification on page 306, Cal Water states "*Cal Water will try to overhaul all valves where the body of*

the valve is in good condition, the valve meets certain minimum requirements such as being epoxy coated, the valve is in a suitable location where it can be easily maintained, and the vault is sized properly where it can be maintained. If the valve does not meet these requirements and is in need of repair, Cal Water will evaluate if a replacement project will improve these conditions significantly before planning a replacement project. Otherwise, Cal Water will plan to overhaul the valve and plan for a future redesign of the system to more permanently resolve the issues." **It is the valve's condition that determines if it can be overhauled, not the cost effectiveness.**

j. Are any of the control valve overhaul and replacement associated with "standby" or "inactive" stations?
Response: No.

4. Refer to project justification book "Common Plant Overview_2024_Final" Service Line Replacement Program (pp. 370-380):

   a. Please provide the Excel file for all figures and tables in the referenced section for Service Line Replacement Program.
   Partial Response #2: Please see "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves" , "KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material" , and "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for all figures and tables and supporting documents referenced in the Service Line Replacement Program justification.

   Please note the estimated number of services in the final Common Plant justification on page Common Plant PJ-381 was revised slightly down in the year 2027 from the originally analyzed numbers and costs for 2027 presented in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve", which was compiled in December 2023. Originally, the analysis in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve" in tab "Forecast & Alt Comparison" had assumed $6,747,425 (2023 dollars) in the year 2027 amounting to 392 services replaced at $17,200 each (in 2023 dollars). This was ultimately revised down in the final filing to $6,582,697 (2023 dollars) or $7,266,066 (escalated to 2027 dollars at 2.5%), amounting to approximately 383 service replacements at $17,200 each (in 2023 dollars).
   ~~**To be provided in a subsequent response.**~~

   b. Reference Figure 7 on Common Plant PJ-377. Please provide the estimated work schedule for the number of annual service line replacements from 2025-2027. Please provide supporting documents for the proposed replacement schedule, such as any vendor invoices, bids, proposal, or internal communications.
   Partial Response #2: Cal Water is proposing to complete 387, 384, and 383 services in years 2025, 2026, and 2027 respectively. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE), see "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for additional details.
   ~~**To be provided in a subsequent response.**~~

   c. Cal Water states that its Bakersfield District "owns and is responsible for approximately 76,100 services within its service boundaries" (p. 370). Please explain why Cal Water considers the Service Line Replacement Program to be a common plant project, given that it is limited to the Bakersfield How does Cal Water define common plant project when it affects only one district?
   Partial Response #2: Cal Water considers this to be a program appropriately covered in Common Plant because this program will continue over time and may be needed in other districts in the future.

   Similar to other programs in the Common Plant book, the success of this program will be evaluated based on overall system metrics, specifically break rate of service lines. If those metrics change over time, the program could be ramped up or down in Bakerfield, or expanded to other districts, in response.
   .

~~**To be provided in a subsequent response.**~~

i. Does Cal Water have any other proposed annual service line replacement for other districts besides Bakersfield?
Partial Response #2: Not at this time.

~~**To be provided in a subsequent response.**~~

d. Cal Water states that "[to] offset this increase in program cost, the [Bakersfield] District will be reducing its pipeline replacement program from 0.7% during the 2021 GRC period to 0.5% for the 2024 GRC period only" (p. 370).

i. Please show how this reduction is done in the RO model and provide supporting analysis for this cost calculation.
Partial Response #2: This reduction was done by simply entering in the dollars for replacing 0.5% of Bakersfield's pipelines into the ROM instead of 0.7% For example, in 2025 Cal Water proposes to replace 25,643 lineal feet of main at a cost of about $595/LF, and the proposed direct cost is the product of these two values plus contingency. Had Cal Water proposed a rate of 0.7% instead, the total footage would have been closer to 36,000 LF at a cost of $595/LF plus contingency. This difference (36,000 – 25,600) x $595 x (1 + 10%) is roughly $6.8M. The proposed direct cost of the 2025 Service Line replacements is $6.99M.

~~**To be provided in a subsequent response.**~~

ii. Has Cal Water performed a cost-benefit analysis of the reduction in its Pipeline Replacement Program to account for the Service Replacement Program?
Partial Response #2: Yes, Cal Water conducted a cost-benefit analysis which demonstrated that reducing the MRP program and increasing the Service Replacement Program would result in net savings of $1.8 million in capital investment. Therefore, this was determined to be the most prudent course of action for customers and the district. Please see "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details.

~~**To be provided in a subsequent response.**~~

e. Cal Water states that Alternative 2: Replace Services Reactively & Ad hoc includes managing the service line as customers experience an issue (pp. 377-378).

Please provide a cost benefit analysis comparing Alternative 2's management of service lines as customers experience issues to the proposed Alternative 3: Programmatic Service Line Replacement annual replacement method.
Partial Response #2: This analysis was presented in Table 1 on page Common Plant PJ-380 which compared the total cost over the next 25 years between Alternative # 2 and Alternative # 3. It was ultimately determined that Alternative # 3 had a reduced capital investment cost, which would save customers approximately $ 28.3 million dollars over the next 25 years, demonstrating the value of proactively planned replacement over deferred and reactive management. Additional details on this cost analysis are presented in the Excel Workbook entitled "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves".
~~**To be provided in a subsequent response.**~~

f. Cal Water states that there has been an increase in plastic service line failures (p. 373). Please provide a list of plastic service line failures in the Bakersfield District from 2015-2024, with supporting documentation such as vendor invoices, as-built, bids, proposals, or internal communications.
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 342_4.f" for the list of service line failures under the tab "Service Leaks BK". This list includes all plastic service lines which can be filtered in Column I by selecting FX, HDPE, PE, PL, PP, and PVC materials.

5. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks involving plastic service lines in the last five years (2020-2024).
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 343_4.f.i" for all the service line leak claim data which represents customers who experienced flooding or other property damage due to a leak between 2020-2024. Cal Water does not track the service line leak claims by material type. All service line failures shown in "CONFIDENTIAL KN3-011 Attachment 342_4.f" represent situations where customers experienced the inconvenience of having their water shut off so Cal Water could repair an unplanned service leak.

~~**To be provided in a subsequent response.**~~

6. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks NOT involving plastic service lines in the last five years (2020-2024).
Partial response #3: Please refer to the response to 4.f.i. Cal Water does not track the service line leak claims by material type. All service line failures shown in "CONFIDENTIAL KN3-011 Attachment 342_4.f" represent situations where customers experienced the inconvenience of having their water shut off so Cal Water could repair an unplanned service leak. This list includes all non-plastic service lines which can be filtered in Column I by selecting AC, BR, CI, CU, DI, GALV, OD STL, OTH, SS GALV, STL, UNK materials.

~~**To be provided in a subsequent response.**~~

7. Please provide 1) the average concentration of chlorine disinfectant to which plastic service lines in the Bakersfield District would have ongoing exposure, and 2) if known, average seasonal temperature range of water flowing to Bakersfield District service lines.
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK" and "CONFIDENTIAL KN3-011 Attachment 345_4f.iii_BKNG" for the free chlorine residual and temperature results of all the distribution sample points for the past 10 years in the Bakersfield and Bakersfield North Garden Systems. Cal Water does not track the nearby sample point water qualities upon each failure and cannot correlate the service line failures to a specific sample point.

~~**To be provided in a subsequent response.**~~

a. Please provide the historical service line replacement and cost data for the Bakersfield District from 2014 – 2024, as requested in Attachment 5, Service Replacement, tabs "Summary of Service Replaced" and "Plastic Service Replaced"
Partial response #3: Please refer to "KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement" for the summary of all service lines replaced under the tab "Summary of Service Replaced". Cal Water does not track the cost and number of services replaced by material type.
To be provided in a subsequent response.

b. Of the 76,100 service connections in the Bakersfield District, how many or what percentage of the service lines does Cal Water propose to replace in its Alternative 3 Programmatic Replacement from 2025-2027? For each year, please provide the number of services to be replaced, cost per replacement, and total cost.
Partial Response #2: Please see the following table.

Year	Number of Services to be Replaced	Cost Per Replacement (Escalated)	Total Costs (Escalated)
2025	387	$18,058.38	$6,988,592.52
2026	384	$18,539.90	$7,119,321.72
2027	383	$18,971.45	$7,266,065.84

~~**To be provided in a subsequent response.**~~

c. For responses to questions 4.h and 4.i, please provide a cost breakdown that includes cost of materials, labor, and equipment. Please provide evidence supporting the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
Partial Response #2: Please see Excel Workbook entitled "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details prepared by our profession engineering consultant. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE).
~~**Response to be provided.**~~

d. Please provide a detailed explanation for any increase or decrease in the cost-of-service line replacement between the periods 2021-2024 and 2025-2027.
Partial Response #2: Unit costs for proactive replacement of services in the 2024 GRC were based on 2023 estimated costs and escalated to the applicable year.
~~**To be provided in a subsequent response.**~~

8. Regarding the Motor Control Center (MCC)/panelboard replacements Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pp. 423-424):

    a. Provide the inspection and maintenance records in Excel format for the existing panelboards for the past 10 years (2015 - November 30, 2024). If inspection/maintenance records are not available, provide an explanation.
    Partial Response #2: Please see list of inspection records available for the MCCs proposed for replacement:
        - **KN3-011 Attachment 158_5.a_BG-002 2021**
        - **KN3-011 Attachment 159_5.a_BG-040 2020**
        - **KN3-011 Attachment 160_5.a_BG-040 2022**
        - **KN3-011 Attachment 161_5.a_CH-005 2016**
        - **KN3-011 Attachment 162_5.a_CH-005 2019**
        - **KN3-011 Attachment 163_5.a_CH-005 2023**
        - **KN3-011 Attachment 164_5.a_CH-018 2015**
        - **KN3-011 Attachment 165_5.a_CH-018 2019**
        - **KN3-011 Attachment 166_5.a_CH-065 2016**
        - **KN3-011 Attachment 167_5.a_CH-065 2024**
        - **KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
        - **KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
        - **KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
        - **KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
        - **KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
        - **KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
        - **KN3-011 Attachment 174_5.a_DOM-279 well 2018**
        - **KN3-011 Attachment 175_5.a_DOM-279 well 2024**
        - **KN3-011 Attachment 176_5.a_KRV-009 2015**
        - **KN3-011 Attachment 177_5.a_KRV-009 2022**
        - **KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
        - **KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
        - **KN3-011 Attachment 180_5.a_LAS-013 2017**
        - **KN3-011 Attachment 181_5.a_LAS-013 2022**
        - **KN3-011 Attachment 182_5.a_LAS-017 2018**
        - **KN3-011 Attachment 183_5.a_LAS-017 2022**
        - **KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
        - **KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
        - **KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
        - **KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
        - **KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
        - **KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
        - **KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
        - **KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
        - **KN3-011 Attachment 192_5.a_LAS-113 2019**
        - **KN3-011 Attachment 193_5.a_LAS-113 2022**
        - **KN3-011 Attachment 194_5.a_LAS-121 2016**
        - **KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
        - **KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
        - **KN3-011 Attachment 197_5.a_LIV-020 2017 2**
        - **KN3-011 Attachment 198_5.a_LIV-020 2017**

- **KN3-011 Attachment 199_5.a_LIV-020 2023**
- **KN3-011 Attachment 200_5.a_LIV-024 2017**
- **KN3-011 Attachment 201_5.a_LIV-024 2021**
- **KN3-011 Attachment 202_5.a_MRL-015 2017**
- **KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **CONFIDENTIAL KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **CONFIDENTIAL KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **KN3-011 Attachment 213_5.a_SC-114 2015**
- **KN3-011 Attachment 214_5.a_SC-114 2018**
- **KN3-011 Attachment 215_5.a_SC-114 2023**
- **KN3-011 Attachment 216_5.a_SLN-019 2020**
- **KN3-011 Attachment 217_5.a_SLN-060 2019**
- **KN3-011 Attachment 218_5.a_SLN-060 2023**
- **KN3-011 Attachment 219_5.a_SLN-106 2019**
- **KN3-011 Attachment 220_5.a_SM-029 2015**
- **KN3-011 Attachment 221_5.a_SM-029 2019**
- **KN3-011 Attachment 222_5.a_SM-029 2021**
- **KN3-011 Attachment 223_5.a_SM-029 2024**
- **CONFIDENTIAL KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **CONFIDENTIAL KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **CONFIDENTIAL KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **KN3-011 Attachment 228_5.a_STK-036 2016**
- **KN3-011 Attachment 229_5.a_STK-036 2019**
- **KN3-011 Attachment 230_5.a_STK-036 2023**
- **KN3-011 Attachment 231_5.a_STK-060 2017**
- **KN3-011 Attachment 232_5.a_STK-060 2023**
- **KN3-011 Attachment 233_5.a_WLK-001 2017**
- **KN3-011 Attachment 234_5.a_WLK-001 2020**
- **KN3-011 Attachment 235_5.a_WLK-001 2023**
- **KN3-011 Attachment 236_5.a_WLK-010 2016**
- **KN3-011 Attachment 237_5.a_WLK-010 2019**
- **KN3-011 Attachment 238_5.a_WLK-010 2024**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance and repair costs (general ledger in Excel format) for the past 10 years (2015 - November 30, 2024) including all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not track maintenance and repair costs associated solely with the electrical equipment. Those costs are combined with other

pumping equipment repair work in a single account.
~~**To be provided in a subsequent response.**~~

9. Regarding the proposed Generator Replacement Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pg. PJ-453 to PJ-454):

    a. In Excel format, provide the inspection and maintenance records, including the CPUC ranking and assement matrix, for the existing generators for the past 10 years (2015-November 30, 2024). If inspection/maintenance records are not available, provide an explanation. Please identify the proposed generator replacement in 2024 GRC with their PID.
    Partial Response #2: Please see below the list of inspection and maintenance records for the generators proposed for replacement. Please see the "KN3-011 Attachment 239_6.a_Generator Condition Assessment" spreadsheet for generators condition assessment.
        - **CONFIDENTIAL KN3-011 Attachment 240_6.a_ BK 162 2013**
        - **CONFIDENTIAL KN3-011 Attachment 241_6.a_ BK 162 Gen service**
        - **KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
        - **CONFIDENTIAL KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
        - **CONFIDENTIAL KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
        - **CONFIDENTIAL KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
        - **CONFIDENTIAL KN3-011 Attachment 246_6.a_ BK 162 PM**
        - **KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
        - **CONFIDENTIAL KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
        - **CONFIDENTIAL KN3-011 Attachment 249_6.a_ BK162Genset**
        - **CONFIDENTIAL KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
        - **CONFIDENTIAL KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
        - **CONFIDENTIAL KN3-011 Attachment 252_6.a_ BK176 Gen PM**
        - **CONFIDENTIAL KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
        - **CONFIDENTIAL KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
        - **KN3-011 Attachment 255_6.a_ CH 032 2019 service**
        - **KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
        - **KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
        - **KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
        - **KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
        - **KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
        - **KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
        - **KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
        - **KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
        - **KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
        - **KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
        - **CONFIDENTIAL KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
        - **CONFIDENTIAL KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
        - **KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
        - **KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**

- **CONFIDENTIAL** KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019
- **CONFIDENTIAL** KN3-011 Attachment 271_6.a_ CH 032 Genset
- KN3-011 Attachment 272_6.a_ CH 032 Genset2021services
- **CONFIDENTIAL** KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- **CONFIDENTIAL** KN3-011 Attachment 277_6.a_ CH 032 PM
- **CONFIDENTIAL** KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- **CONFIDENTIAL** KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- **CONFIDENTIAL** KN3-011 Attachment 280_6.a_ CH 032 waste
- KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- **CONFIDENTIAL** KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- **CONFIDENTIAL** KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- **CONFIDENTIAL** KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- **CONFIDENTIAL** KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791

- **CONFIDENTIAL KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1**
- **KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24**
- **KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020**
- **CONFIDENTIAL KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23**
- **CONFIDENTIAL KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024**
- **KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **CONFIDENTIAL KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **CONFIDENTIAL KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **CONFIDENTIAL KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **CONFIDENTIAL KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **CONFIDENTIAL KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **CONFIDENTIAL KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **CONFIDENTIAL KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **CONFIDENTIAL KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance, repair, and replacement costs (general ledger) of Cal Water's generators for the past 10 years (2015 - November 30, 2024). This includes all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not separately track maintenance and repair costs for generators. These costs are combined with other pumping equipment.
~~**To be provided in a subsequent response.**~~

c. For the following projects, if Cal Water is proposing a fixed generator. Please provide a detailed cost-benefit analysis and explanation for the replacement to be a fixed generator rather than a portable generator for the following projects and any new proposed generator projects.
Partial Response #2: Cal Water did not perform a detailed cost-benefit analysis for the generator replacements.

The generator at BK 162 is proposed as a permanent replacement because the facility is critical to the operation of the system. The station is used to pump purchased water from KCWA into multiple zones in the northeast part of the BK system. The current permanent generator failed in 2024.

The generator at BK 176 is proposed as a permanent replacement because the facility serves a pressure system. Backup power needs to be readily available in order to continually supply the pressure system. Cal Water could not stage a portable booster pump at that location permanently.

The generator at CH 032 is proposed as a permanent generator to replace the existing permanent fixed generator due to its current condition. This well supplies a pressure system and in the event of a widespread power outage, permanent generators are needed to supply water to the system to avoid low pressure and boil water notices.

The generator at CH 66 is proposed as a permanent generator because the facility supplies a pressure system. In the event of a power failure, backup power needs to be immediately available to avoid a loss of pressure to the system. Cal Water could not permanently stage a portable.
~~**To be provided in a subsequent response.**~~

PID	District	Project Name	Project Locations	Direct Costs
132561	Bakersfield	BK 2026 - Genset Replacements	BK 162 Genset Replacement	$2,307,426.75
			BK 176 Genset Replacement	
132564	Chico	CH 2026 - Genset Replacement	CH 032 Genset Replacement	$1,413,512.48
			CH 066 Genset Replacement	

d. Please provide a list of all proposed generator replacements in each district, in Excel format. Please include the following information:

i. Detailed explanation of the need for the proposed generator or MCC replacement.
Partial Response #2: Please see attached spreadsheet "KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC".

~~**To be provided in a subsequent response.**~~

ii. Whether the proposed generator is in a High Fire Threat District, and if so, a map showing the location of the proposed generator.
Partial Response #2: See attachments "CONFIDENTIAL KN3-011 Attachment 337_6.d.ii_Chico Generators", "CONFIDENTIAL KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator", and "CONFIDENTIAL KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator" for the map of generators in high fire threat areas. Note that Salinas Hills is a high fire threat area; however, the Salinas system is not in a high fire threat area.

~~**To be provided in a subsequent response.**~~

iii. Schedule for generator purchase and completion of installation.
Partial Response #2:

	Purchase		Install	
Project	Month	Year	Month	Year
BK 162	8	2025	4	2027
BK 176	8	2025	4	2027
Ch 032	8	2025	5	2027
CH 066	8	2025	5	2027
DOM 232	9	2025	6	2027
SLN 016	8	2025	5	2027
SLN 033	8	2025	5	2027
WLK 001	8	2025	4	2027

~~**To be provided in a subsequent response.**~~

e. Please refer to D. 24-03-042 for the following questions:

i. Cal Water proposed to install a permanent generator at Station 23 in the Visalia District under PID 123954. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is in the construction phase. All permits have been approved, and equipment has been procured. Project is estimated to be complete in the first quarter of 2025.

~~**To be provided in a subsequent response.**~~

ii. Cal Water proposed to replace a generator at Station 71 in the Stockton District under PID 124311. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is currently in preliminary design. Equipment will be procured at a later date.

~~**To be provided in a subsequent response.**~~

END PARTIAL RESPONSE #3

Attachment B - 2024 GRC Pump Replacement Project List

PID	Column2	Column1	Location	Horsepower	Year Installed	OPE Project	Previous OPE	PUC Ranking	Last Pump Date	Recent OPE	PUC Ranking2	Last Pump Date2	Non-OPE Projects	Failure Mode*
132105	2025	BAY	BAY SSF-2-C Pump Replacement	40	2013 Replace Pump & Motor		75.0	Excellent	2018	59.1	Fair	2022	X	FUNC - Equipment Failure
132111	2027	BAY	BAY SM-12-E Pump Replacement	5	2011 Original Pump	X	38.7	Poor	2021	25.5	Poor	2022		
132108	2025	BAY	BAY SM-6-D Pump Replacement	40	1975 Original Pump	X	20.4	Poor	2021	48.0	Poor	2022		
132112	2027	BAY	BAY SC-114-B Pump Replacement	1	2014 Original Pump & Motor	X	13.2	Poor	2015	28	Poor	2018		
132117	2027	BAY	BAY SC-120-B Pump Replacement	15	1975 Original Pump	X	50.1	Poor	2021	33.4	Poor	2022		
132115	2025	BAY	BAY SSF-101-A Pump Replacement	30	2015 Replace Pump & Motor	X	56.9	Fair	2021	46.3	Poor	2022		
132116	2025	BAY	BAY SC-118-A Pump Replacement	100	2009 Replace Pump & Motor	X	50.1	Poor	2021	41.2	Poor	2022		
132132	2025	BK	BK 073-E Pump Replacement	40	2013 Replace Pump & Motor	X	47.6	Poor	2021	40.2	Poor	2022		
132106	2026	BAY	BAY SSF 5 A Pump Replacement	20	2012 Replace Pump & Motor	X	40.5	Poor	2021	46.5	Poor	2022		
132135	2026	CH	CH-65-1 Pump Replacement	150	2015 Replace Pump & Motor	X	65.3	Good	2021	54.2	Poor	2022		
132136	2026	DIX	DIX-10-A Pump Replacement	10	2012 Replace Pump & Motor	X	60.0	Good	2020	43.6	Poor	2022		
132137	2026	DIX	DIX-10-B Pump Replacement	15	2012 Replace Pump & Motor	X	61.4	Good	2020	39.5	Poor	2022		
132139	2026	DOM	DOM-277-01 Pump Replacement	100	2017 Replace Pump	X	67.5	Good	2019	35.2	Poor	2022		
132140	2026	DOM	DOM-277-A Pump Replacement	100	2001 Replace Pump & Motor	X	54.7	Poor	2019	23.9	Poor	2022		
132145	2024	ELA	ELA-023B Booster Replacement	75	2011 Replace Pump & Motor		64.5	Good	2020	67.1	Good	2022		
132148	2024	ELA	ELA-032C Booster Replacement	75	2018 Replace Pump & Motor			Poor						
132142	2027	ELA	ELA-10-03 Pump Replacement	150	2009 Replace Pump & Motor	X	53.0	Poor	2021	49.1	Poor	2022		
132143	2027	ELA	ELA 12 C Pump Replacement	40	2014 Replace Pump & Motor	X	55.0	Fair	2021	39.3	Poor	2022		
132147	2025	ELA	ELA-30-A Pump Replacement	25	2011 Replace Pump & Motor	X	14.0	Poor	2021	16.9	Poor	2022		
132149	2026	ELA	ELA-40-A Pump Replacement	15	1947 Original Pump & Motor	X				45.7	Poor	2022		
132151	2027	ELA	ELA 55 A Pump Replacement	75	2010 Replace Pump & Motor	X		Poor		51.7	Poor	2015		
132152	2027	ELA	ELA-59-A Pump Replacement	40	2018 Replace Pump & Motor	X	58.0	Fair	2021	33.1	Poor	2022		
132155	2026	KC	KC-10 A Pump Replacement	125	2006 Replace Pump & Motor	X	9.0	Poor	2020	15.5	Poor	2022		
132156	2027	KC	KC-13-1 Pump Replacement	75	2016 Replace Pump & Motor	X	59.0	Fair	2020	54.8	Poor	2022		
132157	2025	KC	KC-15-A Pump Replacement	3	2014 Original Pump & Motor	X	39.0	Poor	2020	38.3	Poor	2022		
132158	2025	KRV	KRV ONYX 1 1 Pump Replacement	7.5	2015 Replace Pump & Motor	X				16.0	Poor	2022		
132159	2027	KRV	KRV ONYX-2-1 Pump Replacement	15	*UNK* - Purchased, No Records	X				30.5	Poor	2022		
132161	2026	KRV	KRV ONYX-3-A Pump Replacement	10	2013 Replace Pump & Motor	X				20.5	Poor	2014		
132171	2025	KRV	KRV SMTN-15-A Pump Replacement	50	UNK - Purchased, No Records	X	19.8	Poor	2014	19.2	Poor	2022		
132172	2025	KRV	KRV SMTN-15-B Pump Replacement	50	UNK - Purchased, No Records	X	5.4	Poor	2014	27.7	Poor	2022		
132160	2027	KRV	KRV SMTN-2-15 Pump Replacement	5	No, UNK - Purchased, Records	X	29.6	Poor	2014	27.6	Poor	2022		
132173	2026	KRV	KRV UBOD-104-2 Pump Replacement	25	UNK - Purchased, No Records	X				40.3	Poor	2022		
132213	2026	LAS	LAS-7-E Pump Replacement	60	2012 Replace Pump & Motor	X	71.0	Excellent	2018	51.9	Poor	2022		
132167	2027	KRV	KRV MSHA-6-B Pump Replacement	20	UNKNOWN	X				24.2	Poor	2022		
132214	2025	LAS	LAS 27-1 Pump Replacement	75	2004 Replace Pump & Motor	X	57.0	Fair	2018	51.8	Poor	2022		
132215	2026	LAS	LAS-33-B Pump Replacement	20	2018 Replace Pump & Motor	X	32.0	Poor	2020	47.3	Poor	2022		
132221	2025	LAS	LAS-121-2 Pump Replacement	15	1994 Replace Pump & Motor	X				24.1	Poor	2022		
132218	2026	LAS	LAS-113-B Pump Replacement	10	1998 Replace Pump & Motor	X	35.7	Poor	2021	29.4	Poor	2022		
132216	2027	LAS	LAS-34-B Pump Replacement	125	2006 Replace Pump & Motor	X	65.9	Good	2021	55.4	Poor	2022		
132222	2026	LAS	LAS-123-1 Pump Replacement	50	2010 Replace Pump & Motor	X	47.0	Poor	2020	17.7	Poor	2022		
132223	2025	LIV	LIV 015 Replace Well Pump	60	1958 Original Pump & Motor	X	54.6	Fair	2011	57.8	Fair	2014		
132224	2026	UV	LIV-019-1 Well Pump Replacement	50	2009 Replace Pump & Motor	X				48	Poor	2019		
132226	2025	LIV	LIV 025-B Pump Replacement	30	1993 Replace Pump & Motor	X	69.4	Excellent	2020	59.0	Fair	2022		
132225	2026	LIV	LIV 020 Replace Well Pump	40	2016 Replace Pump & Motor	X	72.7	Excellent	2020	54.4	Fair	2022		
132227	2026	LIV	LIV-29-A Pump Replacement	7.5	2016 Replace Pump & Motor	X	50.2	Poor	2020	41.7	Poor	2022		

132228	2026	LIV	LIV-29-B Pump Replacement	7.5	2016 Replace Pump & Motor	X	47.3	Poor	2020	40.8	Poor	2022		
132230	2026	LIV	LIV-32-A Pump Replacement	10	2016 Replace Pump & Motor	X	19.1	Poor	2020	20.0	Poor	2022		
132232	2025	LIV	LIV-32-C Pump Replacement	10	2016 Replace Pump & Motor	X	13.2	Poor	2020	17.5	Poor	2022		
132219	2027	LAS	LAS-119-D Pump Replacement	25	1984 Replace Pump & Motor	X	51.0	Poor	2020	42.2	Poor	2022		
132231	2026	LIV	LIV-32-B Pump Replacement	10	2016 Replace Pump & Motor	X	13.6	Poor	2020	17.7	Poor	2022		
132235	2026	MRL	MRL-15-1 Pump Replacement	60		X	73.9	Excellent	2017	50.0	Poor	2022		
132233	2027	LIV	LIV-034 Pump Replacements (B,C,D)	B-40 C - 40 D - 40	UNK - Purchased, No Records 2014 Replace Pump & Motor	X		Poor		B - N/A C -N/A D - 13.6	B - N/A C- N/A D - Poor	B-N/A C-N/A D - 2022		
132236	2026	ORO	ORO-15-E Pump Replacement	40	1999 Replace Pump & Motor		75.1	Excellent	2020	75.8	Excellent	2022	X	FUNC - Equipment Failure
132239	2027	SLN	SLN-27-1 Pump Replacement	75	2016 Replace Pump & Motor		69.0	Excellent	2020	68.1	Good	2022	X	FUNC - Equipment Failure
132240	2025	SLN	SLN-32-1 Pump Replacement	60	2010 Replace Pump & Motor	X	49.0	Poor	2020	46.9	Poor	2022		
132242	2025	SLN	SLN-58-B Pump Replacement	10	2018 Replace Pump & Motor	X	49.7	Poor	2017	41.9	Poor	2022		
132241	2027	SLN	SLN-57-A Pump Replacement	20	2013 Replace Pump & Motor	X	63.6	Good	2017	45.6	Poor	2022		
132248	2025	SLN	SLN-304-A Pump Replacement	5	2015 Replace Pump & Motor	X	31.0	Poor	2020	31.0	Poor	2020		
132238	2026	SLN	SLN-21-1 Pump Replacement	100	2015 Rebuild Pump	X	58.0	Fair	2020	55.0	Poor	2022		
132244	2027	SLN	SLN-71-1 Pump Replacement	50	1999 Replace Pump & Motor	X	55.0	Fair	2020	50.9	Poor	2022		
132243	2026	SLN	SLN-67-1 Pump Replacement	200	2009 Replace Pump & Motor		70.0	Excellent	2021	70.0	Excellent	2022	X	FUNC - Equipment Failure
132245	2026	SLN	SLN 73-A Pump Replacement	7.5	2016 Replace Pump & Motor	X	17.6	Poor	2021	28.6	Poor	2022		
132246	2026	SLN	SLN-73-B Pump Replacement	7.5	2016 Replace Pump & Motor	X	34.0	Poor	2020	12.2	Poor	2022		
132249	2025	STK	STK-59-1 Pump Replacement	150	2012 Replace Pump & Motor		59.9	Fair	2021	69.1	Excellent	2022	X	OP - Excessive Sand
132250	2025	STK	STK-60-1 Pump Replacement	150	2014 Replace Pump & Motor		50.0	Poor	2020	55.8	Poor	2022	X	OP - Excessive Sand
132251	2027	VIS	VIS-15-1 Pump Replacement	50	1951 Original Pump & Motor	X	54.2	Fair	2019	46.0	Poor	2021		
132247	2026	SLN	SLN-73-E Pump Replacement	15	2016 Replace Pump & Motor	X	68.0	Excellent	2021	42.5	Poor	2022		
132254	2025	VIS	VIS-57-2 Pump Replacement	25	2016 Replace Pump & Motor	X	38	Poor	2020	32.0	Poor	2021		
132253	2026	VIS	VIS-32-1 Pump Replacement	60	2004 Replace Pump & Motor	X	61.0	Good	2020	51.3	Poor	2022		
132255	2025	VIS	VIS 201-1 Pump Replacement	30	UNKNOWN	X				53.2	Fair	2008		
132252	2027	VIS	VIS 023-1 Pump Replacement	75	2016 Replace Pump & Motor		69	Excellent	2020	67.5	Good	2022		
132256	2026	WIL	WIL-4-1 Pump Replacement	60	2016 Replace Pump & Motor	X	56.7	Fair	2020	52.4	Poor	2022		
133256	2027	RDV	RDV NH-201-A Pump Replacement	3	UNK - Purchased, No Records	X				23.2	Poor	2020		

WO Number	Completion Date	District Name	Station ID	Pump ID	Cost $ - Contractor	Cost $ - Labor	Cost $ - Total Cost	Age at Replacement	Planned or Non-Specific replacement?	Reason for replacement	Inactive or Standby Station?
126710	1/11/2024	AV - LEO	1	1	$ 14,199	$ 13,290	$ 35,131	UNKNOWN	129-129-NON-SPECIFIC	Failure	No
114875	8/30/2024	Bakersfield	140	1	$ 142,623	$ 16,198	$ 196,501	60.7	101-101-SPECIFIC	equipment aged and low OPE	No
116386	8/2/2024	Bakersfield	218	A	$ 31,747	$ 8,006	$ 49,430	43.6	101-101-SPECIFIC	Replace three membrane feed pumps at the NW WTP. Current pumps were installed in 2007 and make a noise similar to a	No
128883	8/2/2024	Bakersfield	218	D	$ 23,940	$ 4,139	$ 33,329	6.4	101-101-NON-SPECIFIC	Replace Pumping Equipment	No
131845	7/26/2024	Bakersfield	201	1	$ 129,508	$ 10,113	$ 166,203	27.8	101-101-NON-SPECIFIC	Pump Failed	No
115307	6/17/2024	Bakersfield	5	5	$ 135,264	$ 11,538	$ 185,977	42.6	101-101-SPECIFIC	equipment aged and low OPE	No
115417	5/29/2024	Bakersfield	216	D	$ 122,615	$ 20,200	$ 176,641	41.6	101-101-SPECIFIC	equipment aged and low OPE	No
131142	5/24/2024	Bakersfield	45		$ 18,599	$ 4,255	$ 26,895	66.3	101-101-NON-SPECIFIC	Failed pumping equipment	No
128967	5/23/2024	Bakersfield	116	H	$ 65,337	$ 19,264	$ 98,261	53.3	101-101-NON-SPECIFIC	Replace failed pumping equipment	No
131164	5/21/2024	Bakersfield	178		$ 115,627	$ 9,690	$ 151,973	12.2	101-101-NON-SPECIFIC	Failed pumping equipment	No
126877	5/20/2024	Bakersfield	220	1	$ 225,752	$ 16,719	$ 289,251	17.3	101-101-NON-SPECIFIC	Decline in well production	No
124291	2/5/2024	Bakersfield	40	2	$ 197,200	$ 8,955	$ 254,016	64.3	101-101-SPECIFIC	Refer to programmatic justification document	No
124295	2/5/2024	Bakersfield	134	1	$ 205,724	$ 11,973	$ 267,501	60.3	101-101-SPECIFIC	Refer to programmatic justification document	No
131192	12/30/2023	Bakersfield	216	P202	$ 12,457	$ 4,182	$ 19,082	6.8	101-101-NON-SPECIFIC	Failed Pumping Equipment	No
115440	12/15/2023	Bakersfield	216	MFS 1	$ 155,759	$ 17,228	$ 207,912	42.2	101-101-SPECIFIC	equipment aged and low OPE	No
127632	10/18/2023	Bakersfield	162	C	$ 109,945	$ 22,429	$ 159,520	46.7	101-101-NON-SPECIFIC	Due to condition of discharge head, age of materials, and low efficiency replace pump and motor with an updated design point to	No
128699	4/30/2023	Bakersfield	164	B	$ 35,254	$ 6,780	$ 50,077	5.8	101-101-NON-SPECIFIC	Shaft seal failure	No
115002	12/12/2023	Bear Gulch	36	A	$ 22,049	$ 19,208	$ 55,349	11.2	102-102-SPECIFIC	Efficiency Improvement	No
115337	12/12/2023	Bear Gulch	23	A	$ 68,252	$ 9,982	$ 92,578	33.7	102-102-SPECIFIC	Efficiency Improvement	No
131055	12/12/2023	Bear Gulch	47	B	$ 3,632	$ -	$ 4,512	UNKNOWN	102-102-NON-SPECIFIC	Failure	No
115009	7/25/2023	Bear Gulch	23	B	$ 42,338	$ 11,299	$ 65,431	44.7	102-102-SPECIFIC	Efficiency Improvement	No
128556	6/28/2023	Bear Gulch	35	A	$ 7,472	$ 12,118	$ 22,672	UNKNOWN	102-102-NON-SPECIFIC	Failure	No
115011	2/10/2023	Bear Gulch	22	B	$ 15,439	$ 5,454	$ 25,134	11.1	102-102-SPECIFIC	Efficiency Improvement	No
124055	7/8/2024	Chico	27	1	$ 98,846	$ 16,640	$ 136,520	66.7	104-104-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
124057	7/1/2023	Chico	29	1	$ 88,183	$ 22,366	$ 135,322	65.3	104-104-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
124061	6/14/2023	Chico	64	1	$ 79,340	$ 14,213	$ 112,022	36.1	104-104-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
135165	11/15/2024	Coast Springs	2	2	$ -	$ 2,267	$ 2,379	UNKNOWN	149-146-NON-SPECIFIC	Failure	No
131593	1/25/2024	Coast Springs	4	1	$ 6,643	$ 1,398	$ 9,285	2.0	149-146-NON-SPECIFIC	Pump Failed	No
133770	9/30/2024	Dominguez	277	1	$ 99,788	$ 5,205	$ 128,284	9.7	128-128-NON-SPECIFIC	Motor failed and needs replacement. After removal of equipment pump was inspected and replacement was needed.	No
115184	3/20/2023	Dominguez	279	A	$ 89,355	$ 15,879	$ 127,356	23.1	128-128-SPECIFIC	Improve pump efficiency and operations	No
134643	8/30/2024	East Los Angeles	12	D	$ 28,376	$ 5,086	$ 43,858	15.7	106-106-NON-SPECIFIC	Pump failed to operate. Electrical VFD was tripping and after inspection the existing pump was unrepairable. Replacement was	No
133846	7/17/2024	East Los Angeles	25	1	$ 45,395	$ 10,077	$ 70,153	10.8	106-106-NON-SPECIFIC	The submersible motor failed and needs repalcement. In addition, the pump age is 10 years of service and due to extensive work	No
115223	11/19/2024	Hermosa Redondo	9	C	$ 34,270	$ 9,992	$ 51,606	UNKNOWN	108-108-SPECIFIC	Failure	No
115230	8/19/2024	Hermosa Redondo	5	A	$ 104,035	$ 28,330	$ 168,249	40.7	108-108-SPECIFIC	Replace pump & motor to improve operational reliability due to advanced equipment age	No
124802	10/22/2024	KRV - SQUM	15	A	$ 71,902	$ 18,687	$ 107,520	UNKNOWN	134-134-NON-SPECIFIC	Failure	No
123767	4/11/2024	KRV - BOD	104	B	$ 21,416	$ 1,074	$ 25,547	31.3	134-134-SPECIFIC	Refer to programmatic justification document	No
131605	12/19/2023	KRV - SOLA	7	1	$ 25,053	$ 5,966	$ 34,738	17.8	134-134-NON-SPECIFIC	Failed pumping equipment	No
130287	9/19/2023	AV - LAN	1	1	$ 31,894	$ 1,814	$ 40,239	13.2	130-129-NON-SPECIFIC	Replace failed pumping equipment	No
131488	9/20/2024	Los Altos Suburban	14	A	$ 64,402	$ 17,698	$ 96,672	69.8	111-111-NON-SPECIFIC	Pump has a bad bearing and experiencing vibration. Flow production has declined since new. Replacing pumping to meet current application	No
123870	6/4/2024	Los Altos Suburban	9	E	$ 64,905	$ 15,310	$ 97,307	63.8	111-111-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
123923	5/6/2024	Los Altos Suburban	23	D	$ 89,450	$ 13,574	$ 118,175	13.9	111-111-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
123917	1/30/2024	Los Altos Suburban	11	D	$ 66,747	$ 8,665	$ 85,431	13.5	111-111-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
123984	1/29/2024	Los Altos Suburban	39	1	$ 125,354	$ 18,258	$ 176,668	26.3	111-111-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability.	No
129396	11/3/2023	Los Altos Suburban	34	A	$ 103,686	$ 14,804	$ 141,949	25.6	111-111-NON-SPECIFIC	Booster Pump failed. Need to replace	No
123867	10/23/2023	Los Altos Suburban	9	D	$ 36,867	$ 11,356	$ 57,423	67.0	111-111-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliability	No
123918	6/6/2023	Los Altos Suburban	19	A	$ 21,805	$ 7,520	$ 34,847	29.2	111-111-SPECIFIC	Refer to programmatic justification document. Improve efficiency and reliabililty.	No
115162	5/19/2023	Los Altos Suburban	13	C	$ 28,247	$ 17,807	$ 55,827	71.0	111-111-SPECIFIC	Improve efficiency and operations	No
126553	3/31/2023	Los Altos Suburban	34	1	$ 141,908	$ 11,471	$ 195,982	10.0	111-111-NON-SPECIFIC	Pump is experiencing extreme vibration	No
115937	2/7/2023	Los Altos Suburban	118	B	$ 14,227	$ 14,788	$ 34,138	25.2	111-111-SPECIFIC	Improve efficiency and operations	No
124075	11/8/2023	Mid Peninsula	112	A	$ 31,540	$ 12,521	$ 50,655	12.8	116-116-SPECIFIC	Refer to programmatic justification document	No
124182	4/25/2024	Oroville	11	B	$ 41,560	$ 10,333	$ 61,043	68.5	113-113-SPECIFIC	Low OPE,	No
132964	4/13/2024	Palos Verdes	4	A	$ 28,451	$ 2,336	$ 36,034	UNKNOWN	122-122-NON-SPECIFIC	Failure	No
130008	10/26/2023	Palos Verdes	23	A	$ 84,506	$ 7,568	$ 111,842	UNKNOWN	122-122-NON-SPECIFIC	Failure	No
114901	3/20/2023	Palos Verdes	4	A	$ 25,036	$ 21,977	$ 61,401	34.4	122-122-SPECIFIC	Improve operaional reliability due to advanced equipment age	No
122837	1/22/2023	Palos Verdes	22	B	$ 368,926	$ 48,085	$ 521,728	51.8	122-122-NON-SPECIFIC	Remove suspected mercury seal pump and replace with a Top drive VTP to increase production capacity	No
131962	9/4/2024	Salinas	73	C	$ 7,928	$ 8,690	$ 18,717	UNKNOWN	114-114-NON-SPECIFIC	Failure	No
127353	8/30/2024	Salinas	16	1	$ 132,275	$ 28,114	$ 194,741	13.7	114-114-NON-SPECIFIC	Production Well 16-01 is a 40HP submersible pump that is not performing efficiently or reliably. It has been experiencing operational issues in the past months and is currently put of service.	No
115409	8/8/2024	Salinas	16	2	$ 146,927	$ 8,413	$ 194,803	61.1	114-114-SPECIFIC	Improve operations and efficiency	No
127819	8/8/2024	Salinas	302	A	$ 25,935	$ 14,724	$ 54,114	5.4	114-114-NON-SPECIFIC	Booster pumps at 302 are no longer meeting operational requirements. The recent hydraulic pump test concluded that 302-D deadheads when the tank level at 302 is 60% and 302-C only produces 50 gpm. The pumping efficiency for Booster D is 41% (poor) and	No
127820	2/1/2024	Salinas	302	B	$ 35,489	$ 14,560	$ 63,815	4.8	114-114-NON-SPECIFIC	Booster pumps at 302 are no longer meeting operational requirements.	No
126057	12/1/2023	Salinas	64	1	$ 48,883	$ 15,397	$ 78,430	13.6	114-114-NON-SPECIFIC	Production well is making noise, vibrating, and wobbling.	No
130155	9/7/2023	Salinas	305	1	$ 17,514	$ 5,923	$ 27,787	UNKNOWN	114-114-NON-SPECIFIC	Failure	No
128740	7/11/2023	Salinas	44	1	$ 220,915	$ 27,773	$ 301,593	30.5	114-114-NON-SPECIFIC	Pump failed. Broken shaft and damaged bowl. Replacment is required.	No
129347	8/4/2023	Selma	20	1	$ 113,563	$ 9,324	$ 146,978	22.8	117-117-NON-SPECIFIC	Pump production decline to usuable ammount and reached pumping critical level reaching 15 feet above bowls.	No
123854	7/22/2024	So. San Francisco	13	A	$ 23,385	$ 12,125	$ 41,688	49.6	118-118-SPECIFIC	To improve efficiency and reliability. Refer to programmatic justification document	No
123830	6/5/2023	So. San Francisco	6	D	$ 65,766	$ 9,935	$ 90,101	16.8	118-118-SPECIFIC	To improve efficiency and reliability. Refer to programmatic justification document	No
61732	10/3/2023	Stockton	77	1	$ 71,215	$ 11,774	$ 116,550	56.0	119-119-SPECIFIC	The primary reason for the replacement of the pump and column assembly is to replace the oil lubricated equipment with product (water) lubrication. It has been shown that the NSF oil used to lubricate the shaft can also be a food source for bacteria. Changing to product lubrication will significantly reduce potential bacterial growth in the well and will minimize the risk of loosing a water source due to bacterial contamination. The oil accumulated in the well over the years, will be removed from the well at the time of the pump replacement. By the year 2015, the existing pump will have 23 years of service	No
123736	7/31/2023	Stockton	7	2	$ 62,486	$ 8,649	$ 84,286	10.7	119-119-SPECIFIC	To improve efficiency and reliability. Refer to programmatic justification document.	No
131215	11/21/2024	Visalia	19	1	$ 85,629	$ 11,054	$ 115,294	UNKNOWN	120-120-NON-SPECIFIC	Failure	No
131849	11/19/2024	Visalia	36	1	$ 71,478	$ 9,504	$ 96,000	17.9	120-120-NON-SPECIFIC	Pump Failed on 09/12/2023	No
134523	8/6/2024	Visalia	7	1	$ 16,895	$ 2,057	$ 22,443	UNKNOWN	120-120-NON-SPECIFIC	Failure	No
131260	8/5/2024	Visalia	25	1	$ 84,588	$ 14,238	$ 116,890	5.5	120-120-NON-SPECIFIC	Replace failed pumping equipment	No

134028	7/30/2024	Visalia	201		2	$	14,161	$	4,470	$	21,807	5.3	120-120-NON-SPECIFIC	Failing Pumping Equipment	No
127654	6/17/2024	Visalia	52		1	$	110,480	$	12,749	$	147,923	44.4	120-120-NON-SPECIFIC	Change of operating conditions	No
129345	5/22/2024	Visalia	69		1	$	75,825	$	11,877	$	99,362	32.7	120-120-NON-SPECIFIC	Pump production decline to the point of being unusable. Replace Pump & Motor to bring asset back to reliable production.	No
123233	5/20/2024	Visalia	72		1	$	124,876	$	8,032	$	164,911	30.6	120-120-SPECIFIC	Low Effeciency	No
124143	5/17/2024	Visalia	83		1	$	130,231	$	17,632	$	175,274	18.6	120-120-SPECIFIC	To improve efficiency and reliability. Refer to programmatic justification document.	No
129191	4/15/2024	Visalia	39		1	$	112,388	$	15,863	$	154,388	51.3	120-120-NON-SPECIFIC	Production of pumping equipment has declined to an unusable amount. Replace pumping equipment to bring asset back into reliable operation.	No
129544	4/15/2024	Visalia	34		1	$	115,187	$	5,754	$	146,412	36.4	120-120-NON-SPECIFIC	Pumping water level has declined to a critical pump level. Replace pumping equipment to bring asset back into reliable operation.	No
131049	4/15/2024	Visalia	82		1	$	105,664	$	6,371	$	127,447	23.5	120-120-NON-SPECIFIC	Replace failed pumping equipment	No
129343	4/4/2024	Visalia	47		1	$	103,540	$	12,885	$	140,596	17.3	120-120-NON-SPECIFIC	Pump production decline to the point of being unusable. Replace Pump & Motor to bring asset back to reliable production.	No
123232	2/15/2024	Visalia	70		1	$	126,222	$	5,788	$	151,129	31.3	120-120-SPECIFIC	Low Effeciency	No
127638	2/15/2024	Visalia	26		1	$	107,398	$	8,675	$	132,308	59.3	120-120-NON-SPECIFIC	Pumping water level at or below the top of the pump bowls.	No
129189	2/15/2024	Visalia	79		1	$	118,963	$	8,650	$	154,408	27.3	120-120-NON-SPECIFIC	Pump production has reduced to an unusable rate. Replace pumping equipment to bring asset back into reliable operation.	No
129854	2/5/2024	Visalia	20		1	$	65,980	$	8,174	$	84,261	10.3	120-120-NON-SPECIFIC	Replace failed pumping equipment	No
131042	1/31/2024	Visalia	13		1	$	42,957	$	6,415	$	55,816	66.0	120-120-NON-SPECIFIC	Replace failed pumping equipment	No
127734	10/24/2023	Visalia	77		1	$	177,527	$	20,066	$	225,607	14.7	120-120-NON-SPECIFIC	Replace pumping equipment to meet new operating conditon: new treatment plant installed onsite and lower water levels.	No
128892	3/28/2023	Visalia	42		1	$	86,845	$	8,192	$	113,412	15.3	120-120-NON-SPECIFIC	Failed pumping equipment	No
115287	2/15/2023	Visalia	22		1	$	101,945	$	16,531	$	144,451	62.7	120-120-SPECIFIC	Efficiency Improvement	No
114898	4/10/2023	Westlake	1	A		$	105,191	$	13,402	$	161,793	39.7	123-123-SPECIFIC	Replacement will improve operational reliability of the pump and motor due to the advanced equipment age and also improve operational flexibility during peak demand	No
129788	1/15/2024	Willows	11	B		$	42,231	$	11,756	$	63,005	11.5	121-121-NON-SPECIFIC	Booster Pump showing signs of failure through vibration	No
128846	12/22/2022	KRV - SQUM	15	B		$	30,393	$	8,142	$	45,289	30.0	134-134-NON-SPECIFIC	Replace Failed Pumping Equipment	No
129130	12/22/2022	KRV - ARD	1		3	$	25,376	$	2,234	$	32,871	11.9	134-134-NON-SPECIFIC	Failed pumping equipment	No
129520	12/22/2022	KRV - BOD	8		1	$	20,292	$	4,494	$	29,373	5.4	134-134-NON-SPECIFIC	Replace pumping equipment	No
128229	12/9/2022	Visalia	30		1	$	98,724	$	7,221	$	126,347	54.9	120-120-NON-SPECIFIC	Production has declined to an unuseable level of production. Replace pumping equipment to meet new operating conditions.	No
127342	12/8/2022	Bakersfield	123		2	$	165,471	$	37,260	$	242,560	17.6	101-101-NON-SPECIFIC	Replace failed pumping equipment	No
127667	12/6/2022	Salinas	73	D		$	13,199	$	8,314	$	25,372	6.0	114-114-NON-SPECIFIC	73-D is one of 2 pumps that supply water to teh 834 Zone. It is currently not pumping water and needs to be replaced.	No
123814	11/23/2022	Bear Gulch	5	K		$	95,288	$	11,219	$	127,744	17.8	102-102-SPECIFIC	To improve efficiency and reliability. Refer to programmatic justification document	No
127251	11/23/2022	Livermore	28	A		$	56,391	$	5,892	$	75,570	32.8	110-110-NON-SPECIFIC	Booster Pump 28-A was installed in 1990. It is currently leaking and corroded beyond repair and is currently not reliable.	No
126814	11/23/2022	Salinas	22		2	$	117,087	$	18,942	$	164,226	8.3	114-114-NON-SPECIFIC	Production Well 22-02 failed in the peak season. This work will be treated as an emergency replacement because of the hot weather and fire flow requirement.	No
125313	10/24/2022	Bakersfield	62		2	$	99,973	$	13,167	$	138,049	34.0	101-101-NON-SPECIFIC	Mitigate bacteriological challenges	No
125314	10/24/2022	Bakersfield	101		1	$	75,981	$	12,399	$	107,801	64.8	101-101-NON-SPECIFIC	Pumping equipment failed, replace with new, more reliable pumping equipment.	No
127472	10/20/2022	Los Altos Suburban	8	E		$	58,081	$	12,487	$	84,528	27.2	111-111-NON-SPECIFIC	Pump is profoundly leaking from packing. Packing gland found to be failed	No
98203	9/30/2022	Westlake	1	B		$	101,187	$	10,105	$	134,985	16.0	123-123-SPECIFIC	Efficiency Improvement	No
115460	9/28/2022	Bear Gulch	35	B		$	59,550	$	8,064	$	85,767	UNKNOWN	102-102-SPECIFIC	Failure	No
127646	9/28/2022	KRV - ARD	3		1	$	36,341	$	7,996	$	52,811	16.1	134-134-NON-SPECIFIC	New operation point required for blending plan	No
127158	9/28/2022	Salinas	16	D		$	70,628	$	5,213	$	91,876	5.7	114-114-NON-SPECIFIC	Booster 16-D is leaking and vibrating. The hydraulic pump test shows that the pump is running at 50%. The existing pump is rated at 1500 GPM but is producing on average 400-500 gpm because it is pressure controlled via a VFD.	No
115320	9/26/2022	Visalia	45		1	$	99,158	$	9,721	$	129,932	45.1	120-120-SPECIFIC	Efficiency Improvement	No
115941	9/15/2022	Stockton	21		2	$	126,351	$	18,076	$	174,349	12.2	119-119-SPECIFIC	Efficiency Improvement	No
115938	9/14/2022	Salinas	108	A		$	64,988	$	8,377	$	89,613	35.1	114-114-SPECIFIC	Improve operations and efficiency	No
115940	9/14/2022	Salinas	108	C		$	73,347	$	12,900	$	107,615	34.8	114-114-SPECIFIC	Improve operations and efficiency	No
115565	9/14/2022	Visalia	64		1	$	102,057	$	8,814	$	132,868	29.8	120-120-SPECIFIC	Efficiency Improvement	No
127439	9/14/2022	Visalia	60		1	$	47,007	$	10,594	$	68,103	30.8	120-120-NON-SPECIFIC	Failed pumping equipment	No
127482	9/14/2022	Visalia	46		1	$	97,345	$	7,225	$	124,780	45.7	120-120-NON-SPECIFIC	Pump approaching critical pumping water level	No
122864	9/13/2022	Bakersfield	2		10	$	124,968	$	18,046	$	174,906	9.7	101-101-NON-SPECIFIC	Failed Pumping Equipment	No
115802	9/6/2022	Lucerne	1	C		$	20,276	$	18,322	$	48,391	17.9	146-146-SPECIFIC	Improve operations and increase pumping plant efficiency	No
62996	9/6/2022	Mid Peninsula	107	B		$	32,340	$	36,251	$	93,543	29.8	116-116-SPECIFIC	By the year 2013, both pump and motor will have 54 years of service. The pump and motor are not reliable due to age and wear and should be replaced to increase reliability. The last pump test, performed on 2/06/09 shows an OPE of 29.2%, which is very low by CPUC and PG&E standards. The OPE can be significantly increased, which will in turn lower operating cost. The pump test also shows a motor loading of 125%, which is very high. The new pump design parameters will be as such that the motor is not overloaded.	No
124073	9/6/2022	Mid Peninsula	107	C		$	87,353	$	12,814	$	119,553	34.8	116-116-SPECIFIC	Refer to programmatic justification document	No
115412	9/1/2022	Salinas	50	A		$	51,447	$	16,864	$	83,578	15.7	114-114-SPECIFIC	Improve operations and efficiency	No
127508	8/17/2022	Visalia	53		1	$	61,734	$	8,221	$	83,283	41.7	120-120-NON-SPECIFIC	Pumping water level below critical pumping level, replace pumping equipment.	No
127245	8/16/2022	KRV - LLAN	6		1	$	18,444	$	2,345	$	24,722	8.7	134-134-NON-SPECIFIC	Replace failed pumping equipment	No
115381	8/15/2022	Livermore	31		1	$	99,183	$	26,435	$	153,359	18.7	110-110-SPECIFIC	Improve pump efficiency and operations.	No
114990	8/8/2022	Mid Peninsula	114	A		$	32,301	$	15,701	$	61,530	7.8	116-116-SPECIFIC	Efficiency Improvement	No
115341	8/1/2022	Bear Gulch	27	A		$	55,063	$	11,384	$	80,663	36.0	102-102-SPECIFIC	Efficiency Improvement	No
127369	7/11/2022	Los Altos Suburban	8	F		$	52,336	$	9,729	$	74,371	9.4	111-111-NON-SPECIFIC	Pump failed on 09/23	No
115012	6/1/2022	Bear Gulch	24	A		$	32,625	$	21,050	$	68,581	32.6	102-102-SPECIFIC	Efficiency Improvement	No
115241	5/3/2022	Palos Verdes	23	F		$	143,624	$	13,490	$	201,326	30.2	122-122-SPECIFIC	Improve operaional reliability due to advanced equipment age	No
128385	5/1/2022	Salinas	29		1	$	15,513	$	4,271	$	23,345	UNKNOWN	114-114-NON-SPECIFIC	Failure	INACTIVE, 09/14/2022
115668	5/1/2022	Stockton	66		2	$	117,843	$	9,088	$	156,511	49.7	119-119-SPECIFIC	Efficiency Improvement	No
124405	4/26/2022	Bakersfield	219		1	$	93,539	$	12,861	$	130,419	6.6	101-101-NON-SPECIFIC	Pumping equipment failure	No
125315	4/25/2022	Bakersfield	185		1	$	87,465	$	10,465	$	117,279	41.3	101-101-NON-SPECIFIC	Pumping equipment failure	No
127185	4/21/2022	Bakersfield	224		1	$	-	$	9,589	$	10,686	1.6	101-101-NON-SPECIFIC	Failed pump under warranty	No
126243	3/28/2022	Palos Verdes	30	B		$	76,332	$	10,117	$	106,157	UNKNOWN	122-122-NON-SPECIFIC	Failure	No
115149	3/22/2022	Los Altos Suburban	19	B		$	23,579	$	10,050	$	40,147	39.7	111-111-SPECIFIC	Improve efficiency and operations	No
114546	3/21/2022	Mid Peninsula	24	A		$	24,893	$	9,546	$	41,016	58.4	116-116-SPECIFIC	Efficiency Improvement	No
127849	3/1/2022	Bear Gulch	19	B		$	8,585	$	4,377	$	15,294	UNKNOWN	102-102-NON-SPECIFIC	Failure	No
126026	3/1/2022	Mid Peninsula	26	D		$	73,133	$	11,955	$	103,965	12.3	116-116-NON-SPECIFIC	Motor Failed	No
127140	3/1/2022	Mid Peninsula	117	A		$	51,231	$	7,475	$	70,657	UNKNOWN	116-116-NON-SPECIFIC	Failure	No
127769	3/1/2022	So. San Francisco	5	D		$	12,475	$	2,237	$	17,423	UNKNOWN	118-118-NON-SPECIFIC	Failure	No
115339	2/16/2022	Bear Gulch	22	A		$	16,179	$	2,501	$	22,699	46.4	102-102-SPECIFIC	Efficiency Improvement	No
127175	1/26/2022	KRV - SMTN	1		2	$	9,872	$	2,929	$	15,193	11.4	134-134-NON-SPECIFIC	Failed pumping equipment	No
127335	1/26/2022	KRV - LLAN	8	A		$	15,567	$	2,424	$	22,352	5.9	134-134-NON-SPECIFIC	Failed Pumping Equimpent	No

115803	1/13/2022	RDV - ARM	1		1	$ 78,619	$ 28,725	$ 134,029	9.3	148-146-SPECIFIC	Improve operations and increase pumping plant efficiency	No
114989	1/1/2022	Salinas	66	B		$ 47,152	$ 10,586	$ 71,837	15.4	114-114-SPECIFIC	Improve operations and efficiency	No
123713	12/31/2021	Dixon	1		3	$ 53,469	$ 11,827	$ 81,413	12.2	105-105-NON-SPECIFIC	Pump and motor is exhibiting mechanical noise and vibration. At it's current state, the pump is at high risk to fail. Replacing the entire pumping equipment improve reliability.	No
127038	12/29/2021	KRV - KERV	3	B		$ 22,025	$ 6,045	$ 33,227	4.1	134-134-NON-SPECIFIC	Failed pumping equipment	No
126885	12/29/2021	Visalia	201		2	$ 14,367	$ 4,770	$ 22,515	2.9	120-120-NON-SPECIFIC	Failed pumping equipment	No
116279	12/27/2021	Coast Springs	HILL WELLS		1	$ 88,586	$ 26,689	$ 149,927	13.0	149-146-SPECIFIC	Existing pumps (10-20 gpm) are not working due to coastal environment and pumps cycle on/off for 10 to 30 seconds frequently and then well casing needs to re-charge before more water can be obtained from well.	No
115145	12/27/2021	Los Altos Suburban	17		1	$ 85,168	$ 15,405	$ 120,521	32.1	111-111-SPECIFIC	Improve efficiency and operations	No
115800	12/27/2021	Lucerne	1	B		$ 44,083	$ 8,368	$ 63,025	UNKNOWN	147-146-SPECIFIC	Failure	No
126489	12/16/2021	KRV - ARD	1		2	$ 19,118	$ 4,503	$ 27,965	4.5	134-134-NON-SPECIFIC	Failed pumping equipment	No
115669	12/3/2021	Stockton	80	B		$ 56,953	$ 5,950	$ 76,856	30.2	119-119-SPECIFIC	Efficiency Improvement	No
126261	11/24/2021	Visalia	24		1	$ 80,663	$ 7,821	$ 106,060	18.9	120-120-NON-SPECIFIC	Pumping equipment failure.	No
115334	11/15/2021	Visalia	55		2	$ 118,524	$ 14,159	$ 158,970	8.3	120-120-SPECIFIC	Efficiency Improvement	No
127425	11/4/2021	Coast Springs	4		1	$ 2,523	$ 1,033	$ 4,182	17.0	149-146-NON-SPECIFIC	Pump is not able to overcome system pressure and production has dropped dramatically	No
127111	11/1/2021	Coast Springs	CLINE WELL		1	$ 10,738	$ 10,933	$ 25,437	17.8	149-146-NON-SPECIFIC	Pump is showing signs for failure	No
125420	10/29/2021	Marysville	9		1	$ 121,297	$ 6,948	$ 153,849	19.3	112-112-NON-SPECIFIC	Pump showing severe vibration and leaks.	No
119359	10/25/2021	Bakersfield	174		1	$ 178,590	$ 30,200	$ 274,372	44.1	101-101-NON-SPECIFIC	Motor burned, Pump shaft broken, Sink hole opened to surface; Replace Pump & Motor.	No
123894	10/22/2021	Palos Verdes	23	D		$ 186,154	$ 9,298	$ 243,320	50.5	122-122-NON-SPECIFIC	To restore service to the pumping unit.	No
115324	10/20/2021	Visalia	51		1	$ 67,726	$ 13,200	$ 97,971	UNKNOWN	120-120-SPECIFIC	Failure	No
115335	10/12/2021	Visalia	61		1	$ 93,083	$ 14,590	$ 129,135	31.8	120-120-SPECIFIC	Efficiency Improvement	No
125765	9/28/2021	Visalia	301		1	$ 23,268	$ 5,166	$ 33,714	7.0	120-120-NON-SPECIFIC	Replace failed pumping equipment	No
122900	9/15/2021	Selma	13		2	$ 82,543	$ 9,973	$ -	29.3	117-117-NON-SPECIFIC	Operation point changed due to TCP treatment and asset has become unreliable	No
115290	9/2/2021	Visalia	27		1	$ 100,088	$ 10,575	$ 133,142	31.8	120-120-SPECIFIC	Efficiency Improvement	No
115407	7/1/2021	Salinas	49		1	$ 70,614	$ 17,181	$ 104,448	9.9	114-114-SPECIFIC	Improve operations and efficiency	No
114789	6/25/2021	Mid Peninsula	24	B		$ 44,968	$ 11,618	$ 69,871	57.6	116-116-SPECIFIC	Efficiency Improvement	No
115743	6/17/2021	Hermosa Redondo	26	E		$ 16,046	$ 2,605	$ 22,403	26.1	108-108-SPECIFIC	Existing pump shelter is heavily corroded and requires replacement to protect pump & motor.	No
97877	6/15/2021	Mid Peninsula	120	A		$ 34,139	$ 21,569	$ 70,793	11.8	116-116-SPECIFIC	Efficiency Improvement	No
125818	5/31/2021	So. San Francisco	1		23	$ 7,117	$ 2,663	$ 11,518	UNKNOWN	118-118-NON-SPECIFIC	Failure	No
123056	5/14/2021	Bear Gulch	4	I		$ 77,634	$ 10,618	$ 107,061	28.6	102-102-NON-SPECIFIC	Booster 4-I is exhibiting mechanical issues that require major repair or complete overhaul. In it's current state, the asset is unreliable and a huge risk to the water supply in the District.	No
120350	5/14/2021	Mid Peninsula	6	E		$ 54,371	$ 8,709	$ 79,201	46.4	116-116-NON-SPECIFIC	Yes	No
126018	5/7/2021	RDV - NH	201		1	$ 23,244	$ 3,691	$ 32,038	13.8	148-146-NON-SPECIFIC	Station being upgraded to address high turbidity	No
115336	5/1/2021	Bear Gulch	7	C		$ 52,023	$ 9,340	$ 75,011	52.3	102-102-SPECIFIC	Efficiency Improvement	No
115590	5/1/2021	Stockton	80	A		$ 58,781	$ 15,407	$ 90,749	29.6	119-119-SPECIFIC	Efficiency Improvement	No
121674	4/26/2021	Mid Peninsula	27	B		$ 79,836	$ 12,561	$ 115,582	18.1	116-116-NON-SPECIFIC	Yes	No
115143	4/21/2021	Los Altos Suburban	38	A		$ 61,228	$ 7,864	$ 83,421	40.6	111-111-SPECIFIC	Improve efficiency and operations	No
122345	4/21/2021	Los Altos Suburban	21	B		$ 44,307	$ 10,625	$ 66,686	11.7	111-111-NON-SPECIFIC	Pump is experiencing severe vibration throughout the pump. Considerable wear on the shaft and bushings. Performance of the pump has also declined	No
97882	4/21/2021	Mid Peninsula	119	B		$ 42,757	$ 18,862	$ 82,746	35.6	116-116-SPECIFIC	Efficiency Improvement	No
123055	4/2/2021	East Los Angeles	32	B		$ 60,212	$ 11,168	$ 88,709	57.7	106-106-NON-SPECIFIC	Pump motor failed. New replacement motor will require pump to be pulled and also replaced.	No
115413	4/1/2021	Salinas	66	A		$ 46,007	$ 8,297	$ 66,220	14.5	114-114-SPECIFIC	Improve operations and efficiency	No
122181	3/31/2021	Chico	66	D		$ 45,928	$ 7,726	$ 66,581	30.4	104-104-NON-SPECIFIC	Booster extremely leaking through pump packing. Review of pump equipment, recommend replacing the entire equipment due to excessive corrosion to the pump head, improper installation.	No
97881	3/31/2021	Mid Peninsula	27	D		$ 47,306	$ 16,410	$ 77,821	27.2	116-116-SPECIFIC	Yes	No
114869	3/29/2021	Hermosa Redondo	26	E		$ 69,588	$ 12,825	$ 100,721	49.8	108-108-SPECIFIC	Replace pump & motor to improve operational efficiency	No
125864	3/1/2021	Mid Peninsula	17	B		$ 7,002	$ 3,493	$ 12,299	UNKNOWN	116-116-NON-SPECIFIC	Failure	No
115385	2/1/2021	Livermore	24		1	$ 103,977	$ 9,730	$ 137,447	23.3	110-110-SPECIFIC	Improve pump efficiency and operations.	No
121013	12/15/2020	Los Altos Suburban	21		1	$ 92,639	$ 7,350	$ 121,894	11.2	111-111-NON-SPECIFIC	Well is experiencing worsening vibration	No
122963	12/15/2020	Los Altos Suburban	121	D		$ 27,296	$ 5,816	$ 40,252	38.2	111-111-NON-SPECIFIC	07/20 - District direction to replacement booster pump due to poor efficency, excessive motor overloading, and age. The components on the pump breaking and falling apart.	No
114868	12/1/2020	East Los Angeles	58	C		$ 81,169	$ 11,219	$ 104,432	55.2	106-106-SPECIFIC	Aging equipment, Low OPE	No
122090	12/1/2020	Salinas	203		1	$ 86,694	$ 19,479	$ 128,572	UNKNOWN	114-114-NON-SPECIFIC	Failure	No
121137	11/13/2020	Bakersfield	146		4	$ 157,079	$ 13,934	$ 211,719	54.1	101-101-NON-SPECIFIC	Replacement of failed pumping equipment	No
120858	11/9/2020	AV - LEO	1		1	$ 7,400	$ 3,371	$ 12,799	8.4	132-129-NON-SPECIFIC	Failed pumping equipment	No
122694	11/1/2020	Bear Gulch	20	B		$ 74,597	$ 10,282	$ 104,154	46.9	102-102-NON-SPECIFIC	Booster 20-B is exhibiting mechanical issues. Symptoms are noise, vibration, heating, and overloading. Booster needs to be replaced immediately to improve reliability.	No
115807	11/1/2020	Coast Springs	4	A		$ -	$ 1,293	$ 2,951	17.2	149-146-SPECIFIC	Improve operations and increase pumping plant efficiency	No
115799	10/30/2020	Lucerne	6	B		$ 7,753	$ 6,917	$ 18,015	9.8	147-146-SPECIFIC	Improve operations and increase pumping plant efficiency	No
99051	10/27/2020	Chico	47		1	$ 65,498	$ 26,549	$ 122,444	24.1	104-104-SPECIFIC	Replace pump and convert column to water lubricated to stop positive baterialogic test results	INACTIVE, 01/01/2016
115806	10/15/2020	Coast Springs	4		1	$ 4,707	$ 3,633	$ 10,173	18.1	149-146-SPECIFIC	Improve operations and increase pumping plant efficiency	No
122672	10/14/2020	Willows	9		1	$ 9,055	$ 4,954	$ 17,222	UNKNOWN	121-121-NON-SPECIFIC	Failure	No
122821	10/1/2020	Bear Gulch	5	N		$ 29,668	$ 12,865	$ 51,631	19.1	102-102-NON-SPECIFIC	Booster 5-N failed. Booster needs to be replaced immediately to improve reliability.	No
120777	9/24/2020	Bakersfield	146		3	$ 139,228	$ 17,986	$ 166,317	4.5	101-101-NON-SPECIFIC	Asset Failing	No
97773	9/1/2020	Bear Gulch	19	A		$ 32,323	$ 14,464	$ 58,089	62.7	102-102-SPECIFIC	Efficiency Improvement	No
99293	8/31/2020	So. San Francisco	1	19,22,23,A,B		$ 300,476	$ 78,406	$ 498,456	39.7	118-118-SPECIFIC	Improvements to the treatment plant to increase capacity and flowrate resulted in new pumping requirements.	No
115539	8/20/2020	Chico	33		1	$ 85,555	$ 17,884	$ 128,604	52.8	104-104-SPECIFIC	Efficiency Improvement	No
98094	8/17/2020	Bakersfield	176	E		$ 67,493	$ 24,798	$ 115,159	24.8	101-101-SPECIFIC	Efficiency Improvement	No
114521	8/17/2020	Visalia	91		1	$ 74,237	$ 13,230	$ 107,959	18.8	120-120-SPECIFIC	Efficiency Improvement	No
121533	8/17/2020	Visalia	14		1	$ 72,978	$ 12,181	$ 103,061	6.7	120-120-NON-SPECIFIC	Failed Pumping Equipment	No
121542	7/16/2020	Visalia	16		2	$ 85,834	$ 7,023	$ -	4.1	120-120-NON-SPECIFIC	New pump and motor required because of a shift in the operational characteristics caused by the installation of GAC vessels onsite for TCP treatement.	No
121277	6/30/2020	KRV - SOLA	8		1	$ 41,039	$ 5,870	$ 58,403	4.3	134-134-NON-SPECIFIC	Submersible pump failure	No
63020	6/25/2020	So. San Francisco	2	A		$ 33,044	$ 21,760	$ 64,936	85.6	118-118-SPECIFIC	By the year 2015, both pump and motor will have 65 years of service. The pump and motor are not reliable due to age and wear and should be replaced to increase reliability. The last pump test, performed on 4/14/2009 shows an OPE of 52.7%, which is borderline low by CPUC and PG&E standards. The OPE can be significantly increased, which will in turn lower operating cost. The pump test also shows a motor overload of 118.6%. The new design parameters will be as such that the motor is not overloaded.	No

121427	6/8/2020	Chico	66	C		$ 46,601	$ 8,544	$ 67,367	29.4	104-104-NON-SPECIFIC	Booster extremely leaking through pump packing. Review of pump equipment, recommend replacing the entire equipment due to excessive corrosion to the pump head, improper installation.	No
114881	6/1/2020	Chico	30		1	$ 106,144	$ 24,534	$ 159,896	56.5	104-104-SPECIFIC	Efficiency Improvement	INACTIVE, 01/01/2021
120643	5/4/2020	Bakersfield	133		1	$ 117,463	$ 8,245	$ -	58.1	101-101-NON-SPECIFIC	Install pump designed for new operating conditions and reduce maintenance costs for GAC vessels.	No
121959	5/1/2020	Bear Gulch	47	A		$ 13,120	$ 2,777	$ 20,099	2.9	102-102-NON-SPECIFIC	Failed pump. Pump is exhibiting mechanical noise and does not pump water.	No
97884	5/1/2020	Mid Peninsula	119	C		$ 34,599	$ 13,768	$ 59,150	UNKNOWN	116-116-SPECIFIC	Failure	No
121632	4/24/2020	East Los Angeles	43		1	$ 63,876	$ 5,899	$ 85,156	9.4	106-106-NON-SPECIFIC	Pump design over rated for current well flow capacity.	No
115164	3/18/2020	Los Altos Suburban	38	B		$ 57,449	$ 3,887	$ 74,256	39.3	111-111-SPECIFIC	Improve efficiency and operations	No
120185	3/17/2020	Oroville	15	J		$ 43,130	$ 3,585	$ 56,263	13.3	113-113-NON-SPECIFIC	Booster pump is showing signs of failure. Extreme wear on entire pump assembly. Critical pump in the treatment and cannot be taken offline more than a day. Replacing entire equipment before catastrophic failure and make modification to improve safety.	No
120349	2/28/2020	Marysville	15	A		$ 35,453	$ 6,648	$ 50,844	32.4	112-112-NON-SPECIFIC	Booster pump is showing signs of failure. Pump is beyond typical life expactancy of booster pumps. Replacing equipment to new condition	No
97831	2/1/2020	King City	4	D		$ 34,291	$ 22,625	$ 71,287	51.7	109-109-SPECIFIC	Efficiency Improvement	No
98398	1/31/2020	Chico	63		1	$ 128,847	$ 16,343	$ 171,872	32.2	104-104-SPECIFIC	Replace pump and convert column to water lubricated to stop positive bacterialogic test results.	INACTIVE, 01/01/2020
98099	1/28/2020	Dominguez	275		1	$ 115,029	$ 14,961	$ 156,733	19.9	128-128-SPECIFIC	Efficiency Improvement	No
121046	12/26/2019	Hermosa Redondo	27	C		$ 27,797	$ 4,262	$ 38,694	13.6	108-108-NON-SPECIFIC	Pump Failed	No
119740	12/26/2019	Palos Verdes	15	B		$ 66,143	$ 8,553	$ 90,449	47.0	122-122-NON-SPECIFIC	Existing pump is damaged and needs to be rebuilt	No
119382	12/13/2019	Bear Gulch	3	E&F		$ 51,957	$ 10,782	$ 76,333	22.2	102-102-NON-SPECIFIC	Pump failed under normal operating conditions	No
120605	11/27/2019	Bear Gulch	33	A		$ 31,990	$ 8,609	$ 49,573	6.2	102-102-NON-SPECIFIC	Pump failed under normal operating conditions	No
120607	11/27/2019	Salinas	62	A		$ 27,958	$ 4,064	$ 38,637	15.1	114-114-NON-SPECIFIC	Pump failed under normal operating conditions	No
120279	11/26/2019	AV - LEO	1		7	$ 5,020	$ 666	$ 6,834	6.8	132-129-NON-SPECIFIC	Submersible pump failed, needs replacement	No
120627	11/26/2019	KRV - BOD	104		1	$ 50,555	$ 4,357	$ 66,132	7.0	134-134-NON-SPECIFIC	Submersible Pump failure	No
119387	11/26/2019	Mid Peninsula	117	B		$ 45,273	$ 29,111	$ 95,175	32.2	116-116-NON-SPECIFIC	Yes	No
98054	11/21/2019	Visalia	12		1	$ 45,768	$ 5,186	$ 61,216	62.2	120-120-SPECIFIC	Efficiency Improvement	No
118494	11/15/2019	Bakersfield	68	A		$ 47,266	$ 14,049	$ 73,621	62.2	101-101-NON-SPECIFIC	excessive vibration	No
119651	11/6/2019	Salinas	16	C		$ 56,757	$ 10,007	$ 80,547	23.2	114-114-NON-SPECIFIC	Under normal operating condition, the pumping equipment exhibits excessive vibrations	No
119323	10/25/2019	AV - LAN	1		1	$ 60,992	$ 8,876	$ 82,269	15.8	130-129-NON-SPECIFIC	Submersible motor burned out - needed replacement.	No
114923	10/24/2019	Mid Peninsula	106	C		$ 51,237	$ 8,572	$ 69,924	19.9	116-116-SPECIFIC	Yes	No
120730	10/18/2019	Bear Gulch	24	B		$ 11,462	$ 3,450	$ 17,946	45.6	102-102-NON-SPECIFIC	Pump failed under normal operating conditions	No
119597	10/15/2019	Mid Peninsula	17	C		$ 48,562	$ 11,271	$ 70,306	31.8	116-116-NON-SPECIFIC	Yes	No
63357	10/14/2019	Livermore	32	A,B,C		$ 38,154	$ 26,199	$ 81,756	15.8	110-110-SPECIFIC	Existing booster pack is exhibiting signs of wear through lower production and available head. Replacement of the booster pack is required to meet current operation requirements. Replacement of individual pumps on the booster pack is not feasible due to the high labor cost to remove and modify the existing unit. A factory assembled unit is more cost effective.	No
119798	10/2/2019	Chico	73	A		$ 41,053	$ 6,716	$ 56,103	15.0	104-104-NON-SPECIFIC	On December 20th, 2018, Local contractor assess Booster A due to reports of a leaking Mech. Seal. Contractor reported the condition and recommends replacing the entire equipment due to excessive corrision to the pump head, improper installation of equipm	No
97832	10/2/2019	King City	6		1	$ 70,506	$ 21,258	$ 106,493	41.9	109-109-SPECIFIC	Efficiency Improvement	No
97880	10/2/2019	Mid Peninsula	27	C		$ 57,633	$ 26,788	$ 101,908	47.0	116-116-SPECIFIC	Yes	No
98093	9/4/2019	Bakersfield	221	L		$ 32,773	$ 19,417	$ 63,853	38.7	101-101-SPECIFIC	Efficiency Improvement	No
98096	9/4/2019	Bakersfield	218	E		$ 35,284	$ 16,588	$ 62,953	37.7	101-101-SPECIFIC	Efficiency Improvement	No
98064	9/4/2019	Visalia	20		1	$ 64,490	$ 17,165	$ 96,085	34.7	120-120-SPECIFIC	Efficiency Improvement	No
98115	8/30/2019	East Los Angeles	39		2	$ 76,392	$ 31,853	$ 93,836	33.7	106-106-SPECIFIC	Efficiency Improvements	No
118653	6/13/2019	East Los Angeles	32	C		$ 68,803	$ 9,172	$ 91,012	26.5	106-106-NON-SPECIFIC	Submersible motor burnt out. Existing sub pump very old with loe OPE,	No
97862	5/17/2019	So. San Francisco	1		21	$ 49,247	$ 14,857	$ 72,376	88.6	118-118-SPECIFIC	Yes	No
114939	5/1/2019	Visalia	201		2	$ 124,062	$ 14,848	$ 159,332	16.4	120-120-NON-SPECIFIC	Emergency equipment replacement due single source water supply in the Tulco District.	No
119314	4/19/2019	Livermore	9	C		$ 26,817	$ 4,281	$ 36,699	66.3	110-110-NON-SPECIFIC	Pump failed due to backspinning	No
110259	4/1/2019	Livermore	10	B		$ 43,212	$ 20,288	$ 75,945	14.2	110-110-NON-SPECIFIC	Pump failed during efficiency testing. Booster B is needed for station reliability in the event A fails.	No
97795	3/25/2019	East Los Angeles	59	A		$ 60,492	$ 19,479	$ 93,711	29.3	106-106-SPECIFIC	low OPE	No
97820	2/27/2019	Salinas	302	B		$ 49,818	$ 11,265	$ 72,438	17.7	114-114-SPECIFIC	Efficiency Improvement	No
97819	2/25/2019	Salinas	302	A		$ 37,029	$ 24,864	$ 75,543	UNKNOWN	114-114-SPECIFIC	Failure	No
118439	2/14/2019	Los Altos Suburban	34		2	$ 74,046	$ 11,260	$ 100,177	52.2	111-111-NON-SPECIFIC	Existing pumping equipment failed under normal operating conditions	No
118063	2/7/2019	Hermosa Redondo	22		1	$ 88,467	$ 13,705	$ 114,598	17.7	108-108-NON-SPECIFIC	Well is pumping entrained air, damaging the pumping equipment	No
119485	1/31/2019	Palos Verdes	15	A		$ 22,499	$ 2,906	$ 29,284	UNKNOWN	122-122-NON-SPECIFIC	Failure	No
98140	12/30/2018	Palos Verdes	38	B		$ 22,293	$ 9,826	$ 38,277	33.7	122-122-SPECIFIC	Efficiency Improvement	No
118691	12/27/2018	Oroville	1	B		$ 32,896	$ 4,751	$ 44,303	89.1	113-113-NON-SPECIFIC	The pump failed under normal operating conditions.	INACTIVE, 12/17/21
114799	12/26/2018	Los Altos Suburban	27		1	$ 68,390	$ 26,599	$ 113,952	3.4	111-111-NON-SPECIFIC	Submersible pump motor failed, so pump was pulled and inspected. Latest efficiency reports suggested bowls also could be replaced.	No
98168	12/26/2018	Westlake	10	B		$ 74,927	$ 12,156	$ 110,846	UNKNOWN	123-123-SPECIFIC	Failure	No
98169	12/26/2018	Westlake	10	C		$ 64,671	$ 7,460	$ 88,343	33.2	123-123-SPECIFIC	Efficiency Improvement	No
98202	12/26/2018	Westlake	10	D		$ 64,129	$ 18,523	$ 102,898	30.1	123-123-SPECIFIC	Efficiency Improvement	No
97790	11/16/2018	Los Altos Suburban	7	D		$ 35,289	$ 7,585	$ 50,187	58.3	111-111-SPECIFIC	Efficiency Improvement	No
98118	11/13/2018	Hermosa Redondo	29	A		$ 50,149	$ 8,098	$ 70,605	23.7	108-108-SPECIFIC	Efficiency Improvement	No
98121	11/13/2018	Hermosa Redondo	13	F		$ 48,430	$ 8,600	$ 69,057	61.0	108-108-SPECIFIC	Efficiency Improvement	No
117842	11/7/2018	King City	4	C		$ 19,371	$ 3,624	$ 27,897	11.9	109-109-NON-SPECIFIC	Pump failed and needs to be replaced.	No
118768	10/24/2018	Bear Gulch	24	B		$ 22,872	$ 5,979	$ 33,725	1.8	102-102-NON-SPECIFIC	BG 024-B failed 6/21/2018 and requires immediate replacement. This pump station is the only feed for the 835 Zone. The back-up pump that is currently being used is inefficient (46%), old (installed in 1989), and therefore a high risk for the District	No
118562	10/23/2018	Mid Peninsula	118	B		$ 24,883	$ 7,380	$ 37,972	9.1	116-116-NON-SPECIFIC	Yes	No
97814	10/22/2018	Los Altos Suburban	33	B		$ 18,066	$ 5,724	$ 27,902	44.2	111-111-SPECIFIC	Efficiency Improvement	No
118769	10/5/2018	Oroville	15	B		$ 40,209	$ 1,651	$ 48,282	UNKNOWN	113-113-NON-SPECIFIC	Failure	No
118069	10/3/2018	Dominguez	219	CIRC.		$ 65,808	$ 10,151	$ 88,579	15.2	128-128-NON-SPECIFIC	Existing circulation booster is breaking down and requires replacement. This pump is needed to boost the chlorine residual in the area.	No
105568	9/28/2018	Visalia	41		1	$ 40,420	$ 11,399	$ 59,716	43.7	120-120-NON-SPECIFIC	Pump equipment failed under normal operating conditions and needs to be replaced to restore supply. Column extension needed as well due to low well levels.	No
108262	9/28/2018	Visalia	40		1	$ 72,991	$ 11,372	$ 99,275	11.7	120-120-NON-SPECIFIC	Pump equipment failed under normal operating conditions and needs to be replaced to restore supply.	No
118537	9/27/2018	Bear Gulch	36	B		$ 13,676	$ 218	$ 16,001	5.3	102-102-NON-SPECIFIC	Pump and motor failed during normal operating conditions	No
98400	9/27/2018	Chico	59		1	$ 46,151	$ 20,621	$ 81,200	36.0	104-104-SPECIFIC	Replace pump and convert column to water lubricated to stop positive bacterialogic test results.	No
118417	9/27/2018	Salinas	58	A,B		$ 11,003	$ 1,397	$ 14,689	8.8	114-114-NON-SPECIFIC	Pumping equipment failed under normal operations	No
118633	9/27/2018	Salinas	19		1	$ 29,380	$ 3,792	$ 39,377	16.9	114-114-NON-SPECIFIC	The pump and motor failed under normal operating conditions.	No
110540	9/17/2018	Chico	56		1	$ 59,083	$ 23,416	$ 100,182	39.7	104-104-NON-SPECIFIC	Conversion of oil lubricated pump to water lubricated pump. Replacement of 75 HP motor.	No

117844	9/17/2018	Chico	26		1	$ 61,272	$ 8,965	$ 84,757	9.2	104-104-NON-SPECIFIC	Noise and vibration in the pump	No
118914	9/10/2018	Chico	76		1	$ 57,767	$ -	$ 66,432	10.7	104-104-NON-SPECIFIC	Pump failed under normal operating conditions	No
118041	9/7/2018	Chico	8		1	$ 48,753	$ 7,580	$ 66,605	7.3	104-104-NON-SPECIFIC	Noise and vibration in the pump. Steady bushing was very loose.	No
75615	9/7/2018	AV - LAN	1	B		$ 84,319	$ 59,417	$ 178,617	UNKNOWN	130-129-SPECIFIC	Failure	No
97968	9/5/2018	Chico	34		1	$ 64,484	$ 21,125	$ 109,028	53.0	104-104-SPECIFIC	Replace pump and convert column to water lubricated to stop positive bacterialogic test results.	No
118323	7/17/2018	Salinas	62	B		$ 17,263	$ 1,426	$ 22,023	13.7	114-114-NON-SPECIFIC	Pump equipment failed under normal operating conditions and needs to be replaced to restore supply.	No
98081	5/11/2018	Bakersfield	216	A		$ 84,711	$ 29,118	$ 143,041	37.5	101-101-SPECIFIC	Efficiency Improvement	No
113547	5/11/2018	Bakersfield	77		2	$ 50,304	$ 8,150	$ 69,034	1.8	101-101-NON-SPECIFIC	pump breaking suction...air in water	No
106881	5/11/2018	East Los Angeles	10	A		$ 122,078	$ 47,746	$ 216,407	8.4	106-106-NON-SPECIFIC	Pump can not pump into system due to high system pressures	No
98120	5/11/2018	Hermosa Redondo	13	E		$ 47,552	$ 9,842	$ 68,866	18.7	108-108-SPECIFIC	Efficiency Improvement	No
108699	3/2/2018	Bakersfield	85		2	$ 76,219	$ 7,941	$ 99,844	39.5	101-101-NON-SPECIFIC	pump noisy and vibrating	No
117439	2/1/2018	Bakersfield	116	G		$ 10,171	$ 1,486	$ 13,700	47.4	101-101-NON-SPECIFIC	pump couple damaged	No
98142	2/1/2018	Palos Verdes	15	C		$ 52,190	$ 10,161	$ 74,404	20.5	122-122-SPECIFIC	Efficiency Improvement	No
115264	1/10/2018	Dominguez	203	CIRC.		$ 43,808	$ 17,005	$ 71,349	17.8	128-128-NON-SPECIFIC	Replace controls & pump and motor for tank recirculation	No
105377	12/20/2017	East Los Angeles	58	B		$ 195,463	$ 54,557	$ 304,040	9.3	106-106-NON-SPECIFIC	Subnersible failed, Replace pump and/or motor for submersible and related appurtenances.	No
117174	12/15/2017	AV - LEO	1		1	$ 7,964	$ 2,281	$ 11,990	UNKNOWN	129-129-NON-SPECIFIC	Failure	No
113545	11/27/2017	Bakersfield	29		2	$ 60,011	$ 5,017	$ 76,149	60.6	101-101-NON-SPECIFIC	pump vibrating /noisy	No
98072	11/9/2017	Bakersfield	100	F		$ 21,061	$ 13,243	$ 41,600	56.8	101-101-SPECIFIC	Efficiency Improvement	No
98074	11/9/2017	Bakersfield	87	D		$ 33,926	$ 10,980	$ 53,079	59.8	101-101-SPECIFIC	Efficiency Improvement	No
113064	11/9/2017	Bakersfield	105		1	$ 49,936	$ 10,080	$ 70,639	5.1	101-101-NON-SPECIFIC	equipment vibrating/noisy	No
114121	11/2/2017	Salinas	12		1	$ 29,967	$ 1,835	$ 38,927	11.8	114-114-NON-SPECIFIC	Pump does not produce flow against 66 PSI or greater. Pulled pump revealed severe corrosion to impellers. Supply is needed to maintain demand in the 155 zone.	No
97824	10/26/2017	Salinas	61		1	$ 42,262	$ 15,731	$ 77,012	14.2	114-114-SPECIFIC	Efficiency Improvement	No
109977	10/23/2017	Hermosa Redondo	8		2	$ 94,011	$ 13,426	$ 124,815	19.1	108-108-NON-SPECIFIC	Pump vibrates excessively and needs to be replaced immediately	No
62102	10/5/2017	Bear Gulch	20	A		$ 64,116	$ 14,537	$ 93,428	43.8	102-102-SPECIFIC	Based on existing pump's design parameters (500 GPM @ 480 FT TDH) and the most recent pump test, it is evident that the production capacity of this unit has decreased about 50% (237 GPM) over the unit's life span. This unit runs about 4500 hours per year. The decrease in pump capacity may be attributed to wear. By replacing the pump, the existing OPE (35%) can be improved to a level above 65% OPE, which will greatly reduce operating cost. A replacement of the pump will also increase the unit's GPM capacity to its original design. Both motor and pump will have 21 years of service by the year 2015. The motor was rewound in 2004 and repaired in 2007. Pump test information indicates that the motor is loaded slightly past 100%, which is not recommended by the industry. The new pump design should be as such that the motor is only loaded 90%.	No
113548	10/4/2017	Bakersfield	32		2	$ 39,667	$ 6,433	$ 56,644	6.2	101-101-NON-SPECIFIC	pump frozen...shutting down due to high amperage	No
97769	9/27/2017	Bear Gulch	25	A		$ 19,202	$ 5,129	$ 28,853	43.8	102-102-SPECIFIC	Efficiency Improvement	No
110579	9/7/2017	Salinas	16	A		$ 41,445	$ 15,055	$ 67,719	49.8	114-114-NON-SPECIFIC	Equipment failure	No
112562	9/1/2017	East Los Angeles	13		2	$ 41,638	$ 6,844	$ 53,938	59.7	106-106-NON-SPECIFIC	pump vibrating . new to pull and replace pump	No
111882	8/2/2017	Dominguez	277		1	$ 26,523	$ 2,318	$ 34,711	17.3	128-128-NON-SPECIFIC	Existing pump is not re-buildable due to extensive damage so new pump is needed	No
110279	7/28/2017	KRV - BOD	8		2	$ 23,721	$ 2,072	$ 31,456	37.6	134-134-NON-SPECIFIC	air in water due to excessive cascading in well. Need to resize and lower pump. Will do video while pump out.	No
63056	7/14/2017	Los Altos Suburban	113	A		$ 32,662	$ 17,056	$ 58,311	47.1	111-111-SPECIFIC	By the year 2015, pump and motor will have 61 years of service. The pump and motor are not reliable due to age and wear and should be replaced to increase reliability. The last pump test performed at LAS 113-A is dated 2/19/2009 and shows an OPE of 48.6%. The OPE can be significantly increased, which will in turn lower operating cost.	No
107821	7/7/2017	Salinas	46		1	$ 31,947	$ 7,461	$ 45,675	15.7	114-114-NON-SPECIFIC	PUMP FAILED	No
98128	7/6/2017	Hermosa Redondo	28	A		$ 56,324	$ 15,498	$ 82,190	59.5	108-108-SPECIFIC	Efficiency Improvement	No
97974	6/30/2017	Hamilton City	2		1	$ 99,541	$ 14,838	$ 140,219	22.8	107-104-SPECIFIC	Replace pump and convert coulumn to water lubricated to stop positive bacterialogic test results	No
98163	5/4/2017	Westlake	10	A		$ 48,678	$ 14,260	$ 76,261	4.3	123-123-SPECIFIC	Efficiency Improvement	No
107840	4/21/2017	Willows	4		1	$ 47,436	$ 4,340	$ 58,909	10.5	121-121-NON-SPECIFIC	Conversion of oil lubricated pump to water lubricated pump	No
98084	4/20/2017	Bakersfield	216	C		$ 108,724	$ 12,792	$ 105,030	34.4	101-101-SPECIFIC	Efficiency Improvement	No
97949	4/1/2017	Livermore	29	B		$ 45,497	$ 4,166	$ 57,349	14.8	110-110-SPECIFIC	Efficiency Improvement	No
97815	3/23/2017	Salinas	16	B		$ 52,990	$ 13,404	$ 81,196	54.2	114-114-SPECIFIC	Efficiency Improvement	No
107337	3/22/2017	Livermore	20		1	$ 45,437	$ 7,719	$ 59,656	57.1	110-110-NON-SPECIFIC	Existing Pump and Motor have failed	No
97892	3/15/2017	Livermore	29	A		$ 51,883	$ 7,175	$ 68,876	14.7	110-110-SPECIFIC	Efficiency Improvement	No
99022	3/1/2017	Oroville	2		1	$ 135,238	$ 18,433	$ 174,742	59.2	113-113-SPECIFIC	Efficiency Improvement	No
98097	2/16/2017	Dominguez	279		1	$ 105,102	$ 9,425	$ 120,143	UNKNOWN	128-128-SPECIFIC	Failure	No
62672	1/26/2017	Los Altos Suburban	30	A		$ 53,480	$ 11,788	$ 76,167	10.9	111-111-SPECIFIC	By the year 2013, both pump and motor will have 51 years of service. The pump and motor are not reliable and should be replaced to increase reliability. Additionally, the latest pump test shows LAS 30-A with an OPE of 44.2%, which is low by PG&E and CPUC standards. The pump test data shown below also shows a motor load of 106%, which can potentially reduce the expected life of the motor due to overheating. The new pump design parameter will be as such that the motor is not overloaded.	No
97789	1/26/2017	Los Altos Suburban	117	B		$ 49,944	$ 2,648	$ 60,420	42.7	111-111-SPECIFIC	Efficiency Improvement	No
62104	1/24/2017	Bear Gulch	25	B		$ 22,779	$ 9,121	$ 36,685	43.0	102-102-SPECIFIC	Existing booster pump's OPE was found to be 20.8% on the last pump efficiency test performed on 3/26/2009. The efficiency of the station can be increased to a level above 60% OPE by replacing the pump and motor, which will significantly lower energy operating cost. Based on existing pump design characteristics (350 GPM @ 100 FT TDH) and the most recent pump test information, it is evident that the total lift required for the pump has increased significantly, also reducing the pump's GPM capacity. The new design and new pump is needed to account for system pressure changes. A new, premium efficient, motor is also required to increase plant efficiency. The existing equipment will have 29 years of service by the year 2014.	No
97766	1/24/2017	Bear Gulch	24	B		$ 25,270	$ 12,325	$ 43,860	27.1	102-102-SPECIFIC	Efficiency Improvement	No
97889	12/30/2016	Livermore	10	A		$ 59,001	$ 8,572	$ 75,401	59.2	110-110-SPECIFIC	and operations Improvement	No
97961	12/27/2016	Chico	18		1	$ 62,473	$ 2,557	$ 74,812	59.0	104-104-SPECIFIC	Replace pump and convert column to water lubricated to stop positive bacterialogic test results.	No
103688	12/23/2016	East Los Angeles	55	B		$ 82,348	$ 32,157	$ 134,546	27.1	106-106-NON-SPECIFIC	pump not pumping water	No
97953	12/22/2016	Livermore	22	A		$ 40,756	$ 6,484	$ 53,229	55.3	110-110-SPECIFIC	Efficiency Improvement	No
97951	12/21/2016	Livermore	22	B		$ 35,895	$ 7,271	$ 49,172	53.2	110-110-SPECIFIC	Efficiency Improvement	No
97817	12/21/2016	Salinas	16	D		$ 36,920	$ 4,136	$ 45,443	20.1	114-114-SPECIFIC	Efficiency Improvement	No
105565	12/13/2016	Visalia	25		1	$ 32,103	$ 1,978	$ 42,841	7.4	120-120-NON-SPECIFIC	Pump equipment failed under normal operating conditions and needs to be replaced to restore supply.	No
105920	12/6/2016	Oroville	15	C		$ 37,811	$ 4,254	$ 48,028	49.1	113-113-NON-SPECIFIC	Motor failed, windings are blown. Motor needs to be replaced. Shaft shows wear signs, will be inspected and replaced if necessary.	No
99940	12/1/2016	Chico	31		1	$ 59,012	$ 4,651	$ 77,697	56.2	104-104-NON-SPECIFIC	Conversion of oil lubricated pump to water lubricated pump	No
82397	12/1/2016	Visalia	6		2	$ 9,949	$ 6,518	$ 22,075	16.2	120-120-NON-SPECIFIC	Existing motor failed under normal operating conditions. The existing motor was installed in 1952 and cannot be repaired. Therefore a new motor is required along with a discharge head that will match the footprint of the new motor.	No
105569	12/1/2016	Visalia	57		2	$ 23,202	$ 683	$ 26,301	29.1	120-120-NON-SPECIFIC	Pump equipment failed under normal operating conditions and needs to be replaced to restore supply.	No
108298	12/1/2016	Visalia	12		1	$ 40,423	$ 269	$ 44,761	23.0	120-120-NON-SPECIFIC	Pump equipment failed under normal operating conditions and needs to be replaced to restore supply.	No

106140	11/29/2016	Palos Verdes	37	A		$ 72,782	$ 13,604	$ 104,060	45.5	122-122-NON-SPECIFIC	Motor failed and needs to be replaced	No
97967	11/23/2016	Chico	62		1	$ 62,084	$ 2,723	$ 74,359	31.0	104-104-SPECIFIC	Replace pump and convert column to water lubricated to stop positive bacterialogic test results.	No
97973	11/23/2016	Chico	19		1	$ 59,059	$ 3,960	$ 71,658	66.0	104-104-SPECIFIC	Replace Pump and Convert column to water lubricated	No
63856	9/30/2016	Livermore	9	B,C		$ 27,828	$ 12,497	$ 56,941	63.7	110-110-SPECIFIC	Existing pumping capacity has decreased due to the age of the equipment and changed to operation.	No
98079	9/1/2016	Bakersfield	188	B		$ 29,108	$ 5,175	$ 40,191	34.0	101-101-SPECIFIC	Efficiency Improvement	No
103548	9/1/2016	Bakersfield	132		1	$ 89,738	$ 10,538	$ 123,281	55.0	101-101-NON-SPECIFIC	not pumping water	No
107781	9/1/2016	Salinas	62	B		$ 14,802	$ 940	$ 17,961	11.7	114-114-NON-SPECIFIC	Pump bowls corroded, reducing production from 600 GPM to 50 GPM. New bowls are needed to restore capacity.	No
80094	8/12/2016	Bear Gulch	40	B		$ 205,481	$ 33,065	$ 314,685	3.9	102-102-NON-SPECIFIC	The existing pump was inspected while removed for repairs. The inspection revealed that extensive repairs were needed, but the lead time was big and the district did not want to risk it with no redundancy at the plant. A short term repair was made. New equipment is needed to maintain redundancy and realiability at this critical Skyline system booster station. Note that discharge pressure for this pump is around 1100 psi and the equipment cost for this service conditions is quite high. Proposals have already been obtained.	No
97760	8/8/2016	Bear Gulch	4	G		$ 35,107	$ 11,884	$ 53,876	50.7	102-102-SPECIFIC	Efficiency Improvement	No
97830	8/8/2016	King City	8		1	$ 46,412	$ 6,778	$ 61,068	21.7	109-109-SPECIFIC	Efficiency Improvement	No
103462	8/8/2016	Livermore	14		1	$ 73,480	$ 30,155	$ 123,060	57.6	110-110-NON-SPECIFIC	Pump failed due to vibration, noise, and leakage issues. Well is also very crooked and most likely the cause of the pump problems.	No
105740	7/18/2016	Dominguez	290		1	$ 46,998	$ 33,452	$ 100,464	16.2	128-128-NON-SPECIFIC	Pump and shaft broke and need to be replaced	No
64077	7/1/2016	Salinas	26		1	$ 41,366	$ 3,785	$ 52,008	42.6	114-114-SPECIFIC	Existing pump equipment is currently operating at a 'low' efficiency and continuing to tred down. Pump replacement is required to maintain production relaibility.	No
105497	6/27/2016	Visalia	94		1	$ 73,948	$ 631	$ 85,148	8.6	120-120-NON-SPECIFIC	Pump bowl failed and needs to be replaced. Pump is currently operating within the well perforations and needs to be raised	No
105726	6/27/2016	Visalia	95		1	$ 25,723	$ 2,596	$ 32,295	5.3	120-120-NON-SPECIFIC	Pump bowl failed and needs to be replaced to restore water supply in this area.	No
62733	6/25/2016	Hermosa Redondo	23	D		$ 34,212	$ 12,602	$ 52,957	58.5	108-108-SPECIFIC	Existing pump is not efficient and edison's recommendation upon testing the pump was to have it replaced. Replacing the pump and motor will enable the company to save $ in operation and energy cost by changing the amount of kWs used to run the equipment for the same amount of water that is currently being pushed to the distribution system. In addition, pump has moderate corrosion. the state of corrosion is expected to worsen in the next two years due to the existing condition of the packing gland.	No
62712	6/17/2016	Dominguez	298		1	$ 99,324	$ 35,523	$ 162,907	16.2	128-128-SPECIFIC	The well pump at DOM sta. 298-01was installed in 2004 and has been in operation since. The pump uses oil as a lubricating medium. Cal Water has to change this pump in order to provide good quality and safe water its customers. Since certain oils have been determined to contribute to the growth of bacteria in groundwater aquifer, replacing the existing pump with a water lubricated pump will prevent further water quality degradation. Well sorroundings will also be cleaned to prevent cross contamination when the pump is replaced.	No
99942	6/14/2016	Chico	32		1	$ 56,737	$ 4,666	$ 75,106	UNKNOWN	104-104-NON-SPECIFIC	Failure	No
101799	6/2/2016	Bakersfield	216	B		$ 29,000	$ 7,012	$ 29,104	16.6	101-101-NON-SPECIFIC	Impellers and shaft are worn thin	No
98131	6/2/2016	Palos Verdes	38	A		$ 22,276	$ 5,291	$ 31,880	30.7	122-122-SPECIFIC	Efficiency Improvement	No
103549	5/27/2016	Bakersfield	54		2	$ 77,361	$ 3,611	$ 96,570	48.8	101-101-NON-SPECIFIC	not pumping enough water capacity	No
104080	5/27/2016	Bakersfield	146		3	$ 117,947	$ 2,590	$ 137,518	6.7	101-101-NON-SPECIFIC	column broke at pump	No
101329	5/17/2016	Bakersfield	77		2	$ 92,956	$ 22,338	$ 135,028	58.7	101-101-NON-SPECIFIC	Not pumping	No
64061	5/17/2016	Salinas	63		1	$ 38,690	$ 3,567	$ 49,639	10.8	114-114-SPECIFIC	Existing pump is operating below the desired efficiency for a 200 HP motor. Replacing the pump bowl will increase the efficiency and reliability of the pumping equipment.	No
105480	5/7/2016	KRV - KERV	1		7	$ 4,366	$ 98	$ 5,094	4.6	134-134-NON-SPECIFIC	Spare pump for WSTP because this is critical for plant operation. Plant will soon shht down if pump fails.	No
105357	5/2/2016	So. San Francisco	13	A		$ 3,374	$ 1,118	$ 5,137	5.3	118-118-NON-SPECIFIC	Motor broke down and needs to be replaced.	No
63612	4/5/2016	Bakersfield	184		1	$ 77,345	$ 3,807	$ 93,372	35.3	101-101-SPECIFIC	Existing booster pump is operating at a 'fair' efficiency. Replacement is required to increase the pump performance from 57% to 67%	No
62515	4/1/2016	Selma	19		1	$ 55,303	$ 7,186	$ 76,874	20.5	117-117-SPECIFIC	Pump replacement is required to due to oil lube pumping equipment pumping excessive oil into the distribution system. Existing pumping equipment doesn't meet current cws specifications	No
62233	4/1/2016	Visalia	7		1	$ 50,547	$ 2,263	$ 72,859	58.7	120-120-SPECIFIC	Current pump test indicates the equipment is operating at a 'very low' raiting. Replacing the equipment will increase the efficiency of the pump from 59% to 66%.	No
102086	4/1/2016	Visalia	16		2	$ 66,515	$ 3,731	$ 90,033	15.8	120-120-NON-SPECIFIC	Existing pump has failed operating and needs to be replaced to maintain water supply.	No
100027	3/18/2016	Chico	67		1	$ 96,024	$ 8,367	$ 124,919	19.5	104-104-NON-SPECIFIC	Conversion of oil lubricated pump to water lubricated pump. Replacement of 150 HP motor.	No
102348	3/18/2016	Chico	49		1	$ 61,376	$ 4,220	$ 76,563	41.8	104-104-NON-SPECIFIC	Vibration and noise issues caused by minor sanding and age of equipment. Pump and motor critical to water supply and needs to be replaced.	No
97712	3/15/2016	East Los Angeles	54		1	$ 70,799	$ 7,204	$ 89,931	14.3	106-106-SPECIFIC	Normal wear and tear	No
105175	3/15/2016	Salinas	27		1	$ 45,301	$ 188	$ 52,039	5.8	114-114-NON-SPECIFIC	Pump vibrated excessively until reaching a level of service failure. New Pump is needed to bring station back to required LOS.	No
99743	3/9/2016	Chico	23		1	$ 58,320	$ 4,552	$ 79,604	61.3	104-104-NON-SPECIFIC	In addition to age and reliability, another reason for the replacement of this pump is to change from an oil lubricated pump shaft to product (water) lubrication in an effort to reduce potential bacterial growth in the well and minimize the risk of losing a water source. It has been shown that certain bacteria use NSF oil as a food source. The accumulation of oil in the well will be removed at the time of replacement.	No
97813	3/1/2016	Los Altos Suburban	17	A		$ -	$ 4,813	$ 73,388	18.1	111-111-SPECIFIC	Efficiency Improvement	No
101959	3/1/2016	Los Altos Suburban	17	A		$ 87,174	$ 13,041	$ 55,315	55.9	111-111-NON-SPECIFIC	Motor burnt out; Pump has low efficiency; pump not changed when system was rezoned.	No
104697	2/23/2016	RDV - ARM	1		2	$ 9,773	$ 4,990	$ 16,889	12.1	148-146-NON-SPECIFIC	Asset has level of service failure; does not produce required flow to meet summer demand	No
104162	2/17/2016	AV - LEO	1		1	$ 6,311	$ 596	$ 7,916	6.3	129-129-NON-SPECIFIC	<Enter data here>	No
97826	1/29/2016	Salinas	16		1	$ 34,778	$ 711	$ 42,969	52.8	114-114-SPECIFIC	Efficiency Improvement	No
102011	1/29/2016	Salinas	205		1	$ 56,653	$ 6,772	$ 77,161	2.2	114-114-NON-SPECIFIC	Motor on submersible pump failed	No
104297	1/29/2016	Salinas	48	D		$ 26,773	$ 2,037	$ 32,976	18.3	114-114-NON-SPECIFIC	Pump intermittently loses flow. Inspection revealed bad motor and corroded impeller.	No
61772	1/29/2016	Stockton	60		1	$ 71,404	$ 8,513	$ 104,849	55.2	119-119-SPECIFIC	CWSC is requesting approval for the replacement of pump and column assembly only, not the motor. The pump will have been in service 52 years by 2013. The most recent pump test, performed 11/12/2008 shows an overall plant efficiency (OPE) of 51.4%, which is low based on PG&E standards for a unit 150 HP in size. Replacing the pump and column assembly will increase bowl efficiency thereby increasing OPE, which will in turn save in operating cost. Since the new equipment will be product lubricated, there is an inherent benefit in replacing the existing equipment which is currently NSF oil lubricated. The motor will be inspected and its bearings will be replaced at the time of pump replacement.	No
64099	1/28/2016	Livermore	22	A,B,C		$ 39,898	$ 3,863	$ 56,471	49.7	110-110-SPECIFIC	Existing booster pumps are producing lower than desired flow and head capacity due to wear of the pump units. Pump replacements are required to maintain reliable operation of the station.	No
103342	12/25/2015	KRV - SOLA	8		1	$ 17,734	$ 2,420	$ 24,387	19.2	134-134-NON-SPECIFIC	Well is producing sand and gravel during operation.	No
101337	12/22/2015	Bakersfield	126		1	$ 68,333	$ 2,803	$ 86,089	56.4	101-101-NON-SPECIFIC	Production Down.	No
103922	12/21/2015	Willows	11	B		$ 13,934	$ 1,850	$ 19,109	3.4	121-121-NON-SPECIFIC	Excessive pump vibration caused damage to shaft and bearings. Pump parts will be replaced and re-conditioned.	No

66629	12/14/2015	Palos Verdes	30	D		$ 197,189	$ 16,105	$ 265,477	12.6	122-122-SPECIFIC	Existing pumping equipment has been in service for 25 years. In that period, the motor has been overhauled twice. the pump, on the other hand, has not even been inspected. Typically, pumps that have operated for this period tend to have mechanical flaws that could result in a catastrophic failure. To avoid such a failure, it is highly recommended that this unit be replaced. A new shelter with ventilation/cooling fan and acoustic material will be installed as well.	No
63814	12/8/2015	Bakersfield	23	F		$ 74,293	$ 10,916	$ 108,722	18.3	101-101-SPECIFIC	Existing pumping equipment is currently operating at a 'fair' rating. Pump efficiency can be increased from 50% to 65%.	No
63815	12/4/2015	Bakersfield	96	A		$ 53,808	$ 5,667	$ 72,319	49.0	101-101-SPECIFIC	Existing booster pumps are operating at a "low" efficiency rating. Efficiency can be improved from 42% and 47% respectivly to 61%.	No
103499	12/1/2015	KRV - ONYX	1		1	$ 8,549	$ 1,136	$ 11,719	4.2	134-134-NON-SPECIFIC	existing submersible pump burnt out.	No
101197	12/1/2015	Palos Verdes	15	A		$ 49,045	$ 10,517	$ 74,760	39.2	122-122-NON-SPECIFIC	Original motor failed which may lead to replacement of both motor and pump.To be replaced with more efficient pump and motor.	No
63595	11/13/2015	Bakersfield	189		1	$ 76,796	$ 3,531	$ 97,683	33.2	101-101-SPECIFIC	Existing booster pump is operating at a low' efficiency rating. Replacement is required to increase the pump performance from 53% to 67%	No
101332	11/12/2015	Bakersfield	178		1	$ 76,061	$ 5,560	$ 99,571	6.8	101-101-NON-SPECIFIC	Not producing water.	No
103419	11/9/2015	East Los Angeles	25		1	$ 12,458	$ 4,940	$ 21,344	13.1	106-106-NON-SPECIFIC	Motor has gone to ground and Well 25-01 is now out of service. Replacement needs to be done ASAP	No
100024	10/26/2015	Chico	50		1	$ 30,205	$ 4,080	$ 42,095	36.0	104-104-NON-SPECIFIC	Replace oil lubricated pump with water lubricated pump. Replace 100 HP motor.	No
102644	10/21/2015	Bakersfield	157		1	$ 80,826	$ 705	$ 98,741	41.0	101-101-NON-SPECIFIC	Pump and column assemblies were in very poor condition and need to replaced entirely and we may take this opportunity to convert the well to water lube	No
102643	10/20/2015	Bakersfield	142		1	$ 67,232	$ 1,375	$ 83,093	18.3	101-101-NON-SPECIFIC	Pump and entire Column Assemblies were in very poor condition and need replacement, which provides a good opportunity to convert well to water lube	No
102637	10/19/2015	Bakersfield	102		1	$ 81,053	$ 952	$ 99,311	56.3	101-101-NON-SPECIFIC	Pump operating poorly and column assemblies corroded	No
102092	10/15/2015	Visalia	24		1	$ 43,618	$ 1,531	$ 54,951	54.6	120-120-NON-SPECIFIC	Existing pump has failed operating and needs to be replaced to maintain water supply.	No
101323	10/14/2015	Bakersfield	156		1	$ 59,152	$ 7,747	$ 80,985	45.0	101-101-NON-SPECIFIC	Not producing	No
103327	10/12/2015	Bakersfield	146		1	$ 22,980	$ -	$ 27,865	49.3	101-101-NON-SPECIFIC	Condition of asset is not reliable	No
96183	10/5/2015	Livermore	18	B		$ 27,030	$ 5,031	$ 40,943	56.0	110-110-NON-SPECIFIC	REPLACE 40HP SLIT CASE PUMP WITH 40HP VERTICAL INLINE PACO PUMP	No
62173	10/1/2015	Chico	20		1	$ 53,082	$ 3,004	$ 68,158	58.0	104-104-SPECIFIC	The main reason for the replacement of this pump is to change from an oil lubricated pump shaft to product (water) lubrication in an effort to reduce potential bacterial growth in the well and minimize the risk of losing a water source. It has been shown that certain bacteria use food grade oil as a food source. The accumulation of oil in the well will be removed at the time of replacement. By the year 2014, the motor and pump will have 62 and 18 years of service, respectively.	No
99937	10/1/2015	Chico	5		2	$ 54,194	$ 3,357	$ 70,554	45.0	104-104-NON-SPECIFIC	Replacement of oil lubricated pump to a water lubricated one, with removal of oil contamination in well to address water quality issues.	No
100026	10/1/2015	Chico	65		1	$ 81,983	$ 3,176	$ 104,607	25.0	104-104-NON-SPECIFIC	Conversion of oil lubricated pump to water lubricated pump. Replacement of 150 HP motor.	No
102717	10/1/2015	Palos Verdes	22	F		$ 46,806	$ 2,452	$ 62,474	32.1	122-122-NON-SPECIFIC	Motor failed and needs to be repaired. Large and critical pump to the water system	No
63614	9/21/2015	Bakersfield	143		1	$ 67,240	$ 4,613	$ 88,399	51.0	101-101-SPECIFIC	Existing pumping equipment is operating at a 'low' rating. Repalcement pump to increase efficiency from 41% to 67%.	No
98986	9/16/2015	Bakersfield	129		1	$ 57,619	$ 3,973	$ 74,800	4.3	101-101-NON-SPECIFIC	Existing pumping equipment is not operating as designed. Pull, inspect and replace parts as necessary	No
101327	9/16/2015	Bakersfield	47		2	$ 36,658	$ 483	$ 44,960	57.7	101-101-NON-SPECIFIC	Not pumping to maximum	No
63633	9/15/2015	Bakersfield	151		1	$ 115,785	$ 11,575	$ 165,342	46.2	101-101-SPECIFIC	Existing pumping equipment is operating at a 'fair' rating. Replacement is required to increase efficiency from 51% to 67%	No
61652	9/15/2015	Stockton	35		1	$ 60,757	$ 5,456	$ 84,733	62.0	119-119-SPECIFIC	The reasons for the replacement of pump, motor, and column assembly are: 1) To replace the old equipment which is deemed unreliable and 2) To replace the oil lubricated equipment with product (water) lubrication. It has been shown that the NSF oil used to lubricate the shaft can also be a food source for bacteria. Changing to product lubrication will significantly reduce potential bacterial growth in the well and will minimize the risk of loosing a water source due to bacterial contamination. The oil accumulated in the well over the years will be removed from the well at the time of the pump replacement. By the year 2014, the existing pump and motor will have 57 years of service.	No
102959	8/31/2015	Bakersfield	89		1	$ 60,858	$ 2,504	$ 76,765	57.7	101-101-NON-SPECIFIC	The pump inspection revealed that the existing pump has to be replaced.	No
101040	8/15/2015	Visalia	31		1	$ 24,703	$ 2,085	$ 32,512	47.3	120-120-NON-SPECIFIC	Existing pump's mechanical equipment failed and needs to be replace to restore and maintain water supply.	No
96999	8/14/2015	Bakersfield	182		1	$ 137,588	$ 5,594	$ 173,622	34.7	101-101-NON-SPECIFIC	Existing pumping equipment is operating at a 'fair' OPE rating. Replacement is required to increase efficiency.	No
62235	7/31/2015	Visalia	50		1	$ 42,959	$ 14,336	$ 83,480	37.1	120-120-SPECIFIC	Existing pumping equipment has been causing continious water quality problems due to the oil lube application.	No
102077	7/22/2015	Chico	54		1	$ 70,674	$ 2,448	$ 89,167	UNKNOWN	104-104-NON-SPECIFIC	Failure	No
101918	7/15/2015	Salinas	25		1	$ 51,034	$ 2,355	$ 67,210	42.7	114-114-NON-SPECIFIC	Impellers on pump completely corroded away due to elevated salinity in the aquifer.	No
101498	7/14/2015	Bakersfield	219		1	$ 127,083	$ 4,830	$ 160,351	36.7	101-101-NON-SPECIFIC	Well not pumpimg	No
20581	6/25/2015	Mid Peninsula	23	A,B		$ 57,712	$ 11,453	$ 87,180	49.5	116-116-SPECIFIC	Upgrade to provide larger pumps adequate to provide peak hour, max day, and fire flow; include electric, telemetry and hydropneumatic tank upgrades as needed. Energy efficiency monitoring equipment is required for real-time power consumption management.	No
97639	6/16/2015	So. San Francisco	1		15	$ 25,624	$ 3,578	$ 37,664	84.4	118-118-NON-SPECIFIC	<Enter data here>	No
101037	6/12/2015	Visalia	56		1	$ 20,435	$ 2,356	$ 28,519	21.6	120-120-NON-SPECIFIC	Replace failed pump bowl	No
96747	6/8/2015	Bear Gulch	26	B		$ 34,378	$ 8,794	$ 55,968	38.0	102-102-NON-SPECIFIC	The 30 HP vertical motor failed at this station.	No
62553	5/26/2015	Los Altos Suburban	27	A		$ 73,777	$ 17,045	$ 117,960	12.8	111-111-SPECIFIC	Existing is not a reliable station due to age of equipment. By the year 2013, the pump and motor will have 51 and 52 years of service, respectively. Pump and motor should be replaced.	No
99865	5/4/2015	Selma	22		1	$ 19,041	$ 4,378	$ 29,774	2.6	117-117-NON-SPECIFIC	Bowl unit and shaft failed due to improper installation.	No
99917	4/16/2015	Chico	39		1	$ 52,477	$ 1,846	$ 68,283	46.3	104-104-NON-SPECIFIC	Removal of oil in well, and replacement of pump and 75 HP motor to self lubricated pump to address water quality issues.	No
62240	4/13/2015	Chico	25		1	$ 54,695	$ 1,762	$ 72,026	57.3	104-104-SPECIFIC	In addition to age and reliability, another reason for the replacement of this pump is to change from an oil lubricated pump shaft to product (water) lubrication in an effort to reduce potential bacterial growth in the well and minimize the risk of losing a water source. It has been shown that certain bacteria use NSF oil as a food source. The accumulation of oil in the well will be removed at the time of replacement. By the year 2015, the motor and pump will have 59 years of service.	INACTIVE, 08/29/17
61632	3/31/2015	Dixon	8		1	$ 91,536	$ 13,851	$ 134,967	36.2	105-105-SPECIFIC	The most recent pump test performed at DIX 8-01 shows an OPE of 42%, which is low by PG&E and CPUC standards. OPE can be increased to 65% or above by replacing the existing pumping equipment with new reliable and more efficient equipment. With an increase in OPE due to replacement of inefficient equipment, operating cost can be greatly reduced. Additionally, existing pump shaft is oil lubricated. Replacement equipment will be product (water) lubricated, which will potentially reduce the growth of bacteria that uses NSF oil as a food source. The accumulation of oil in the well will be removed at the time of replacement. By the year 2014, the existing pump will have 35 of service.	No
100897	3/25/2015	Chico	71		1	$ 11,754	$ 308	$ 15,094	12.4	104-104-NON-SPECIFIC	Pump is critical to water supply and needs to be repaired	No
96184	3/19/2015	Livermore	14	A		$ 27,580	$ 8,240	$ 45,533	56.2	110-110-NON-SPECIFIC	REMOVE EXISTING SPLIT CASE PUMP AND REPLACE WITH 50HP VERTICAL INLINE PACO PUMP	No
62954	2/6/2015	Visalia	94		1	$ 22,733	$ 7,615	$ 38,408	7.5	120-120-SPECIFIC	Current pump test indicated the pump is operating at a 'fair' rating. It has been concluded that unanticipated changes in the well performance have caused the original pump design paramenters to be inaccurate. A pump bowl replacement and changes to the pump setting should adequately address the performance issue.	No
97266	2/4/2015	Visalia	60		1	$ 14,802	$ 2,514	$ 20,976	23.6	120-120-NON-SPECIFIC	Emergency work	No
96909	12/5/2014	Chico	64		1	$ 53,253	$ 3,458	$ 74,259	26.9	104-104-NON-SPECIFIC	Emergency replacement of 75Hp oil lubricated pump and motor to address a water quality and supply issue	No

96389	12/5/2014	Hermosa Redondo	8	A	$	10,870	$	3,462	$	19,204	35.3 108-108-NON-SPECIFIC	Circulation pump allows treatment plant and well to operate continously. Without this pump both plant and well wouldn't be operational.	No

District Name	Station ID	Pump ID	Cost $	Known maintenance problems	Last Work Date	Last Work Description	Planned Work Date	Planned Work Description	De Laval Pump?	Oil Lubricated Shaft Pump?	Mercury Seal Submersible Motor?	Inactive or Standby Station? (Answer: Inactive, Standby, or NA)
BK	73	E		Low Overall Plant Efficiency (OPE)	2013	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
BAY -SC	114	B		Low Overall Plant Efficiency (OPE)	2014	Original Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
BAY -SC	118	A		Low Overall Plant Efficiency (OPE)	2009	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
BAY -SC	120	B		Low Overall Plant Efficiency (OPE)	175	Original Pump	2027	Replace Pump & Motor	No	No	No	No
BAY - SM	12	E		Low Overall Plant Efficiency (OPE)	2011	Original Pump	2027	Replace Pump & Motor	No	No	No	No
BAY - SM	6	D		Low Overall Plant Efficiency (OPE)	1975	Original Pump	2025	Replace Pump & Motor	No	No	No	No
BAY - SSF	101	A		Low Overall Plant Efficiency (OPE)	2015	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
BAY - SSF	2	C		FUNC - EQUIPMENT FAILURE	2013	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
BAY - SSF	5	A		Low Overall Plant Efficiency (OPE)	2012	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
CH	65	1		Low Overall Plant Efficiency (OPE)	2015	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
DIX	10	A		Low Overall Plant Efficiency (OPE)	2012	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
DIX	10	B		Low Overall Plant Efficiency (OPE)	2012	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
DOM	277	1		Low Overall Plant Efficiency (OPE)	2017	Replace Pump	2026	Replace Pump & Motor	No	No	No	No
DOM	277	A		Low Overall Plant Efficiency (OPE)	2001	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
ELA	23	B		Low Overall Plant Efficiency (OPE)	2011	Replace Pump & Motor	2024	Replace Pump & Motor	No	No	No	No
ELA	32	C		Low Overall Plant Efficiency (OPE)	2018	Replace Pump & Motor	2024	Replace Pump & Motor	No	No	No	No
ELA	10	3		Low Overall Plant Efficiency (OPE)	2009	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
ELA	12	C		Low Overall Plant Efficiency (OPE)	2014	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
ELA	30	A		Low Overall Plant Efficiency (OPE)	2011	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
ELA	40	A		Low Overall Plant Efficiency (OPE)	1947	Original Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
ELA	55	A		Low Overall Plant Efficiency (OPE)	2010	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
ELA	59	A		Low Overall Plant Efficiency (OPE)	2018	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
KC	10	A		Low Overall Plant Efficiency (OPE)	2006	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
KC	13	1		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
KC	15	A		Low Overall Plant Efficiency (OPE)	2014	Original Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
KRV - ONYX	1	1		Low Overall Plant Efficiency (OPE)	2015	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
KRV - ONYX	2	1		Low Overall Plant Efficiency (OPE)	Unknown	Unknown	2027	Replace Pump & Motor	No	No	No	No
KRV - ONYX	3	A		Low Overall Plant Efficiency (OPE)	2013	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
KRV - SMTN	15	A		Low Overall Plant Efficiency (OPE)	Unknown	Unknown	2025	Replace Pump & Motor	No	No	No	No
KRV - SMTN	15	B		Low Overall Plant Efficiency (OPE)	Unknown	Unknown	2025	Replace Pump & Motor	No	No	No	No
KRV - SMTN	2	15		Low Overall Plant Efficiency (OPE)	Unknown	Unknown	2027	Replace Pump & Motor	No	No	No	No
KRV - UBOD	104	2		Low Overall Plant Efficiency (OPE)	Unknown	Unknown	2026	Replace Pump & Motor	No	No	No	No
LAS	113	B		Low Overall Plant Efficiency (OPE)	1998	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LAS	119	D		Low Overall Plant Efficiency (OPE)	1984	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
LAS	121	2		Low Overall Plant Efficiency (OPE)	1994	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
LAS	123	1		Low Overall Plant Efficiency (OPE)	2010	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LAS	27	1		Low Overall Plant Efficiency (OPE)	2004	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
LAS	33	B		Low Overall Plant Efficiency (OPE)	2018	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LAS	34	B		Low Overall Plant Efficiency (OPE)	2006	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
LAS	7	E		Low Overall Plant Efficiency (OPE)	2012	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LIV	15	1		Low Overall Plant Efficiency (OPE)	1958	Original Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
LIV	20	1		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LIV	25	G		Low Overall Plant Efficiency (OPE)	1993	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
LIV	29	A		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LIV	29	B		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LIV	32	A		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LIV	32	B		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
LIV	32	C		Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
					"B" & "C" - UNKNOWN				No	No	No	No
									No	No	No	No
						"B" & "C" - Unknown			No	No	No	No
					"D" - 2014				No	No	No	No
LIV	34	B,C,D		Low Overall Plant Efficiency (OPE)		"D" - Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
MRL	15	1		Low Overall Plant Efficiency (OPE)	2012	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
ORO	15	E		FUNC - EQUIPMENT FAILURE	1999	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
RDV - NH	201	A		Low Overall Plant Efficiency (OPE)	Unknown	Unknown	2027	Replace Pump & Motor	No	No	No	No
SLN	21	1		Low Overall Plant Efficiency (OPE)	2015	Rebuild Pump	2026	Replace Pump & Motor	No	No	No	No
SLN	27	1		FUNC - EQUIPMENT FAILURE	2016	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
SLN	304	A		Low Overall Plant Efficiency (OPE)	2015	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
SLN	32	1		Low Overall Plant Efficiency (OPE)	2010	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No

SLN	57	A	Low Overall Plant Efficiency (OPE)	2013	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
SLN	58	B	Low Overall Plant Efficiency (OPE)	2018	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
SLN	67	1	FUNC - EQUIPMENT FAILURE	2009	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
SLN	71	1	Low Overall Plant Efficiency (OPE)	1999	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
SLN	73	A	Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
SLN	73	B	Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
SLN	73	E	Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
STK	59	1	OP - Excessive Sand	2012	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
STK	60	1	OP - Excessive Sand	2014	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
VIS	15	1	Low Overall Plant Efficiency (OPE)	1951	Original Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
VIS	32	1	Low Overall Plant Efficiency (OPE)	2004	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
VIS	57	2	Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2025	Replace Pump & Motor	No	No	No	No
WIL	4	1	Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
VIS	201	1	Low Overall Plant Efficiency (OPE)	UNKNOWN	UNKNOWN	2025	Replace Pump & Motor	No	No	No	No
VIS	23	1	Low Overall Plant Efficiency (OPE)	2016	Replace Pump & Motor	2027	Replace Pump & Motor	No	No	No	No
UV	19	1	Low Overall Plant Efficiency (OPE)	2009	Replace Pump & Motor	2026	Replace Pump & Motor	No	No	No	No
KRV - MSHA	6	B	Low Overall Plant Efficiency (OPE)	UNKNOWN	UNKNOWN	2027	Replace Pump & Motor	No	No	No	No

LIST OF ATTACHMENTS FOR CHAPTER 7

	Attachment #	Description
1	Attachment 7-1	CWS Response to DR KN3-011 Q2e-f_Attachment 340

Attachment 7-1:
CWS Response to DR KN3-011 Q2e-f_Attachment 340

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Date: **December 31, 2024** **Partial Response #2 sent December 23, 2024** **Partial Response #2 sent December 19, 2924** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #3 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 and 4 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**

- **Attachment #340 – KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS**
- **Attachment #341 – KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost**
- **Attachment #342 – CONFIDENTIAL KN3-011 Attachment 342_4.f**
- **Attachment #343 – CONFIDENTIAL KN3-011 Attachment 343_4.f.i**
- **Attachment #344 – CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK**
- **Attachment #345 – CONFIDENTIAL KN3-011 Attachment 345_4.f.iii_BKNG**
- **Attachment #346 – KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: Please see tab Historical CPC Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS".
    ~~**To be provided in a subsequent response.**~~

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: The unit costs for the proposed cathodic protection projects in this rate case were derived from a vendor quote. Please see tab Future CPS Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS". Please refer to "KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost" for supporting evidence.
    ~~**To be provided in a subsequent response.**~~

g. Are any of the CPS to be replaced associated with “standby” or “inactive” stations?
Response: No.

[KN3-011 Attachment 340_2.f. Tab: Requested Replacement]

District Name	Station ID	CPS Replacement IDs	Scope of Replacement (Complete or Partial Repair)	Cost $	Replacement year since Jan 2021-Nov 2024	Age at Replacement	Planned or Non-Specific replacement?	Reason for replacement	Inactive or Standby Station? (Answer: Inactive, Standby, or NA)
Antelope Valley	STA. 001-T1	00123499		$9,670.82	2024		Planned		
Bakersfield	STA 073-T4 STA 116-T2 STA 116-T3 STA 087-T7 STA 045-T4 STA 087-T8	00123130		$83,768.24	2024		Planned		
Bakersfield	STA 100-T5	00114862		$29,032.98	2022		Planned		
Bakersfield	STA. 045-T5	00114870		$17,392.71	2022		Planned		
Bakersfield	STA 196-T1 STA 194-T1 STA 023-T2 STA 210-T1	00114874		$79,718.95	2022		Planned		
Bear Gulch	STA 022-T1	00114876		$18,589.98	2021		Planned		
Bear Gulch	STA 041-T1 STA 041-T2 STA 027-T4	00114879		$49,203.41	2021		Planned		
Dominguez	STA 203-T4	00123133		$23,094.57	2023		Planned		
East Los Angeles	STA 040-T1 STA 061-T2 STA 004-T1	00123552		$41,936.09	2023		Planned		
Hermosa Redondo	STA 027-T1 STA 009-T2 STA 026-T2	00123294		$40,129.08	2024		Planned		
Kern River Valley	STA 011-T1	00123105		$16,404.59	2024		Planned		
Kern River Valley	STA 006-T1	00123333		$17,893.03	2024		Planned		
Kern River Valley	STA 007-T1	00123442		$13,599.85	2024		Planned		
King City	STA 010-T1	00114891		$15,274.40	2021		Planned		
Livermore	STA. 029-T1	00123339		$19,141.01	2023		Planned		
Livermore	STA. 025-T1	00114893		$16,093.64	2021		Planned		
Los Altos Suburban	STA 119-T1	00123553		$11,196.37	2024		Planned		
Palos Verdes	STA 023-T19 STA 049-T2	00114888		$37,898.58	2023		Planned		
Redwood Valley	STA. 008-T1	00123246		$18,894.94	2024		Planned		
Redwood Valley	STA. 001-T1	00114880		$12,011.61	2022		Planned		
Redwood Valley	STA. 002-T1	00114882		$12,485.36	2024		Planned		
Salinas	STA 201-T2 STA 047-T1 STA 052-T3 STA 052-T2	00123295		$57,687.33	2023		Planned		
Salinas	STA 302-T2 STA 048-T1 STA 053-T1	00114895		$47,689.65	2021		Planned		

Westlake	STA 008 T1	00114897	$9,691.72	2022	Planned
Livermore	STA 018-T1	00131561	$11,180.97	2024	Non-Specific
Bayshore	STA 011-T1 STA 011-T2 STA 013-T1	00131368	$14,820.62	2024	Non-Specific
Los Altos Suburban	STA 104-T1	00128836	$3,956.47	2022	Non-Specific
Los Altos Suburban	STA 123-T1	00128230	$3,392.66	2022	Non-Specific
Visalia	STA 012-T2	00128058	$70,467.54	2022	Non-Specific
Livermore	STA 013-T2	00127975	$8,474.03	2022	Non-Specific
Bayshore	STA 115-T1	00120716	$7,571.31	2021	Non-Specific

[KN3-011 Attachment 340_2.f. Tab: Historical CPS Replacement]

District Name	Station ID	CPS Replacement IDs	Cost $ (direct)	Scope of Replacement (Complete or Partial Repair)	Date Scheduled for Replacement	Age at Replacement	Reason for replacement	Inactive or Standby Station? (Answer: Inactive, Standby, or NA)
Antelope Valley	LAN 001-T2	00132974	$ 16,598.78		2026			
Antelope Valley	LHUG 003-T1	00132980	$ 13,272.55		2025			
Bear Gulch	BG 002	00133024	$ 12,212.40		2026			
Bear Gulch	BG 021	00133025	$ 23,321.76		2026			
Chico	CH 066-T2	00133035	$ 18,732.66		2025			
Chico	CH 074-T1	00133036	$ 19,220.92		2025			
Dominguez	DOM 203-T3	00133055	$ 39,170.78		2026			
Dominguez	DOM 215-T1	00133056	$ 15,715.76		2025			
Dominguez	DOM 277-T1	00133057	$ 15,376.13		2025			
Dominguez	DOM 279-T1	00133058	$ 14,085.56		2026			
Dominguez	DOM 279-T2	00133059	$ 14,085.56		2026			
Dominguez	DOM 297-T1	00133060	$ 14,085.56		2026			
Dominguez	DOM 298-T1	00133061	$ 14,900.66		2025			
East Los Angeles	ELA 023-T1	00133070	$ 9,453.07		2025			
East Los Angeles	ELA 040-T3	00133071	$ 16,714.78		2025			
Hermosa Redondo	HR 005-T1	00133075	$ 41,395.59		2027			
Hermosa Redondo	HR 009-T3	00133076	$ 16,842.27		2027			
Hermosa Redondo	HR 026-T2	00133077	$ 16,037.15		2027			
Hermosa Redondo	HR 026-T3	00133079	$ 15,153.02		2025			
Livermore	LIV 029-T2	00133108	$ 27,832.81		2026			
Oroville	ORO 016-T1	00133120	$ 32,363.10		2026			
Visalia	VIS 012-T2	00133139	$ 16,461.65		2025			
Bakersfield	BK 087-T8	00133168	$ 19,045.40		2026			
Bakersfield	BK 100-T1	00133169	$ 14,848.35		2026			
Bakersfield	BK 116-T4	00133170	$ 18,668.10		2026			
Bakersfield	BK 188-T1	00133171	$ 14,776.30		2026			
Bakersfield	BK 213-T2	00133172	$ 14,612.40		2026			
Bakersfield	BK 216-T1	00133173	$ 36,920.40		2026			
Stockton	STK 069-T1	00133202	$ 29,871.60		2025			
Selma	SEL 021-T1	00133252	$ 23,120.90		2026			
Redwood Valley	LUC 003-T1	00133257	$ 16,441.64		2026			
Redwood Valley	LUC 005-T1	00133258	$ 17,836.67		2025			
Redwood Valley	COS 007-T4	00133259	$ 17,520.20		2027			
Kern River Valley	KERV 001-T3	00133458	$ 18,294.65		2027			
Kern River Valley	SOLA 001-T1	00133459	$ 16,435.65		2026			
Kern River Valley	ONYX 003-T2	00133462	$ 15,684.90		2027			
Kern River Valley	ONYX 003-T3	00133463	$ 15,684.90		2027			
Kern River Valley	SQRL 013-T1	00133466	$ 10,737.10		2027			
Kern River Valley	ARD 014-T1	00133467	$ 10,737.10		2027			
Travis	TAB STA 002-T2	00133495	$ 28,530.84		2025			

LIST OF ATTACHMENTS FOR CHAPTER 8

	Attachment #	Description
1	Attachment 8-1	CWS Partial Response #3 FINAL to DR KN3-011
2	Attachment 8-2	BK_2021_GRC_Justification_Book_FINAL

Attachment 8-1:
CWS Response to DR KN3-011
(Excludes confidential attachments)

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

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Date: **December 31, 2024** **Partial Response #2 sent December 23, 2024** **Partial Response #2 sent December 19, 2924** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #3 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 and 4 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**

- **Attachment #2 – KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan**
- **Attachment #3 – KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test**
- **Attachment #4 – KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted**
- **Attachment #5 – KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo**
- **Attachment #6 – KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices**
- **Attachment #7 – KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test**
- **Attachment #8 – CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email**
- **Attachment #9 – KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report**
- **Attachment #10 – KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test**
- **Attachment #11 – KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report**
- **Attachment #12 – CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District**
- **Attachment #13 – KN3-011 Attachment 13_2.a**
- **Attachment #14 – KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan**
- **Attachment #15 – KN3-11 Attachment 15_3.a_Control Valve Asset Data**
- **Attachment #16 – KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement**
- **Attachment #17 – KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors**
- **Attachment #18 – KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **Attachment #19 – KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **Attachment #20 – KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **Attachment #21 – KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **Attachment #22 – KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **Attachment #23 – KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **Attachment #24 – KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **Attachment #25 – KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **Attachment #26 – KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **Attachment #27 – KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **Attachment #28 – KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **Attachment #29 – KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **Attachment #30 – KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **Attachment #31 – KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **Attachment #32 – Attachment #17 – KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **Attachment #33 – KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **Attachment #34 – KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **Attachment #35 – KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **Attachment #36 – KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **Attachment #37 – KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **Attachment #38 – KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **Attachment #39 – KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **Attachment #40 – KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **Attachment #41 – KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **Attachment #42 – KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **Attachment #43 – KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **Attachment #44 – CONFIDENTIAL KN3-011 Attachment 44_1.k_C.7-2 111-134005**

- **Attachment #45 – KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **Attachment #46 – KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **Attachment #47 – KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **Attachment #48 – KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **Attachment #49 – KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **Attachment #50 – KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **Attachment #51 – KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **Attachment #52 – KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **Attachment #53 – KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **Attachment #54 – KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **Attachment #55 – KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **Attachment #56 – KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **Attachment #57 – KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **Attachment #58 – KN3-011 Attachment 58_1.k_C.7-3 111-162062**
- **Attachment #59 – KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data**
- **Attachment #60 – KN3-011 Attachment 60_1.k_C.7-3 114-152172**
- **Attachment #61 – KN3-011 Attachment 61_1.k_C.7-3 116-134003**
- **Attachment #62 – KN3-011 Attachment 62_1.k_C.7-3 116-152438A**
- **Attachment #63 – KN3-011 Attachment 63_1.k_C.7-3 116-152438B**
- **Attachment #64 – KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data**
- **Attachment #65 – KN3-011 Attachment 65_1.k_C.7-3 123-158159**
- **Attachment #66 – KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data**
- **Attachment #67 – KN3-011 Attachment 67_1.k_C.7-4 101-161192**
- **Attachment #68 – KN3-011 Attachment 68_1.k_C.7-4 103-139232**
- **Attachment #69 – KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data**
- **Attachment #70 – CONFIDENTIAL KN3-011 Attachment 70_1.k_C.7-4 108-133173**
- **Attachment #71 – KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data**
- **Attachment #72 – KN3-011 Attachment 72_1.k_C.7-4 111-153636**
- **Attachment #73 – KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data**
- **Attachment #74 – KN3-011 Attachment 74_1.k_C.7-4 114-152770**
- **Attachment #75 – KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data**
- **Attachment #76 – KN3-011 Attachment 76_1.k_C.7-4 116-145345**
- **Attachment #77 – KN3-011 Attachment 77_1.k_C.7-4 118-163640**
- **Attachment #78 – KN3-011 Attachment 78_1.k_C.7-4 119-136664**
- **Attachment #79 – KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data**
- **Attachment #80 – KN3-011 Attachment 80_1.k_C.7-4 128-159233**
- **Attachment #81 – KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data**
- **Attachment #82 – KN3-011 Attachment 82_1.k_C.7-5 102-137283**
- **Attachment #83 – KN3-011 Attachment 83_1.k_C.7-5 113-150270**
- **Attachment #84 – KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data**
- **Attachment #85 – KN3-011 Attachment 85_1.k_C.7-5 114-150819**
- **Attachment #86 – KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data**
- **Attachment #87 – KN3-011 Attachment 87_1.k_C.7-6 101-157160**
- **Attachment #88 – KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data**
- **Attachment #89 – KN3-011 Attachment 89_1.k_C.7-6 102-153268**
- **Attachment #90 – KN3-011 Attachment 90_1.k_C.7-7 102-148376**
- **Attachment #91 – KN3-011 Attachment 91_1.k_C.5 Well Pump**
- **Attachment #92 – KN3-011 Attachment 92_1.k_C.5-11 120-137793**

- **Attachment #93 – KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data**
- **Attachment #94 – KN3-011 Attachment 94_1.k_C.5-11 120-143709**
- **Attachment #95 – KN3-011 Attachment 95_1.k_C.5-11 120-143711**
- **Attachment #96 – KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data**
- **Attachment #97 – KN3-011 Attachment 97_1.k_C.5-11 120-163217**
- **Attachment #98 – KN3-011 Attachment 98_1.k_C.5-11 120-165911**
- **Attachment #99 – KN3-011 Attachment 99_1.k_C.5-11 120-169118**
- **Attachment #100 – KN3-011 Attachment 100_1.k_C.5-11 128-145221**
- **Attachment #101 – KN3-011 Attachment 101_1.k_C.5-13 104-136978**
- **Attachment #102 – KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data**
- **Attachment #103 – KN3-011 Attachment 103_1.k_C.5-13 111-140907**
- **Attachment #104 – KN3-011 Attachment 104_1.k_C.5-14 120-132879**
- **Attachment #105 – KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data**
- **Attachment #106 – KN3-011 Attachment 106_1.k_C.5-14 120-159181**
- **Attachment #107 – KN3-011 Attachment 107_1.k_C.5-14 120-149719**
- **Attachment #108 – KN3-011 Attachment 108_1.k_C.5-15 120-150618**
- **Attachment #109 – KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data**
- **Attachment #110 – KN3-011 Attachment 110_1.k_C.5-15 134-160056**
- **Attachment #111 – KN3-011 Attachment 111_1.k_C.5-16 128-141937**
- **Attachment #112 – KN3-011 Attachment 112_1.k_C.5-2 101-138075**
- **Attachment #113 – KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data**
- **Attachment #114 – KN3-011 Attachment 114_1.k_C.5-2 120-143426**
- **Attachment #115 – KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data**
- **Attachment #116 – KN3-011 Attachment 116_1.k_C.5-3 120-152749**
- **Attachment #117 – KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data**
- **Attachment #118 – KN3-011 Attachment 118_1.k_C.5-4 120-147114**
- **Attachment #119 – KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data**
- **Attachment #120 – KN3-011 Attachment 120_1.k_C.5-5 114-132921**
- **Attachment #121 – KN3-011 Attachment 121_1.k_C.5-5 117-136325**
- **Attachment #122 – KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data**
- **Attachment #123 – KN3-011 Attachment 123_1.k_C.5-5 119-142076**
- **Attachment #124 – KN3-011 Attachment 124_1.k_C.5-5 120-144864**
- **Attachment #125 – KN3-011 Attachment 125_1.k_C.5-5 120-152746**
- **Attachment #126 – KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data**
- **Attachment #127 – KN3-011 Attachment 127_1.k_C.5-5 120-152747**
- **Attachment #128 – KN3-011 Attachment 128_1.k_C.5-5 120-152748**
- **Attachment #129 – KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data**
- **Attachment #130 – KN3-011 Attachment 130_1.k_C.5-5 120-153531**
- **Attachment #131 – KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data**
- **Attachment #132 – KN3-011 Attachment 132_1.k_C.5-5 120-156680**
- **Attachment #133 – KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data**
- **Attachment #134 – KN3-011 Attachment 134_1.k_C.5-5 120-159180**
- **Attachment #135 – KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data**
- **Attachment #136 – KN3-011 Attachment 136_1.k_C.5-5 120-160355**
- **Attachment #137 – KN3-011 Attachment 137_1.k_C.5-5 120-163022**
- **Attachment #138 – KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data**
- **Attachment #139 – KN3-011 Attachment 139_1.k_C.5-5 120-163642**
- **Attachment #140 – KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data**

- **Attachment #141 – KN3-011 Attachment 141_1.k_C.5-5 120-163648**
- **Attachment #142 – KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data**
- **Attachment #143 – KN3-011 Attachment 143_1.k_C.5-6 120-152160**
- **Attachment #144 – KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data**
- **Attachment #145 – KN3-011 Attachment 145_1.k_C.5-8 120-143244**
- **Attachment #146 – KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data**
- **Attachment #147 – KN3-011 Attachment 147_1.k_C.5-8 120-152745**
- **Attachment #148 – KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data**
- **Attachment #149 – KN3-011 Attachment 149_1.k_C.5-9 102-151068**
- **Attachment #150 – KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **Attachment #151 – KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **Attachment #152 – KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **Attachment #153 – KN3-011 Attachment 153_1.k_C.5-9 120-144028**
- **Attachment #154 – KN3-011 Attachment 154_4.a._Active Services & Survivor Curves**
- **Attachment #155 – KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material**
- **Attachment #156 – KN3-011 Attachment 156_4.a._Service Program Cost Estimate**
- **Attachment #157 – KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis**
- **Attachment #158 – KN3-011 Attachment 158_5.a_BG-002 2021**
- **Attachment #159 – KN3-011 Attachment 159_5.a_BG-040 2020**
- **Attachment #160 – KN3-011 Attachment 160_5.a_BG-040 2022**
- **Attachment #161 – KN3-011 Attachment 161_5.a_CH-005 2016**
- **Attachment #162 – KN3-011 Attachment 162_5.a_CH-005 2019**
- **Attachment #163 – KN3-011 Attachment 163_5.a_CH-005 2023**
- **Attachment #164 – KN3-011 Attachment 164_5.a_CH-018 2015**
- **Attachment #165 – KN3-011 Attachment 165_5.a_CH-018 2019**
- **Attachment #166 – KN3-011 Attachment 166_5.a_CH-065 2016**
- **Attachment #167 – KN3-011 Attachment 167_5.a_CH-065 2024**
- **Attachment #168 – KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
- **Attachment #169 – KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
- **Attachment #170 – KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
- **Attachment #171 – KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
- **Attachment #172 – KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
- **Attachment #173 – KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
- **Attachment #174 – KN3-011 Attachment 174_5.a_DOM-279 well 2018**
- **Attachment #175 – KN3-011 Attachment 175_5.a_DOM-279 well 2024**
- **Attachment #176 – KN3-011 Attachment 176_5.a_KRV-009 2015**
- **Attachment #177 – KN3-011 Attachment 177_5.a_KRV-009 2022**
- **Attachment #178 – KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
- **Attachment #179 – KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
- **Attachment #180 – KN3-011 Attachment 180_5.a_LAS-013 2017**
- **Attachment #181 – KN3KN3-011 Attachment 181_5.a_LAS-013 2022**
- **Attachment #182 – KN3KN3-011 Attachment 182_5.a_LAS-017 2018**
- **Attachment #183 – KN3KN3-011 Attachment 183_5.a_LAS-017 2022**
- **Attachment #184 – KN3KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
- **Attachment #185 – KN3KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
- **Attachment #186 – KN3KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
- **Attachment #187 – KN3KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**

- **Attachment #188 – KN3KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
- **Attachment #189 – KN3KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
- **Attachment #190 – KN3KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
- **Attachment #191 – KN3KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
- **Attachment #192 – KN3KN3-011 Attachment 192_5.a_LAS-113 2019**
- **Attachment #193 – KN3-011 Attachment 193_5.a_LAS-113 2022**
- **Attachment #194 – KN3-011 Attachment 194_5.a_LAS-121 2016**
- **Attachment #195 – KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
- **Attachment #196 – KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
- **Attachment #197 – KN3-011 Attachment 197_5.a_LIV-020 2017 2**
- **Attachment #198 – KN3-011 Attachment 198_5.a_LIV-020 2017**
- **Attachment #199 – KN3-011 Attachment 199_5.a_LIV-020 2023**
- **Attachment #200 – KN3-011 Attachment 200_5.a_LIV-024 2017**
- **Attachment #201 – KN3-011 Attachment 201_5.a_LIV-024 2021**
- **Attachment #202 – KN3-011 Attachment 202_5.a_MRL-015 2017**
- **Attachment #203 – KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **Attachment #204 – KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **Attachment #205 – KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **Attachment #206 – KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **Attachment #207 – KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **Attachment #208 – CONFIDENTIAL KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **Attachment #209 – CONFIDENTIAL KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **Attachment #210 – KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **Attachment #211 – KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **Attachment #212 – KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **Attachment #213 – KN3-011 Attachment 213_5.a_SC-114 2015**
- **Attachment #214 – KN3-011 Attachment 214_5.a_SC-114 2018**
- **Attachment #215 – KN3-011 Attachment 215_5.a_SC-114 2023**
- **Attachment #216 – KN3-011 Attachment 216_5.a_SLN-019 2020**
- **Attachment #217 – KN3-011 Attachment 217_5.a_SLN-060 2019**
- **Attachment #218 – KN3-011 Attachment 218_5.a_SLN-060 2023**
- **Attachment #219 – KN3-011 Attachment 219_5.a_SLN-106 2019**
- **Attachment #220 – KN3-011 Attachment 220_5.a_SM-029 2015**
- **Attachment #221 – KN3-011 Attachment 221_5.a_SM-029 2019**
- **Attachment #222 – KN3-011 Attachment 222_5.a_SM-029 2021**
- **Attachment #223 – KN3-011 Attachment 223_5.a_SM-029 2024**
- **Attachment #224 – CONFIDENTIAL KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **Attachment #225 – CONFIDENTIAL KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **Attachment #226 – KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **Attachment #227 – CONFIDENTIAL KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **Attachment #228 – KN3-011 Attachment 228_5.a_STK-036 2016**
- **Attachment #229 – KN3-011 Attachment 229_5.a_STK-036 2019**
- **Attachment #230 – KN3-011 Attachment 230_5.a_STK-036 2023**
- **Attachment #231 – KN3-011 Attachment 231_5.a_STK-060 2017**
- **Attachment #232 – KN3-011 Attachment 232_5.a_STK-060 2023**
- **Attachment #233 – KN3-011 Attachment 233_5.a_WLK-001 2017**

- Attachment #234 – KN3-011 Attachment 234_5.a_WLK-001 2020
- Attachment #235 – KN3-011 Attachment 235_5.a_WLK-001 2023
- Attachment #236 – KN3-011 Attachment 236_5.a_WLK-010 2016
- Attachment #237 – KN3-011 Attachment 237_5.a_WLK-010 2019
- Attachment #238 – KN3-011 Attachment 238_5.a_WLK-010 2024
- Attachment #239 – KN3-011 Attachment 239_6.a_Generator Condition Assessment
- Attachment #240 – **CONFIDENTIAL** KN3-011 Attachment 240_6.a_ BK 162 2013
- Attachment #241 – **CONFIDENTIAL** KN3-011 Attachment 241_6.a_ BK 162 Gen service
- Attachment #242 – KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults
- Attachment #243 – **CONFIDENTIAL** KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131
- Attachment #244 – **CONFIDENTIAL** KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162
- Attachment #245 – **CONFIDENTIAL** KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)
- Attachment #246 – **CONFIDENTIAL** KN3-011 Attachment 246_6.a_ BK 162 PM
- Attachment #247 – KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024
- Attachment #248 – **CONFIDENTIAL** KN3-011 Attachment 248_6.a_ BK-162-GEN1PM
- Attachment #249 – **CONFIDENTIAL** KN3-011 Attachment 249_6.a_ BK162Genset
- Attachment #250 – **CONFIDENTIAL** KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827
- Attachment #251 – **CONFIDENTIAL** KN3-011 Attachment 251_6.a_ BK176 Gen PM 2
- Attachment #252 – **CONFIDENTIAL** KN3-011 Attachment 252_6.a_ BK176 Gen PM
- Attachment #253 – **CONFIDENTIAL** KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2
- Attachment #254 – **CONFIDENTIAL** KN3-011 Attachment 254_6.a_BK176 GeneratorPM
- Attachment #255 – KN3-011 Attachment 255_6.a_ CH 032 2019 service
- Attachment #256 – KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL
- Attachment #257 – KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT
- Attachment #258 – KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL
- Attachment #259 – KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE
- Attachment #260 – KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023
- Attachment #261 – KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023
- Attachment #262 – KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024
- Attachment #263 – KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE
- Attachment #264 – KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20
- Attachment #265 – KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20
- Attachment #266 – **CONFIDENTIAL** KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0
- Attachment #267 – **CONFIDENTIAL** KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0
- Attachment #268 – KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE
- Attachment #269 – KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023
- Attachment #270 – **CONFIDENTIAL** KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019

- Attachment #271 – **CONFIDENTIAL** KN3-011 Attachment 271_6.a_ CH 032 Genset
- Attachment #272 – KN3-011 Attachment 272_6.a_ CH 032 Genset2021services
- Attachment #273 – **CONFIDENTIAL** KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- Attachment #274 – KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- Attachment #275 – KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- Attachment #276 – KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- Attachment #277 – **CONFIDENTIAL** KN3-011 Attachment 277_6.a_ CH 032 PM
- Attachment #278 – **CONFIDENTIAL** KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- Attachment #279 – **CONFIDENTIAL** KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- Attachment #280 – **CONFIDENTIAL** KN3-011 Attachment 280_6.a_ CH 032 waste
- Attachment #281 – KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- Attachment #282 – KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- Attachment #283 – KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- Attachment #284 – KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- Attachment #285 – **CONFIDENTIAL** KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- Attachment #286 – **CONFIDENTIAL** KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- Attachment #287 – **CONFIDENTIAL** KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- Attachment #288 – **CONFIDENTIAL** KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- Attachment #289 – **CONFIDENTIAL** KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- Attachment #290 – **CONFIDENTIAL** KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- Attachment #291 – KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- Attachment #292 – KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- Attachment #293 – KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- Attachment #294 – KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- Attachment #295 – KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- Attachment #296 – KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- Attachment #297 – KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- Attachment #298 – KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- Attachment #299 – KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- Attachment #300 – KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- Attachment #301 – KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- Attachment #302 – KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- Attachment #303 – KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- Attachment #304 – **CONFIDENTIAL** KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- Attachment #305 – **CONFIDENTIAL** KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_A
- Attachment #306 – KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- Attachment #307 – KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)

- Attachment #308 – KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- Attachment #309 – KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- Attachment #310 – **CONFIDENTIAL** KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- Attachment #311 – **CONFIDENTIAL** KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- Attachment #312 – KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- Attachment #313 – KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- Attachment #314 – **CONFIDENTIAL** KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- Attachment #315 – KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- Attachment #316 – KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- Attachment #317 – **CONFIDENTIAL** KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- Attachment #318 – **CONFIDENTIAL** KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024
- Attachment #319 – KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020
- Attachment #320 – KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24
- Attachment #321 – KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22
- Attachment #322 – KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22
- Attachment #323 – KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22
- Attachment #324 – **CONFIDENTIAL** KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024
- Attachment #325 – KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST
- Attachment #326 – **CONFIDENTIAL** KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1
- Attachment #327 – KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020
- Attachment #328 – **CONFIDENTIAL** KN3-011 Attachment 328_6.a_ WLK 001 122035IR
- Attachment #329 – KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190
- Attachment #330 – **CONFIDENTIAL** KN3-011 Attachment 330_6.a_ WLK 001 150957ir
- Attachment #331 – **CONFIDENTIAL** KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322
- Attachment #332 – **CONFIDENTIAL** KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231
- Attachment #333 – **CONFIDENTIAL** KN3-011 Attachment 333_6.a_ WLK 001.PDF
- Attachment #334 – **CONFIDENTIAL** KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021
- Attachment #335 – **CONFIDENTIAL** KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023
- Attachment #336 – KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC
- Attachment #337 – **CONFIDENTIAL** KN3-011 Attachment 337_6.d.ii_Chico Generators
- Attachment #338 – **CONFIDENTIAL** KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator
- Attachment #339 – **CONFIDENTIAL** KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator

- **Attachment #340 – KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS**
- **Attachment #341 – KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost**
- **Attachment #342 – CONFIDENTIAL KN3-011 Attachment 342_4.f**
- **Attachment #343 – CONFIDENTIAL KN3-011 Attachment 343_4.f.i**
- **Attachment #344 – CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK**
- **Attachment #345 – CONFIDENTIAL KN3-011 Attachment 345_4.f.iii_BKNG**
- **Attachment #346 – KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

vibrations typically indicate problems with the pump downhole. If not addressed, this will eventually lead to premature equipment failure.

- **132243 – SLN 067-01 has a known motor overheating issue. Excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. [See "CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District"]**

g. Does Cal Water have warranties with pumping equipment vendors or manufacturers that potentially apply in cases where the pump fails while still in "excellent" or "good" condition?
Response: Manufacturer typically provide only a 1 year warranty if the pump was pit tested prior to release. The warranty only covers manufacturing defects such as the pump not meeting specification parameters. Operational failures in which efficiency falls are not covered by warranty.

h. For any pump replacement projects (e.g.,PID 132161, PID 132151, PID 132112, PID 132223, PID 133256, PID 132248, PID 132251, PID 132254) with a Last Pump Date before 2022 why does the pumping equipments need to be replaced in the 2024 GRC if it has not been pumped since 2022?
Response: 'Last Pump Date' refers to the year in which the hydraulic performance test was performed, not when the pump was last operated. Cal Water's Hydraulic Testing Program performs test pumps on an annual or bi-annual basis depending on horsepower. Refer to Section 4 – 'Failure Modes and Condition Assessment - Low OPE' on page 9 of 12 of "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan".

i. Are any of the 88 pump units listed in Attachment B associated with "standby" or "inactive" stations?
Response: None of the pump units listed in Attachment B are designated as "standby" or "inactive." However, VIS 201-01 (132255) is actually a typo, and the correct location should be VIS 201-02, which is active and requires replacement due to low operational efficiency (OPE).

j. Has Cal Water experienced a supply chain and/or labor issues with pump and motor replacements for planned and unplanned projects? If so, what is the purchase order lead time?
Response: Current market conditions do not indicate supply chains issues with procuring new pump and motor equipment. Typical lead times on new pumping equipment range from 4-to- 22 weeks depending on the style of pump.
Contactor labor availability is limited but not unusual due to the high impact market of this industry.

k. For the 88 pumps to be replaced, please populate the attached Excel file labeled "Attachment 1-Pumps and Motor", Tab "Requested Replacement." Please provide a breakdown of the average cost of the replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: See filled out "Requested Replacement" Tab under "KN3-011

Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors". Cal Water has also provided the cost catalog supporting documentation for its unit costs for well pumps and booster pumps. Please refer to the following attachments:

- **KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **CONFIDENTIAL KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **KN3-011 Attachment 58_1.k_C.7-3 111-162062**

- KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data
- KN3-011 Attachment 60_1.k_C.7-3 114-152172
- KN3-011 Attachment 61_1.k_C.7-3 116-134003
- KN3-011 Attachment 62_1.k_C.7-3 116-152438A
- KN3-011 Attachment 63_1.k_C.7-3 116-152438B
- KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data
- KN3-011 Attachment 65_1.k_C.7-3 123-158159
- KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data
- KN3-011 Attachment 67_1.k_C.7-4 101-161192
- KN3-011 Attachment 68_1.k_C.7-4 103-139232
- KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data
- **CONFIDENTIAL** KN3-011 Attachment 70_1.k_C.7-4 108-133173
- KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data
- KN3-011 Attachment 72_1.k_C.7-4 111-153636
- KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data
- KN3-011 Attachment 74_1.k_C.7-4 114-152770
- KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data
- KN3-011 Attachment 76_1.k_C.7-4 116-145345
- KN3-011 Attachment 77_1.k_C.7-4 118-163640
- KN3-011 Attachment 78_1.k_C.7-4 119-136664
- KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data
- KN3-011 Attachment 80_1.k_C.7-4 128-159233
- KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data
- KN3-011 Attachment 82_1.k_C.7-5 102-137283
- KN3-011 Attachment 83_1.k_C.7-5 113-150270
- KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data
- KN3-011 Attachment 85_1.k_C.7-5 114-150819
- KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data
- KN3-011 Attachment 87_1.k_C.7-6 101-157160
- KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data
- KN3-011 Attachment 89_1.k_C.7-6 102-153268
- KN3-011 Attachment 90_1.k_C.7-7 102-148376
- KN3-011 Attachment 91_1.k_C.5 Well Pump
- KN3-011 Attachment 92_1.k_C.5-11 120-137793
- KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data
- KN3-011 Attachment 94_1.k_C.5-11 120-143709

- KN3-011 Attachment 95_1.k_C.5-11 120-143711
- KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data
- KN3-011 Attachment 97_1.k_C.5-11 120-163217
- KN3-011 Attachment 98_1.k_C.5-11 120-165911
- KN3-011 Attachment 99_1.k_C.5-11 120-169118
- KN3-011 Attachment 100_1.k_C.5-11 128-145221
- KN3-011 Attachment 101_1.k_C.5-13 104-136978
- KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data
- KN3-011 Attachment 103_1.k_C.5-13 111-140907

- KN3-011 Attachment 104_1.k_C.5-14 120-132879
- KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data
- KN3-011 Attachment 106_1.k_C.5-14 120-159181
- KN3-011 Attachment 107_1.k_C.5-14 120-149719
- KN3-011 Attachment 108_1.k_C.5-15 120-150618
- KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data
- KN3-011 Attachment 110_1.k_C.5-15 134-160056
- KN3-011 Attachment 111_1.k_C.5-16 128-141937
- KN3-011 Attachment 112_1.k_C.5-2 101-138075
- KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data
- KN3-011 Attachment 114_1.k_C.5-2 120-143426
- KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data
- KN3-011 Attachment 116_1.k_C.5-3 120-152749
- KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data
- KN3-011 Attachment 118_1.k_C.5-4 120-147114
- KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data
- KN3-011 Attachment 120_1.k_C.5-5 114-132921
- KN3-011 Attachment 121_1.k_C.5-5 117-136325
- KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data
- KN3-011 Attachment 123_1.k_C.5-5 119-142076
- KN3-011 Attachment 124_1.k_C.5-5 120-144864
- KN3-011 Attachment 125_1.k_C.5-5 120-152746
- KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data
- KN3-011 Attachment 127_1.k_C.5-5 120-152747
- KN3-011 Attachment 128_1.k_C.5-5 120-152748
- KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data
- KN3-011 Attachment 130_1.k_C.5-5 120-153531
- KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data
- KN3-011 Attachment 132_1.k_C.5-5 120-156680
- KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data
- KN3-011 Attachment 134_1.k_C.5-5 120-159180
- KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data
- KN3-011 Attachment 136_1.k_C.5-5 120-160355
- KN3-011 Attachment 137_1.k_C.5-5 120-163022
- KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data
- KN3-011 Attachment 139_1.k_C.5-5 120-163642
- KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data
- KN3-011 Attachment 141_1.k_C.5-5 120-163648
- KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data
- KN3-011 Attachment 143_1.k_C.5-6 120-152160
- KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data
- KN3-011 Attachment 145_1.k_C.5-8 120-143244
- KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data
- KN3-011 Attachment 147_1.k_C.5-8 120-152745
- KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data
- KN3-011 Attachment 149_1.k_C.5-9 102-151068

- **KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **KN3-011 Attachment 153_1.k_C.5-9 120-144028**

An explanation of how to read the cost catalog workbook was provided on slide 4 of the common plant tour presentation to Cal Advocates on Sept 3rd, 2024.
~~**To be provided in a subsequent response.**~~

l. Please use the attached Excel file Attachment 1-Pump and Motor, Tab "Historical Replacement" to assist in providing the historical replacements from 2014 to November 30th, 2024. Please provide a breakdown of the average cost of the replacements, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as the general ledger, vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: Please find "Historical Replacement" Tab under "KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors"
~~**To be provided in a subsequent response.**~~

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: Please see tab Historical CPC Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS".
    ~~**To be provided in a subsequent response.**~~

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: The unit costs for the proposed cathodic protection projects in this rate case were derived from a vendor quote. Please see tab Future CPS Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS". Please refer to "KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost" for supporting evidence.
    ~~**To be provided in a subsequent response.**~~

g. Are any of the CPS to be replaced associated with “standby” or “inactive” stations?
Response: No.

3. Refer to project justification book "Common Plant Overview_2024_Final" Section Control Valve Overhaul and Replacement (p. 304-306).

   a. Please populate the risk assessment matrix using attached Excel file Attachment 3-Control Valve Overhaul and Replacement," tabs "Overhaul Rating" and "Replacement Rating" to provide the detailed breakdown.
   Response: Cal Water has modified its criticality analysis from what was submitted in the 2018 GRC filing and no longer records and analyzes the criticality of assets using the list shown in the "Overhaul Rating" and "Replacement Rating" tabs. The results from that analysis were recorded in Cal Water's Asset Management database; however, they are not consistent with our current practice as defined in the Strategic Asset Management Plan. For the valves where we have recorded the data, we have adjusted the criticality scores to be in line with our current program as defined in the Strategic Asset Management Plan. Please see "KN3-11 Attachment 15_3.a_Control Valve Asset Data". Cal Water is actively working on updating its criticality scores for all assets.
   Cal Water has not developed its list of valves that are planned for overhaul or replacement in the 2025 to 2027 years. Those are normally issued at the beginning of the year from Cal Water's asset management system based on the schedule shown in the asset plan.

   b. Using Cal Water's Control Valve risk assessment matrix, what is the lowest possible ranking score?
   Response: In terms of risk of failure, or criticality, 5.

   c. Using Cal Water's Control Valve risk assessment matrix, what is the highest possible ranking score?
   Response: In terms of risk of failure, or criticality, 1

   d. Is risk of failure to critical customers considered in the control valve risk assessment matrix?
   Response: No.

   e. If risk of failure to critical customers is considered in the control valve risk assessment matrix, please describe how that risk is factored into the final risk score. Please describe in detail (numerically and in words), where applicable.
   Response: Please refer to the response to 3.d.

   f. Provide a breakdown of the total number of control valves in each ranking across Cal Water's entire water system, from highest possible rank to lowest possible rank in Excel file "DR KN3-011 Attachment 3," tab "Total Ranking."
   Response: The condition scoring records are not available and are being built in Q1 2025. The 5-year overhaul cycle is used to assess the serviceability of the valves and they are replaced as necessary.

   g. Provide the annual number of control valve replacements and overhauls performed for each district for the past five years (2020-2024) in Excel file "DR KN3-011 Attachment 3." Please use tab "Historical Overhaul" for control valve overhauls and tab "Historical

Replacement" for control valve replacements.
Response : Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

h. Provide the annual number of control valve replacements and overhauls performed for each district between 2025-2027 in Excel file "DR KN3-011 Attachment 3." Please use tab "Future Overhaul" for control valve overhauls and tab "Future Replacement" for control valve replacements.
Response: Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

i. Refer to the project description concerning "Payback Period" under the category "Financial Efficiency." Page Common Plant PJ – 305 states "[i]f the old valve was to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures."

i. Describe the methodology Cal Water used to calculate the potential cost of a control valve failure event.
Response: Typically, Cal Water does not track the cost of repair for each incident. However, there have been incidents where Cal Water paid damage claims due to control valve failures. While not typical, one claim was as high as $1.9M due to a control valve failure that flooded a building.

ii. Is the potential cost of a control valve failure event assumed to be the same for every control valve?
Response: In our current model, yes.

iii. If the estimated potential cost is not the same for every potential control valve failure, please describe in detail the factors that influence the estimated cost.
Response: Please refer to the response to 3.i.ii.

iv. In the last five years (2019- 2023), please provide the actual recorded cost of control valve failures.
Response: Cal Water does not track the costs for control valve failures in any one account. Damage claims are also not normally classified by the cause of failure; however, Cal Water has attributed the event above to a control valve failure.

v. Please explain in detail how Cal Water determines the cost of overhaul and replacement of control valve failures is less cost effective than performing a regular overhaul and replacing older control valves. Please also provide evidence to support the analysis. This includes but is not limited to any vendor invoices, as-built, bids, proposal, or internal communications.
Response: Cal Water determines if a valve can be overhauled first prior to planning a replacement. In the common plant justification on page 306, Cal Water states "*Cal Water will try to overhaul all valves where the body of*

the valve is in good condition, the valve meets certain minimum requirements such as being epoxy coated, the valve is in a suitable location where it can be easily maintained, and the vault is sized properly where it can be maintained. If the valve does not meet these requirements and is in need of repair, Cal Water will evaluate if a replacement project will improve these conditions significantly before planning a replacement project. Otherwise, Cal Water will plan to overhaul the valve and plan for a future redesign of the system to more permanently resolve the issues." **It is the valve's condition that determines if it can be overhauled, not the cost effectiveness.**

j. Are any of the control valve overhaul and replacement associated with "standby" or "inactive" stations?
Response: No.

4. Refer to project justification book "Common Plant Overview_2024_Final" Service Line Replacement Program (pp. 370-380):

   a. Please provide the Excel file for all figures and tables in the referenced section for Service Line Replacement Program.
   Partial Response #2: Please see "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves" , "KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material" , and "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for all figures and tables and supporting documents referenced in the Service Line Replacement Program justification.

   Please note the estimated number of services in the final Common Plant justification on page Common Plant PJ-381 was revised slightly down in the year 2027 from the originally analyzed numbers and costs for 2027 presented in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve", which was compiled in December 2023. Originally, the analysis in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve" in tab "Forecast & Alt Comparison" had assumed $6,747,425 (2023 dollars) in the year 2027 amounting to 392 services replaced at $17,200 each (in 2023 dollars). This was ultimately revised down in the final filing to $6,582,697 (2023 dollars) or $7,266,066 (escalated to 2027 dollars at 2.5%), amounting to approximately 383 service replacements at $17,200 each (in 2023 dollars).
   ~~**To be provided in a subsequent response.**~~

   b. Reference Figure 7 on Common Plant PJ-377. Please provide the estimated work schedule for the number of annual service line replacements from 2025-2027. Please provide supporting documents for the proposed replacement schedule, such as any vendor invoices, bids, proposal, or internal communications.
   Partial Response #2: Cal Water is proposing to complete 387, 384, and 383 services in years 2025, 2026, and 2027 respectively. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE), see "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for additional details.
   ~~**To be provided in a subsequent response.**~~

   c. Cal Water states that its Bakersfield District "owns and is responsible for approximately 76,100 services within its service boundaries" (p. 370). Please explain why Cal Water considers the Service Line Replacement Program to be a common plant project, given that it is limited to the Bakersfield How does Cal Water define common plant project when it affects only one district?
   Partial Response #2: Cal Water considers this to be a program appropriately covered in Common Plant because this program will continue over time and may be needed in other districts in the future.

   Similar to other programs in the Common Plant book, the success of this program will be evaluated based on overall system metrics, specifically break rate of service lines. If those metrics change over time, the program could be ramped up or down in Bakerfield, or expanded to other districts, in response.
   .

~~**To be provided in a subsequent response.**~~

i. Does Cal Water have any other proposed annual service line replacement for other districts besides Bakersfield?
Partial Response #2: Not at this time.

~~**To be provided in a subsequent response.**~~

d. Cal Water states that "[to] offset this increase in program cost, the [Bakersfield] District will be reducing its pipeline replacement program from 0.7% during the 2021 GRC period to 0.5% for the 2024 GRC period only" (p. 370).

i. Please show how this reduction is done in the RO model and provide supporting analysis for this cost calculation.
Partial Response #2: This reduction was done by simply entering in the dollars for replacing 0.5% of Bakersfield's pipelines into the ROM instead of 0.7% For example, in 2025 Cal Water proposes to replace 25,643 lineal feet of main at a cost of about $595/LF, and the proposed direct cost is the product of these two values plus contingency. Had Cal Water proposed a rate of 0.7% instead, the total footage would have been closer to 36,000 LF at a cost of $595/LF plus contingency. This difference (36,000 – 25,600) x $595 x (1 + 10%) is roughly $6.8M. The proposed direct cost of the 2025 Service Line replacements is $6.99M.

~~**To be provided in a subsequent response.**~~

ii. Has Cal Water performed a cost-benefit analysis of the reduction in its Pipeline Replacement Program to account for the Service Replacement Program?
Partial Response #2: Yes, Cal Water conducted a cost-benefit analysis which demonstrated that reducing the MRP program and increasing the Service Replacement Program would result in net savings of $1.8 million in capital investment. Therefore, this was determined to be the most prudent course of action for customers and the district. Please see "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details.

~~**To be provided in a subsequent response.**~~

e. Cal Water states that Alternative 2: Replace Services Reactively & Ad hoc includes managing the service line as customers experience an issue (pp. 377-378).

Please provide a cost benefit analysis comparing Alternative 2's management of service lines as customers experience issues to the proposed Alternative 3: Programmatic Service Line Replacement annual replacement method.
Partial Response #2: This analysis was presented in Table 1 on page Common Plant PJ-380 which compared the total cost over the next 25 years between Alternative # 2 and Alternative # 3. It was ultimately determined that Alternative # 3 had a reduced capital investment cost, which would save customers approximately $ 28.3 million dollars over the next 25 years, demonstrating the value of proactively planned replacement over deferred and reactive management. Additional details on this cost analysis are presented in the Excel Workbook entitled "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves".
~~**To be provided in a subsequent response.**~~

f. Cal Water states that there has been an increase in plastic service line failures (p. 373). Please provide a list of plastic service line failures in the Bakersfield District from 2015-2024, with supporting documentation such as vendor invoices, as-built, bids, proposals, or internal communications.
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 342_4.f" for the list of service line failures under the tab "Service Leaks BK". This list includes all plastic service lines which can be filtered in Column I by selecting FX, HDPE, PE, PL, PP, and PVC materials.

5. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks involving plastic service lines in the last five years (2020-2024).
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 343_4.f.i" for all the service line leak claim data which represents customers who experienced flooding or other property damage due to a leak between 2020-2024. Cal Water does not track the service line leak claims by material type. All service line failures shown in "CONFIDENTIAL KN3-011 Attachment 342_4.f" represent situations where customers experienced the inconvenience of having their water shut off so Cal Water could repair an unplanned service leak.

~~**To be provided in a subsequent response.**~~

6. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks NOT involving plastic service lines in the last five years (2020-2024).
Partial response #3: Please refer to the response to 4.f.i. Cal Water does not track the service line leak claims by material type. All service line failures shown in "CONFIDENTIAL KN3-011 Attachment 342_4.f" represent situations where customers experienced the inconvenience of having their water shut off so Cal Water could repair an unplanned service leak. This list includes all non-plastic service lines which can be filtered in Column I by selecting AC, BR, CI, CU, DI, GALV, OD STL, OTH, SS GALV, STL, UNK materials.

~~**To be provided in a subsequent response.**~~

7. Please provide 1) the average concentration of chlorine disinfectant to which plastic service lines in the Bakersfield District would have ongoing exposure, and 2) if known, average seasonal temperature range of water flowing to Bakersfield District service lines.
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK" and "CONFIDENTIAL KN3-011 Attachment 345_4f.iii_BKNG" for the free chlorine residual and temperature results of all the distribution sample points for the past 10 years in the Bakersfield and Bakersfield North Garden Systems. Cal Water does not track the nearby sample point water qualities upon each failure and cannot correlate the service line failures to a specific sample point.

~~**To be provided in a subsequent response.**~~

a. Please provide the historical service line replacement and cost data for the Bakersfield District from 2014 – 2024, as requested in Attachment 5, Service Replacement, tabs "Summary of Service Replaced" and "Plastic Service Replaced"
Partial response #3: Please refer to "KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement" for the summary of all service lines replaced under the tab "Summary of Service Replaced". Cal Water does not track the cost and number of services replaced by material type.
To be provided in a subsequent response.

b. Of the 76,100 service connections in the Bakersfield District, how many or what percentage of the service lines does Cal Water propose to replace in its Alternative 3 Programmatic Replacement from 2025-2027? For each year, please provide the number of services to be replaced, cost per replacement, and total cost.
Partial Response #2: Please see the following table.

Year	Number of Services to be Replaced	Cost Per Replacement (Escalated)	Total Costs (Escalated)
2025	387	$18,058.38	$6,988,592.52
2026	384	$18,539.90	$7,119,321.72
2027	383	$18,971.45	$7,266,065.84

~~**To be provided in a subsequent response.**~~

c. For responses to questions 4.h and 4.i, please provide a cost breakdown that includes cost of materials, labor, and equipment. Please provide evidence supporting the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
Partial Response #2: Please see Excel Workbook entitled "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details prepared by our profession engineering consultant. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE).
~~**Response to be provided.**~~

d. Please provide a detailed explanation for any increase or decrease in the cost-of-service line replacement between the periods 2021-2024 and 2025-2027.
Partial Response #2: Unit costs for proactive replacement of services in the 2024 GRC were based on 2023 estimated costs and escalated to the applicable year.
~~**To be provided in a subsequent response.**~~

8. Regarding the Motor Control Center (MCC)/panelboard replacements Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pp. 423-424):

    a. Provide the inspection and maintenance records in Excel format for the existing panelboards for the past 10 years (2015 - November 30, 2024). If inspection/maintenance records are not available, provide an explanation.
    Partial Response #2: Please see list of inspection records available for the MCCs proposed for replacement:
        - **KN3-011 Attachment 158_5.a_BG-002 2021**
        - **KN3-011 Attachment 159_5.a_BG-040 2020**
        - **KN3-011 Attachment 160_5.a_BG-040 2022**
        - **KN3-011 Attachment 161_5.a_CH-005 2016**
        - **KN3-011 Attachment 162_5.a_CH-005 2019**
        - **KN3-011 Attachment 163_5.a_CH-005 2023**
        - **KN3-011 Attachment 164_5.a_CH-018 2015**
        - **KN3-011 Attachment 165_5.a_CH-018 2019**
        - **KN3-011 Attachment 166_5.a_CH-065 2016**
        - **KN3-011 Attachment 167_5.a_CH-065 2024**
        - **KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
        - **KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
        - **KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
        - **KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
        - **KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
        - **KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
        - **KN3-011 Attachment 174_5.a_DOM-279 well 2018**
        - **KN3-011 Attachment 175_5.a_DOM-279 well 2024**
        - **KN3-011 Attachment 176_5.a_KRV-009 2015**
        - **KN3-011 Attachment 177_5.a_KRV-009 2022**
        - **KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
        - **KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
        - **KN3-011 Attachment 180_5.a_LAS-013 2017**
        - **KN3-011 Attachment 181_5.a_LAS-013 2022**
        - **KN3-011 Attachment 182_5.a_LAS-017 2018**
        - **KN3-011 Attachment 183_5.a_LAS-017 2022**
        - **KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
        - **KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
        - **KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
        - **KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
        - **KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
        - **KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
        - **KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
        - **KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
        - **KN3-011 Attachment 192_5.a_LAS-113 2019**
        - **KN3-011 Attachment 193_5.a_LAS-113 2022**
        - **KN3-011 Attachment 194_5.a_LAS-121 2016**
        - **KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
        - **KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
        - **KN3-011 Attachment 197_5.a_LIV-020 2017 2**
        - **KN3-011 Attachment 198_5.a_LIV-020 2017**

- **KN3-011 Attachment 199_5.a_LIV-020 2023**
- **KN3-011 Attachment 200_5.a_LIV-024 2017**
- **KN3-011 Attachment 201_5.a_LIV-024 2021**
- **KN3-011 Attachment 202_5.a_MRL-015 2017**
- **KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **CONFIDENTIAL KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **CONFIDENTIAL KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **KN3-011 Attachment 213_5.a_SC-114 2015**
- **KN3-011 Attachment 214_5.a_SC-114 2018**
- **KN3-011 Attachment 215_5.a_SC-114 2023**
- **KN3-011 Attachment 216_5.a_SLN-019 2020**
- **KN3-011 Attachment 217_5.a_SLN-060 2019**
- **KN3-011 Attachment 218_5.a_SLN-060 2023**
- **KN3-011 Attachment 219_5.a_SLN-106 2019**
- **KN3-011 Attachment 220_5.a_SM-029 2015**
- **KN3-011 Attachment 221_5.a_SM-029 2019**
- **KN3-011 Attachment 222_5.a_SM-029 2021**
- **KN3-011 Attachment 223_5.a_SM-029 2024**
- **CONFIDENTIAL KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **CONFIDENTIAL KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **CONFIDENTIAL KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **KN3-011 Attachment 228_5.a_STK-036 2016**
- **KN3-011 Attachment 229_5.a_STK-036 2019**
- **KN3-011 Attachment 230_5.a_STK-036 2023**
- **KN3-011 Attachment 231_5.a_STK-060 2017**
- **KN3-011 Attachment 232_5.a_STK-060 2023**
- **KN3-011 Attachment 233_5.a_WLK-001 2017**
- **KN3-011 Attachment 234_5.a_WLK-001 2020**
- **KN3-011 Attachment 235_5.a_WLK-001 2023**
- **KN3-011 Attachment 236_5.a_WLK-010 2016**
- **KN3-011 Attachment 237_5.a_WLK-010 2019**
- **KN3-011 Attachment 238_5.a_WLK-010 2024**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance and repair costs (general ledger in Excel format) for the past 10 years (2015 - November 30, 2024) including all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not track maintenance and repair costs associated solely with the electrical equipment. Those costs are combined with other

pumping equipment repair work in a single account.
~~**To be provided in a subsequent response.**~~

9. Regarding the proposed Generator Replacement Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pg. PJ-453 to PJ-454):

    a. In Excel format, provide the inspection and maintenance records, including the CPUC ranking and assement matrix, for the existing generators for the past 10 years (2015-November 30, 2024). If inspection/maintenance records are not available, provide an explanation. Please identify the proposed generator replacement in 2024 GRC with their PID.
    Partial Response #2: Please see below the list of inspection and maintenance records for the generators proposed for replacement. Please see the "KN3-011 Attachment 239_6.a_Generator Condition Assessment" spreadsheet for generators condition assessment.
        - **CONFIDENTIAL KN3-011 Attachment 240_6.a_ BK 162 2013**
        - **CONFIDENTIAL KN3-011 Attachment 241_6.a_ BK 162 Gen service**
        - **KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
        - **CONFIDENTIAL KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
        - **CONFIDENTIAL KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
        - **CONFIDENTIAL KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
        - **CONFIDENTIAL KN3-011 Attachment 246_6.a_ BK 162 PM**
        - **KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
        - **CONFIDENTIAL KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
        - **CONFIDENTIAL KN3-011 Attachment 249_6.a_ BK162Genset**
        - **CONFIDENTIAL KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
        - **CONFIDENTIAL KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
        - **CONFIDENTIAL KN3-011 Attachment 252_6.a_ BK176 Gen PM**
        - **CONFIDENTIAL KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
        - **CONFIDENTIAL KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
        - **KN3-011 Attachment 255_6.a_ CH 032 2019 service**
        - **KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
        - **KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
        - **KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
        - **KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
        - **KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
        - **KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
        - **KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
        - **KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
        - **KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
        - **KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
        - **CONFIDENTIAL KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
        - **CONFIDENTIAL KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
        - **KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
        - **KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**

- **CONFIDENTIAL** KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019
- **CONFIDENTIAL** KN3-011 Attachment 271_6.a_ CH 032 Genset
- KN3-011 Attachment 272_6.a_ CH 032 Genset2021services
- **CONFIDENTIAL** KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- **CONFIDENTIAL** KN3-011 Attachment 277_6.a_ CH 032 PM
- **CONFIDENTIAL** KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- **CONFIDENTIAL** KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- **CONFIDENTIAL** KN3-011 Attachment 280_6.a_ CH 032 waste
- KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- **CONFIDENTIAL** KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- **CONFIDENTIAL** KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- **CONFIDENTIAL** KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- **CONFIDENTIAL** KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791

- **CONFIDENTIAL KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1**
- **KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24**
- **KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020**
- **CONFIDENTIAL KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23**
- **CONFIDENTIAL KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024**
- **KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **CONFIDENTIAL KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **CONFIDENTIAL KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **CONFIDENTIAL KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **CONFIDENTIAL KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **CONFIDENTIAL KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **CONFIDENTIAL KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **CONFIDENTIAL KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **CONFIDENTIAL KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance, repair, and replacement costs (general ledger) of Cal Water's generators for the past 10 years (2015 - November 30, 2024). This includes all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not separately track maintenance and repair costs for generators. These costs are combined with other pumping equipment.
~~**To be provided in a subsequent response.**~~

c. For the following projects, if Cal Water is proposing a fixed generator. Please provide a detailed cost-benefit analysis and explanation for the replacement to be a fixed generator rather than a portable generator for the following projects and any new proposed generator projects.
Partial Response #2: Cal Water did not perform a detailed cost-benefit analysis for the generator replacements.

The generator at BK 162 is proposed as a permanent replacement because the facility is critical to the operation of the system. The station is used to pump purchased water from KCWA into multiple zones in the northeast part of the BK system. The current permanent generator failed in 2024.

The generator at BK 176 is proposed as a permanent replacement because the facility serves a pressure system. Backup power needs to be readily available in order to continually supply the pressure system. Cal Water could not stage a portable booster pump at that location permanently.

The generator at CH 032 is proposed as a permanent generator to replace the existing permanent fixed generator due to its current condition. This well supplies a pressure system and in the event of a widespread power outage, permanent generators are needed to supply water to the system to avoid low pressure and boil water notices.

The generator at CH 66 is proposed as a permanent generator because the facility supplies a pressure system. In the event of a power failure, backup power needs to be immediately available to avoid a loss of pressure to the system. Cal Water could not permanently stage a portable.
~~**To be provided in a subsequent response.**~~

PID	District	Project Name	Project Locations	Direct Costs
132561	Bakersfield	BK 2026 - Genset Replacements	BK 162 Genset Replacement	$2,307,426.75
			BK 176 Genset Replacement	
132564	Chico	CH 2026 - Genset Replacement	CH 032 Genset Replacement	$1,413,512.48
			CH 066 Genset Replacement	

d. Please provide a list of all proposed generator replacements in each district, in Excel format. Please include the following information:

i. Detailed explanation of the need for the proposed generator or MCC replacement.
Partial Response #2: Please see attached spreadsheet "KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC".

~~**To be provided in a subsequent response.**~~

ii. Whether the proposed generator is in a High Fire Threat District, and if so, a map showing the location of the proposed generator.
Partial Response #2: See attachments "CONFIDENTIAL KN3-011 Attachment 337_6.d.ii_Chico Generators", "CONFIDENTIAL KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator", and "CONFIDENTIAL KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator" for the map of generators in high fire threat areas. Note that Salinas Hills is a high fire threat area; however, the Salinas system is not in a high fire threat area.

~~**To be provided in a subsequent response.**~~

iii. Schedule for generator purchase and completion of installation.
Partial Response #2:

	Purchase		Install	
Project	Month	Year	Month	Year
BK 162	8	2025	4	2027
BK 176	8	2025	4	2027
Ch 032	8	2025	5	2027
CH 066	8	2025	5	2027
DOM 232	9	2025	6	2027
SLN 016	8	2025	5	2027
SLN 033	8	2025	5	2027
WLK 001	8	2025	4	2027

~~**To be provided in a subsequent response.**~~

e. Please refer to D. 24-03-042 for the following questions:

i. Cal Water proposed to install a permanent generator at Station 23 in the Visalia District under PID 123954. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is in the construction phase. All permits have been approved, and equipment has been procured. Project is estimated to be complete in the first quarter of 2025.

~~**To be provided in a subsequent response.**~~

ii. Cal Water proposed to replace a generator at Station 71 in the Stockton District under PID 124311. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is currently in preliminary design. Equipment will be procured at a later date.

~~**To be provided in a subsequent response.**~~

END PARTIAL RESPONSE #3

	Service Lateral Replacement Historical Data										
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
# of Services Replaced/Repaired	229	485	189	315	275	243	230	387	317	384	173
Total Cost of Service Replacements	$1,407,046.91	$2,868,567.74	$2,242,162.26	$2,917,327.65	$1,610,373.48	$3,704,644.10	$3,198,969.68	$4,526,099.76	$5,216,810.00	$4,995,567.45	$3,629,338.15
Avg. Cost Per Service Replaced	$6,144.31	$5,914.57	$11,863.29	$9,261.36	$5,855.90	$15,245.45	$13,908.56	$11,695.35	$16,456.81	$13,009.29	$20,978.83

Attachment 8-2:
A.21-7-002 2021 GRC Bakersfield District Project Justification Book

CAPITAL PROJECT JUSTIFICATION

Bakersfield District

2021 GENERAL RATE CASE

A.21-07-____ (For Test Year 2023)

July 2021

California Water Service

Quality. Service. Value.

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Table of Contents

Section A. Operating District Overview 8

District Summary 9

Bakersfield District 2021 GRC Capital Improvement Summary 9

Bakersfield Project Justification Book Structure 10

Bakersfield Project Justification Threshold 11

Bakersfield Location Factor 11

Service Area Terminology 11

Section B. Programmatic Justifications 13

Pipeline Replacement Program 14

Meter Replacement Program 57

PID # 123159, 123171,… Vehicle Replacement Program 61

PID # 123863 CARB Vehicle Replacement Program 69

PID # 124729 Tank 045-T1 Roof Replacement 73

Section C. Specific Justifications 85

PID # 123165 BKNG Tank & Booster Facility 86

PID # 123170 BK 615/660/675 Border Rezone and Pipeline 97

PID # 123185 Partial Rebuild Station 87 107

PID # 123190 Flowmeter & Building, Panelboard Replacement Station 116 113

PID # 123193 Station 148 Building & Panelboard Replacement 124

PID # 123195, 123196,… Poly Service Replacements 135

PID # 123434 BK 2024 Well Replacement Program 140

PID # 124358, 124364,… Routine Granular Activated Carbon Changeout 160

PID # 124412, 124419,… Flat to Meter Conversions 167

PID # 124745 Storage Tank Replacement Station 147 171

PID # 125251 Well PFAS Treatment at Station 49 179

Section D. Cost Summary Table 190

Section E. Supply Demand Report 205

Table 1. Capital Budget Summary –Bakersfield District

End Year	Project ID	Description	Direct Cost[a]	Inserted [b]
2022	124979	BK 2022 Analyzer Replacements	$12,209	X[d]
2022	123401	BK 2022 Control Valve Replacements	$150,666	X[d]
2022	123130	BK 2022 CP Upgrades	$68,209	X[d]
2022	123367	BK 2022 Control Valve Overhaul	$55,825	X[d]
2022	123925	BK 2022 Flowmeter Replacement	$118,116	X[d]
2022	124934	BK 2022 Sample Sites	$7,493	X[d]
2022	124173	BK 209 Panel Shade Awning	$13,226	
2022	124169	BK 194 Sta Valve Replacement	$17,194	
2022	124280	BKD 2022 chemical pump replacements	$19,116	
2022	124172	BK 202 Chemical Enclosure	$19,840	
2022	124328	BK 2022 Misc Pumping Equipment	$26,453	
2022	123974	BK 2022 Customer Meter Vault Lids	$27,448	
2022	123626	BK 188-T1 - Seismic Retrofit	$70,231	X[d]
2022	123642	BK 176-A VFD Install	$70,682	
2022	123142	BK 116-T1 - Seismic Retrofit	$76,993	X[d]
2022	123628	BK 188-T2 - Seismic Retrofit	$76,993	X[d]
2022	123510	BK Tank Exterior Ladder Lifelines	$183,110	X[d]
2022	124262	BK 081-01 Well Renewal	$302,076	X[d]
2022	124729	BK 045-T1 - Tank Roof Replacement	$471,699	X
2022	123195	BK 2022 Poly Service Replacements	$666,834	X
2022	124745	BKD 147 Storage Tank Replacement	$977,098	X
2022	124358	BK 2022 GAC Media Replacement	$986,913	X
2022	125251	BK 49-03 GAC Treatment	$1,305,235	X
2022	124412	BK 2022 Flat to Meter	$2,663,746	X
2022	BKD0900_2022	Meter Replacement Program	$416,823	X
2022	101MRP22	BK 2022 Main Replacement Program	$14,850,914	X
2022	123437	BK 091-C Replace Pump & Motor	$44,972	X[d]
2022	123654	BK 162-A Replace Pump & Motor	$44,972	X[d]
2022	123658	BK 162-B - Replace Pump & Motor	$44,972	X[d]
2022	123471	BK 100-E Replace Pump & Motor	$45,359	X[d]
2022	123430	BK 087-E Replace Pump & Motor	$70,568	X[d]
2022	124295	BK 134-01 - Replace Pump & Motor	$156,013	X[d]
2022	124291	BK 040-02 - Replace Pump & Motor	$159,327	X[d]
2022	125421	BK 2022 Physical Security Upgrades	$920,623	X[c]
2022	123625	BK 073-T5 Tank Retrofits	$20,380	X[d]
2022	123371	BK 116-T3 - Tank Retrofits	$27,865	X[d]
2022	123132	BK 116-T1 - Tank Retrofits	$32,175	X[d]
2022	123159	BK 2022 Vehicle Replacement Program	$171,534	X
2022	123863	BK 2022 CARB VEHICLE REPLACEMENT	$518,466	X

End Year	Project ID	Description	Direct Cost[a]	Inserted [b]
2022	101UNSCH_22	BK 2022 Unscheduled	$5,298,558	X[d]
2022	101-NON-SP_22	2022 Bakersfield Non-Specific	$2,040,108	X[d]
2023	123441	BK 2023 Control Valve Replacements	$176,174	X[d]
2023	123377	BK 2023 Control Valve Overhaul	$56,121	X[d]
2023	123961	BK 2023 Flowmeter Replacements	$137,382	X[d]
2023	124983	BK 2023 Analyzers Replacement	$4,915	X[d]
2023	124286	BK 2023 Chemical Pump Replace	$18,168	
2023	124329	BK 2023 MISC PUMPING EQUIPMENT	$27,656	
2023	123975	BK 2023 Customer Meter Vault Lids	$28,134	
2023	123735	BK 2022 Field Equipment/Tools	$37,766	
2023	124325	BK Sta 96 Isolation Valve install	$62,226	
2023	123644	BK 209-A VFD Install	$63,875	
2023	123637	BK 218-E Install VFD	$69,915	
2023	123595	BK 100-F Install VFD	$70,256	
2023	123607	BKD 116-G Install VFD	$72,801	
2023	123183	BK 186 Corner Tank BFV Controls	$77,108	
2023	123201	BK 82 Piping Replacement	$84,590	
2023	124190	BK Sta 96 Vault Lid Replacement	$103,710	
2023	124828	BK NEWTP Algal Toxin Study	$114,156	
2023	124826	BK NWWTP Algal Toxin Study	$119,883	
2023	126467	2023 BK 49 Carbon Change Outs	$145,442	
2023	124822	BK NEWTP Traveling Screen Rebuild	$177,903	
2023	124824	BK NEWTP CIP Neutralization Tank	$206,718	
2023	123194	BK 23 Building Replacement	$234,554	
2023	123180	BK 150 Surge Tank	$245,662	
2023	123181	BKNG 219 Surge Tank	$245,662	
2023	124302	BK 079-01 Well Renewal	$299,673	X[d]
2023	124819	BK 2023 NEWTP Filter Modules	$317,353	
2023	123936	BK 116-PT1 Pressure Vessel Replace	$325,584	X[d]
2023	124364	BK 2023 GAC Media Replacement	$339,605	
2023	123196	BK 2023 Poly Service Replacements	$683,505	X
2023	123190	BK 116 PB & Building Replacement	$752,064	X
2023	124419	BK 2023 Flat to Meter	$2,784,947	X
2023	BKD0900_2023	Meter Replacement Program	$427,244	X
2023	101MRP23	BK 2023 Main Replacement Program	$15,222,187	X
2023	123643	BK 212-D Replace Pump & Motor	$48,117	X[d]
2023	123645	BK 116-F Replace Pump & Motor	$68,892	X[d]
2023	123473	BK 144-01 Replace Pump & Motor	$80,433	X[d]
2023	123475	BK 195-01 Replace Pump & Motor	$80,433	X[d]
2023	125422	BK 2023 Physical Security Upgrades	$914,755	X[c]

End Year	Project ID	Description	Direct Cost[a]	Inserted [b]
2023	123345	BK 096-T2 - Tank Retrofits	$16,330	X[d]
2023	123347	BK 096-T3 - Tank Retrofits	$16,330	X[d]
2023	123352	BK 096-T4 - Tank Retrofits	$20,908	X[d]
2023	123655	BK 148-T1 - Tank Retrofit	$45,114	X[d]
2023	123171	BK 2023 Vehicle Replacement Program	$38,727	X
2023	101UNSCH_23	BK 2023 Unscheduled	$5,431,022	X[d]
2023	101-NON-SP_23	2023 Bakersfield Non-Specific	$2,091,127	X[d]
2024	123425	BK 2024 Control Valve Replacement	$57,371	X[d]
2024	123399	BK 2024 Control Valve Overhaul	$58,101	X[d]
2024	123962	BK 2024 Flowmeter Replacements	$135,464	X[d]
2024	124986	BK 2024 Analyzers Replacement	$6,713	X[d]
2024	124290	BK 2024 chemical pump replace	$20,895	
2024	123978	BK 2024 Customer Meter Vault Lids	$28,837	
2024	124331	BK 2024 pumping equipment	$28,915	
2024	124178	BK 2023 Misc Field Equipment	$41,564	
2024	124365	BK 2024 GAC Media Replacement	$79,475	
2024	124823	BK NWWTP Traveling Screen Rebuild	$89,623	
2024	123200	BK 36-02 Piping Replacement	$91,154	
2024	123859	BK 215 VFD Controls Upgrades	$99,059	
2024	126470	2024 BK Carbon Change Outs	$149,079	
2024	123662	BK 176-T2 - Seismic Retrofit	$176,808	
2024	123185	BK 87 Station Rebuild - Design	$216,157	
2024	123850	BK 156 Generator Replacement	$240,945	
2024	124306	BK 042-02 Well Renewal	$248,584	
2024	123721	BK 148 Generator Replacement	$253,287	
2024	124820	BK 2024 NEWTP Filter Modules	$325,287	
2024	123684	BK Sta 146-04 Wildfire Generator	$329,301	
2024	123864	BK 162 Panelboard Replacement	$356,228	
2024	123899	BK 212 Panelboard Replacement	$357,605	
2024	123193	BK 148 PB & Building Replacement	$424,112	X
2024	123799	BK 2024 Vehicle Replacemnt Program	$521,706	X
2024	123197	BK 2024 Poly Service Replacements	$700,592	X
2024	123170	BK 675 Rezone	$1,595,033	X
2024	123165	BK New Tank & Booster Facility	$2,819,273	X
2024	124420	BK 2024 Flat to Meter	$2,911,662	X
2024	BKD0900_2024	Meter Replacement Program	$437,925	X
2024	101MRP24	BK 2024 Main Replacement Program	$15,602,741	X
2024	123440	BK 097-B Replace Pump & Motor	$47,249	X[d]
2024	123462	BK 097-C Replace Pump & Motor	$47,249	X[d]
2024	123409	BK 003-04 Replace Pump & Motor	$82,444	X[d]

End Year	Project ID	Description	Direct Cost[a]	Inserted [b]
2024	124297	BK 042-02 - Replace Pump & Motor	$82,444	X[d]
2024	123176	BK 1025 Zone SCADA	$97,905	
2024	125423	BK 2024 Physical Security Upgrades	$572,814	X[c]
2024	123255	BK 213-T3 - Tank Retrofits	$13,160	X[d]
2024	123676	BK 176-T2 - Tank Retrofit	$27,194	X[d]
2024	123459	BK 073-T3 - Tank Retrofits	$33,132	X[d]
2024	123454	BK 100-T3 - Tank Retrofits	$36,021	X[d]
2024	123376	BK 087-T5 - Tank Retrofits	$36,858	X[d]
2024	123675	BK 100-T4 - Tank Retrofit	$37,530	X[d]
2024	123456	BK 100-T1 - Tank Retrofits	$39,818	X[d]
2024	101UNSCH_24	BK 2024 Unscheduled	$5,566,798	X[d]
2024	101-NON-SP_24	2024 Bakersfield Non-Specific	$2,143,450	X[d]
Total	**131**		**$103,103,723**	

Notes:

(a) Direct costs include escalation, but exclude construction overhead and AFUDC.

(b) Only projects above the District threshold of $400,000 direct cost are presented in this book with specific or programmatic justifications (see Section A for additional discussion). Projects not denoted as being inserted can be found in the Bakersfield Report on the Results of Operation book.

(c) Due to confidentiality concerns, justifications for Physical Security projects are include separately within the Physical Security Project justification book.

(d) Project presented in the Common Plant Issues justification book.

Section A.

Operating District Overview

District Overview

District Summary

Cal Water's Bakersfield District (District) was formed in 1926 with the purchase of the Bakersfield water works. White Water Company. Located in the Central Valley, the Bakersfield Water System provides drinking water to approximately 286,310 customers through 72,150 service connections in the majority portion of the City of Bakersfield and in the entire communities of Olcese and North Garden. The sources of water supplies to meet the needs of customers is provided by eight interconnections with the Kern County Water Agency and with 82 active wells. The distribution system also includes over 1,580 miles of pipe, 29 booster stations and 55 storage tanks (amounting to 45.5 million gallons in total storage). This system has two surface water treatment plants. The distribution system is hydraulically divided up into 21 pressure zones. Customer average day demands amount to 53.0 million gallons per day and annual historical and forecasted water demands are presented in Figure 1 below based on the 2015 *Urban Water Management Plan* (UWMP).

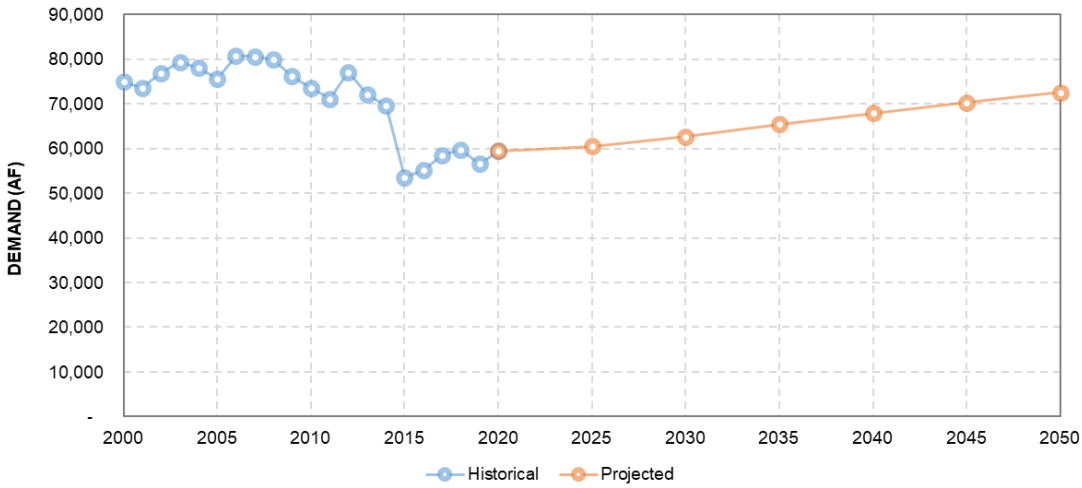


Figure 1 – Bakersfield District Historic and Forecasted Customer Demand

Bakersfield District 2021 GRC Capital Improvement Summary

For the 2021 GRC, the District will focus on a mixture of companywide programmatic projects and district specific improvement needs. Programmatic projects will be those identified based on system evaluation criteria and Cal Water asset management strategies discussed more in the Common Plant Issues justification book and includes such project types as flat to meter conversions, water main replacements, meter vault lid replacements, customer meter replacements, tank retrofits, and physical security upgrades. Specific justifications are those projects specific to the District that are necessary to ensure Cal Water can continue to deliver a reliable source of high quality water to customers. As part of the 2021 GRC these specific projects will cover a new tank and booster facility construction, transmission main, station rebuilds, panelboard replacements, and well renewals. In addition, several backup generators will

be included to address the power outages and ensure reliability of service in the face of the recent PSPS and power outages experienced in the region.

Bakersfield Project Justification Book Structure

The Bakersfield Project Justification (PJ) book is separated into two key sections: (1) programmatic justifications (Section B), and (2) individual specific project justifications (Section C). Programmatic projects are those which are part of a larger company wide capital investment strategy and which have an additional supporting justification outside of the Bakersfield PJ book in the Common Plant Issues justification book (see subsection below for complete listing). Specific project justifications are those unique district projects for which an individual detailed project justification presents the necessity and supporting documents for the capital project. Generally, specific project justifications are projects which are not part of any ongoing companywide programs.

Programmatic Justifications

The following is a complete listing of all programmatic justifications covered in the Common Plant Issues justification book:

- Flowmeter Replacements
- Vehicle Replacements
- Control Valve Overhaul and Replacement
- Water Quality Sample Stations
- SB 1398 Service Replacement Program
- Pump and Motors
- Wildfire Hardening
- Meter Replacements
- Customer Meter Vault Lids
- Cathodic Protection
- Tank Retrofits
- Tank Coating
- Pressure Vessel Replacement
- Water Quality Analyzers

Not all programs are applicable to every district and additional detail beyond the Common Plant Issues justification book is presented in this PJ book only for programs that are over the district threshold (see section below for addition details on the Bakersfield District threshold).

Justification Presentation Format

Programmatic and specific justifications in this PJ book are presented in the following general format:

- **Overview/Problem Statement:** A brief introduction providing any background and/or summary of the needs for the project.
- **Project Justification:** This section identifies the deficiencies and any supporting analysis or details supporting the need for improvement project.
- **Alternative Analysis:** Description of approaches to address the current deficiencies, which always includes a "*Do Nothing*" alternative (i.e. maintain existing conditions).
- **Recommended Solution** Identification and reasoning for the optimum solution to the current deficiencies.

- **Detailed Project Scope:** This section provides a more detailed breakdown of the recommended solution, including permitting challenges, potential construction considerations, and customer awareness.
- **Customer Benefits:** The intent of this section is to make clear how customers directly benefit from the recommended project to address the deficiencies previously identified.
- **Attachments:** All supporting documents, figures, data, maps, reports, budgets, and cost information are presented at the end of the justification write up.

In addition, some projects reference critical reports or studies that have been located at the end of the PJ book in Section F *Background Reports* given the document size. This was intended to avoid having supporting documents that are of significant length (generally greater than 50 pages) being located in the middle of the PJ book and making it difficult for the reader to find specific justifications or read through the PJ book.

Bakersfield Project Justification Threshold

Detailed written justifications have been provided for all programmatic and specific projects greater than $400,000 direct cost in order to demonstrate the necessity of the capital investment proposed for the District in the 2021 GRC. This threshold was selected as the most appropriate dollar amount to ensure that all major capital projects in the District are presented in sufficient detail to the CPUC and customers for review. Budgeting and cost details for all projects in the District are available for review in the relevant Results of Operation Report.

Bakersfield Location Factor

Location factors are a vital tool in cost engineering in order to provide a way to evaluate relative costs between two geographic locations.[1] Cal Water has incorporated a location factor into its standard cost estimating practices since first presented to the Commission in the 2018 GRC and as described in the Common Plant Issues justification book. The use of location factors ensures that costs developed for a particular district can more accurately reflect the economic environment of that district and thereby improve the confidence in the cost estimates Cal Water presents to the Commission and its customers. For the Bakersfield District, Cal Water has assigned a negative location factor change (i.e. markup of -5%) over baseline cost estimates developed from Cal Water's Cost Catalogue (see Section D) and vendor quotes. Cal Water believes the baseline costs developed and cost quotes are generally higher than in the Bakersfield District.

Service Area Terminology

"Ratemaking areas," "operating districts," and other terminology used throughout this project justification book is defined here for clarity. A "ratemaking area" has a fixed definition and consists of the geographic areas that have a common revenue requirement, as historically approved by the CPUC. The

[1] AACE, No. 28-R-03 *Developing Locations Factors by Factoring – As Applied in Architecture & Engineering, And Engineering, Procurement & Construction* (2006)

terms “district” or “operating district,” however, no longer have a fixed definition, but are generally used to refer to the group of water systems whose operations are overseen by one management group.[2]

Bakersfield is considered both an operating district and a ratemaking area.

[2] Cal Water has twenty-four (24) operating districts. See Common Plant book for additional discussion.

Section B.

Programmatic Justifications

Details on the overall programs presented within this section are included in the Common Plant Issues justification book as they are companywide programs affecting multiple districts.

District – Bakersfield
Pipeline Replacement Program

Overview

Cal Water is proposing to replace 107,907-ft of pipeline within the Bakersfield District (District) during the 2022 to 2024 rate cycle in order to decrease the break rate and reduce risk exposure to Cal Water and its customers. This length amounts to an average percent replacement rate throughout the cycle of 0.70% per year. Pipeline projects identified for this program were selected utilizing a risk prioritization model, as well as input from operations managers and other key stakeholders. Cal Water is proposing an incremental increase in the overall pipeline replacement program from the 2018 General Rate Case (GRC) application from 0.60% to 0.70%.

Program Justification

This program is necessary to ensure that pipelines are being proactively replaced and not waiting until complete failure that could have significant consequences and impact on customers. This puts Bakersfield's replacement rate at 0.70% year replacement cycle in the 2021 GRC, which is still below the industry recommended replacement rate of between 1% and 1.6% per year.[3] However, given the competing priorities within Bakersfield (e.g. water treatment projects), Cal Water believes that a 0.70% replacement is the best alternative to continue delivery a high quality reliable source of water to customers for the future.

Details of the pipeline assessment criteria and candidate selection can be found in Common Plant Issues justification book and a summary of the pipeline replacement program for the District is presented below in Table 1.

Table 1. Bakersfield District Pipeline Replacement Program for 2021 GRC

PID	Year	Total District Footage (ft)	Average Replacement Length (ft)	Average Replacement Rate	Unit Cost[(a)] ($/ft)	Direct Cost[(b)]
101MRP22	2022		35,969	0.70%		$14,850,914
101MRP23	2023	5,138,481	35,969	0.70%	$357.26	$15,222,187
101MRP24	2024		35,969	0.70%		$15,602,741

Notes:

(a) Unit cost average for 2020

(b) Assumes escalation of 2.5% per year and 10% contingencies above unit cost (see attached Cost Estimates for details)

[3] Utah State University, *Water Main Break Rates in the USA and Canada: A Comprehensive Study* (March 2018)

Selection Methodology

The Bakersfield distribution system is comprised of roughly 973 miles of pipeline and the distribution of the risk associated with these pipelines can be seen in the risk matrix presented in Figure 1. This risk assessment is based on an individual asset determination, considering the consequence of failure (i.e. what is the impact on customers and company if this pipeline leaks or breaks) and probability of failure (i.e. how likely will this pipeline leak or break given its age, material, and other site specific conditions). Additional details on risk analysis for the pipeline replacement program is available in the Common Plant Issues justification book. The conditions of these pipelines were then mapped in a GIS layer, as presented in Attachment A, and, in meeting with District operators, engineers, and water quality staff, as well as other key stakeholders potential pipeline projects were then identified. Based on this analysis, the projects presented in Attachment B were selected for consideration in the 2021 GRC.

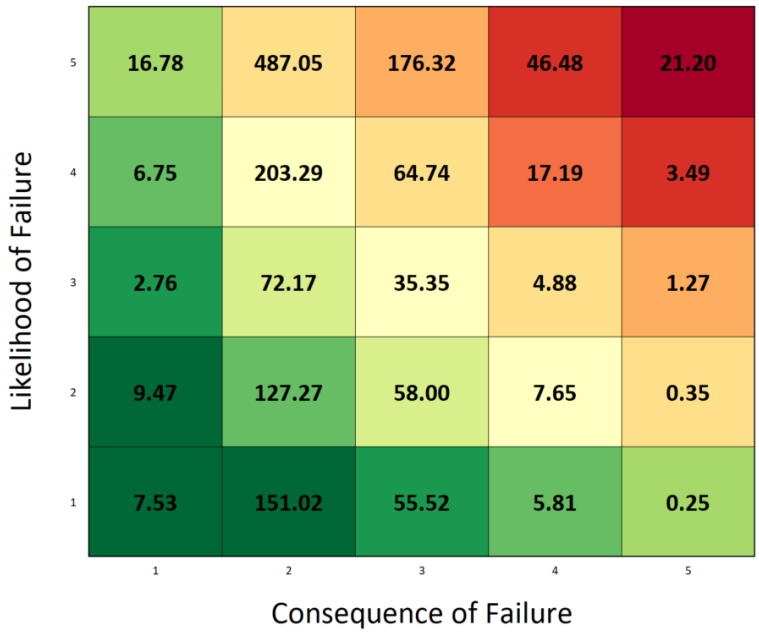


Figure 2 – Bakersfield District Pipeline Risk Assessment Matrix
(number in each category represents number of miles with that overall risk assessment)

Summary

Cal Water is proposing to replace a total of 107,907 feet of pipeline in the 2022 to 2024 rate cycle for the Bakersfield District. The average replacement rate will be 0.70% per year. The pipelines selected utilizing the prioritization model and input form the operations manager are designed to decrease the break rate and reduce risk exposure to Cal Water and its customers.

Project Attachments

Cost Estimate

Attachment A – Bakersfield Main Replacement Candidate Map
Attachment B – Pipelines Replacement Schematics

101MRP22 Cost Estimate

Capital Project Cost Estimate

Project No. :	101MRP22
Description	BK 2022 Main Replacement Program
District / Department:	Bakersfield
Project Start Date:	01/01/2022
Project Completion Date:	12/31/2022
Prepared By:	dblanusa
Date Initiated:	09/11/2020
Base Year:	2020
Sub-Total:	$14,135,313
Direct Cost:	$14,850,914

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
REPLACE MAIN PIPELINE	[LF]	35969	$357.26	$12,850,284.94	Common Plant Book B.a
10% CONTINGENCY	[EA]	1	$1,285,028.49	$1,285,028.49	Common Plant Book B.a

Sub-total = $14,135,313.43
Direct Cost = $14,850,913.63

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

101MRP23 Cost Estimate

Capital Project Cost Estimate

Project No. :	101MRP23
Description	BK 2023 Main Replacement Program
District / Department:	Bakersfield
Project Start Date:	01/01/2023
Project Completion Date:	12/31/2023
Prepared By:	dblanusa
Date Initiated:	09/11/2020
Base Year:	2020
Sub-Total:	$14,135,313
Direct Cost:	$15,222,187

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
REPLACE MAIN PIPELINE	[LF]	35969	$357.26	$12,850,284.94	Common Plant Book B.a
10% CONTINGENCY	[EA]	1	$1,285,028.49	$1,285,028.49	Common Plant Book B.a

Sub-total = $14,135,313.43
Direct Cost = $15,222,186.66

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

101MRP24 Cost Estimate

Capital Project Cost Estimate

Project No. : 101MRP24
Description BK 2024 Main Replacement Program
District / Department: Bakersfield
Project Start Date: 01/01/2024
Project Completion Date: 12/31/2024
Prepared By: dblanusa
Date Initiated: 09/11/2020
Base Year: 2020
Sub-Total: $14,135,313
Direct Cost: $15,602,741

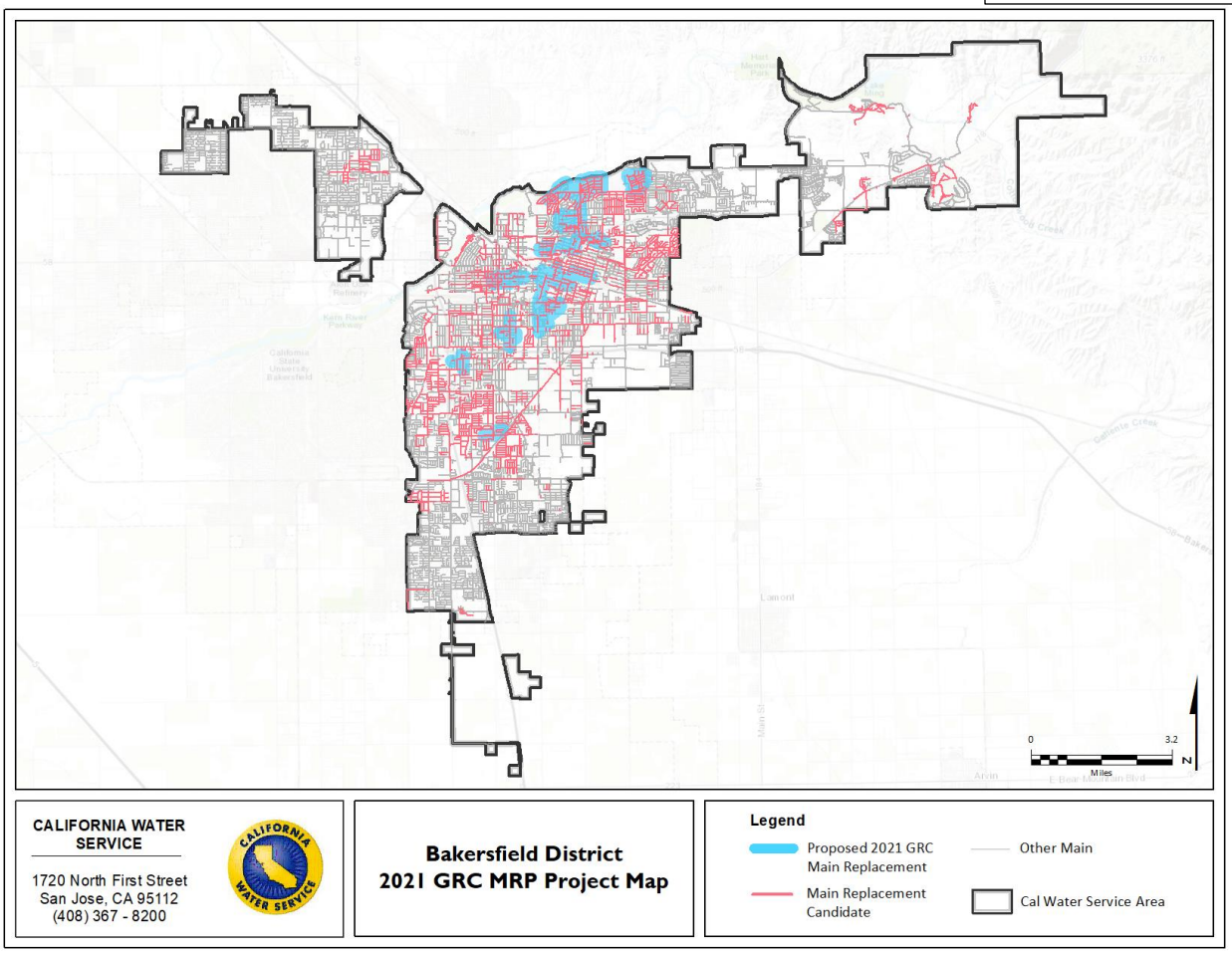
Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
REPLACE MAIN PIPELINE	[LF]	35969	$357.26	$12,850,284.94	Common Plant Book B.a
10% CONTINGENCY	[EA]	1	$1,285,028.49	$1,285,028.49	Common Plant Book B.a

Sub-total = $14,135,313.43
Direct Cost = $15,602,741.22

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification


0
3.2
Miles
N
CALIFORNIA WATER SERVICE
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(408) 367 - 8200
Bakersfield District
2021 GRC MRP Project Map
Legend
Proposed 2021 GRC Main Replacement
Main Replacement Candidate
Other Main
Cal Water Service Area

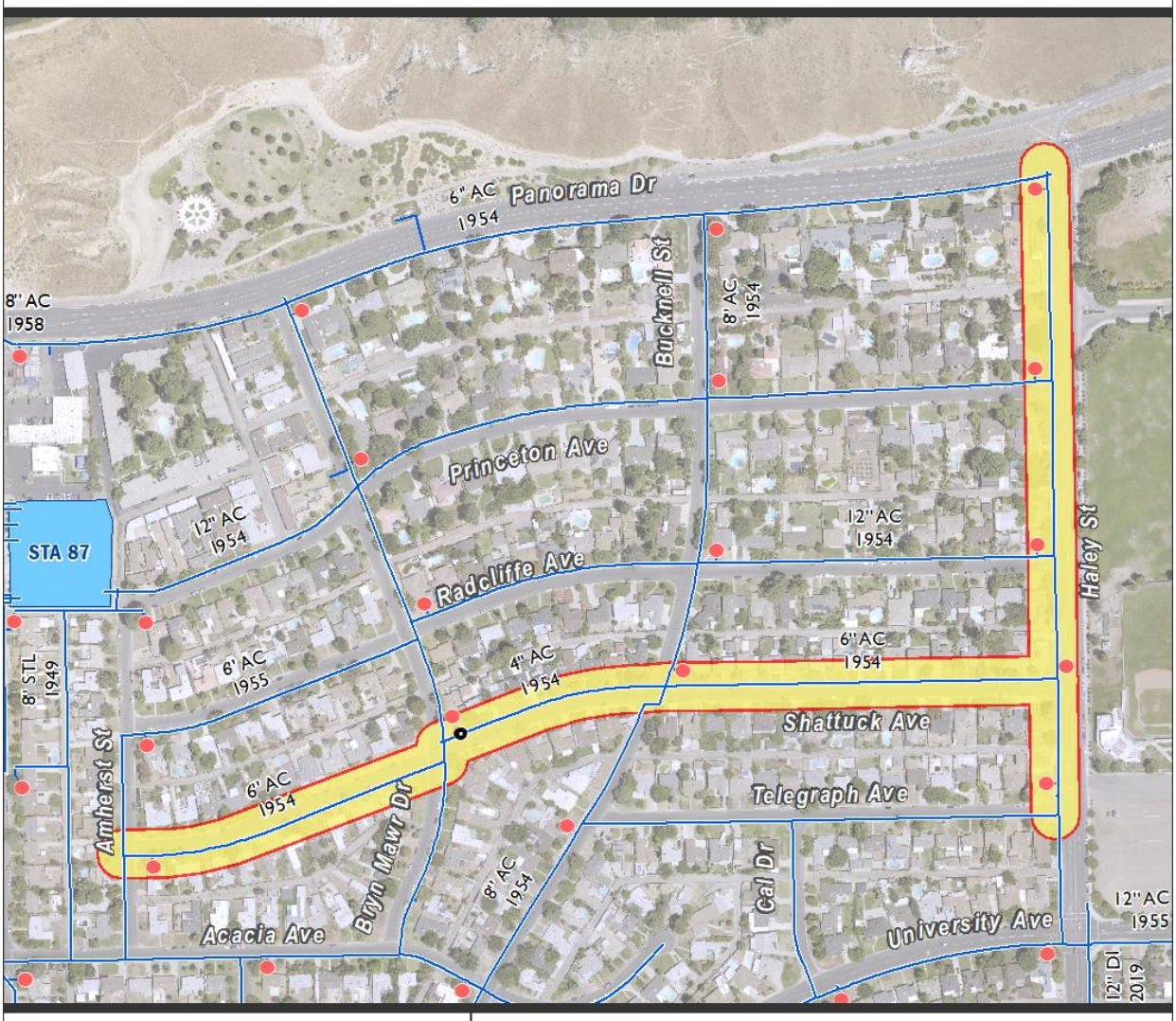
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18AH
Budget Year: 2022

Number of Leaks: 1
Likelihood of Failure (LOF): High
Consequence of Failure (COF): Low-Medium
Business Risk Exposure (BRE): Medium

Install Footage: 3953 ft
Retirement Footage: 3953 ft
Financial Department: Bakersfield
Water System: Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Pipe Size Score = 5
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 187.5 375 750
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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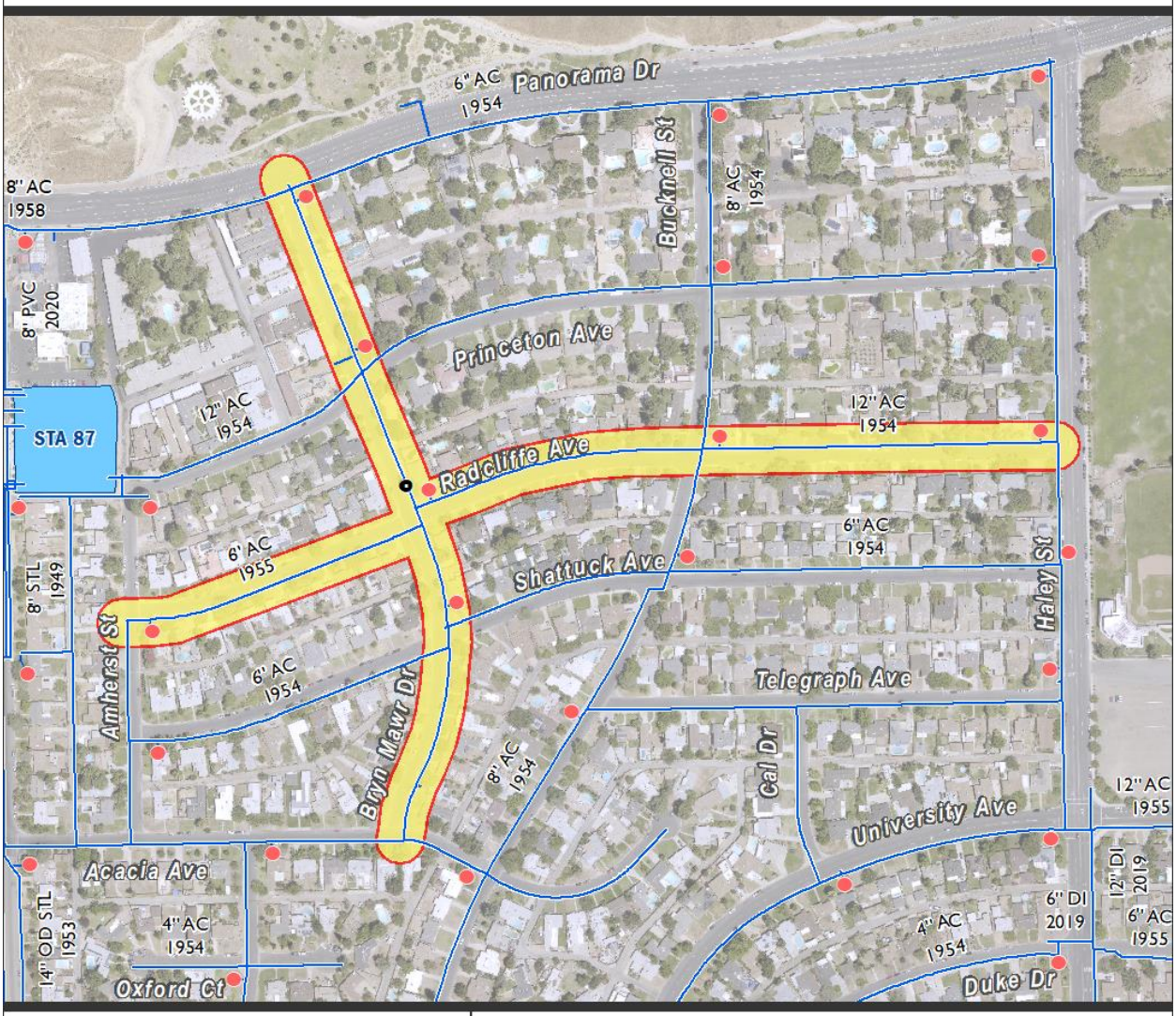
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18AI
Budget Year: 2022

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
4096 ft
Retirement Footage:
4096 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Moderate Fire Threat
Pipe Size Score = 5
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 187.5 375 750
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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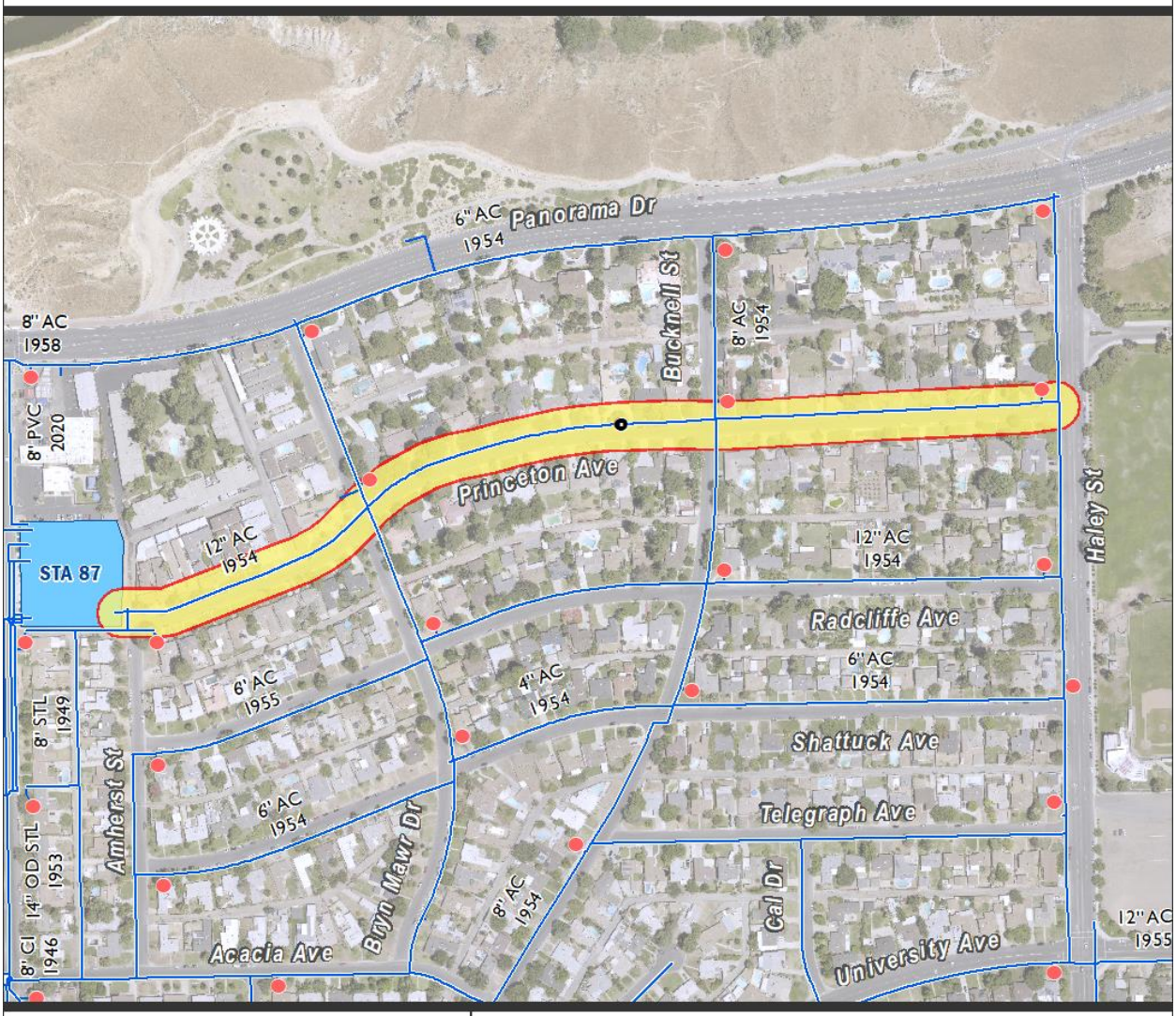
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18AJ
Budget Year: 2022

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2417 ft
Retirement Footage:
2417 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Alley
Pipe Size Score = 5
Land Use: 5
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 187.5 375 750
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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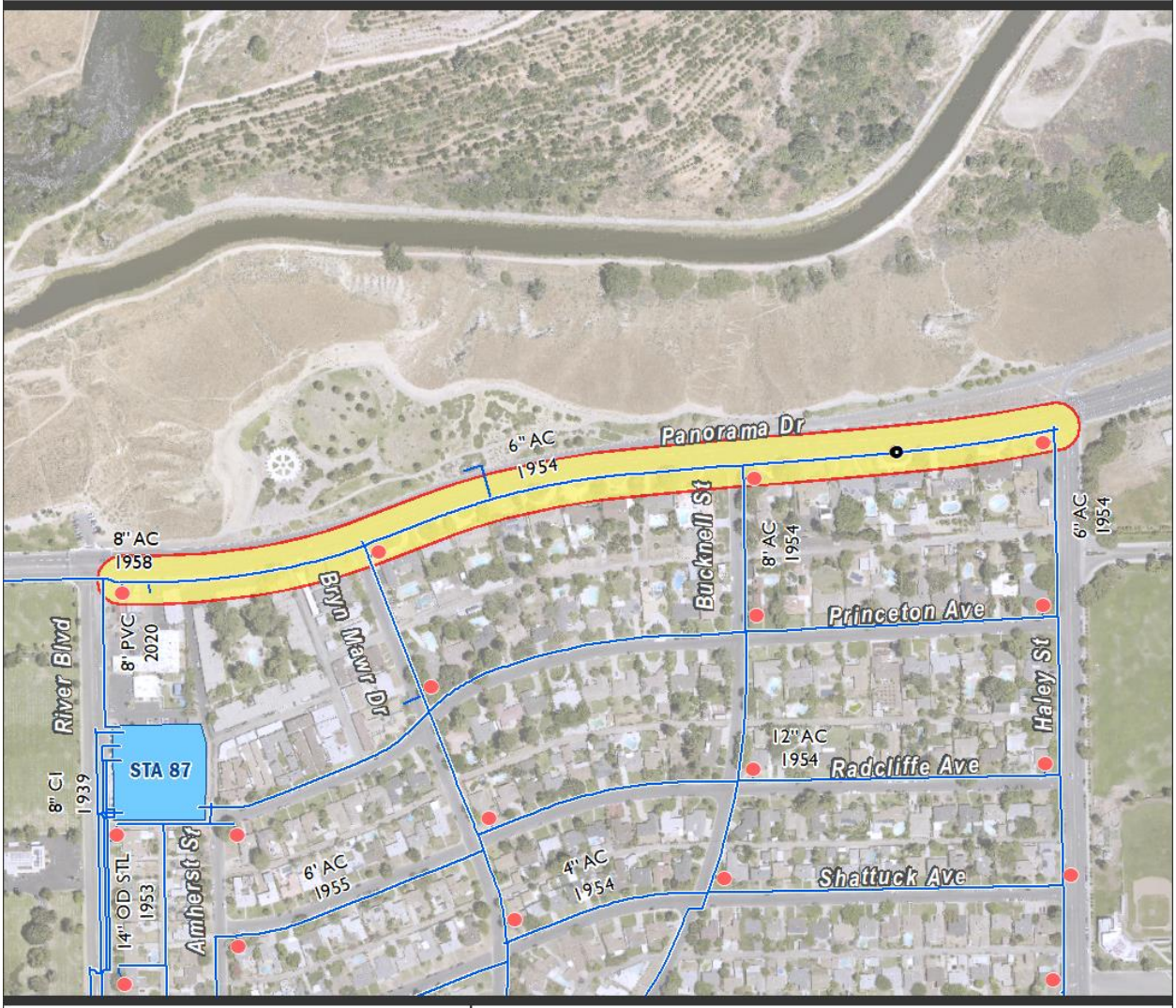
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18AK
Budget Year: 2022

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2580 ft
Retirement Footage:
2580 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Moderate Fire Threat
Pipe Size Score = 3
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 205 410 820
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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BK PJ - 23

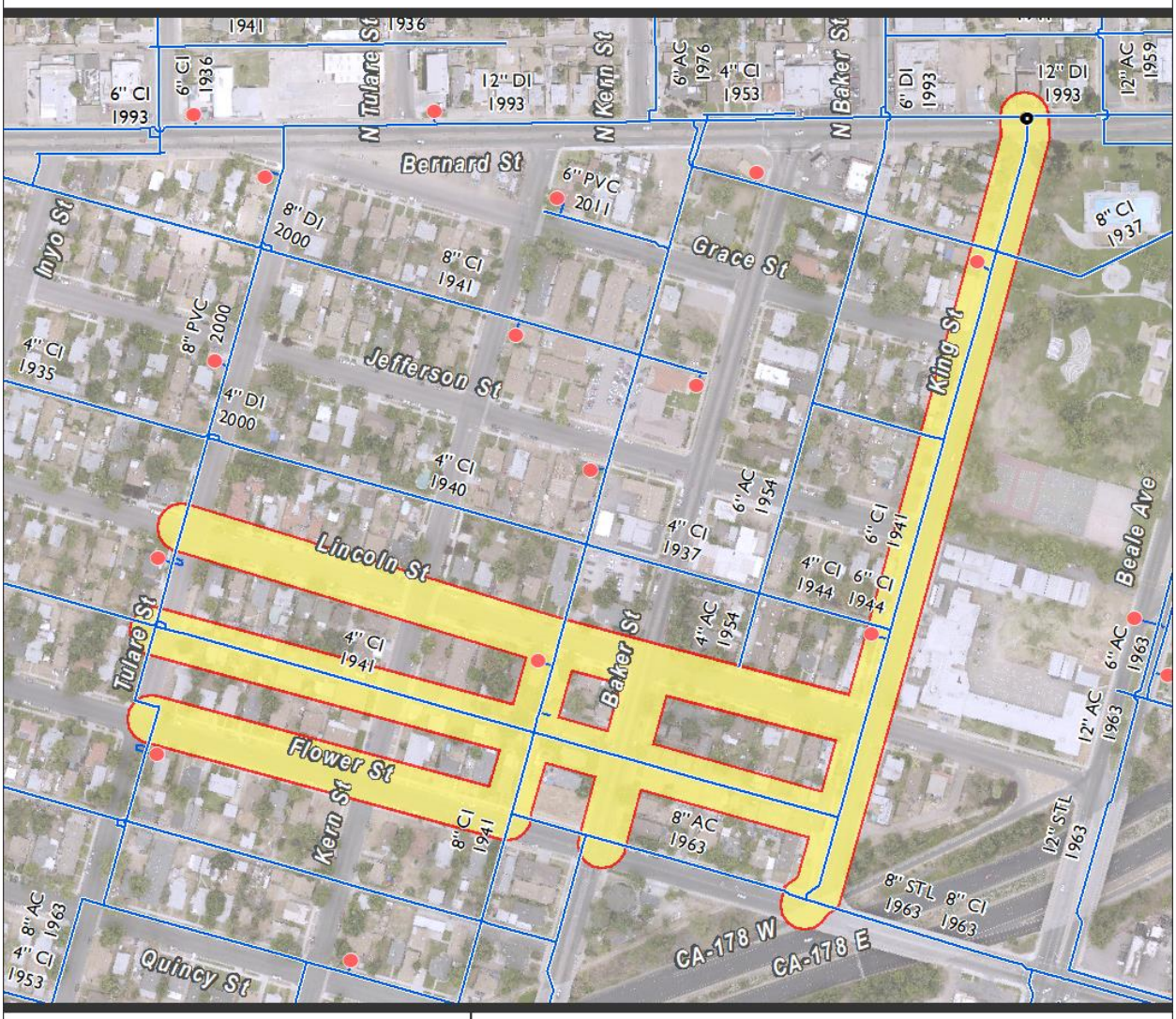
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18M
Budget Year: 2022

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
4251 ft
Retirement Footage:
3492 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
School
Pipe Size Score = 4
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 155 310 620
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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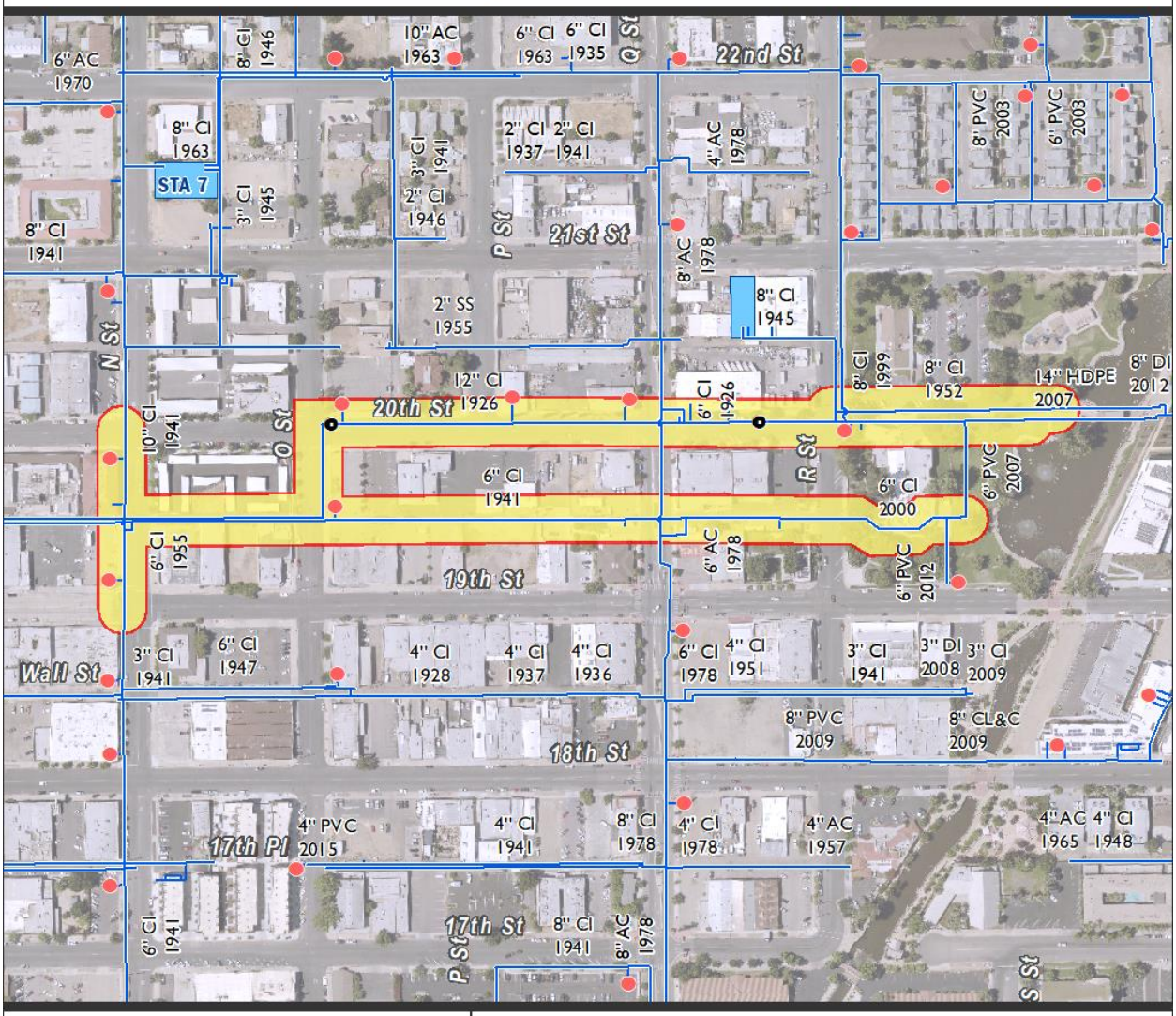
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18N
Budget Year: 2022

Number of Leaks:
2
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
4507 ft
Retirement Footage:
4507 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Backyard Easement
Water Body or Stream
Pipe Size Score = 5
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 150 300 600
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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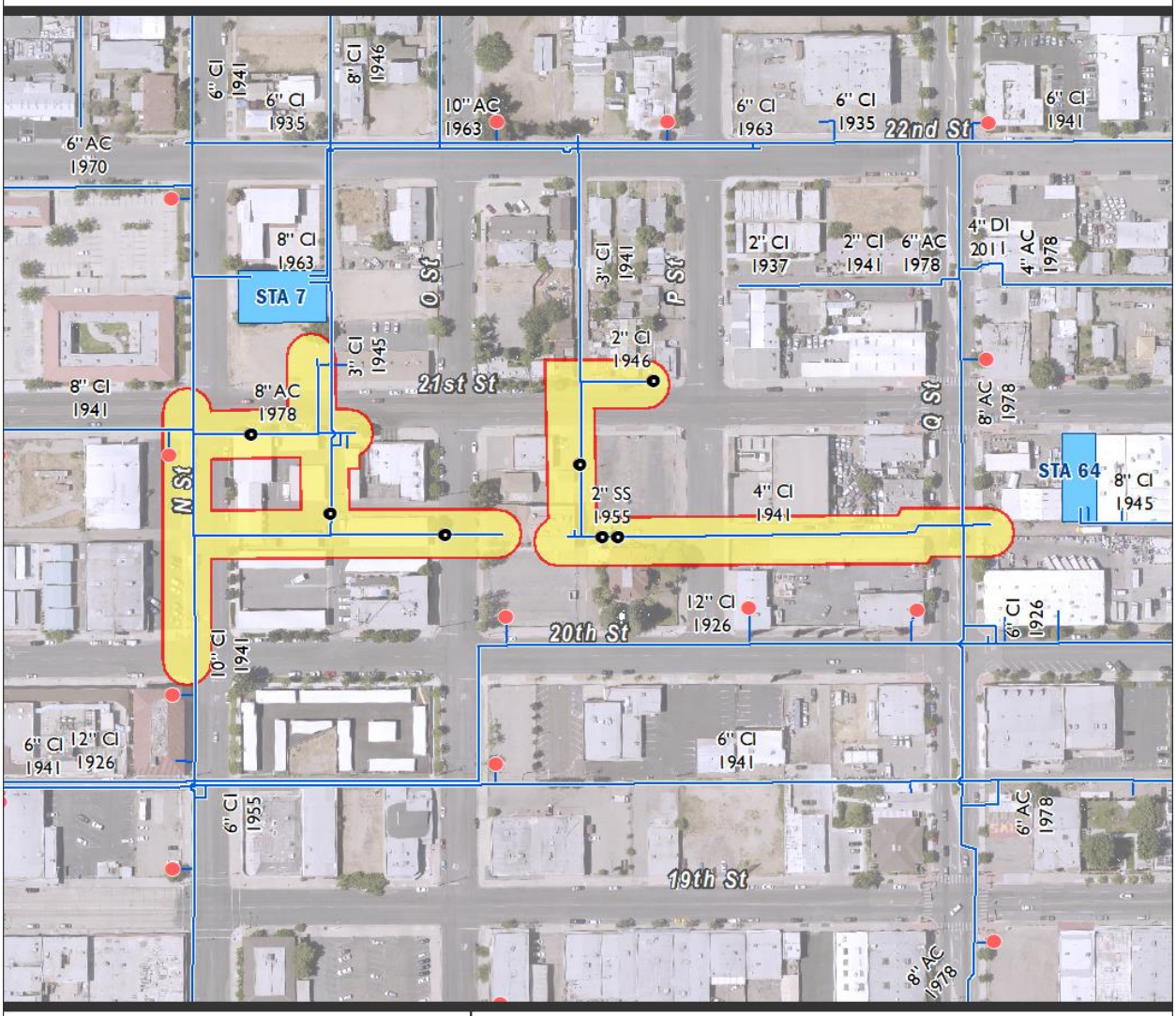
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-180
Budget Year: 2022

Number of Leaks:
7
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2217 ft
Retirement Footage:
2217 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 4
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

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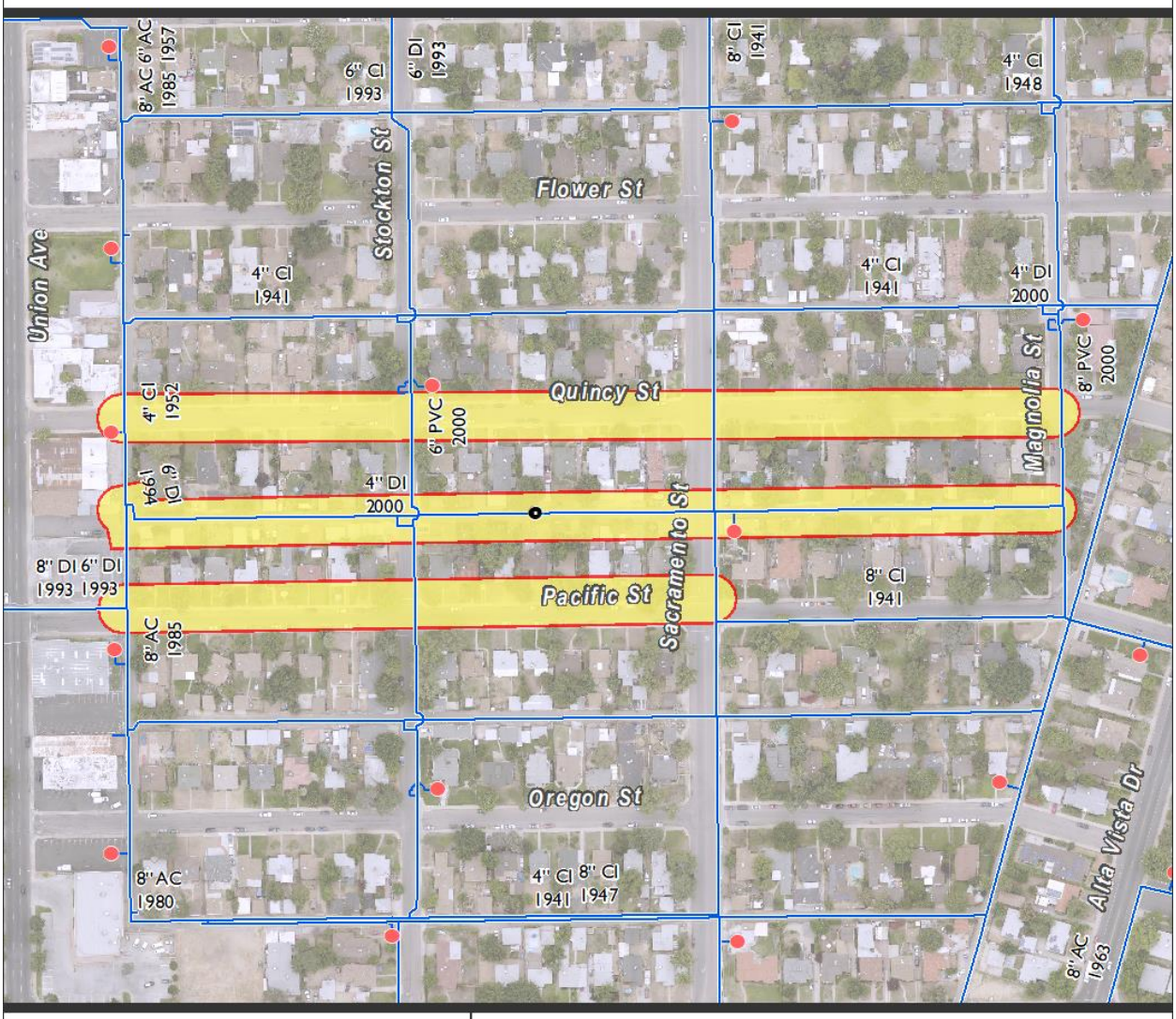
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18P
Budget Year: 2022

Number of Leaks:
1
Likelihood of Failure (LOF):
Medium-High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2424 ft
Retirement Footage:
1499 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Alley
Pipe Size Score = 4
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 120 240 480
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
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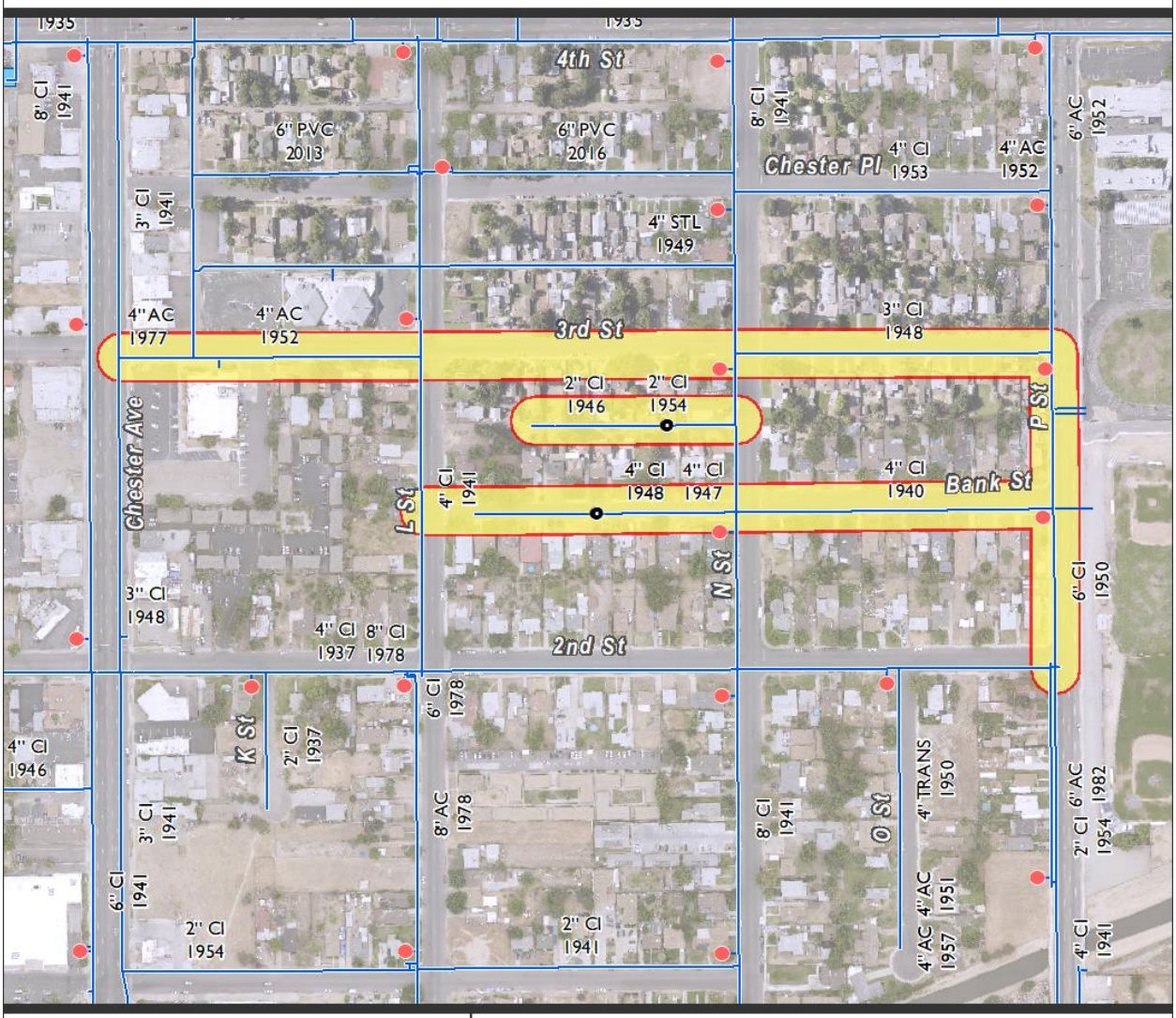
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18Q
Budget Year: 2022

Number of Leaks:
2
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
4113 ft
Retirement Footage:
3757 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
School
Pipe Size Score = 3
Land Use: 4
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 165 330 660
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

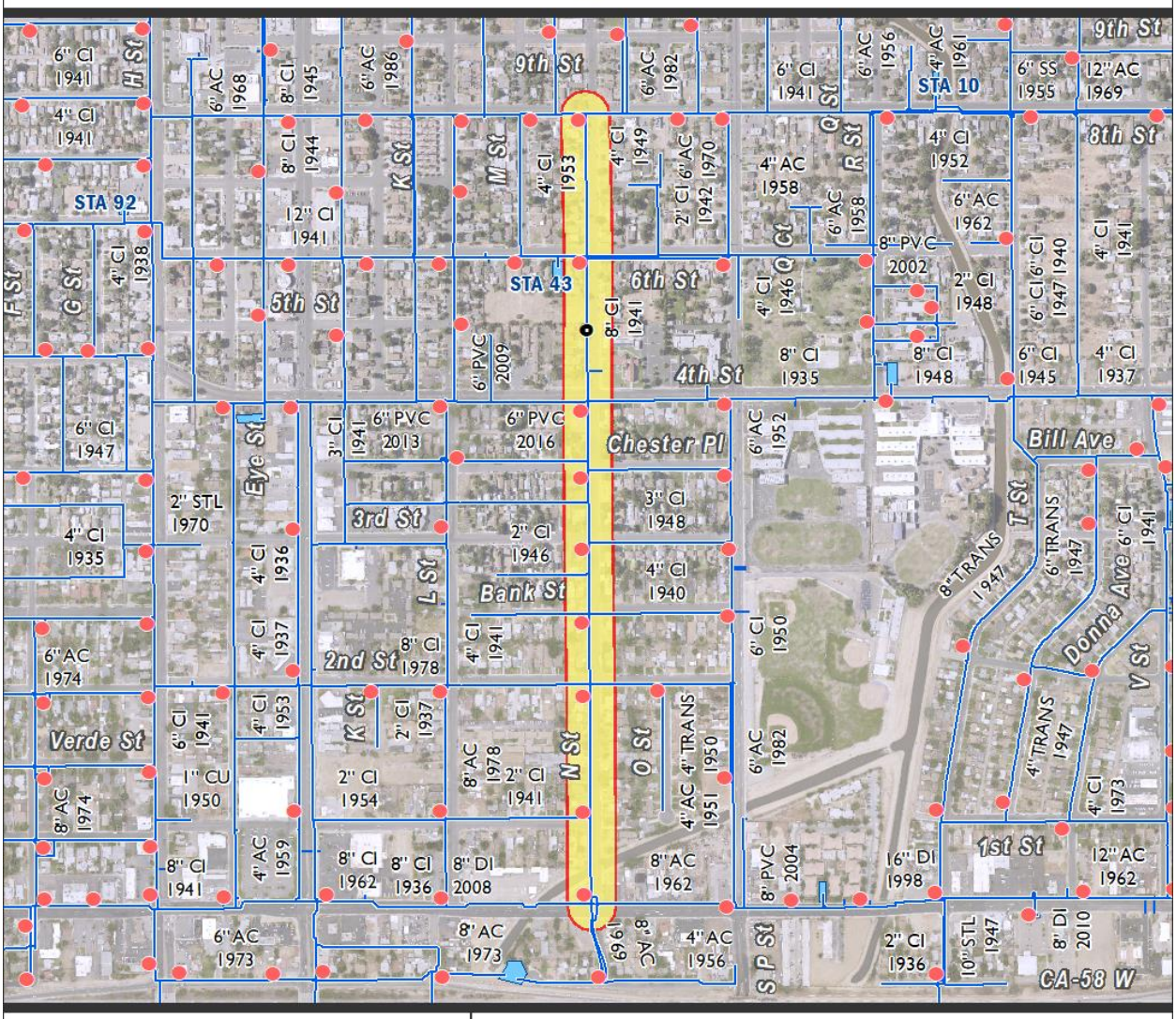
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18R
Budget Year: 2022

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3841 ft
Retirement Footage:
3841 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Water Body or Stream
Wetland
Pipe Size Score = 4
Land Use: 4
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 360 720 1,440
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
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(408) 367 - 8200

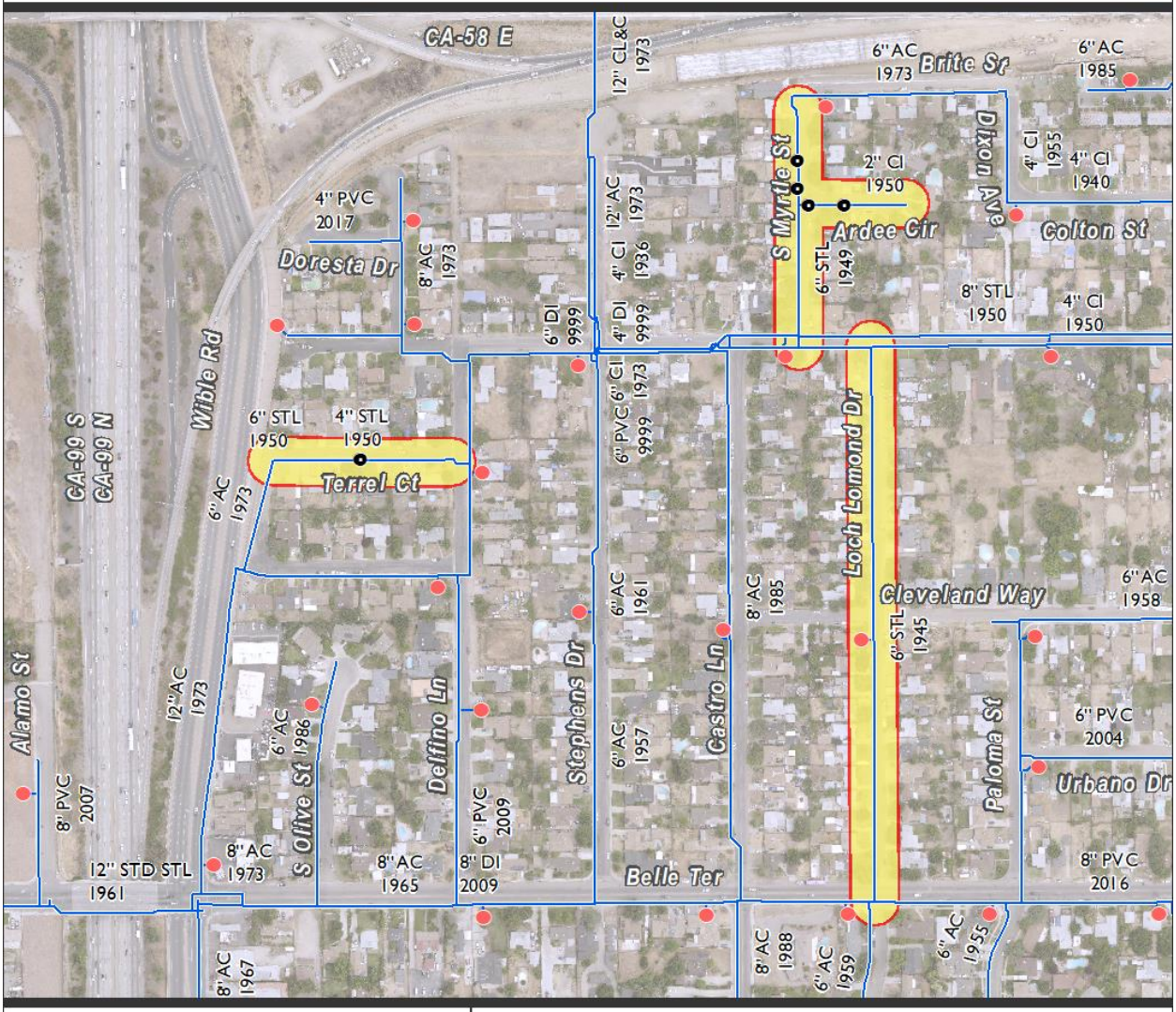
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18S
Budget Year: 2022

Number of Leaks:
5
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2581 ft
Retirement Footage:
2581 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Pipe Size Score = 3
Land Use: 3
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 180 360 720
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

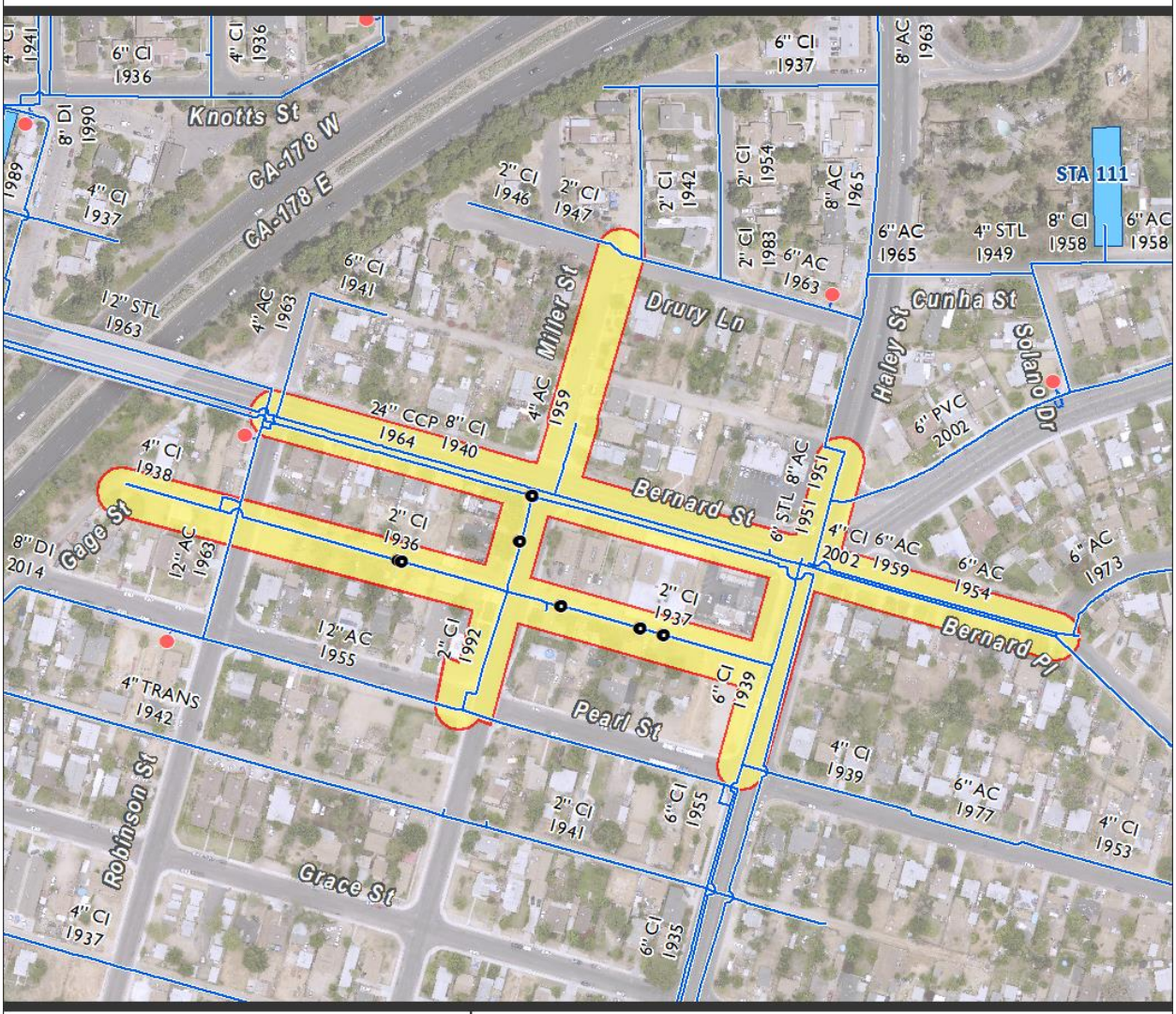
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-18U
Budget Year: 2022

Number of Leaks:
7
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2813 ft
Retirement Footage:
3666 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 5
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 130 260 520
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

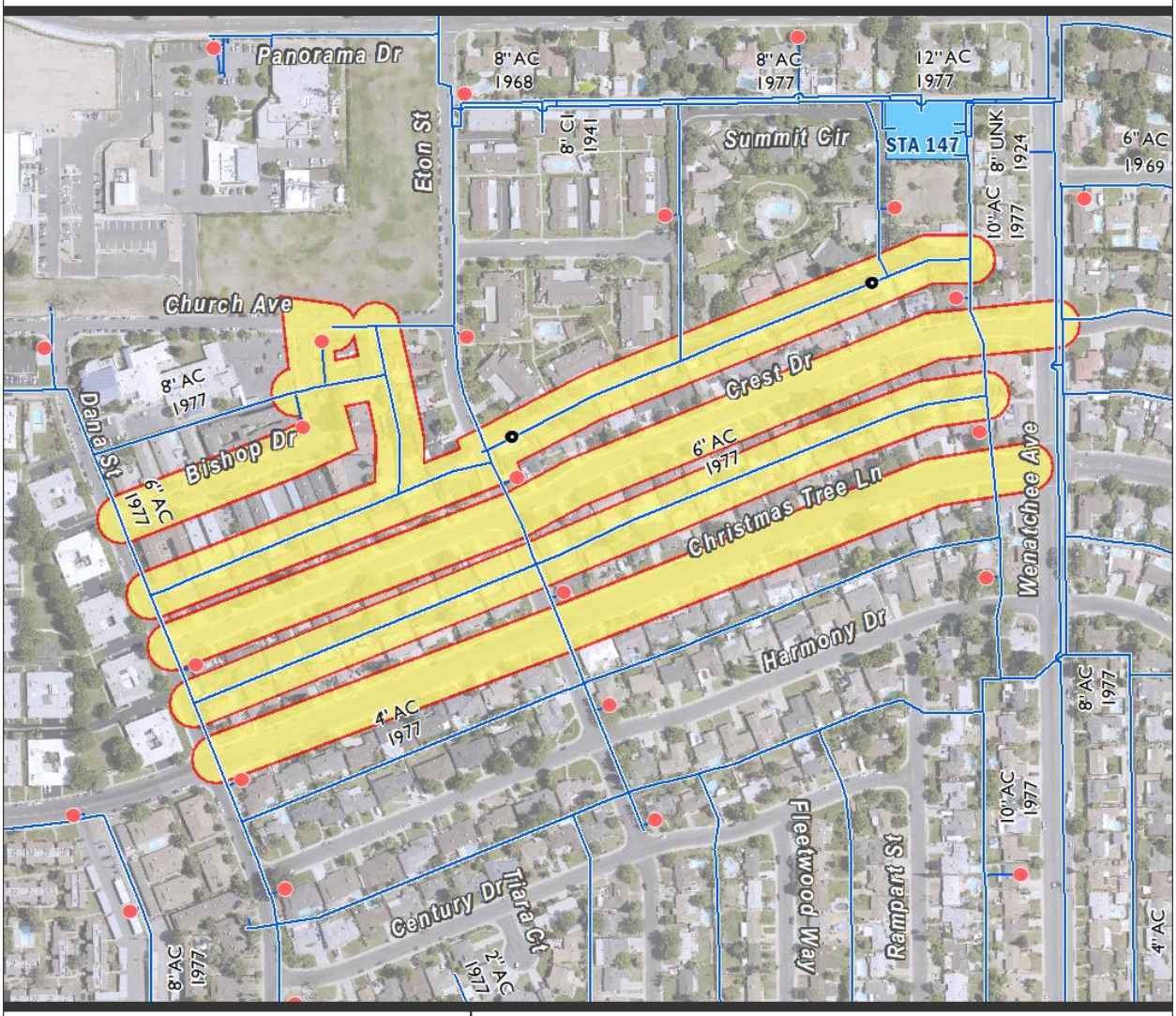
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21A
Budget Year: 2023

Number of Leaks:
2
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
4786 ft
Retirement Footage:
4436 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Alley
Backyard Easement
Pipe Size Score = 4
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 165 330 660
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

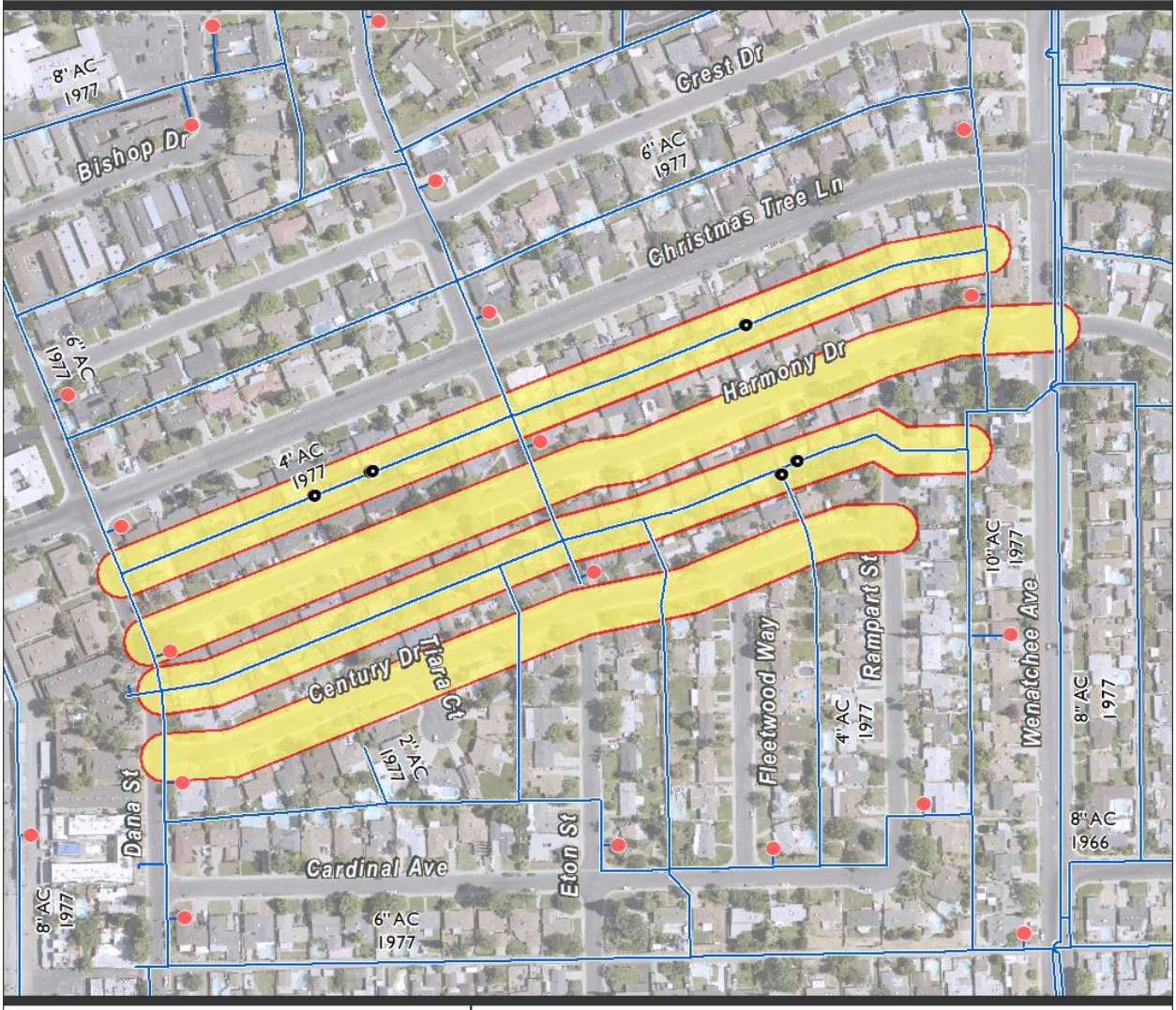
CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21B
Budget Year: 2023

Number of Leaks: 7	Install Footage: 3350 ft
Likelihood of Failure (LOF): High	Retirement Footage: 3439 ft
Consequence of Failure (COF): Medium	Financial Department: Bakersfield
Business Risk Exposure (BRE): Medium	Water System: Bakersfield



COF Factors

Local Road
Backyard Easement
Pipe Size Score = 4
Land Use: 3
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 145 290 580
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
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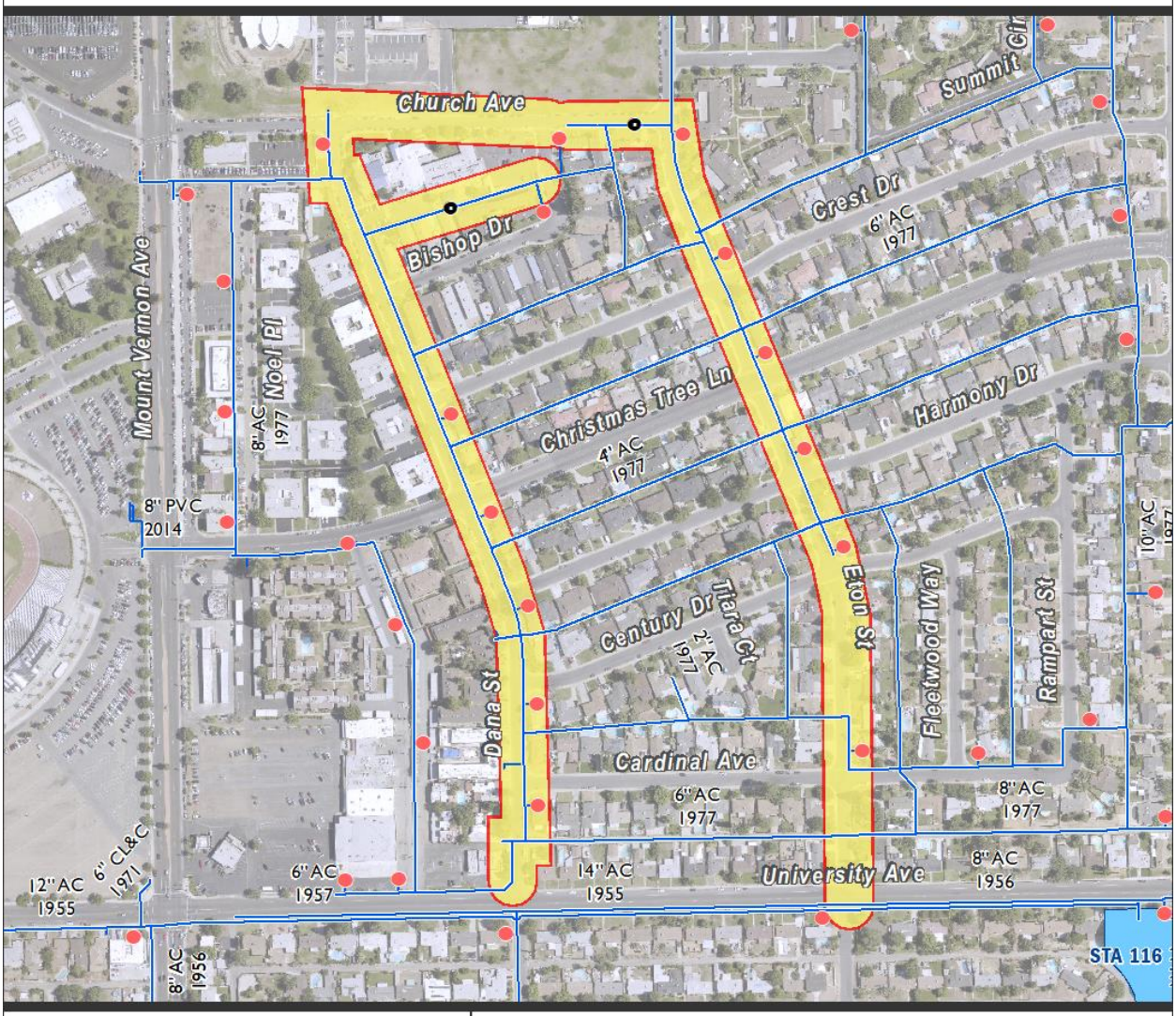
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21C
Budget Year: 2023

Number of Leaks:
2
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
5061 ft
Retirement Footage:
4957 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Alley
Backyard Easement
Pipe Size Score = 4
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 195 390 780
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

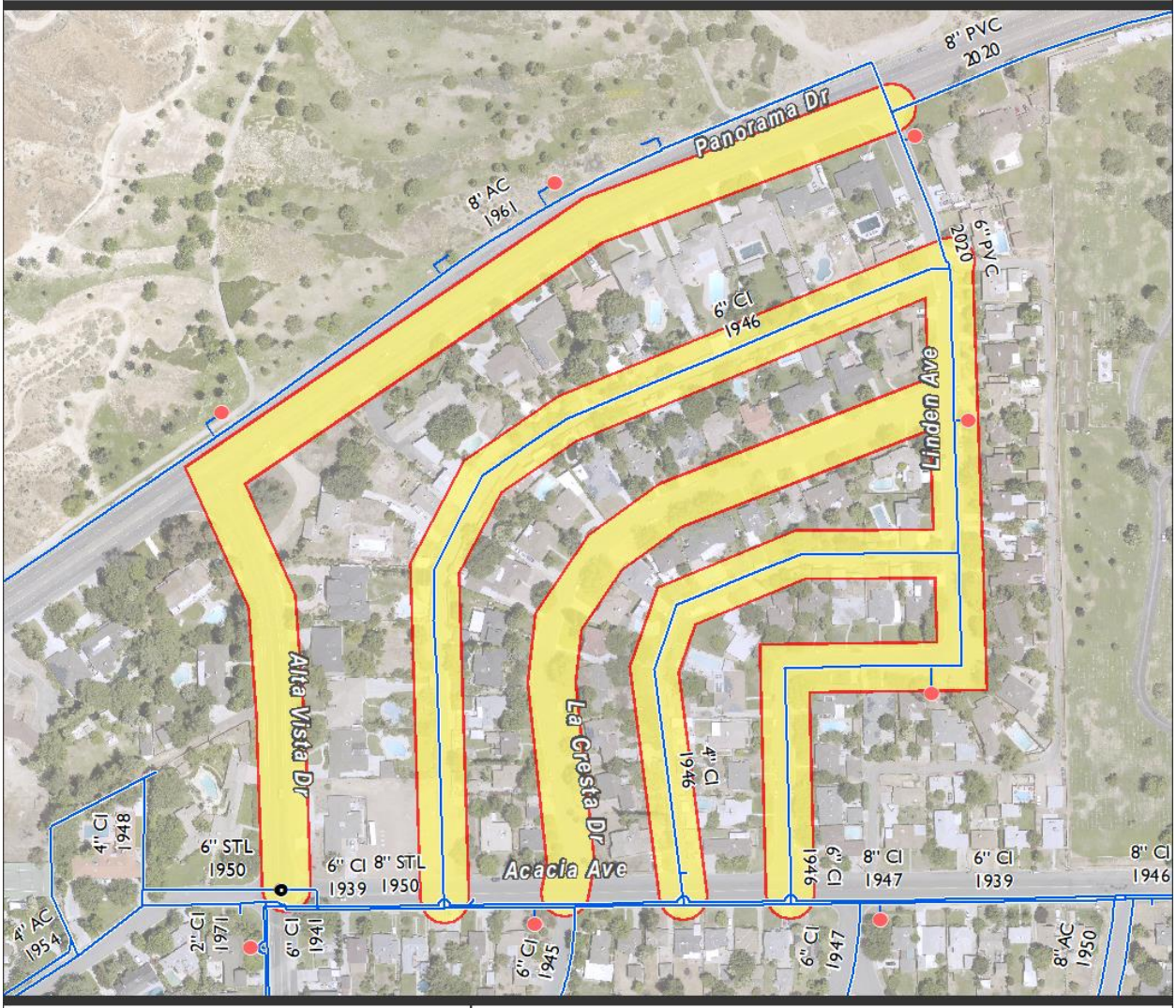
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21D
Budget Year: 2023

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
4576 ft
Retirement Footage:
3909 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Moderate Fire Threat
Pipe Size Score = 3
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 125 250 500
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

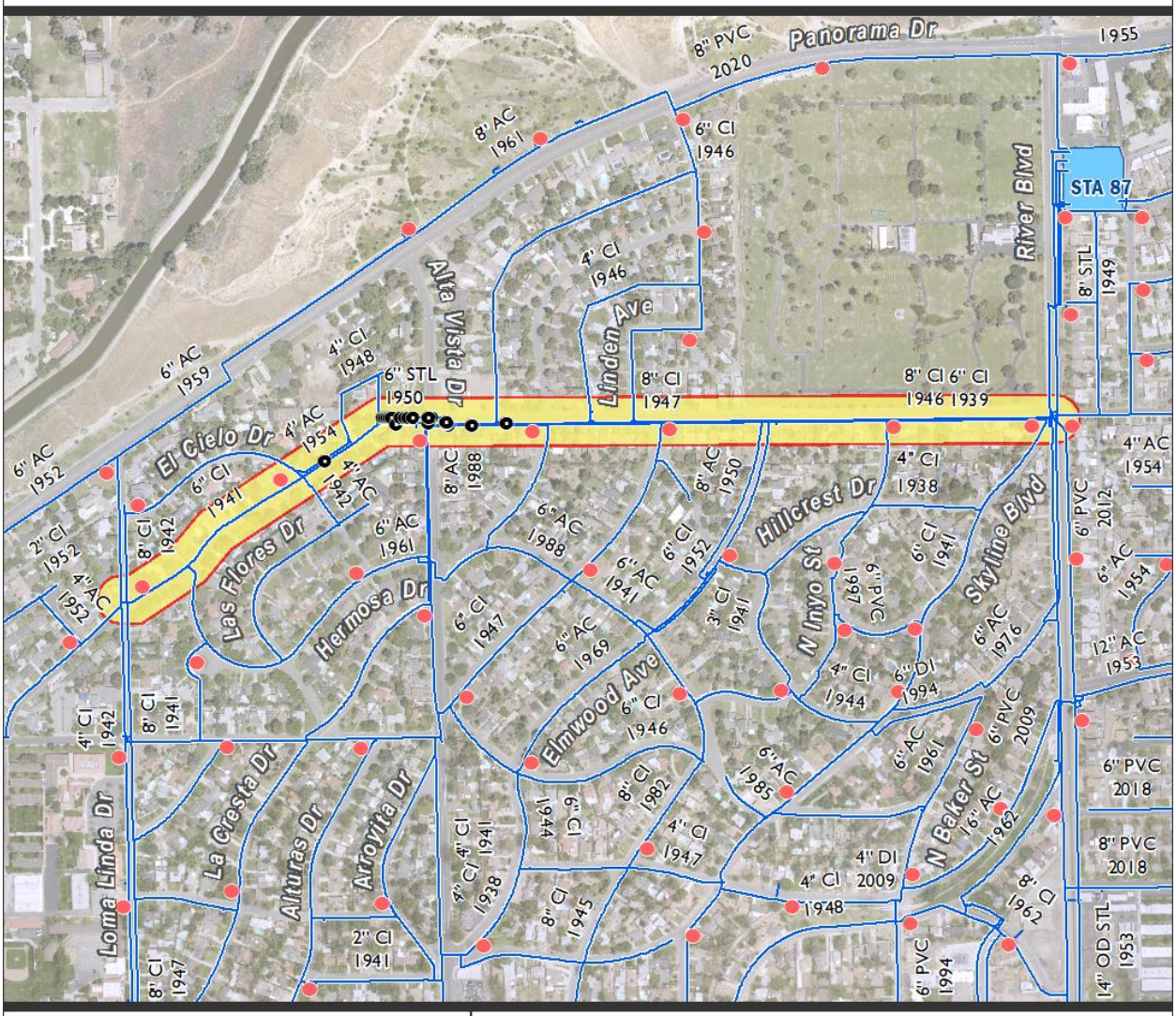
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21E
Budget Year: 2023

Number of Leaks:
20
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
4190 ft
Retirement Footage:
4190 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Pipe Size Score = 4
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 312.5 625 1,250
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

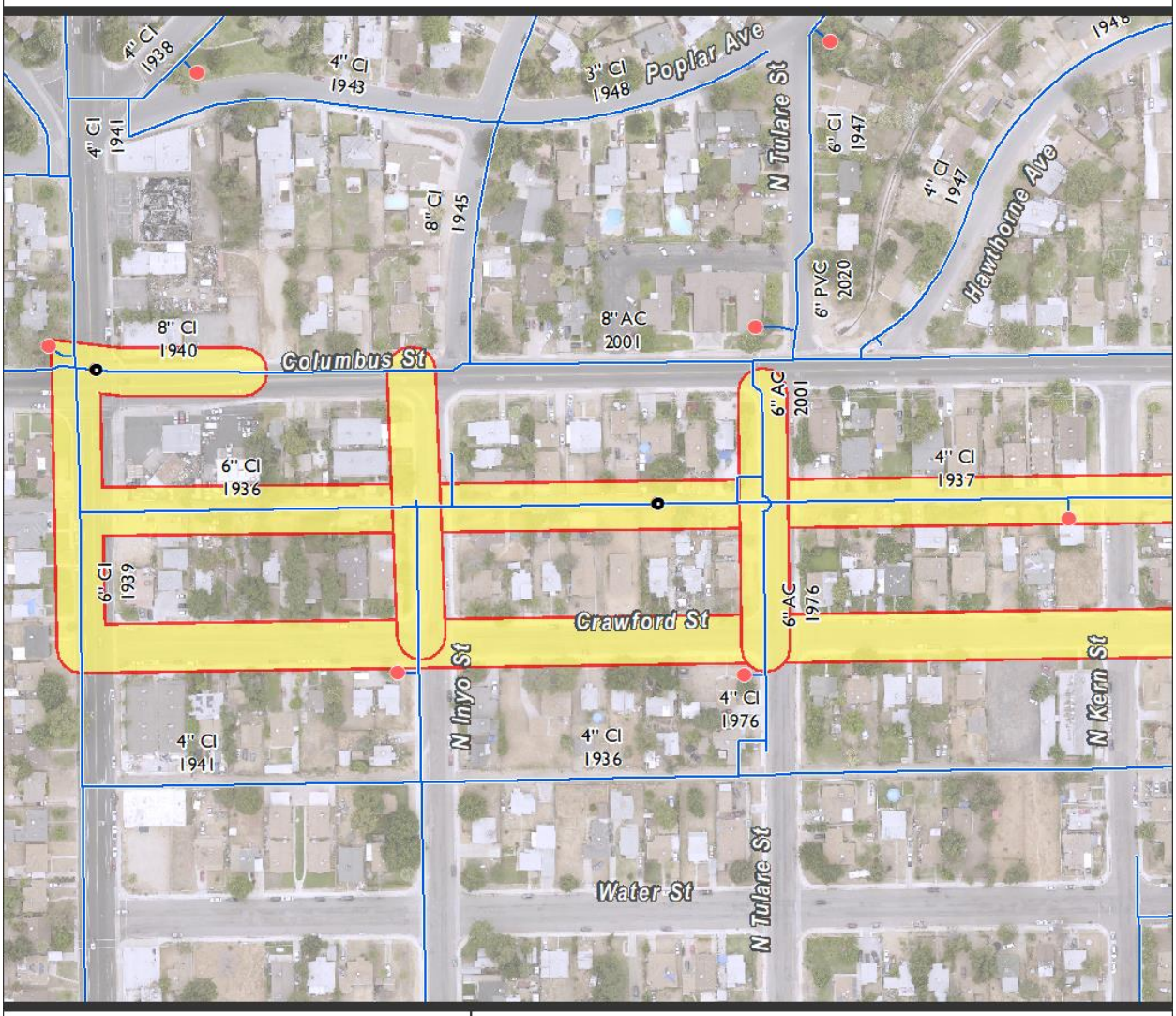
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21F
Budget Year: 2023

Number of Leaks:
0
Likelihood of Failure (LOF):
Medium-High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
726 ft
Retirement Footage:
0 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 3
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
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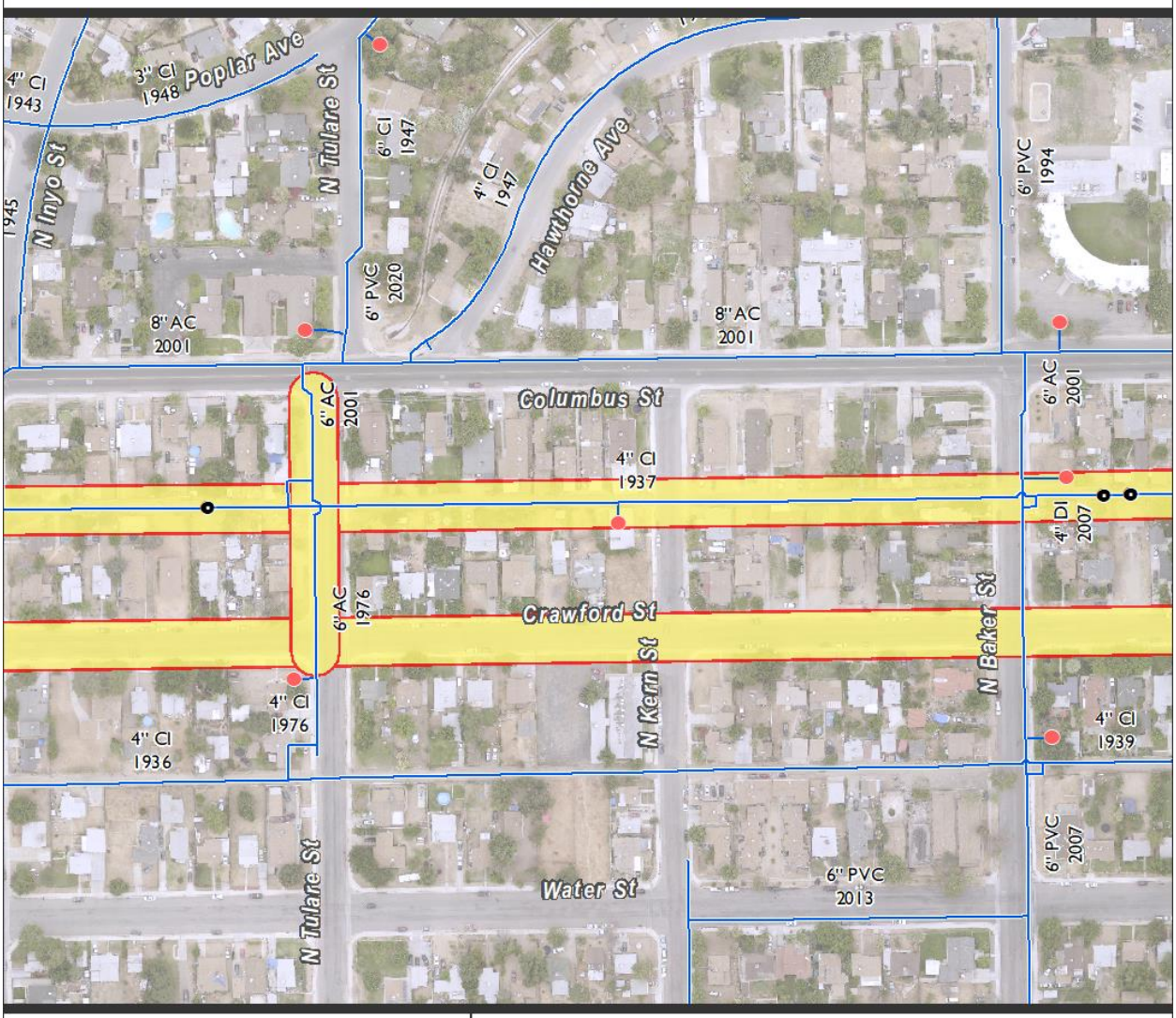
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21F
Budget Year: 2023

Number of Leaks:
9
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3307 ft
Retirement Footage:
3307 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 4
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

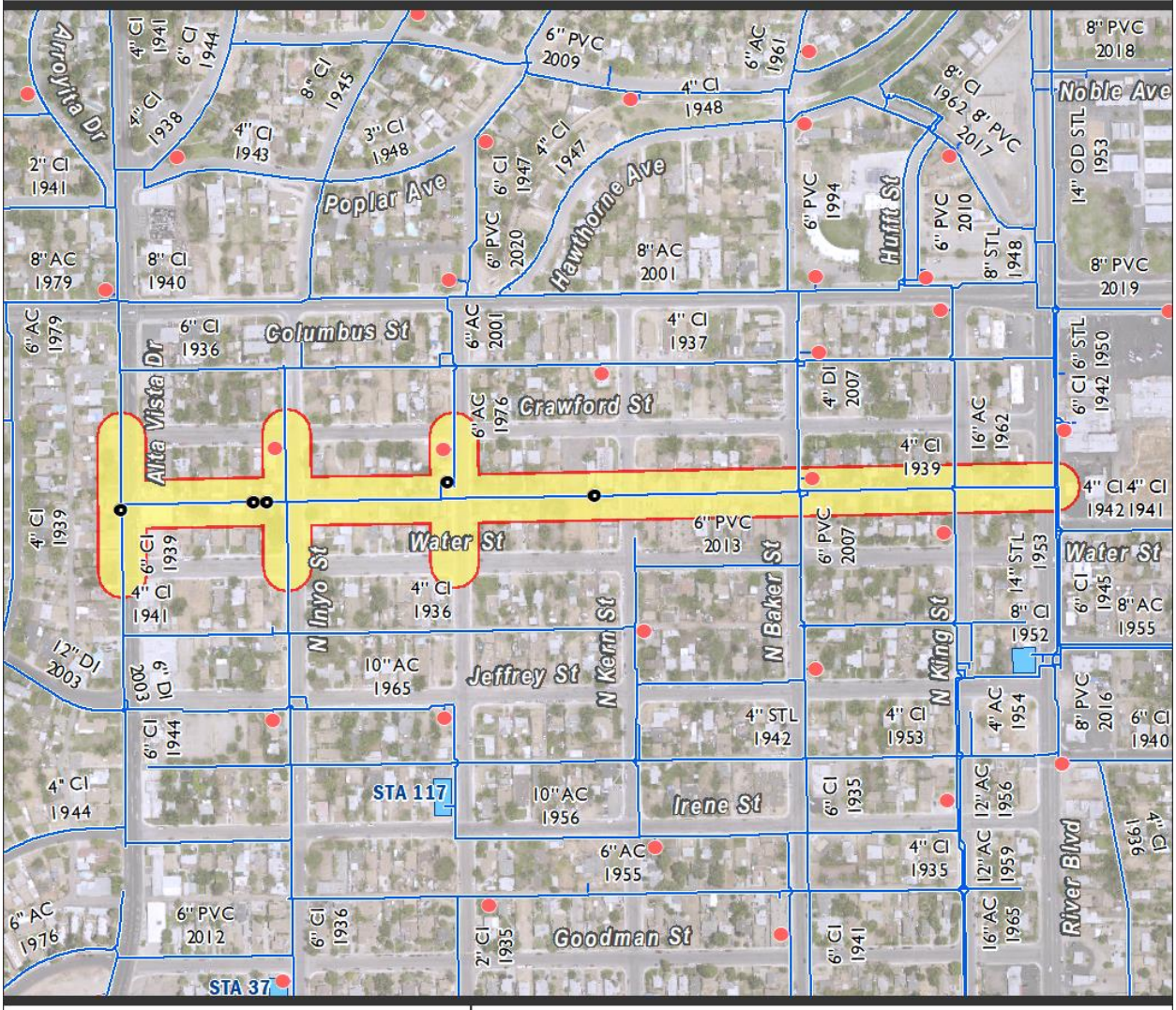
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21G
Budget Year: 2023

Number of Leaks:
5
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
1142 ft
Retirement Footage:
3822 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 3
Land Use: 4
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 220 440 880
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

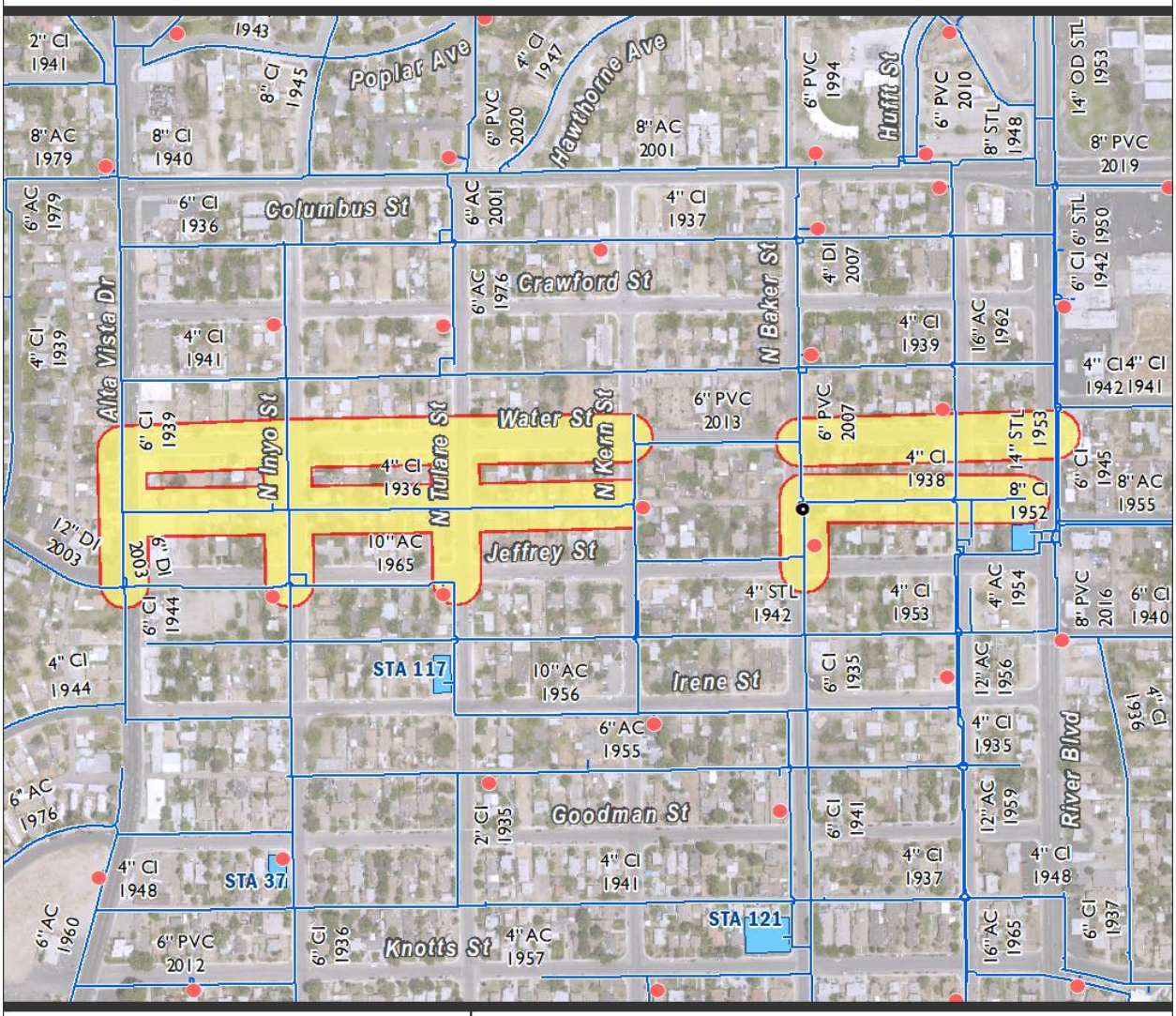
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21H
Budget Year: 2023

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
3579 ft
Retirement Footage:
3090 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Landslide Hazard
Pipe Size Score = 3
Land Use: 5
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 220 440 880
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

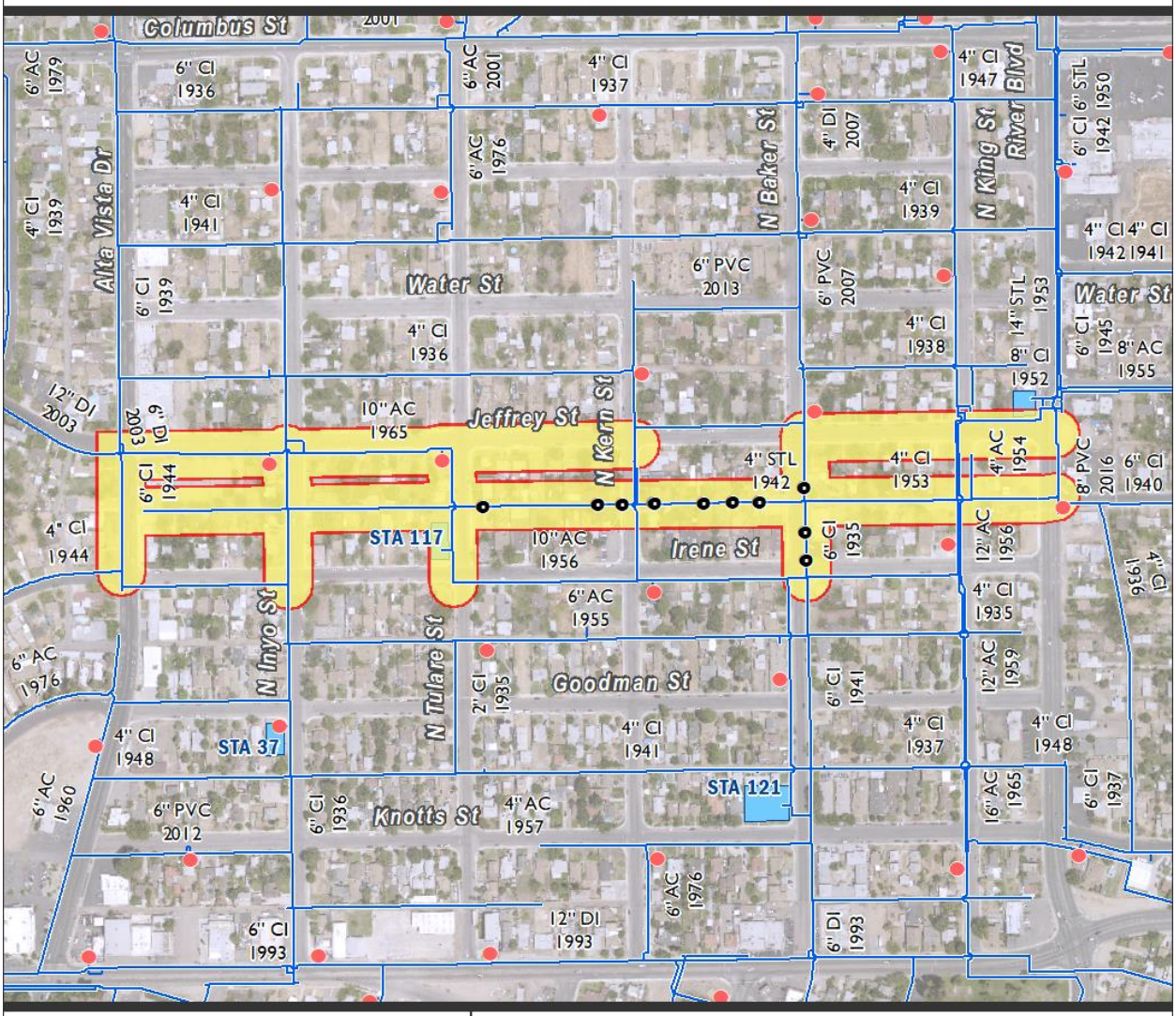
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21I
Budget Year: 2023

Number of Leaks:
12
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3693 ft
Retirement Footage:
5053 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Landslide Hazard
Pipe Size Score = 4
Land Use: 5
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 215 430 860
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

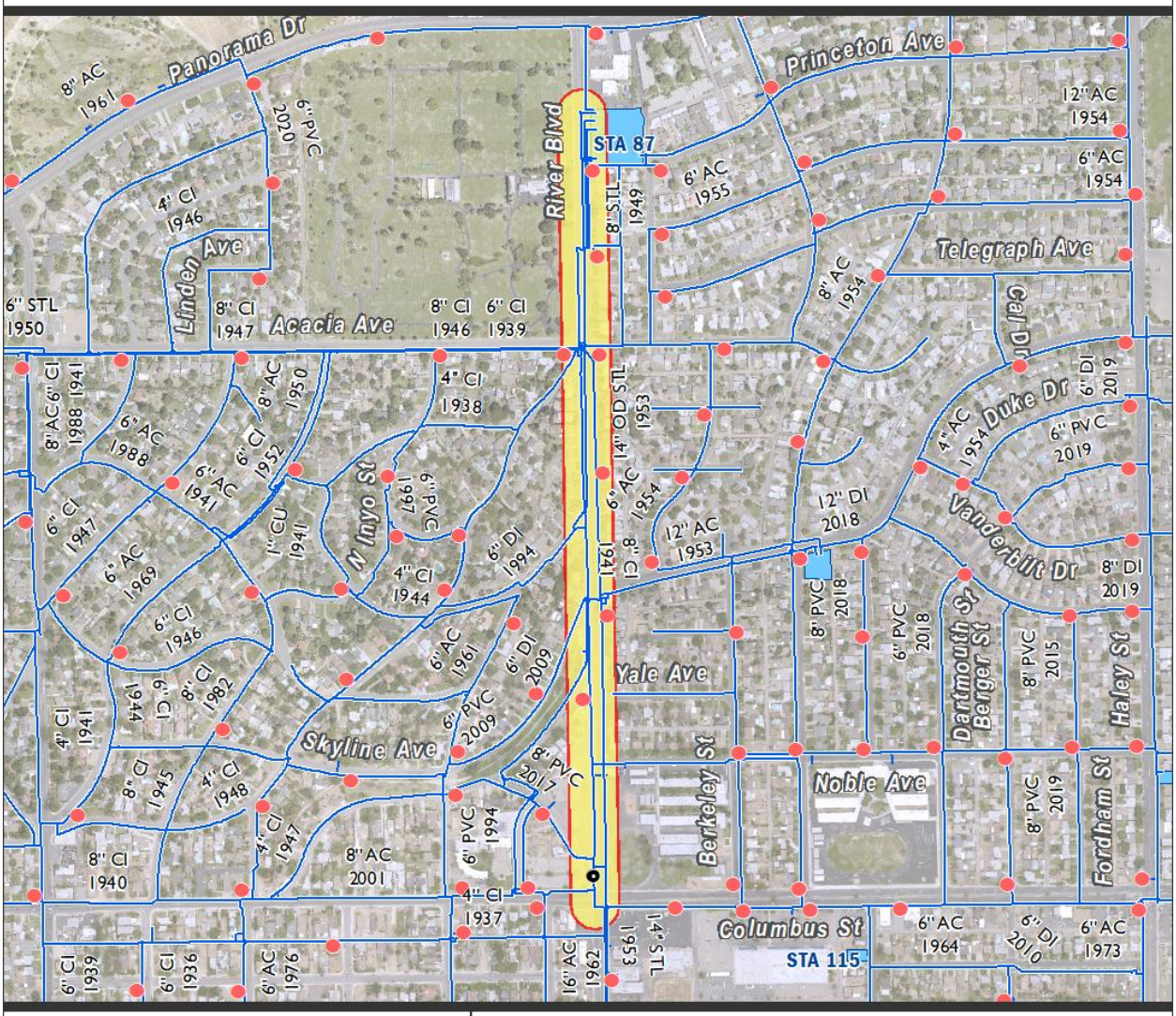
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21J
Budget Year: 2023

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3774 ft
Retirement Footage:
3774 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Pipe Size Score = 5
Land Use: 5
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 355 710 1,420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

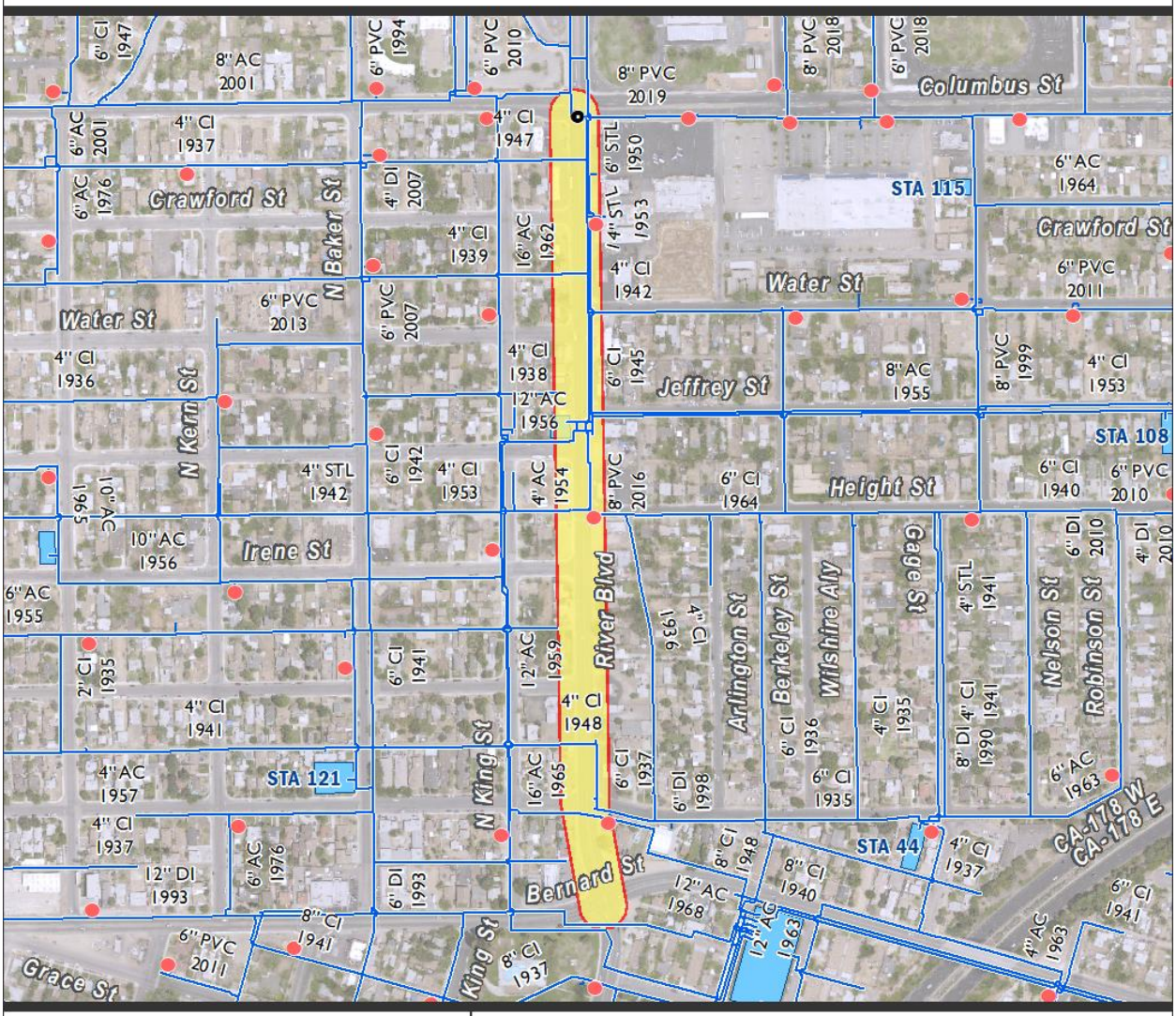
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21K
Budget Year: 2024

Number of Leaks:
1
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
2580 ft
Retirement Footage:
2580 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Pipe Size Score = 5
Land Use: 5
Soil: CL_GC_GM_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 250 500 1,000
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

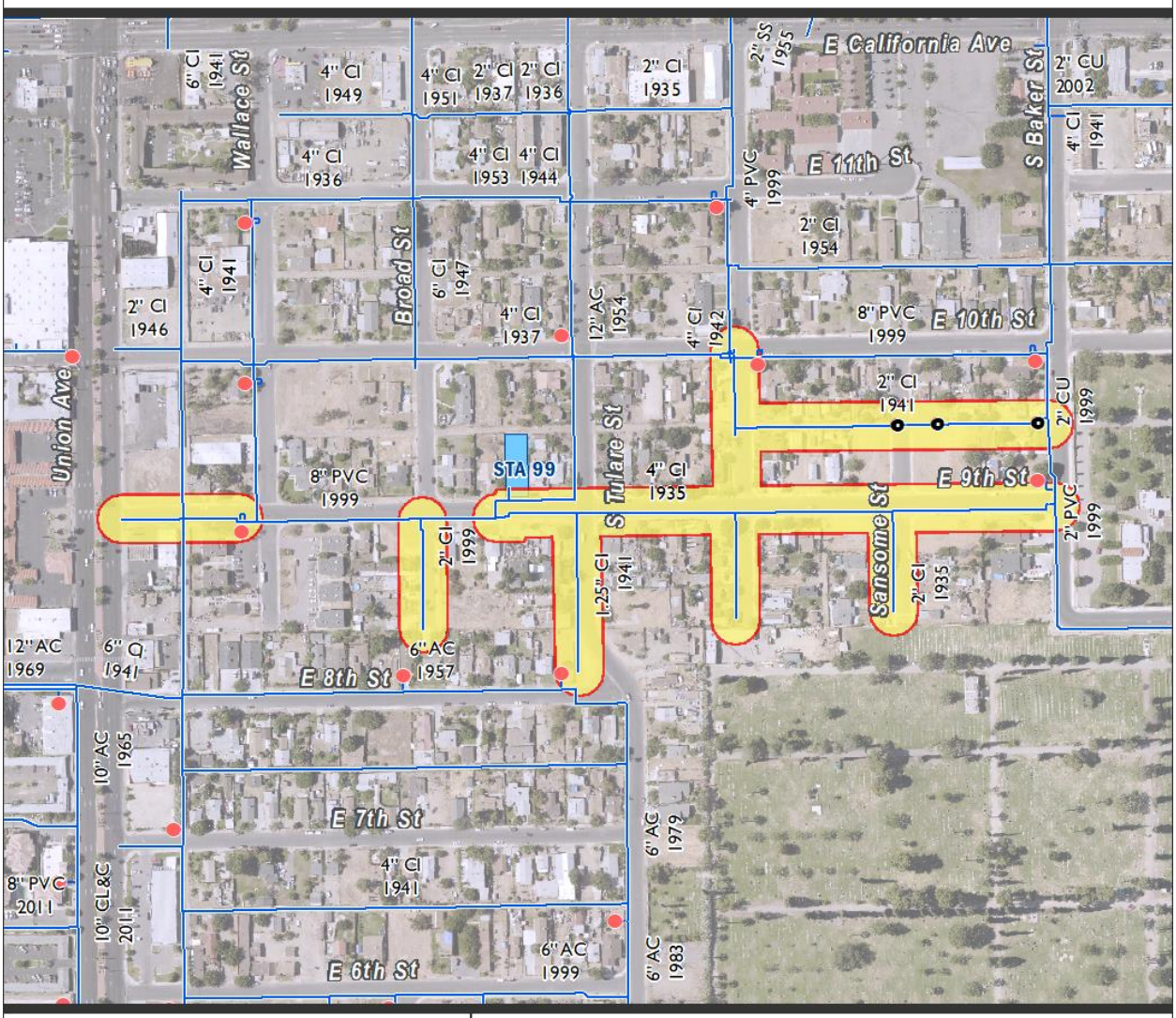
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21L
Budget Year: 2024

Number of Leaks:
4
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
2869 ft
Retirement Footage:
3553 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Alley
Pipe Size Score = 2
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 165 330 660
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

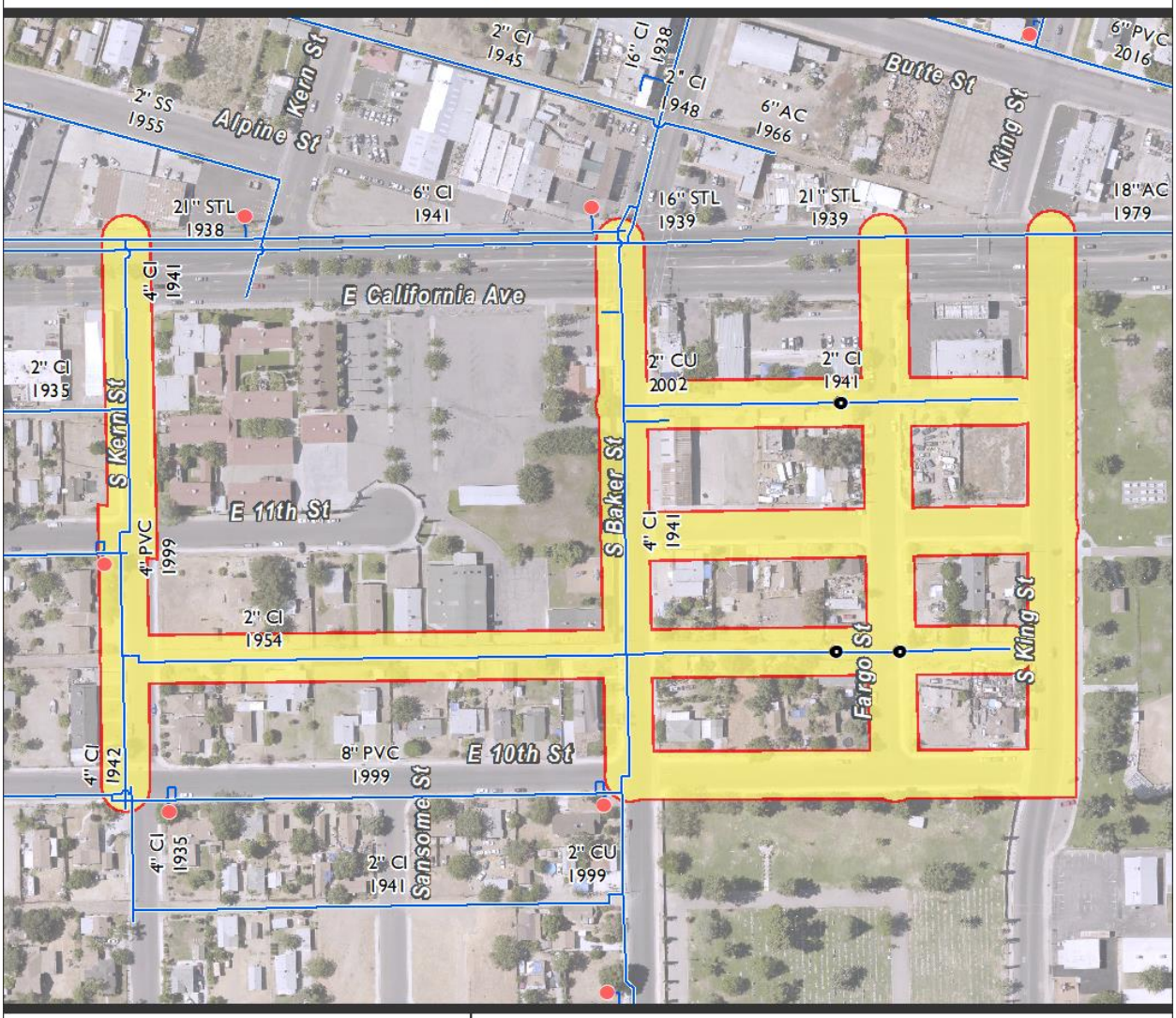
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21M
Budget Year: 2024

Number of Leaks:
10
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
4226 ft
Retirement Footage:
3326 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
School
Pipe Size Score = 4
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

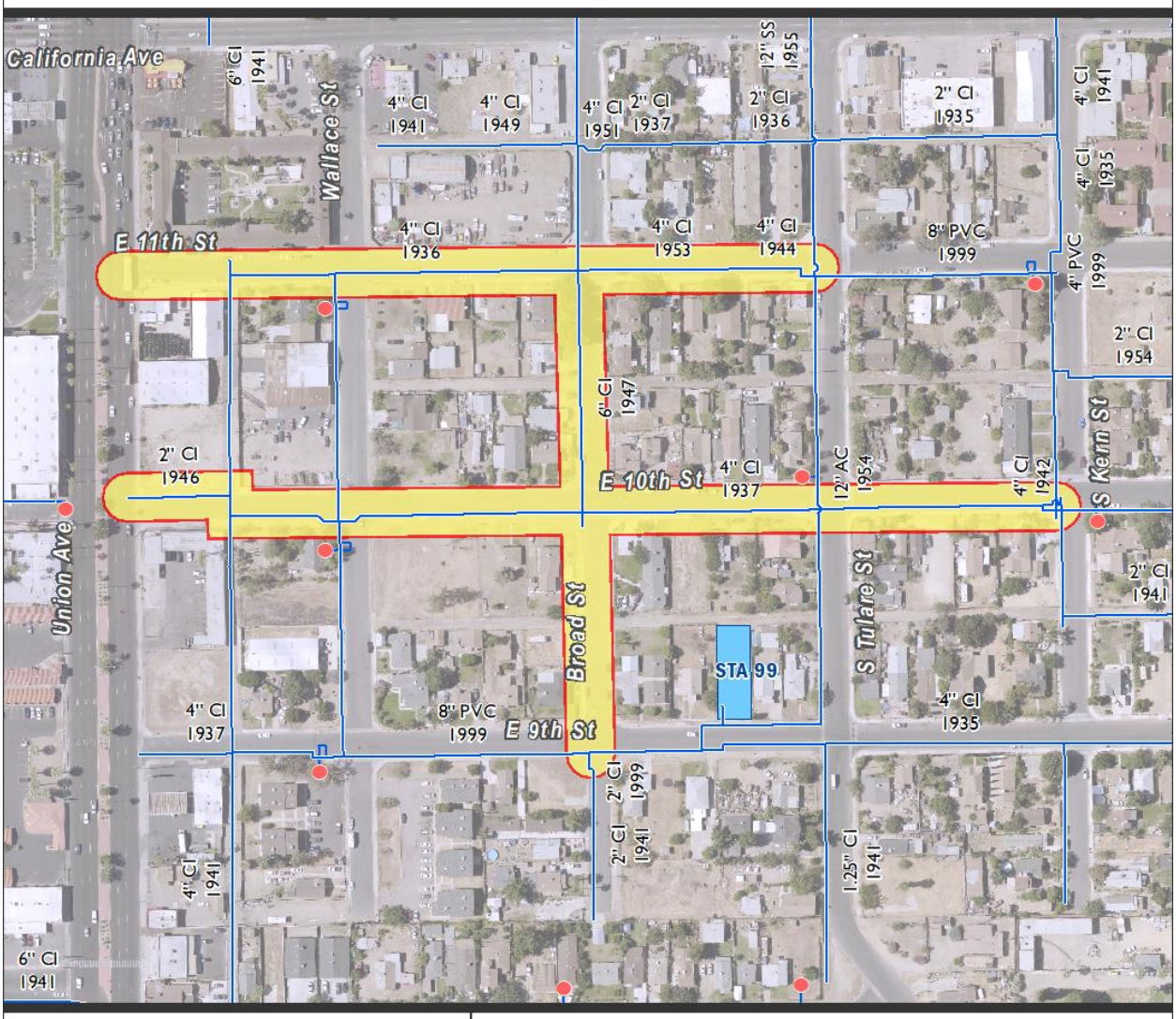
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21N
Budget Year: 2024

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3077 ft
Retirement Footage:
3077 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 3
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 110 220 440
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

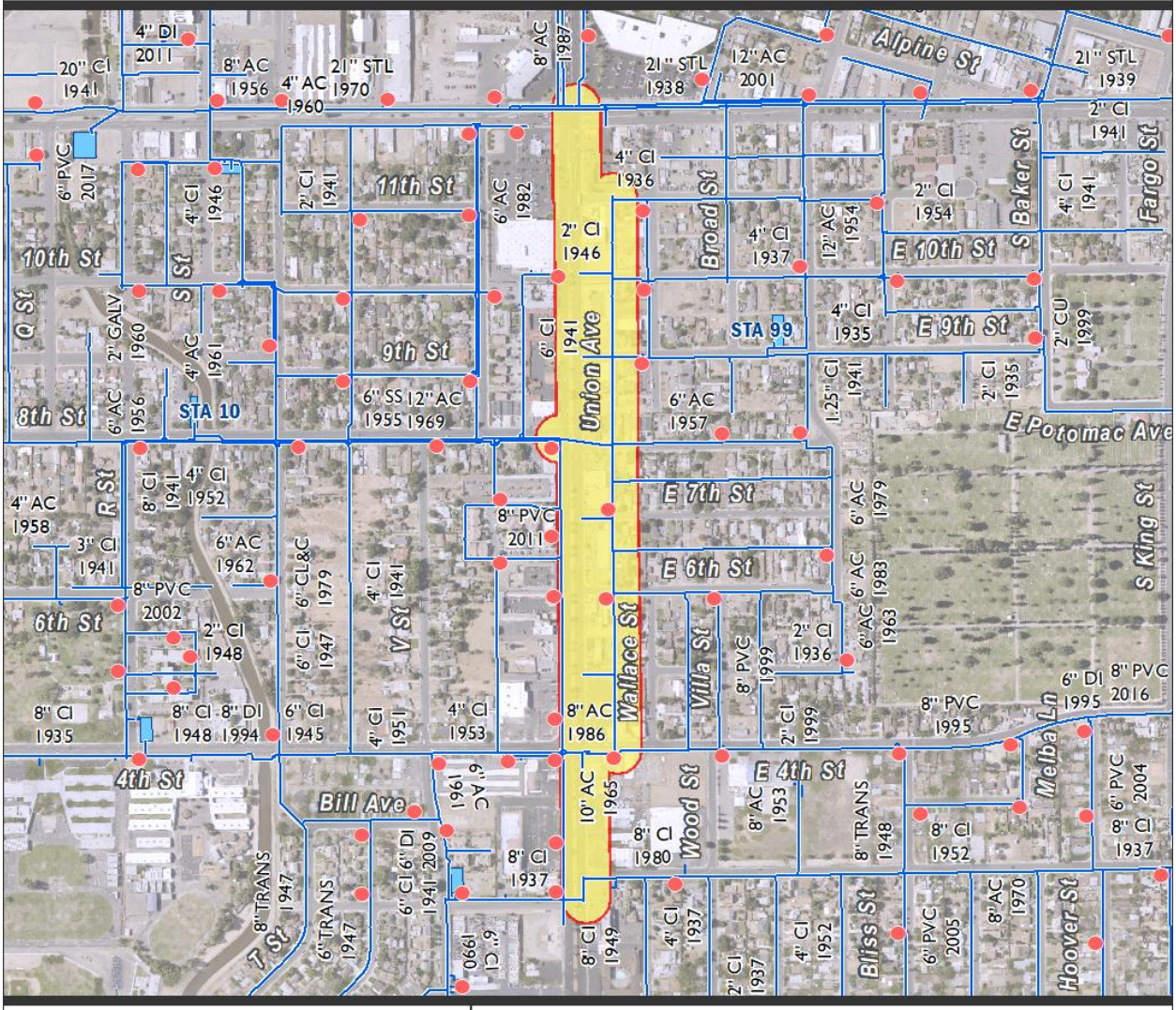
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-210
Budget Year: 2024

Number of Leaks:
0
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
3723 ft
Retirement Footage:
3088 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 4
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 330 660 1,320
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
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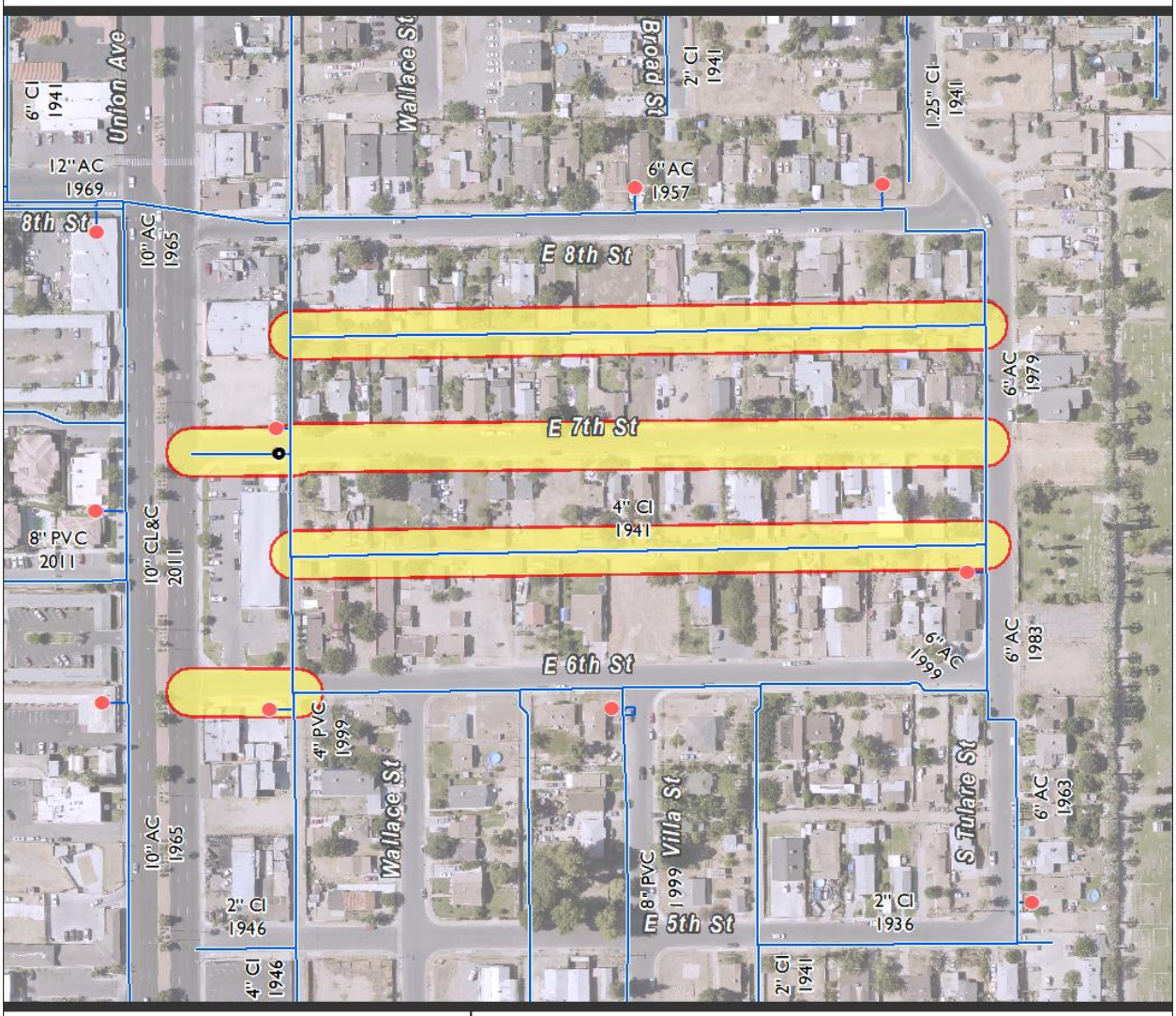
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21P
Budget Year: 2024

Number of Leaks:
1
Likelihood of Failure (LOF):
Medium-High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
1264 ft
Retirement Footage:
2079 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Pipe Size Score = 2
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

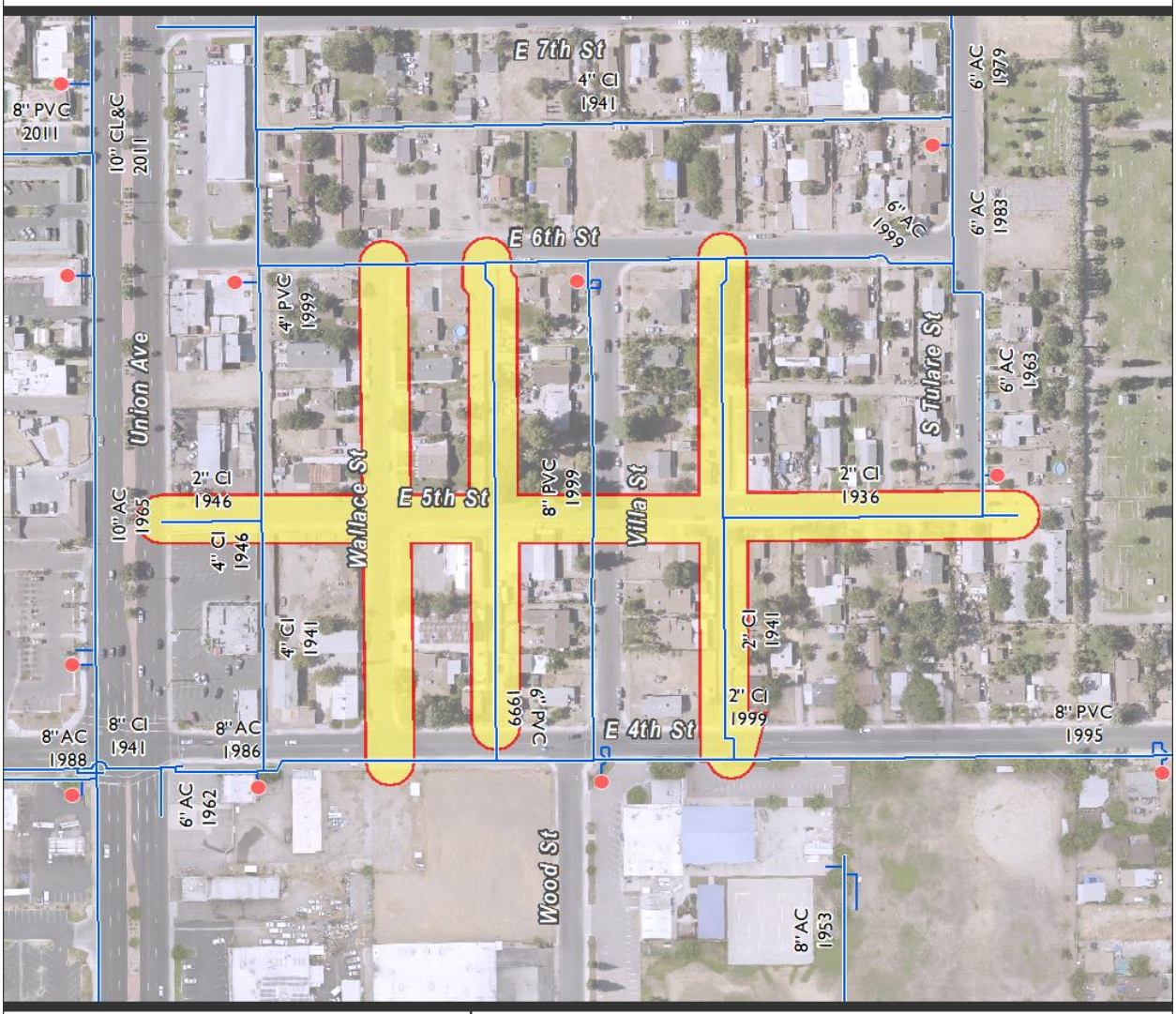
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21Q
Budget Year: 2024

Number of Leaks:
0
Likelihood of Failure (LOF):
Medium-High
Consequence of Failure (COF):
Low-Medium
Business Risk Exposure (BRE):
Medium

Install Footage:
1879 ft
Retirement Footage:
1908 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Local Road
Alley
Pipe Size Score = 2
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 105 210 420
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

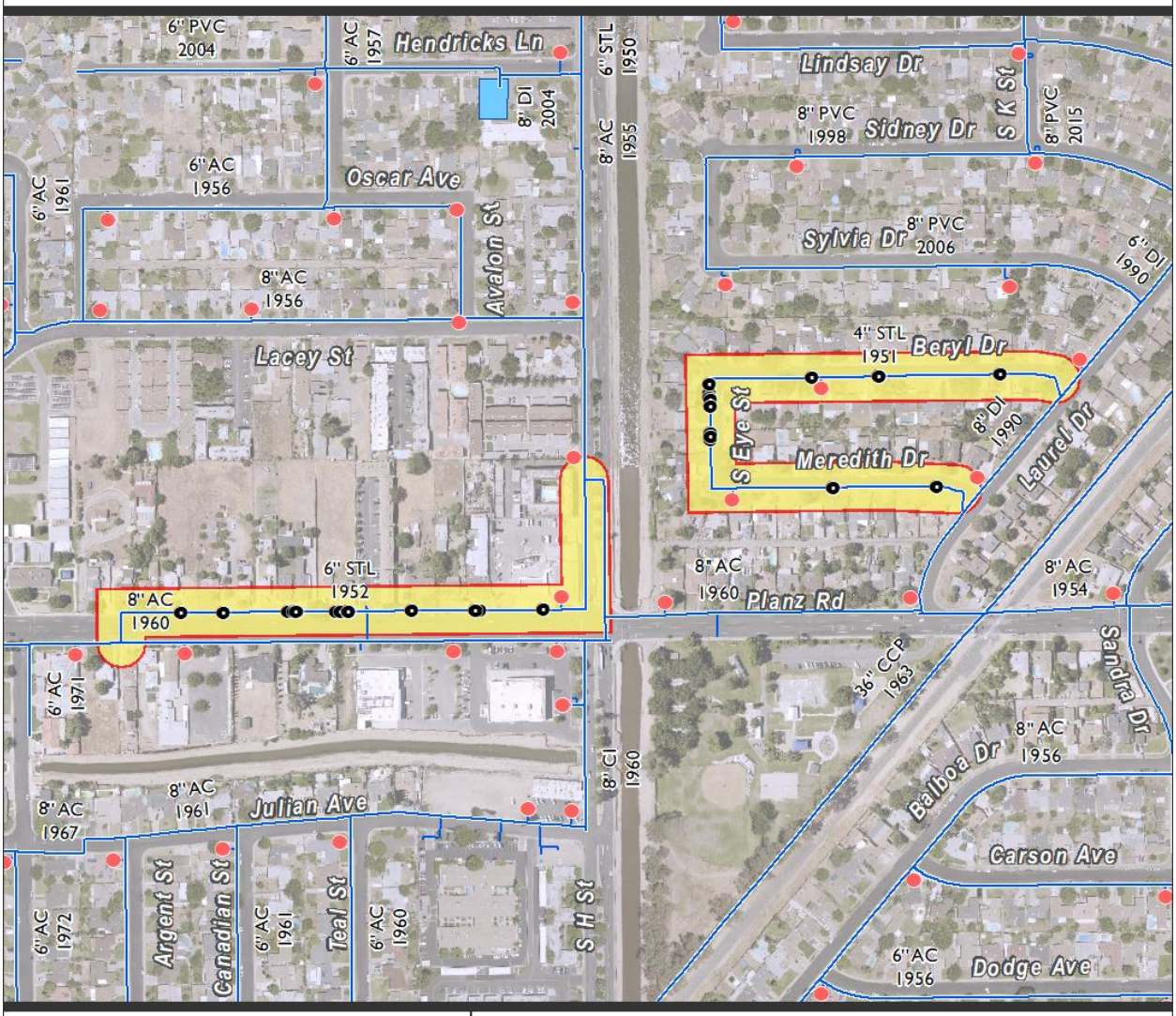
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21R
Budget Year: 2024

Number of Leaks:
48
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
1772 ft
Retirement Footage:
3344 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Water Body or Stream
Pipe Size Score = 3
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 190 380 760
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

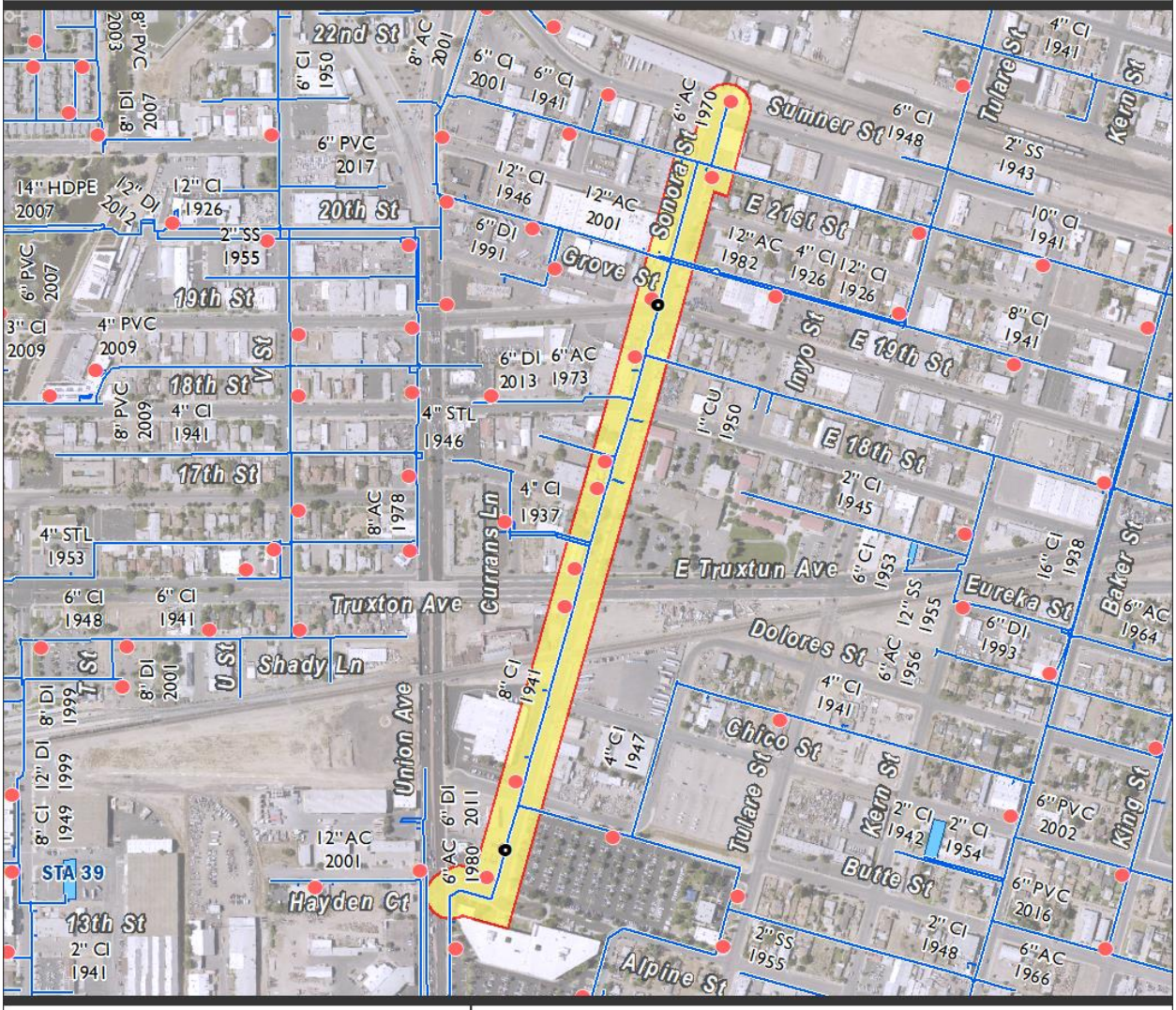
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21S
Budget Year: 2024

Number of Leaks:
2
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3482 ft
Retirement Footage:
3482 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Railroad
Secondary Road
Local Road
Alley
Pipe Size Score = 4
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 295 590 1,180
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

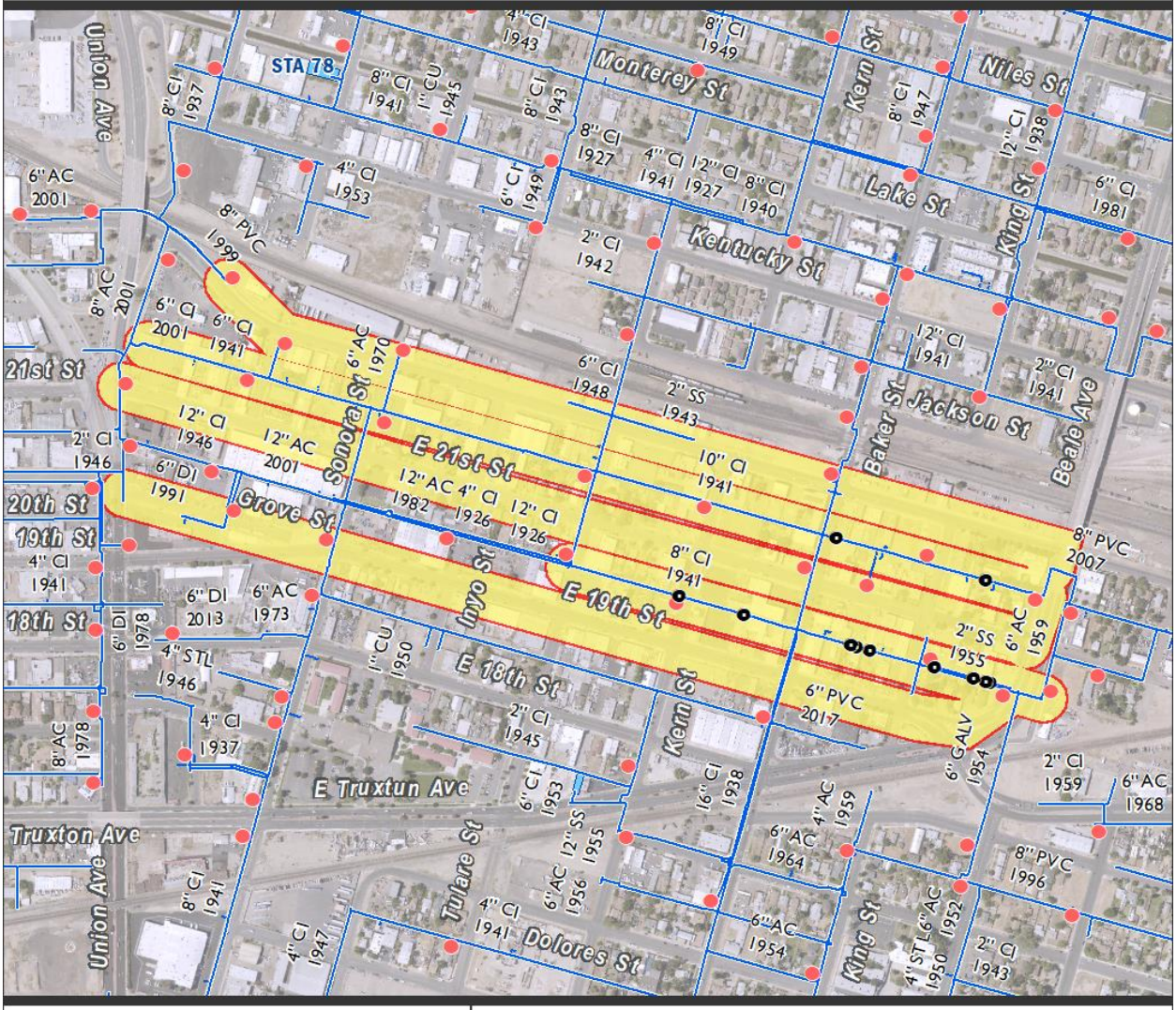
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21T
Budget Year: 2024

Number of Leaks:
11
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
11562 ft
Retirement Footage:
5760 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors
Secondary Road
Local Road
Alley
Fire Station
Pipe Size Score = 4
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 305 610 1,220
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

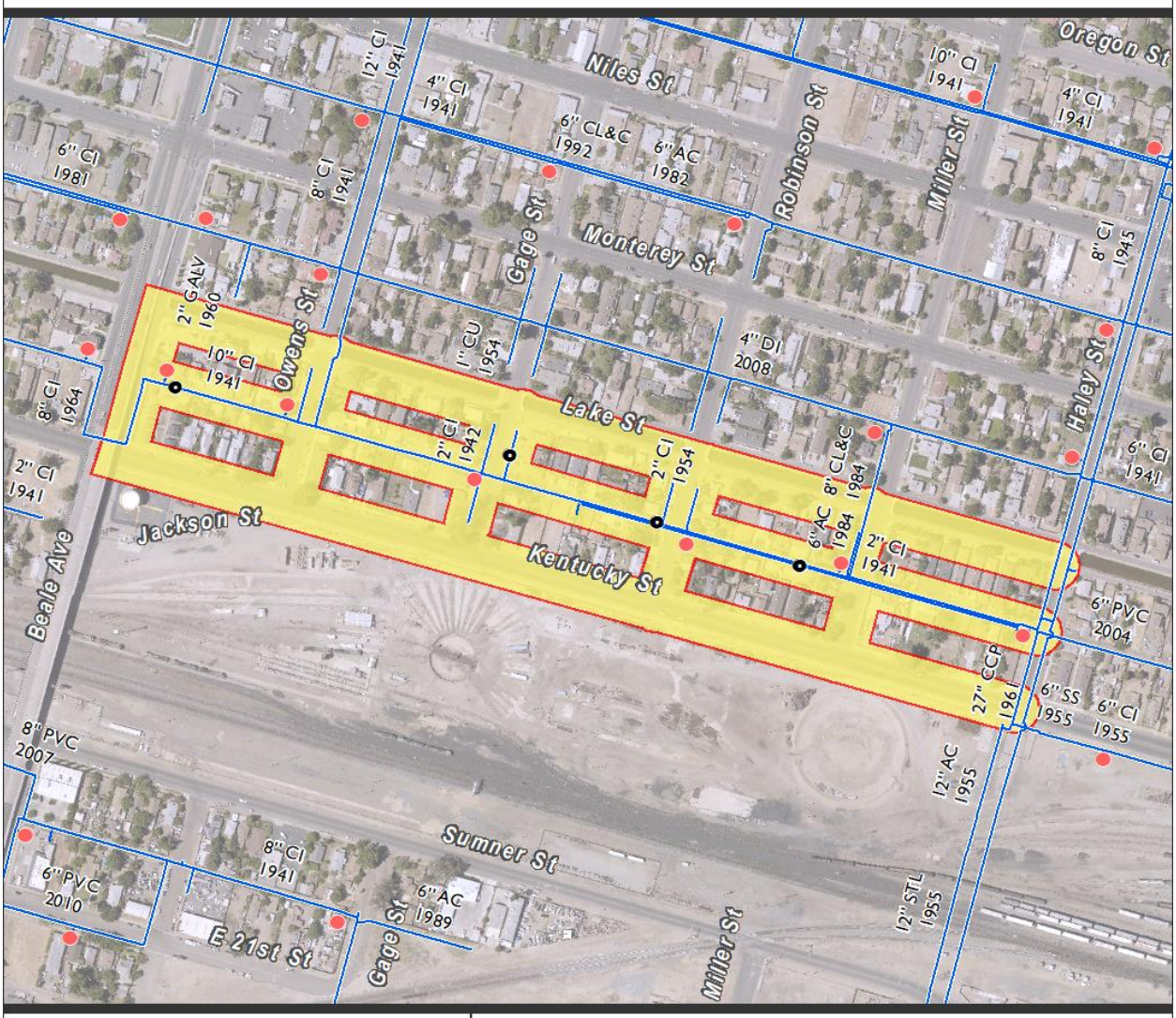
CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21U
Budget Year: 2022

Number of Leaks: 6	Install Footage: 6266 ft
Likelihood of Failure (LOF): High	Retirement Footage: 3636 ft
Consequence of Failure (COF): Medium	Financial Department: Bakersfield
Business Risk Exposure (BRE): Medium	Water System: Bakersfield



COF Factors

Local Road
Alley
Water Body or Stream
Pipe Size Score = 5
Land Use: 5
Soil: CL_ML_SC_SM

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 190 380 760
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

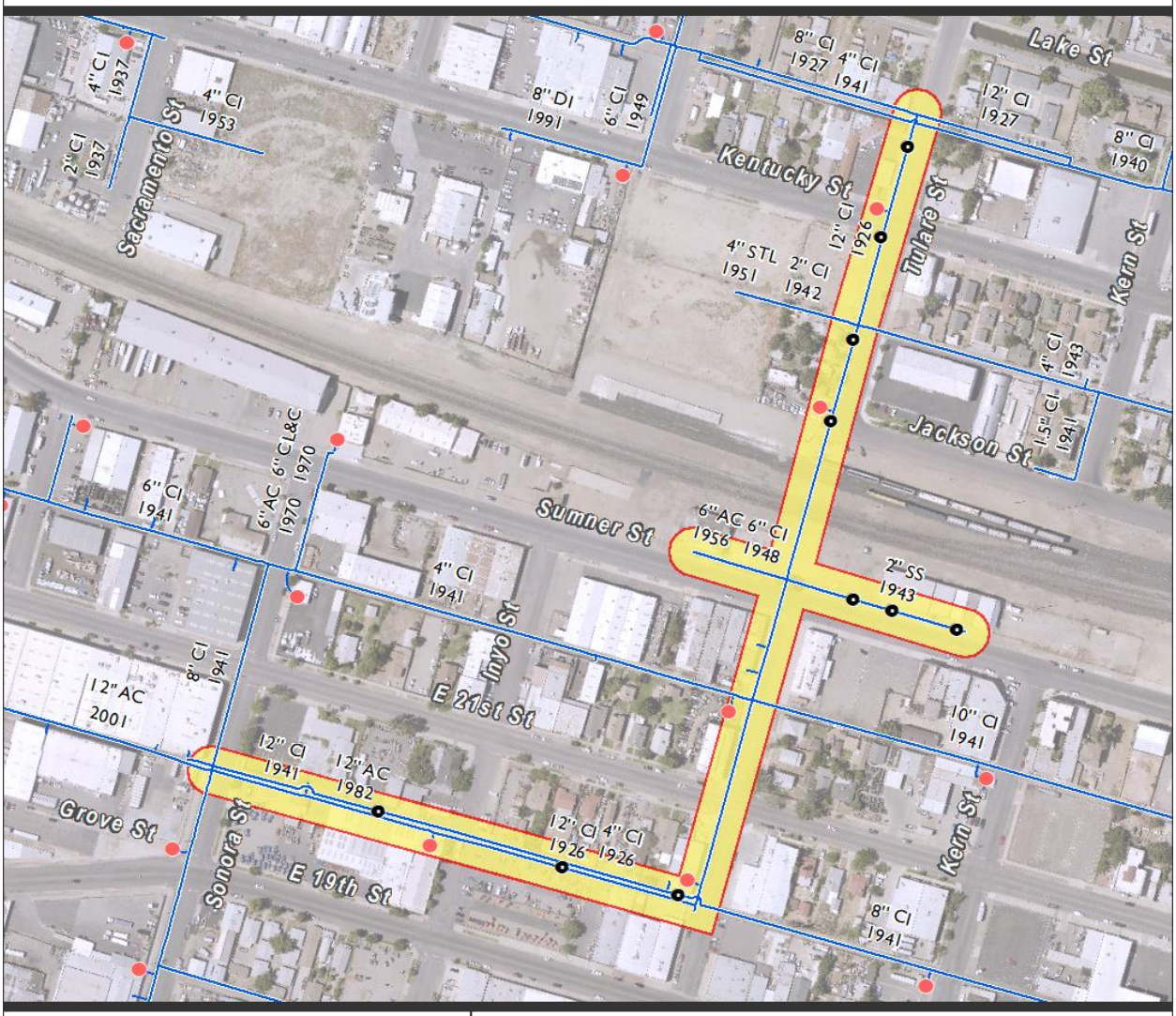
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21V
Budget Year: 2023

Number of Leaks:
10
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium
Business Risk Exposure (BRE):
Medium-High

Install Footage:
3052 ft
Retirement Footage:
3052 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Railroad
Secondary Road
Local Road
Alley
Backyard Easement
Pipe Size Score = 5
Land Use: 5
Soil: CL_ML_SC_SM_SP

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 145 290 580
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

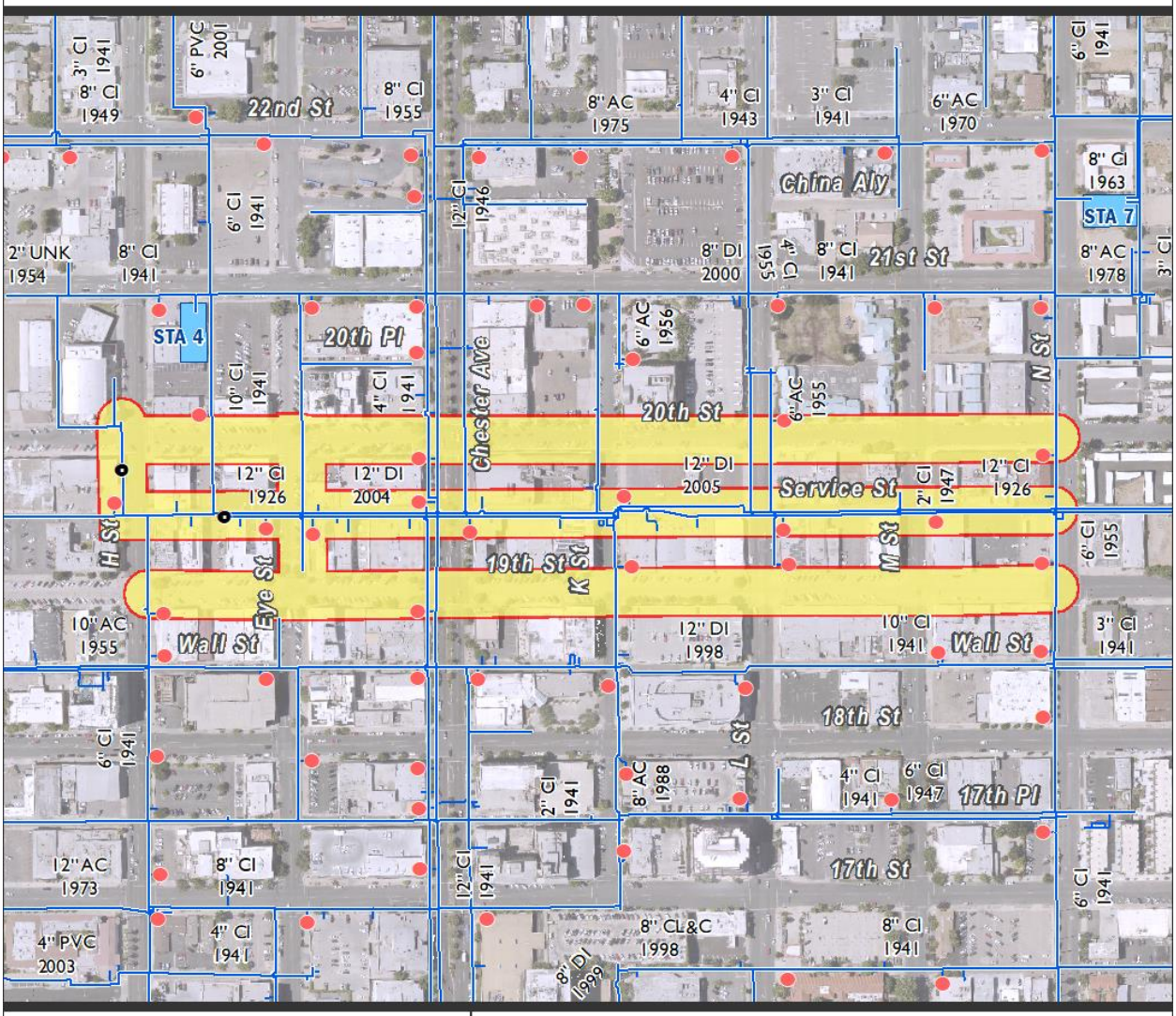
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21W
Budget Year: 2022

Number of Leaks:
2
Likelihood of Failure (LOF):
High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
High

Install Footage:
4762 ft
Retirement Footage:
2628 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Alley
Healthcare Facility
School
Pipe Size Score = 5
Land Use: 5
Soil: N/A

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 170 340 680
Feet

Data Source: Cal Water GIS; ESRI

Date of Issue: 6/14/2021

World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY

1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

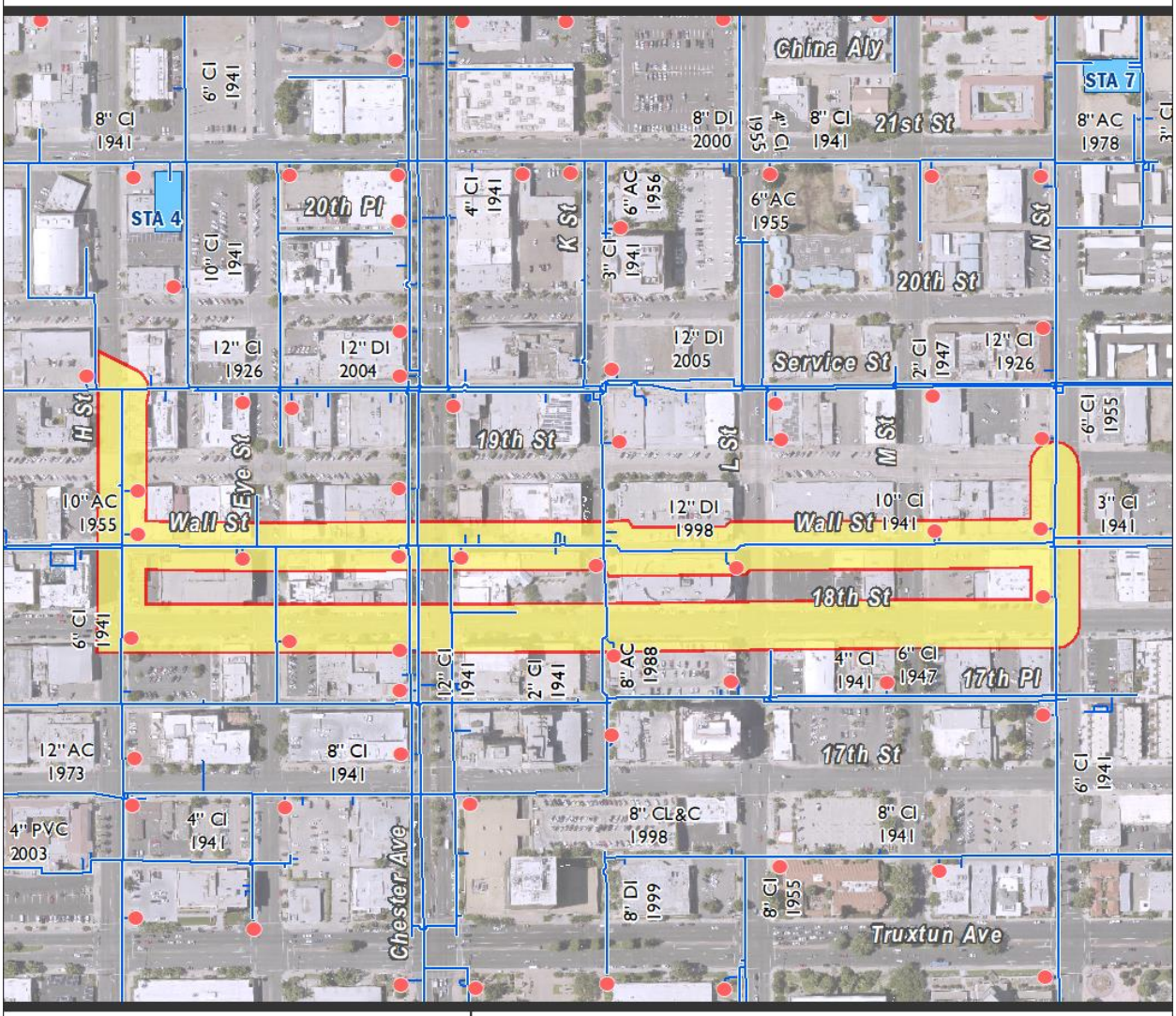
Attachment B
PID: 101MRP22, 101MRP23…

Bakersfield

Map ID: BK-21X
Budget Year: 2022

Number of Leaks:
0
Likelihood of Failure (LOF):
Medium-High
Consequence of Failure (COF):
Medium-High
Business Risk Exposure (BRE):
Medium-High

Install Footage:
2944 ft
Retirement Footage:
2952 ft
Financial Department:
Bakersfield
Water System:
Bakersfield



COF Factors

Secondary Road
Local Road
Healthcare Facility
Pipe Size Score = 5
Land Use: 5
Soil: N/A

Proposed Project Area
Existing Main
Mainline Leak (Proposed Project)
Existing Hydrant
Existing Station

N

0 165 330 660
Feet

Data Source: Cal Water GIS; ESRI
Date of Issue: 6/14/2021
World Geodetic System 1984
California (Teale) Albers (Feet)

CALIFORNIA WATER SERVICE COMPANY
1720 North First Street
San Jose, CA 95112
(408) 367 - 8200

District – Bakersfield
Meter Replacement Program

Description of Evaluation Criteria

The criteria which triggered the need for the small and large meter replacements are government mandate (CPUC General Order 103) and the routine programmatic replacement of large meters that have reached the end of their useful life cycle. More details on the Cal Water's evaluation criteria and alternatives analysis can be found in the Common Plant Issues justification book.

Detailed Project Scope

The Specific 0900 Small Meter Replacement Program (see Table 1) is the routine removal and replacement of 5/8"-2" meters in order to comply with CPUC General Order 103. General Order 103 mandates meters be tested or replaced based on age criteria.

The Specific 0900 Large Meter Replacement Program is the routine removal and replacement of obsolete meters that have reached the end of their useful life cycle. The program provides for the routine programmatic replacement of 3" and larger meters on a 20 year replacement cycle.

Table 1. Meter Replacement Program - Bakersfield District

PID	Direct Cost	Year
BKD0900	$416,823	2022
	$427,244	2023
	$437,925	2024

Customer Benefits

The benefit to the customer is the accurate billing and equitable distribution of the costs of providing water service through accurate water meters to all of our customers.

Project Attachments

Cost Estimate

BKD0900_2022 Cost Estimate

Capital Project Cost Estimate

Project No. : BKD0900_2022
Description Meter Replacement Program
District / Department: Bakersfield
Project Start Date: 01/01/22
Project Completion Date: 12/31/22
Prepared By: mstevanus
Date Initiated: 01/01/2020
Base Year: 2020
Direct Cost: $416,823

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
(A) SMALL METER REPLACEMENT, 5/8"	EA	379	$117.81	$44,648.80	Cost Catalog No. G.2
(B) SMALL METER REPLACEMENT, 3/4"-1"	EA	756	$210.83	$159,386.66	Cost Catalog No. G.2
(C) SMALL METER REPLACEMENT, 1.5"	EA	74	$592.36	$43,834.36	Cost Catalog No. G.2
(D) SMALL METER REPLACEMENT, 2"	EA	184	$735.77	$135,382.34	Cost Catalog No. G.2
(E) LARGE METER REPLACEMENT, 3"	EA	14	$3,568.50	$49,958.98	Cost Catalog No. G.2
(F) LARGE METER REPLACEMENT, 4"	EA	7	$6,605.97	$46,241.81	Cost Catalog No. G.2
(G) LARGE METER REPLACEMENT, 6"	EA	3	$10,662.08	$31,986.25	Cost Catalog No. G.2

Direct Cost = $416,822.95

Notes:

1. Unit Costs are fully loaded with 15% overhead.
2. Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

BKD0900_2023 Cost Estimate

Capital Project Cost Estimate

Project No. : BKD0900_2023
Description Meter Replacement Program
District / Department: Bakersfield
Project Start Date: 01/01/23
Project Completion Date: 12/31/23
Prepared By: mstevanus
Date Initiated: 01/01/2020
Base Year: 2020
Direct Cost: $427,244

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
(A) SMALL METER REPLACEMENT, 5/8"	EA	379	$120.75	$45,765.02	Cost Catalog No. G.2
(B) SMALL METER REPLACEMENT, 3/4"-1"	EA	756	$216.10	$163,371.32	Cost Catalog No. G.2
(C) SMALL METER REPLACEMENT, 1.5"	EA	74	$607.17	$44,930.22	Cost Catalog No. G.2
(D) SMALL METER REPLACEMENT, 2"	EA	184	$754.17	$138,766.90	Cost Catalog No. G.2
(E) LARGE METER REPLACEMENT, 3"	EA	14	$3,657.71	$51,207.96	Cost Catalog No. G.2
(F) LARGE METER REPLACEMENT, 4"	EA	7	$6,771.12	$47,397.85	Cost Catalog No. G.2
(G) LARGE METER REPLACEMENT, 6"	EA	3	$10,928.63	$32,785.90	Cost Catalog No. G.2

Direct Cost = $427,243.52

Notes:

1. Unit Costs are fully loaded with 15% overhead.
2. Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

BKD0900_2024 Cost Estimate

Capital Project Cost Estimate

Project No. : BKD0900_2024
Description Meter Replacement Program
District / Department: Bakersfield
Project Start Date: 01/01/24
Project Completion Date: 12/31/24
Prepared By: mstevanus
Date Initiated: 01/01/2020
Base Year: 2020
Direct Cost: $437,925

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
(A) SMALL METER REPLACEMENT, 5/8"	EA	379	$123.77	$46,909.15	Cost Catalog No. G.2
(B) SMALL METER REPLACEMENT, 3/4"-1"	EA	756	$221.50	$167,455.60	Cost Catalog No. G.2
(C) SMALL METER REPLACEMENT, 1.5"	EA	74	$622.34	$46,053.48	Cost Catalog No. G.2
(D) SMALL METER REPLACEMENT, 2"	EA	184	$773.02	$142,236.07	Cost Catalog No. G.2
(E) LARGE METER REPLACEMENT, 3"	EA	14	$3,749.15	$52,488.16	Cost Catalog No. G.2
(F) LARGE METER REPLACEMENT, 4"	EA	7	$6,940.40	$48,582.80	Cost Catalog No. G.2
(G) LARGE METER REPLACEMENT, 6"	EA	3	$11,201.85	$33,605.55	Cost Catalog No. G.2

Direct Cost = $437,924.61

Notes:

1. Unit Costs are fully loaded with 15% overhead.
2. Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

District – Bakersfield
PID # 123159, 123171,…
Vehicle Replacement Program

Background

During the 2022 to 2024 rate cycle, Cal Water is proposing to upfit and replace 15 vehicles. Cal Water continues to use a modified version of the criteria established by the California Department of General Services ("DGS") Office of Fleet and Asset Management ("OFAM"). The OFAM guidelines regulate vehicle replacement for state agencies in California. Additionally, the OFAM allows for a replacement of a vehicle outside of the mileage criteria when it would be cost-effective to do so. These cases are determined by comparing the current condition of the vehicle, the maintenance and repair record of the vehicle and the repairs and maintenance needed for the vehicle in the near future to the current value of the vehicle.

Cal Water also applies the 120,000 mile criteria to the vehicles in its fleet. Many of Cal Water's vehicles have a gross vehicle weight rating (GVWR) in excess of 8,500 pounds, which fall under the OFAM criteria of 150,000 miles. However, most of the company's vehicles could be considered "emergency vehicles" as they are used to maintain its system and respond to emergency situations at all hours. The mileage cut-off for emergency vehicles is 100,000 miles. The company has determined the 120,000 mile criteria to be adequate in all cases. More details regarding Cal Water's vehicle replacement criteria and selection can be found in the Common Plant Issues justification book.

Detailed Project Scope

Proposed vehicle upfit and replacements are shown in Table 1.

Table 1. Vehicle Replacement Program – Bakersfield District

PID	Vehicles			Year
	Make	Model	Type	
123159	CHEVROLET	SILVERADO	0.5 Ton Pickup & Upfitting	2022
	FORD	EXPLORER	Vehicle - SUV	
	FORD	F-150	0.5 Ton Pickup & Upfitting	
	TOYOTA	TUNDRA	0.5 Ton Pickup & Upfitting	
123171	FORD	EXPLORER	Vehicle - SUV	2023
123799	FORD	F-150	0.5 Ton Pickup & Upfitting	2024
	FORD	F-150	0.5 Ton Pickup & Upfitting	
	FORD	F-150	0.5 Ton Pickup & Upfitting	
	CHEVROLET	SILVERADO 3500	1.0 Ton C&C & Upfitting	
	FORD	R-150 4X4 SU	0.5 Ton Pickup & Upfitting	
	FORD	F-150	0.5 Ton Pickup & Upfitting	
	FORD	F-150	0.5 Ton Pickup & Upfitting	
	CHEVROLET	COLORADO 4X2	0.5 Ton Pickup & Upfitting	
	FORD	F-150 4X4	0.5 Ton Pickup & Upfitting	
	FORD	F-150	0.5 Ton Pickup & Upfitting	

Customer Benefits

Replacing the company's vehicles on a regular basis benefits the company's customers through increased safety and reliability of company employees, keeping drivers on the road and able to perform their jobs, and through reduced costs by keeping major maintenance and repairs to a minimum.

Project Attachments

Cost Estimates

123159 Cost Estimate

Capital Project Cost Estimate

Project No. : 123159
Description BK 2022 Vehicle Replacement Program
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/31/2022
Prepared By: rybarra
Date Initiated: 08/10/2020
Base Year: 2020
Sub-Total: $163,269
Direct Cost: $171,534

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
UPFITTING	[EA]	3	$6,824.12	$20,472.36	Cost Catalog No. G.1
VEHICLES	[EA]	4	$33,941.40	$135,765.58	Cost Catalog No. G.1
LOCATION FACTOR -5%	[EA]	1	-$7,811.90	-$7,811.90	Cost Catalog No. G.1
CONTINGENCY	[EA]	1	$14,842.60	$14,842.60	Contingency Estimate

Sub-total = $163,268.64
Direct Cost = $171,534.12

Notes:
1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123171 Cost Estimate

Capital Project Cost Estimate

Project No. :	123171
Description	BK 2023 Vehicle Replacement Program
District / Department:	Bakersfield
Project Start Date:	01/01/2023
Project Completion Date:	12/31/2023
Prepared By:	rybarra
Date Initiated:	08/11/2020
Base Year:	2020
Sub-Total:	$35,962
Direct Cost:	$38,727

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
VEHICLE	[EA]	1	$34,413.55	$34,413.55	Cost Catalog No. G.1
LOCATION FACTOR -5%	[EA]	1	-$1,720.68	-$1,720.68	Cost Catalog No. G.1
CONTINGENCY	[EA]	1	$3,269.29	$3,269.29	Contingency Estimate

Sub-total =	$35,962.16
Direct Cost =	$38,727.31

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

123799 Cost Estimate

Capital Project Cost Estimate

Project No. : 123799
Description BK 2024 Vehicle Replacemnt Program
District / Department: Bakersfield
Project Start Date: 01/01/2024
Project Completion Date: 12/31/2024
Prepared By: rybarra
Date Initiated: 08/27/2020
Base Year: 2020
Sub-Total: $472,640
Direct Cost: $521,706

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
UPFITTING	[EA]	10	$10,141.70	$101,417.04	Cost Catalog No. G.1
VEHICLES	[EA]	10	$35,087.01	$350,870.10	Cost Catalog No. G.1
LOCATION FACTOR -5%	[EA]	1	-$22,614.36	-$22,614.36	Cost Catalog No. G.1
CONTINGENCY	[EA]	1	$42,967.28	$42,967.28	Contingency Estimate

Sub-total = $472,640.06
Direct Cost = $521,706.15

Notes:
1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123159 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123159
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 34,413.55	1	2020	$ 34,413.55	Vehicle-SUV	V220103
2	$ 33,383.41	3	2019	$ 101,352.03	Vehicle .5 ton	V219025-Taxfees
3	$ 6,743.20	3	2019	$ 20,472.36	Vehicle .5 ton Upfitting	V219025-Upfit

123171 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123171
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 34,413.55	1	2020	$ 34,413.55	Vehicle-SUV	V220103

123799 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123799
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 45,539.37	1	2018	$ 46,814.00	Vehicle 1 ton	V218077-Tax Fees
2	$ 33,383.41	9	2019	$ 304,056.10	Vehicle .5 ton	V219025-Tax Fees
3	$ 6,743.20	9	2019	$ 61,417.07	Vehicle .5 ton Upfitting	V219025-Upfit
4	$ 38,910.87	1	2018	$ 39,999.97	Vehicle 1 ton Upfitting	V218077-Upfit

District – Bakersfield
PID # 123863
CARB Vehicle Replacement Program

Background

Since 2006, Cal Water has had to comply with California Air Resources Board (CARB) regulations for on-road heavy duty diesel trucks in public utility fleets. Under this regulation, all trucks with a Gross Vehicle Weight Rating (GVWR) greater than 14,000 pounds and an engine built before 2007 has to be retrofitted with a VDECS (CARB Verified Diesel Emission Control System) to reduce particulate matter (PM) emissions by 85%. As a result, HUSS and Cleaire Horizon VDECS were installed on 17 Cal Water trucks. Trucks that were built in 2007 and later came from the factory equipped with emission controls (i.e., Selective Catalytic Reduction with BlueDEF injection) that accomplished the same PM reduction.

Starting January 1, 2020, the Public Utility Fleet regulation ends and Cal Water must begin complying with the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel Vehicles, also known as the Truck and Bus Regulation (Title 13, California Code of Regulations, Section 2025). In addition to PM, this regulation focuses on reducing NOx emissions by 85%.

The Truck and Bus Regulation impacts trucks with a GVWR of 14,000 pounds or greater and an engine model year of 2000-2009. While the regulation has additional requirements for trucks with a GVWR greater than 26,000 pounds, there are no trucks of that size in Cal Water's fleet.

Section 2025(l)(4) in the regulation allows private utility owners to delay compliance until January 1, 2021. Cal Water will need to follow the requirements of section 2025(f). Those requirements are:

By January 1, 2023, all of Cal Water's diesel trucks with GVWRs of 14,000 to 26,000 pounds and engine years from 2007-2009 must be retired, retrofitted with a VDECS for PM & NOx or repowered with an engine that meets CARB's 2010 model year emission standards. However, since no retrofit emission control systems are currently commercially available that reduce both PM and NOX by 85% that leaves 2 options:

a) Sell the truck and replace it with one that has an engine certified to CARB's 2010 model year or newer heavy-duty emissions standard, or

b) Repower the truck with an engine certified to CARB's 2010 model year or newer heavy-duty emissions standard.

Detailed Project Scope

Proposed vehicle replacements are shown in Table 1.

Table 1. CARB Vehicle Replacement – Bakersfield District

PID	Vehicles			Year
	Make	Model	Type	
123863	Ford International Ford	F-650 Vac Truck F-550	2.5 ton Leak Truck Vac Truck Dump Trunk	2022

Customer Benefits

Vehicles that do not comply with the CARB regulation cannot be registered for 2023. If these vehicles are not replaced, this will result in a significant disruption in our ability to provide timely service to our customers. These vehicles are the workhorse of our fleet and will allow Cal Water to continue servicing customer needs effectively and efficiently.

Project Attachments

Cost Estimates

123863 Cost Estimate

Capital Project Cost Estimate

Project No. : 123863
Description BK 2022 CARB VEHICLE REPLACEMENT
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/31/2022
Prepared By: rybarra
Date Initiated: 08/28/2020
Base Year: 2020
Sub-Total: $493,483
Direct Cost: $518,466

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
UPFITTING	[EA]	1	$139,404.59	$139,404.59	Cost Catalog No. G.1
VEHICLES-CAB AND CHASSIS	[EA]	1	$332,827.98	$332,827.98	Cost Catalog No. G.1
LOCATION FACTOR -5%	[EA]	1	-$23,611.63	-$23,611.63	Cost Catalog No. G.1
CONTINGENCY	[EA]	1	$44,862.09	$44,862.09	Contingency Estimate

Sub-total = $493,483.03
Direct Cost = $518,465.59

Notes:
1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123863 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123863
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 68,314.98	1	2018	$ 70,227.09	Vehicle 2.5 ton Leak Truck	V218073
2	$ 98,550.70	1	2018	$ 101,309.09	Vehicle 2.5 ton Upfit	V218073-Upfit
3	$ 57,095.10	1	2020	$ 57,095.10	Vehicle 1.75 ton Dump Truck	V220090
4	$ 38,095.50	1	2020	$ 38,095.50	Vehicle-1.75 ton Dump Upfit	V220090-Upfit
5	$ 205,505.79	1	2020	$ 205,505.79	Vac Truck	Vac Truck

District – Bakersfield
PID # 124729
Tank 045-T1 Roof Replacement

Problem Statement

The 500,000 gallon steel tank at Bakersfield Station 45 was constructed in 1940 with a wooden roof. This may have been due to rationing of materials at that time, such as steel. A large wooden support structure was constructed on the interior of the tank to support the roof, which does not meet current industry or AWWA standards. The existing wooden roof and support structure are deteriorating and require replacement.

Project Justification

Station 45 is a critical supply for the eastern side of the Bakersfield system. The existing roof and support structure are beginning to deteriorate. If the roof or support structure were to fail, the tank would have to remain out of service until a new roof could be designed and constructed. The lead time for design and construction of a new roof could take up to six months.

To date, Cal Water has completed several projects with this same scope with excellent results. The final product is an overhauled tank with a renewed lifecycle. The installation of a new steel cone roof will increase the overall strength and will match the life span of the rest of the tank. The low profile of the steel cone roof will not be any more pronounced than the existing roof and will allow for easy routine inspection. The new steel roof will not be susceptible to environmental hazards such as fire and will eliminate contamination pathways that the current roof presents. The interior wooden support structure will be removed and replaced with steel columns, coated with an NSF approved coating and eliminate a potential risk to water quality. A new steel cone roof has the lowest total life cycle cost of all of the alternatives.

Alternative Analysis

1. Replace existing roof with an aluminum geodesic dome.
    - An aluminum geodesic dome was considered as an alternative but was not selected for the following reasons. First, the shape of the roof makes inspections difficult and hazardous. Rather than attempting a risky inspection, the inspector will typically do a visual inspection from the ground rather than a detailed inspection. Additionally, the added height of the roof could present Cal Water with zoning issues or complaints from neighbors. The high reflectivity of aluminum roofs can increase the air temperature of the surrounding areas.

2. Replacing the wood roof in kind.
    - Replacing the wood roof in kind was also considered. The life span of the remaining steel structure greatly exceeds that of a wooden roof. If a new wooden roof was constructed to replace the existing, it would require additional replacement before the rest of the tank

required replacement since wooden roofs and their wooden support structures are not as robust as steel roofs. The additional roof replacements would needlessly increase the total life cycle cost of the tank. Also, the wood is susceptible to environmental hazards such as termites and wood rot. And the submerged portion of the support structure could lead to water quality issues.

3. Repairing existing roof.
    - Repairing the roof was taken into consideration as well, but the fact that the tank has to be taken offline to make frequent repairs makes it inconvenient. Extra monitoring of the tank will be required to identify deficiencies before they become failures which will be costly, time consuming and will cause the tank to be unreliable.

4. Do Nothing
    - Leaving the existing roof as is will only make the roof more susceptible to collapse due to continued deterioration.

Recommended Solution

Replace existing wooden roof structure with steel cone roof.

Detailed Project Scope

- Demo existing wooden roof structure.
- Construct new steel cone roof.
- Adjust appurtenances as required.
- Remove existing interior and exterior coating.
- Install new interior and exterior coating.

Customer Benefits

Replacing the roof maintains reliable service to the customers and prevents potential service interruption as the result of a failure.

Project Cost Estimate & Attachments

Figure 1 – Steel Tank
Figure 2 – Internal Wood Support Structure
Figure 3 – Deterioration on Submerged Support Structure
Figure 4 – Covering on Tank Roof

Cost Estimates

Attachment A-C – Roof Replacement Quotes

Figure 1 – Steel Tank

Figure 2 – Internal Wood Support Structure

Figure 3 – Deterioration on Submerged Support Structure

Figure 4 – Covering on Tank Roof

124729 Cost Estimate

Capital Project Cost Estimate

Project No. :	124729
Description	BK 045-T1 - Tank Roof Replacement
District / Department:	Bakersfield
Project Start Date:	01/15/2022
Project Completion Date:	12/18/2022
Prepared By:	flobato
Date Initiated:	09/21/2020
Base Year:	2020
Sub-Total:	$448,970
Direct Cost:	$471,699

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	80	$75.29	$6,023.20	Labor SKU
CWS ENG LABOR	CW-Maint Eng LABOR [HR]	40	$121.41	$4,856.40	Labor SKU
ROOF REPLACEMENT	[EA]	1	$418,757.14	$418,757.14	Engineer's Estimate
LOCATION FACTOR -5%	[EA]	1	-$21,481.84	-$21,481.84	Engineer's Estimate
CONTINGENCY 10%	[EA]	1	$40,815.49	$40,815.49	Engineer's Estimate

Sub-total =	$448,970.39
Direct Cost =	$471,699.47

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

124729 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	124729
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 465,630.00	1	2015	$ 513,210.48	Roof replacement	Quote 1
2	$ 420,612.00	1	2015	$ 463,592.31	Roof replacement	Quote 2
3	$ 454,700.00	1	2015	$ 501,163.60	Roof replacement	Quote 3

124729 Attachments

Attachment A
PID: 124729

CROSNO CONSTRUCTION INC.

819 Sheridan Rd., Arroyo Grande, CA 93420 Office: (805) 343-7437 Fax: (805) 343-1006
CA license 835288 - A, C51 & C33 / Dept. of Industrial Relations #1000006959

October 6, 2015

PID 124729

Stephen Harrison
California Water Service Company
1720 North First Street
San Jose, CA 95112
(408) 367-8528
Email: sharrison@calwater.com

Re: Proposal for the BG 002-T2 welded steel tank roof replacement & interior tank coating project in Atherton, CA
60' diameter x 24' height

Stephen:

Crosno Construction is pleased to offer this proposal for the demolition and disposal of the existing wooden roof and to design, furnish and construct one (1) of three (3) new tank roof options on the referenced project. Tank coatings will be applied to the newly installed roof and balance of the tank surfaces as specified.

Scope of work:

- Work scope will be performed in accordance with the Request for Proposal/Bid package sent to us via email on September 24, 2015.
- Payment of non-prevailing wages
- We have included for seal welding the roof laps on the underside of the roof for both the Internal Bent Plate Roof and External Bent Plate Roof options.
- We have included for 100% solids epoxy coating on all interior tank surfaces of the External Bent Plate Roof option.
- We have included for 100% solids epoxy coating on all interior tank surfaces below the overflow level on the Traditional Cone Roof and Internal Bent Plate Roof options.
- One (1) year warranty

Exclusions:

- Isolating the tank, draining the tank or making the tank ready for workers to be inside of the tank
- Hydrotesting including supplying and furnishing water to the tank
- Working with, handling or disposing of any hazardous materials
- Third party welding or coating inspection
- Storm Water Permit or Storm Water Pollution Prevention Plan/Permit
- Bonds, permits, fees or city business license

Clarifications:

- Proposal is based upon there being at least 15' of clearance from a worker standing on top of the tank to any power lines. We have not viewed the site, but one we do if the power line clearances are less than this distance we will evaluate the situation and any additional costs for us to develop a new safety plan, implement that safety plan and follow that safety plan at the site will be paid to us by Cal Water Service.
- Proposal is based upon any trees around the tank perimeter being at least 10' away from the tank. We have assumed that Cal Water Service will removed any trees or limbs within this zone and we have not included for any costs for tree or limb removal.
- Depending upon access we may need to use a tank door sheet for access.

Attachment A
PID: 124729

Pricing:

	Traditional Cone Roof	Internal Bent Plate Roof	External Bent Plate Roof
Design Phase -			
Engineering & shop drawings	$6,919	$6,919	$6,919
Construction Phase -			
Mobilization	$4,034	$4,034	$4,034
Remove existing roof	$49,899	$49,899	$49,899
Materials	$32,150	$47,560	$45,264
Taxes	$2,655	$3,927	$3,738
Freight	$5,554	$7,750	$7,750
Construct new roof	$82,663	$101,992	$104,010
Coatings Phase -			
Tank coatings	$182,406	$182,406	$192,942
Dehumidification	$15,626	$15,626	$17,328
Taxes	$3,122	$3,122	$3,248
Freight	$1,747	$1,747	$1,747
Full containment	$40,648	$40,648	$40,661
TOTAL	**$427,423**	**$465,630**	**$477,540**

Terms & Conditions:
Terms and conditions will be per California Water Service Company standard contract terms.

Validity:
This quotation is valid for 30 days.

Stephen, after your review if you have any questions or need any clarifications please let us know.

Regards,

Wade Crosno
(805) 458-3958 mobile

Attachment B
PID: 124729

FARR CONSTRUCTION CORPORATION dba
RESOURCE DEVELOPMENT COMPANY

PID 124729

California Water Service
1720 North First Street
San Jose, CA 95112-4598

October 14, 2015

ATTENTION: Francisco Lobato flobato@calwater.com

REFERENCE: Welded Steel Tank Roof Replacements & Interior Tank Coating

Gentlemen:

As requested, please find the following quotes for certain tanks with the sales tax broken out from the total cost.

- **BG 002-T2 - Atherton, CA Exterior Rafter Design**
  It is our opinion that the exterior rafter design is your best design from the maintenance standpoint due to the fact that approximately 90% of the interior corrosion is in the rafters or rafter/vent areas. Locating the rafters to the exterior will eliminate this issue, and from the esthetics standpoint, it would be the least desirable. Life cycle of the exterior rafter roof should exceed 30 years with proper inspection to address any coating maintenance.

1.	Design Phase	$10,000.00
2.	Mobilization	13,683.00
3.	Removal	61,912.00
4.	Materials	46,050.00
5.	Installation	68,112.00
6.	Coating Phase:	
a.	Surface preparation	132,243.00
b.	Waste Management	10,000.00
c.	Coating Application	58,612.00
d.	Dehumidification	20,000.00

Subtotal: $413,244.00
Sales Tax: 7,368.00

TOTAL COST: $420,612.00

continued....

1050 Linda Way, Sparks, Nevada 89431-5598
(775) 356-8004 / Fax (775) 356-0610
Nevada License No. 75026 / California License No. 893537

Attachment B
PID: 124729

- **ELA 061-T1 - Monterey Park, CA Bent Roof Design**
  It is our opinion that the bent roof design should be least desirable design from a maintenance standpoint due to the fact that the channel that is required for engineering is hard to access for blasting and coating. It will also catch water creating an area for corrosion to accumulate, and from the esthetics standpoint, would be one of the two best due to the fact of the smooth top. Life cycle should be about 10 years with proper inspection to address any coating maintenance.

1.	Design Phase	$10,000.00
2.	Mobilization	9,500.00
3.	Removal	57,550.00
4.	Materials	48,970.00
5.	Installation	57,100.00
6.	Coating Phase:	
	a. Surface preparation	136,704.00
	b. Waste Management	10,000.00
	c. Coating Application	61,136.00
	d. Dehumidification	20,000.00

Subtotal: $403,359.00
Sales Tax: 7,601.00

TOTAL COST: $410,960.00

Should you require additional information, please do not hesitate to contact our office.

Sincerely,

RESOURCE DEVELOPMENT COMPANY

Jeff Farr
President

Attachment C
PID: 124729

AZ #119975 • CA #333989 • NV #0038929

Spiess Construction Co., Inc.

P.O. Box 2849
Santa Maria, CA 93457-2849
(805) 937-5859
Fax (805) 934-4432

October 5, 2015

To: California Water Service
Attn: Mr. Stephen Harrison
1720 First Street
San Jose, CA 95112

PID 124729

Fax: (408) 367-8427

Re: Roof Replacements
Atherton, CA and Monterey Park, CA.

Subj: Proposal

Dear Mr. Harrison,

On behalf of Spiess Construction Co., Inc., we would like to thank you for the opportunity to submit our proposal for the above referenced wood roof removal and new steel roof replacements together with coatings remediation as outlined in your September 24, 2015 request For Proposal.

We herewith offer to perform the requested work for the three types of roof replacements at each location, at the prices stated below.

SCOPE OF WORK – Our work shall include providing the men, equipment, tools and supervision to perform the installation of all materials as outlined below:

- Mobilization to site
- Remove the entire wood roof and internal support structure.
- Cut and remove the top 3" of corroded shell and the entire top outer girder.
- Furnish and install a new 3" x 3" x3/8" rolled rim angle around the tank shell perimeter.
- Furnish and install a new roof support system consisting of:
  - A new ¼" bearing plate welded to the tank floor
  - A new base plate (size to be determined by P.E.'s calculation)
  - A new center column support (size to be determined by P.E.'s calculation)
  - A new hat (dollar) plate (size to be determined by P.E.'s calculation)
  - New rafters (other than the bent plate option) size to be determined by P.E.'s calculation.
- Roof plates and rafters will be fully shop blasted to an SSPC-SP10 (near white) and prime coated with specified epoxy coating prior to delivery and installation at the site. The rafter tops for the cone roof option will also receive additional coatings to yield a minimum 15 mil DFT.
- For the cone roof and exterior roof options, new 3/16" A-36 roof plate will be installed to cover the entire roof and shall be fillet welded at all plate junctions on the top side, and around the entire roof perimeter to the newly installed rim angle. Roof plates shall be installed at a ¾":1 ft roof pitch to shed water. They shall be laid in an anti-water shed fashion to prevent condensation and moisture from collecting between internal roof plates.
- The bent plate option will be full formed 3/8" steel plate, and shop blasted and prime coated prior to erection.

Attachment C
PID: 124729

- The following new appurtenances will also be furnished and installed:
  - One new 36" Ø center roof vent (built to CSW standard details) and capable of supporting a 5000# horizontal load for employee fall protection (Exterior roof option)
  - Three (3) additional 24" Ø roof vents will be provide and installed for either the cone roof or bent plate roof options
  - One new 39" square roof hatch
  - One new hand rail enclosure around the new roof hatch.
  - One new 30" Ø AWWA mono-bolt shell manway

- All of the removed materials and construction debris will be loaded into a roll off dumpster and removed fro the site at the conclusion of the work.

Bear Gulch 002-Tank 2 60' ØX 24' high

1. **Cone Roof Replacement**	
a. Design & Engineering	$ 10,600.00
b. Construction	$ 245,300.00
c. Coatings	$ 176,700.00
Total Costs	$432,600.00
2. **Bent Plate Roof Replacement**	
a. Design & Engineering	$ 12,300..00
b. Construction	$ 264,250.00
c. Coatings	$ 170,300.00
Total Costs	$ 446,850.00
3. **Exterior Roof Replacement**	
a. Design & Engineering	$ 12,300.00
b. Construction	$ 268,450.00
c. Coatings	$ 173,950.00
Total Costs	$454,700.00

E. LA. – Monterey Park 061-Tank 1 54' ØX 30' high

4. **Cone Roof Replacement**	
a. Design & Engineering	$ 10,600.00
b. Construction	$230,600.00
c. Coatings	$160,500.00
Total Costs	$401,700.00
5. **Bent Plate Roof Replacement**	
d. Design & Engineering	$ 12,300.00
e. Construction	$252,500.00
f. Coatings	$155,800.00
Total Costs	$420,600.00
6. **Exterior Roof Replacement**	
g. Design & Engineering	$ 12,300.00
h. Construction	$251,100.00
i. Coatings	$159,200.00
Total Costs	$428,600.00

Attachment C
PID: 124729

CONDITIONS:

- No removal of hazardous coatings either inside or outside the reservoirs is included. Should it be determined that abatement and or special handling is required, it will be at additional expense.
- The above proposal does not include any concrete footing removal or replacement.
- The above proposal excludes modifications to the existing overflow assemblies, and interior ladders.
- No new liquid level indicator assembly has been requested nor is included in this proposal.
- We also exclude installation of cathodic protection systems and any electrical, instrumentation, SCADA/telemetry controls, conduit, wiring or similar devices.
- No disinfection of tank interiors is included
- Installation prices are based on performing the work during dry weather.
- Toilet and sanitary facilities shall be provided and maintained by SCCI.
- Permits licenses and fees are not included.
- Spiess Construction is a non-union, merit shop contractor, non-prevailing wages are included.
- The above prices include one mobilization per reservoir.
- Our proposal is contingent receipt of a contract to perform work at both sites. Should the scope of work be reduced to one site, an adjustment in price will be required.

EXCLUSIONS:

- Any work not specifically identified above.

TERMS:

- Payments are to be made in monthly installments for the work performed in the preceding month.
- Payment and performance bonds are not included but may be provided for an additional 1% of the contract amount.
- The above prices are firm if accepted within a period of thirty days from the proposal date.
- Full payment must be made within 35 days after the completion of our items of work regardless of when the entire project is completed. A finance charge of 2% or portion thereof will be added to all outstanding balances in excess of 30 days.

If any part of this proposal is unclear, please do not hesitate to call.

Sincerely,
Spiess Construction Co., Inc.

Barry Matchett
Tank Division Manager

C:msw\bids\Repairs/2015/CWS\Roof replacement\101615

Section C.

Specific Justifications

District – Bakersfield
PID # 123165
BKNG Tank & Booster Facility

Problem Statement

The northwestern portion of Bakersfield North Garden (BKNG) system is currently supplied by two wells (BKNG-W-214-01 and BKNG-W-219-01) and is connected to the main BKNG system with a single 12-inch diameter pipeline along Snow Road. This pocket of the distribution system experiences large pressure swings during peak demands (Figure 1) and is heavily reliant on the wells to meet peak demands. Each of the wells are equipped with H_2S and TCP wellhead treatment, which require routine maintenance and media replacement to effectively meet water quality regulations. During these equipment maintenance activities, the wells are removed from service reducing supply to the zone.

Project Justification

The northwest portion of the BKNG system was identified as having an issue with pressure fluctuations during high demand periods and is susceptible to pressure dips when a local source is offline for maintenance and/or emergency work. Attachment A includes a vicinity map of the northwestern portion of the BKNG distribution system. This map shows that this portion of the distribution system is isolated from the main BKNG system with the exception of the 12-inch pipeline along Snow Road.

Figure 1 shows representative pressure and flow readings from Station 219, from September 2020. The station readings show fluctuations and low pressure readings, corresponding with well pump cycles. On September 8, BKNG-W-219-01 was taken offline due to a mechanical failure of the pumping equipment and the local pressure later dipped to 36 psi during peak demand (Figure 1). Although the dips are less drastic when Station 219 is running, the system pressure still dips to the low 40's during peak demand when in operation.

In order to reduce the pressure swings experienced during peak usages and provide emergency supply reliability if a source is temporarily out of service, Cal Water proposes to install a new tank and booster facility in the northwestern portion of the BKNG system. The proposed tank will be filled from the distribution system during off peak hours and help bring additional reliability to this portion of the system.

Alternative Analysis

1. <u>Drill new well in northwestern portion of BKNG system.</u>
    - Although drilling and equipping a new well in the northwestern portion of the BKNG system will also help solve the pressure swing and emergency supply issues faced in this area, water quality is a point of concern. The local aquifer is known to produce water with H_2S and TCP that requires treatment in order to meet water quality requirements. These treatment facilities require extensive capital investment and build in longer term operational costs. If

CWS were able to fill a tank from the distribution system during off peak hours and boost out to combat peak demand periods, CWS could utilize existing supply to address the issues.

2. Do Nothing
    - The do nothing alternative does not address the pressure fluctuations or emergency storage deficiencies aforementioned. This alternative will continue to expose Cal Water customers in this service area to the unnecessary risk including a potential loss of supply during high demand periods, loss of pressure in the distribution system, and impact to fire flow capacities. Given the risks and magnitude of the deficiencies, the do nothing alternative was not considered prudent and thus not deemed an appropriate solution.

Recommended Solution

Install a one million gallon storage tank and booster pump facility in the northwest portion of the BKNG distribution system to reduce pressure swings and low-pressure events in the area.

Detailed Project Scope

- Perform site grading.
- Install 1 MG welded steel tank and associated foundation.
- Install two (2) 1,000 gallons per minute booster pumps in acoustic shelters (75 horsepower).
- Install 12-inch station piping, altitude valve, and booster pump manifold.
- Install electrical service and transformer.
- Install electrical panelboard and electrical equipment.
- Develop site frontage per local requirements.
- Install chain-link fence around property limits.
- Install drainage facilities to contain tank draining & overflow water.
- Install diesel generator for backup power during emergency events.

Customer Benefits

Implementation of the BKNG Tank & Booster Facility project will ensure a reliable source of high quality water can be delivered to customers at all times for the foreseeable future. Moreover, the reliable source capacity will also ensure there is sufficient water storage available to meet fire flow requirements and ensure adequate pressure in the distribution system.

Project Attachments

Figure 1 – BKNG 219 Pressure & Flow Readings

Cost Estimates

Attachment A – Vicinity Map
Attachment B – Landscape Design Cost Basis
Attachment C – Offsite Improvements Cost Basis

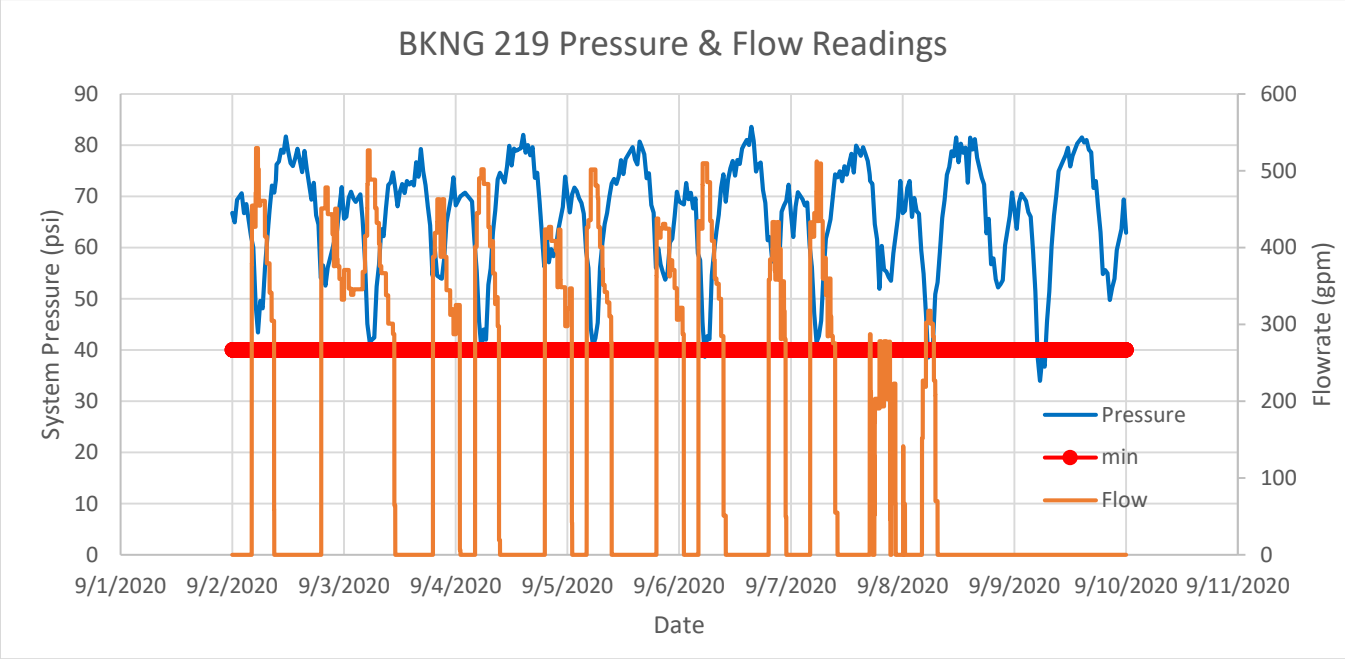


Figure 1 – BKNG 219 Pressure & Flow Readings

123165 Cost Estimate

Capital Project Cost Estimate

Project No. : 123165
Description BK New Tank & Booster Facility
District / Department: Bakersfield
Project Start Date: 01/01/2023
Project Completion Date: 12/01/2024
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $2,585,655
Direct Cost: $2,819,273

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
12" CONTROL VALVE	12in dia [EA]	1	$15,577.00	$15,577.00	Cost Catalog No. C.3-5
12" FLOWMETER	12in Magmeter [EA]	1	$8,402.46	$8,402.46	Cost Catalog No. C.6-4
ASPHALT PAVING	R&R Paving [SF]	5000	$12.61	$63,050.00	Cost Catalog No. A.17-1
BOOSTER PUMPS	75 -100 hp [EA]	2	$54,053.62	$108,107.24	Cost Catalog No. C.7-4
BUILDING	New Bldng <1,000 SF [SF]	400	$312.75	$125,100.00	Cost Catalog No. A.9-1
CEQA PERMIT FEE	Initial Study - Typical [LS]	1	$22,575.03	$22,575.03	Cost Catalog No. E.1-1
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	40	$214.06	$8,562.40	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	200	$75.29	$15,058.00	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	200	$97.22	$19,444.00	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	300	$80.94	$24,282.00	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	300	$93.13	$27,939.00	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	120	$303.53	$36,423.00	Labor SKU
CWS ENG SCADA LABOR	CW-SCADA Prog LABOR [HR]	80	$143.13	$11,450.40	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	40	$607.05	$24,282.00	Labor SKU
CWS OPERATIONS ENGINEERING	CW-Oper Eng LABOR [HR]	80	$121.41	$9,712.80	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
DRIVEWAY AND APPROACH	Concrete - 16ft W x 50ft L [EA]	1	$16,576.35	$16,576.35	Cost Catalog No. A.13-2
ELEC PANELBOARD	400 Amp[EA]	1	$59,146.14	$59,146.14	Cost Catalog No. D.3-2
ELECTRICAL INSTALLATION	Complex/PumpedStrgeFacilty[LS]	1	$145,405.37	$145,405.37	Cost Catalog No. B.1-2
FENCE AND GATE	6ftH ChainLink-100ftx100ftLot[LS]	1	$17,559.12	$17,559.12	Cost Catalog No. A.12-1
FLEX-TEND CONNECTION	Double Ball EBAA, 12 in dia[EA]	2	$8,577.41	$17,154.82	Cost Catalog No. C.8-3
GENETERATOR & ATS	300 KW [EA]	1	$106,300.18	$106,300.18	Cost Catalog No. D.1-2
GEOTECHNICAL REPORT	4 Borings [LS]	1	$10,343.14	$10,343.14	Cost Catalog No. E.8-2
LANDSCAPE CONSULTANT	[EA]	1	$6,527.40	$6,527.40	Engineer's Estimate
LANDSCAPING AND IRRIGATION	Complex Scope [LS]	1	$27,668.81	$27,668.81	Cost Catalog No. A.10-2
METER PANEL	[EA]	1	$17,347.00	$17,347.00	Engineer's Estimate
OFF SITE IMPROVEMENTS	[EA]	1	$107,433.92	$107,433.92	Engineer's Estimate
ON SITE CONCRETE CURB	Concrete [FT]	200	$209.24	$41,848.00	Cost Catalog No. F.10-1
ON SITE DRAINAGE CATCH BASIN	24in x 24in CB [EA]	3	$18,368.79	$55,106.37	Cost Catalog No. F.9-2
ON SITE DRAINAGE PIPE	On-site, Drainage Pipe [FT]	50	$414.04	$20,702.00	Cost Catalog No. F.8-1
PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
PRESSURE TRANSDUCER	Pressure Transducer [EA]	1	$790.63	$790.63	Cost Catalog No. D.8-1
RTU PANEL	RTU Panel/Radio Panel [EA]	1	$6,766.00	$6,766.00	Cost Catalog No. D.5-1
SCADA PACK	SCADA Pack [EA]	1	$2,765.44	$2,765.44	Cost Catalog No. D.6-1
SITE GRADING	Excave/Embank, Tank Site [LS]	1	$37,950.50	$37,950.50	Cost Catalog No. F.7-3
SITE SURVEY	TopographyW/LegalDescriptn[LS]	1	$8,396.23	$8,396.23	Cost Catalog No. E.6-11
SPECIAL INSPECTION/CM	[EA]	1	$198,686.33	$198,686.33	Engineer's Estimate
STATION PIPING	Tank Station [LS]	1	$229,967.70	$229,967.70	Cost Catalog No. A.8-2
STORAGE TANK AND FOUNDATION	1.0-1.5M Gal [GAL]	1E+06	$0.69	$690,000.00	Cost Catalog No. A.18-3
TANK LEVEL TRANSDUCER	Tank Level Transducer [EA]	1	$2,671.64	$2,671.64	Cost Catalog No. D.8-2
CONTINGENCY	[EA]	1	$229,593.09	$229,593.09	Engineer's Estimate

Sub-total = $2,579,099.71
Direct Cost = $2,819,273.37

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

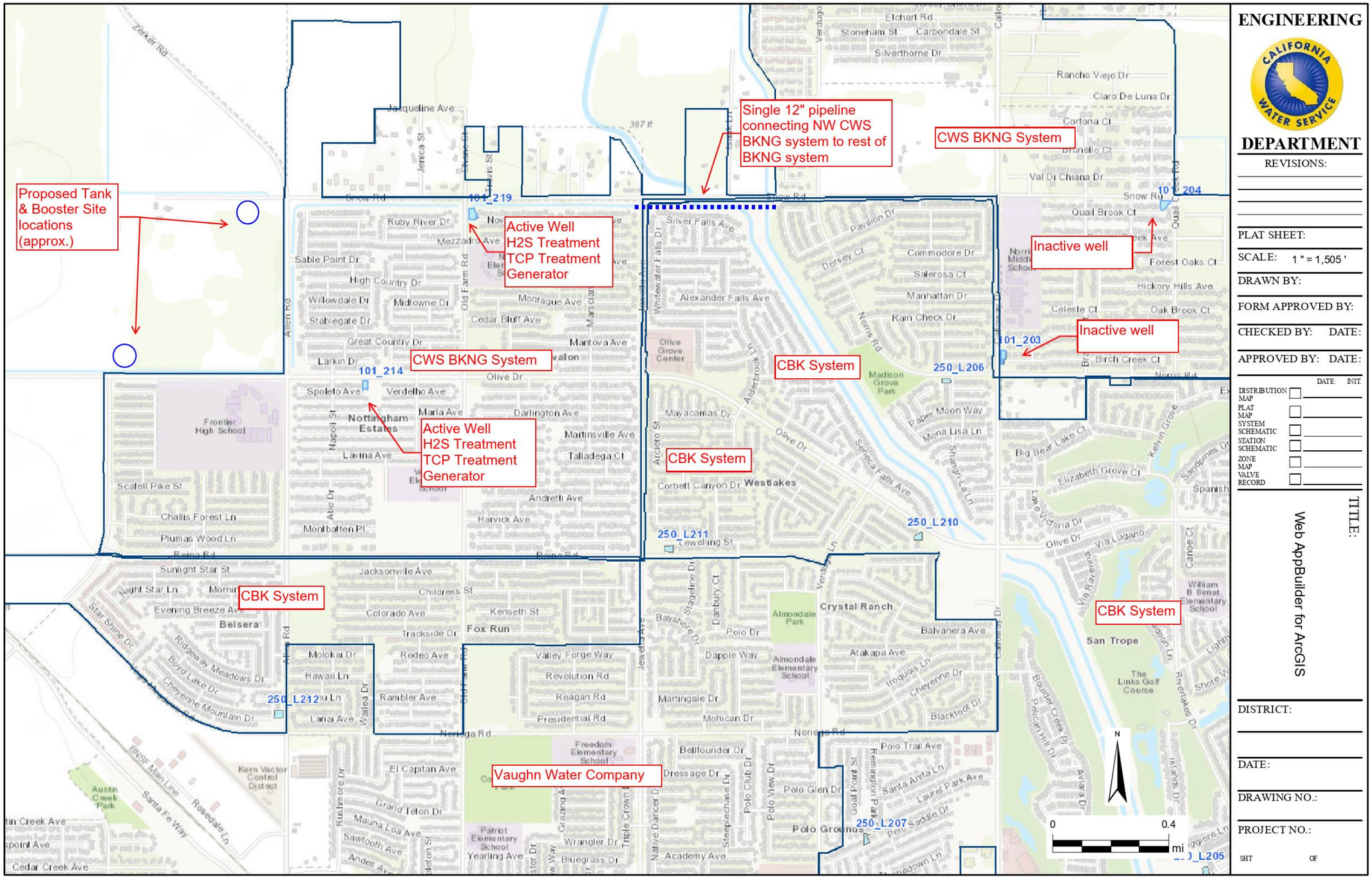
123165 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	123165
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 6,450.00	1	2019	$ 6,527.40	Landscape Design	Attachment B PO#0000119271
2	$ 106,160.00	1	2019	$ 107,433.92	Offsite Improvements	Attachment C BK 225 Bid List

Attachment A
PID: 123165



Attachment B
PID: 123165

Purchase Order

Dispatch via E-Mail

Purchase Order	Date	Revision	Page
CWSCO 0000119271	03/18/2019		1
Payment Terms	**Freight Terms**		**Ship Via**
N30	DESTINATION		BST METHOD
Buyer	**Phone**		**Currency**
Dickson, Jordan (BK)			USD

CALIFORNIA WATER SERVICE CO.
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598
Phone: 408-367-8200
Fax: 408-392-9797

Ship To: Bakersfield Field Office
3725 SOUTH " H " STREET
BAKERSFIELD CA 93304

Supplier: 0000008277
QUAD KNOPF INC.
901 EAST MAIN ST
VISALIA CA 93292
Fax: 559/733-7821

Bill To: accountspayable@calwater.com
OR
PO Box 49033
San Jose CA 95161-9033

Tax Exempt? N **Tax Exempt** **Replenishment Option:** Standard

Line-Sch	Item/Description	Vendor Item-ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	BK 225-01 Landscape Design		1.00	AMT	6,450.00	6,450.00	04/19/2019

Schedule Total 6,450.00

CWS Item ID:

Item Total 6,450.00

<<Furnish labor, equipment, materials, and transportation to perform the following work at station BK 225-01 in the CWS Bakersfield District. Create Landscape Design plans per the City of Bakersfield' s standards and submit draft plans to CWS for review/approval prior to submitting to the City if Bakersfield. Address plan check comments provided by the City of Bakersfield (as required) until approval/acceptance. All work per Task NO. 1 in RFP received 2/15/2019. Price based on "Time and Material Not to Exceed" $6,450.00 without prior approval from California Water Service Company.>>

PER THE ATTACHED PROPOSAL, DATED 2/14/19

Total PO Amount 6,450.00

PLEASE SIGN AND EMAIL TO PURCHASEORDER@CALWATER.COM OR FAX PURCHASE ORDER TO (408) 392-9797 PRIOR TO SHIPPING GOODS OR COMMENCING SERVICE

	Unauthorized	

Attachment C
PID: 123165

BID SCHEDULE BK 225 WELL PROJECT **EXHIBIT A**

PROJECT # 99821
PROJECT NAME: BK 225 New Low Zone Well
PROJECT LOCATION: 8403 Wible Rd Bakersfield, CA 93313
BID DUE DATE 11/1/2019
CONTRACTOR NAME: W. M. Lyles Co.

The following ITEMS shall include the cost of all necessary tools, materials, labor, transportation, and equipment necessary to install the described facilities in accordance with California Water Service Co. standards and specifications included in the attached bid package or referenced on the drawings. The BID ITEMS shall also include miscellaneous items such as freight costs, taxes, temporary security fencing (if the contractor feels this is necessary), off-hauling of excavation spoils, and site clean-up.

TABLE 1: BID ITEMS

BID ITEMS	DESCRIPTION	Unit Cost	# of Units	Unit	ITEM TOTAL
1	Mobilization, survey/staking, demobilization, site clean-up, and restoration.	$ 32,500.00	1	LS	$ 32,500.00
2	Coordinate pick-up and offload of CWS supplied materials from Bakersfield District storage yard.	$ 4,800.00	1	LS	$ 4,800.00
3	Final grading per Contract Drawings and prepare building, well pedestal, generator, panelboard and meter cabinet foundations. Contractor to coordinate compaction testing/inspection with SEI. Contractor to coordinate City of Bakersfield Inspection as applicable.	$ 43,000.00	1	LS	$ 43,000.00
4	Haul off excess soil cuttings.	$ 87.00	25	CY	$ 2,175.00
5	Install privacy slat chain-link fence and access gates per Contract Drawings.	$ 81.00	800	FT	$ 64,800.00
6	Install 6' tall concrete block wall per Contract Drawings.	$ 312.00	200	FT	$ 62,400.00
7	Install 18" storm drain piping, catch basins, concrete aprons and drain inlet per Contract Drawings. Contractor to coordinate inspection with CWS prior to backfill. Contractor to supply As-Built drawing prior to final invoicing.	$ 166.00	700	FT	$ 116,200.00
8	Install driveway and building walkway per contract drawings. Contractor to coordinate testing/inspection services with SEI.	$ 15.00	900	SF	$ 13,500.00
9	Install sidewalk and curb/gutter per Contract Drawings. Contractor to coordinate testing/inspection services with SEI.	$ 203.00	100	FT	$ 20,300.00
10	Street improvements per Contract Drawings. Contractor to coordinate testing/inspection services with SEI. Contractor to coordinate obtaining street permit with CWS personnel.	$ 32.40	2650	SF	$ 85,860.00

Attachment C
PID: 123165

11	Install all underground and overhead conduits and conduit fittings shown on the Contract Drawings. Supply, pull, and terminate all required wiring in accordance with the project's Electrical Drawings & Details. Contractor to coordinate the inspection of all trenches and conduits with CWS prior to backfill. Contractor to provide Electrical As-Built prior to final invoicing.	$ 39,900.00	1	LS	$ 39,900.00
12	Install 300kVa PG&E transformer foundation and 3-5" conduits. Contractor to coordinate and schedule all required PG&E inspections with PG&E Inspectors.	$ 39,400.00	1	LS	$ 39,400.00
13	Install building electrical conduits, lighting, fans, and applicable electrical components per Contract Drawing. Contractor to coordinate inspection with CWS PM.	$ 17,500.00	1	LS	$ 17,500.00
14	Install 12" station piping and plumbing appurtenances per Contract Drawings and Specifications. Contractor to coordinate inspection with CWS prior to backfill. Contractor to supply As-Built drawing prior to final invoicing.	$ 863.00	120	FT	$ 103,560.00
15	Construct generator, panelboard, and meter cabinet foundation per Contract drawings. Contractor to coordinate testing/inspection with SEI.	$ 18,200.00	1	LS	$ 18,200.00
16	Construct well pedestal per Contract Drawings. Contractor to coordinate well pedestal construction and appurtenances with Bakersfield Well and Pump (Well Pump Supplier).	$ 9,700.00	1	LS	$ 9,700.00
17	Construct concrete block building and foundation per Contract Drawings. Contractor to coordinate with CWS PM for well pump/motor and panelboard installation prior completion. Contractor to coordinate testing/inspection with SEI.	$ 399.00	480	SF	$ 191,520.00
18	Install and anchor electrical generator, panelboard, and meter cabinet per Contract Drawings. Contractor to coordinate equipment delivery with CWS PM prior to install. Contractor to coordinate testing/inspection with SEI.	$ 15,300.00	1	LS	$ 15,300.00
19	Install all chemical room equipment per Contract Drawings. Equipment to be supplied by Owner.	$ 11,500.00	1	LS	$ 11,500.00
20	Pour station gravel per Contract Drawings.	$ 2.50	5000	SF	$ 12,500.00
21	Install landscape and irrigation per Contract Drawings. Contractor to coordinate inspection with City of Bakersfield.	$ 92,900.00	1	LS	
22	Pressure test station piping. Contractor to coordinate pressure test with PM & District personnel.	$ 4,900.00	1	LS	$ 4,900.00
23	Disinfect station piping. Contractor to coordinate disinfection with PM & District personnel.	$ 600.00	1	LS	$ 600.00
24	SWPPP compliance and coordination with Porter & Associates for onsite monitoring and inspection.	$ 6,800.00	1	LS	$ 6,800.00

Attachment C
PID: 123165

25	Startup and commission all electrical/mechanical components shown in the Contract Drawings.	$ 4,900.00	1	LS	$ 4,900.00
26	Procurement and install of removable vehicle bollards per Contract Drawings. Location, type, and quantity to be determined in the field by CWS Representative.	$ 1,000.00	5	LS	$ 5,000.00
27	Procurement and install of fixed vehicle bollards per Contract Drawings. Location, type, and quantity to be determined in the field by CWS Representative.	$ 700.00	23	LS	$ 16,100.00
TOTAL COST FOR BID ITEMS (1 THROUGH 27)					$942,915.00

TABLE 2: COST OF BONDS					
1	Performance Bond for a lump sum price	$ 1,885.00	1	LS	$ 1,885.00
2	Payment Bond for a lump sum price	$ 1,885.00	1	LS	$ 1,885.00

Contractor Authorized Agent Name (Type Name):	Kevin R. Shigematsu
Contractor Authorized Agent Title (Type Title):	Vice President

I hereby confirm that proposal herein constitutes an irrevocable bid good for 60 days from the bid submission due date.

District – Bakersfield
PID # 123170
BK 615/660/675 Border Rezone and Pipeline

Problem Statement

For decades, there have been low pressure issues (ranging between 25 and 40 psi) along the northern and eastern boundaries of the 615 zone. One area of concern has critical facilities including a county hospital (Kern Medical Center), Kern County Health Department, and other county buildings. Other areas include: Heritage Park and several residential areas located to the west (Attachment A). During the last several years, the Kern Medical Center has complained about low pressures for both their domestic and fire services (Attachment B). The pressures in these areas need to be increased in order to better comply with California Public Utilities Commission (CPUC) General Order 103-A.

The hydraulic grade line for the 615 zone is set by the water level at the Station 96 tanks located at the intersection of Mount Vernon Avenue and Bernard Street. Since the above-mentioned areas are close in elevation to Station 96, the tanks cannot provide enough pressure even when they are full (Figure 1-2 and Attachment C). In order to increase the pressure in these areas, we need to use water from other storage tanks (Station 87/660 zone and Station 100/675 zone) that are approximately 45 to 60 feet higher in elevation than Station 96.

Project Justification

As shown in Attachment D, the Bakersfield system has historic low pressure areas where the minimum normal operating pressure ranges between 25 and 40 psi. The areas to be rezoned with this project are located within the historic low pressure area. Cal Water has made operational changes to mitigate this situation through the use of existing infrastructure, but customers have continued to complain about domestic and fire flow concerns. For example, the Kern Medical Center has been experiencing low on-site pressures. At times, their domestic water booster pumps have had difficulty sending water to their multi-story buildings. Also, they are having difficulty passing their fire pump tests without Cal Water making temporary operational adjustments.

Cal Water has been able to accommodate the hospital's domestic and fire flow needs by increasing its water tank levels at Station 96 and adjusting control valves located at Station 45, but this only yields about a 5 psi increase (Figure 3) and is only a temporary fix to the problem. Maintaining these system adjustments causes water quality issues such as loss of chlorine residual and increased water temperature due to reduced tank turnover.

Recently, Cal Water had an unexpected pipe shut down in Mt. Vernon Avenue to the hospital that caused very low pressures and nearly zero flow to the entire facility. This facility and its surrounding area are in dire need of greater reliability and flexibility.

In order to eliminate these low pressure pockets, Cal Water proposes the installation of a new pipeline and rezoning of a portion of the 615 zone to the 660 and 675 zones. These changes would increase the local pressure by 20 to 60 psi and result in a new pressure range of 64-psi to 84-psi in these newly rezoned areas. This rezone effort would not only resolve long-standing pressure issues (Attachment D), but would also increase firefighting capabilities in the area.

In order to change the northeast portion of the 615 zone to the 675 zone, Cal Water needs to increase the pressures within the existing pipe in Mt. Vernon Avenue by resetting zone valves. These pipes currently deliver water from the storage tanks at Station 96 to the 615 zone. Since this pipe will no longer be used for the 615 zone, a new pipe is needed from Station 96 to the new 615 zone boundary. This pipeline will travel from Station 96, then along Bernard Street to the intersection of Haley and Pearl Street in order to re-connect the Station 96 storage tanks to the remaining 615 zone.

Additionally, Cal Water will reset existing zone valves along the southern and western borders of the new 675 zone expansion. One new valve will be installed in this area.

In order to change the north portion of the 615 zone to the 660 zone, Cal Water will reset the existing zone valves. One new valve will be installed in this area.

Alternative Analysis

1. Increase water level in tanks at Station 96 and adjust control valves.
    - This alternative only increases pressures by 5 psi and has caused water quality problems.

2. Install new pipelines in Mt. Vernon Avenue and Flower Street to up-zone hospital/county site.
    - This alternative only increases pressures at the hospital/county site, and installing pipe in Mt. Vernon Avenue would be very costly and challenging because of high traffic and existing underground utilities in this street.
    - Installing pipe just in Mt. Vernon Avenue or Flower Street would create a risky, dual zone situation on this private property which is prohibited by Cal Water. This is because Cal Water would not have control over maintaining good water quality and system pressures.

3. Have hospital/county site install their own onsite facilities (i.e. water tank, booster pump, pipe).
    - This alternative only increases pressures at the hospital/county site and ignores other low pressure areas. This option has been presented to the hospital, and they have declined. Cal Water cannot assume that the hospital will do this in the future, so we need to take action in order not to place the hospital and therefore the community who depend on this facility at risk.

4. Install new pipeline and re-zone.
    - All customers in these problem areas will permanently benefit from a more reliable water system that will adequately provide domestic, emergency, and fire needs.

5. Do Nothing
    - Does not address low pressure pockets in distribution system.

Recommended Solution

Install new main and re-zone system. Install approximately 3,400 feet of 12-inch ductile iron (DI) pipe along Bernard Street to connect the tanks at Station 96 to the 615 zone pipeline located at the intersection of Haley and Pearl Street.

In addition to the new pipe installation, the existing pipes in Mt. Vernon Avenue, Flower Street, Ridge Road and Bernard Street will need to be re-zoned through the adjustment of system hand valves and the installation of a few new valves. These valves will be switched from an open-to-closed position or from a closed-to-open position in order to re-establish the zone boundaries. See Attachment A for more detail.

Operationally, Station 96 tank would continue to supply the 615 zone through the new pipe. Station 23 tanks would continue to feed the 615 and 660 zones through boosters. The Station 86 and 100 tanks would continue to supply the 660 and 675 zones respectively. The Station 45 tanks would no longer feed the 615 zone but would still feed the 675 zone through boosters. The Station 140 well site would continue to supply the 615 zone.

Detailed Project Scope

- Install approximately 3,400 feet of 12-inch ductile iron (DI) pipe along Bernard Street.
- Complete adjustment of zone valves and install new control valves.

Customer Benefits

Implementation of the 615/660/675 re-zone project will ensure a reliable source of high quality water can be delivered to customers. Moreover, the reconfigured system will ensure there is sufficient pressure to meet fire flow requirements.

Project Attachments

Figure 1 – Hydrant BK-2127 Pressure Data
Figure 2 – Kern County Public Health Department Pressure Data
Figure 3 – Kern County Public Health Department Pressure Data Showing 5 psi Increase

Cost Estimates

Attachment A – Rezone Map
Attachment B – CPUC Informal Complaint Form
Attachment C – 615 Zone Elevation
Attachment D – Low Pressure Zone Area Map

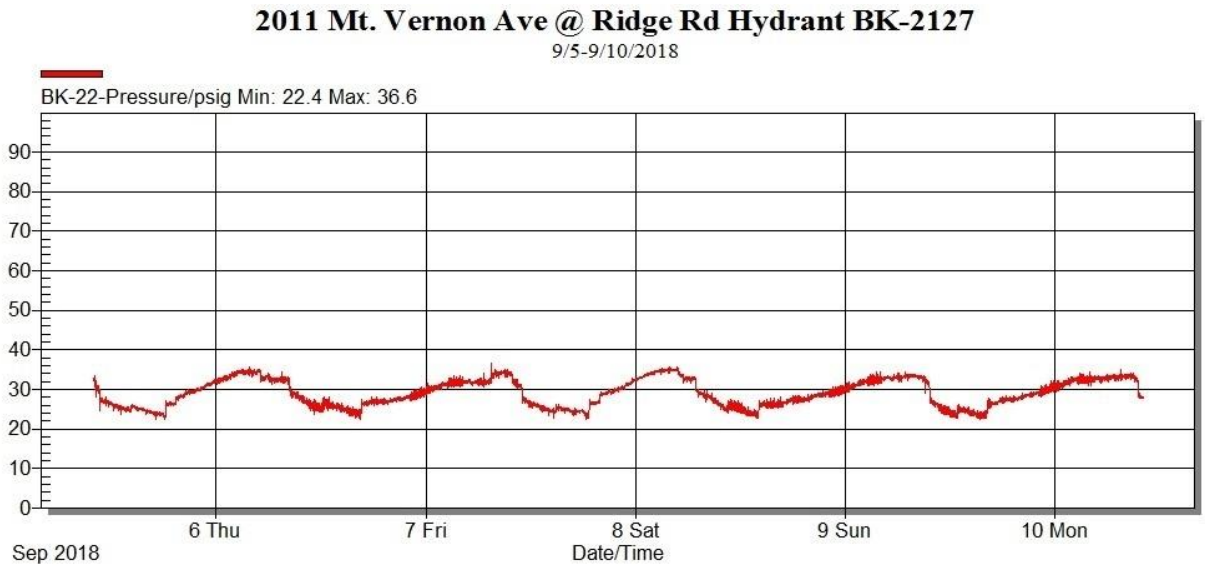


Figure 1 – Hydrant BK-2127 Pressure Data

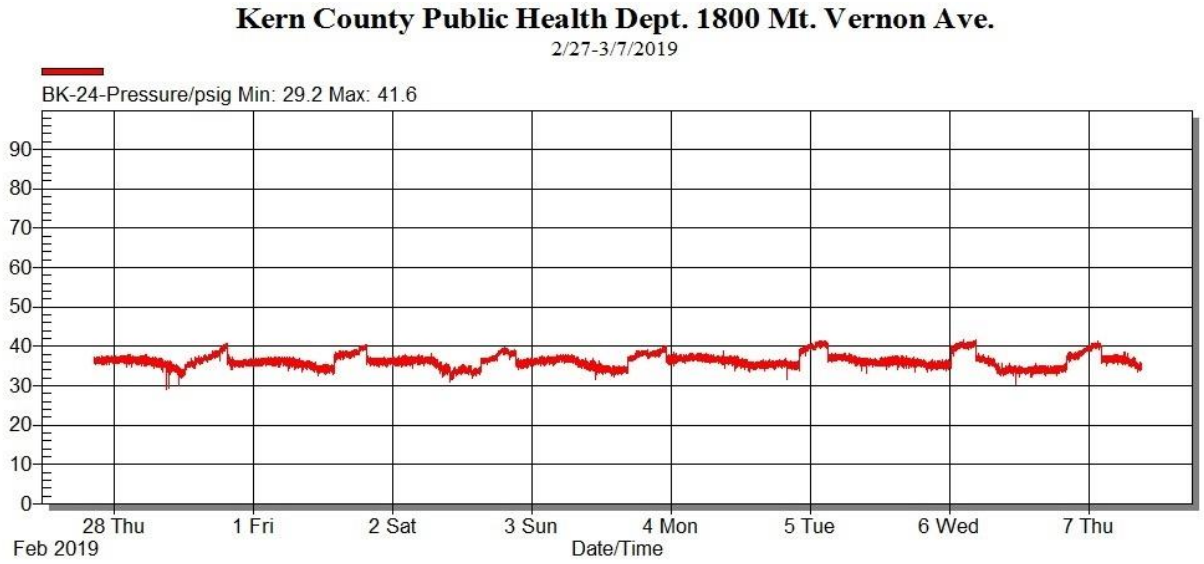


Figure 2 – Kern County Public Health Department Pressure Data

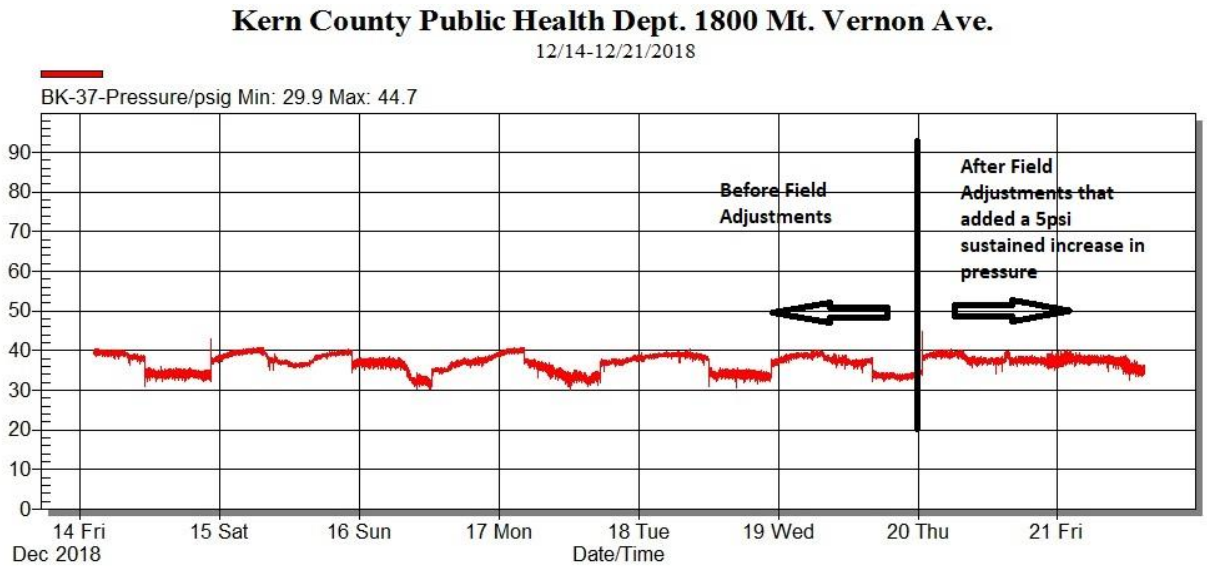


Figure 3 – Kern County Public Health Department Pressure Data Showing 5 psi Increase

123170 Cost Estimate

Capital Project Cost Estimate

Project No. : 123170
Description BK 675 Rezone
District / Department: Bakersfield
Project Start Date: 01/01/2023
Project Completion Date: 12/30/2024
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $1,462,861
Direct Cost: $1,595,033

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
12" DI MAIN	Street Piping-BK-Standard [FT]	3400	$308.00	$1,047,200.00	Cost Catalog No. A.8-10
6" FIRE HYDRANT (NEW)	New Install [EA]	5	$9,182.63	$45,913.15	Cost Catalog No. A.27-3
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	20	$107.03	$2,140.60	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	200	$75.29	$15,058.00	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	300	$161.88	$48,564.00	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	200	$93.13	$18,626.00	Labor SKU
CWS ENG LABOR	CW-Oper Eng LABOR [HR]	100	$121.41	$12,141.00	Labor SKU
ENCROACHMENT PERMIT	Encroachment Permit [LS]	1	$4,040.71	$4,040.71	Cost Catalog No. F.1-3
SITE SURVEY	Complex >2kft pipe or 2+ dy[LS]	1	$11,238.48	$11,238.48	Cost Catalog No. E.6-13
SPECIAL INSPECTION/CM	[EA]	1	$110,265.89	$110,265.89	Engineer's Estimate
TRAFFIC CONTROL	Traffic Control (Simple) [LS]	1	$20,254.57	$20,254.57	Cost Catalog No. F.5-1
CONTINGENCY (10%)	[EA]	1	$127,418.36	$127,418.36	Engineer's Estimate

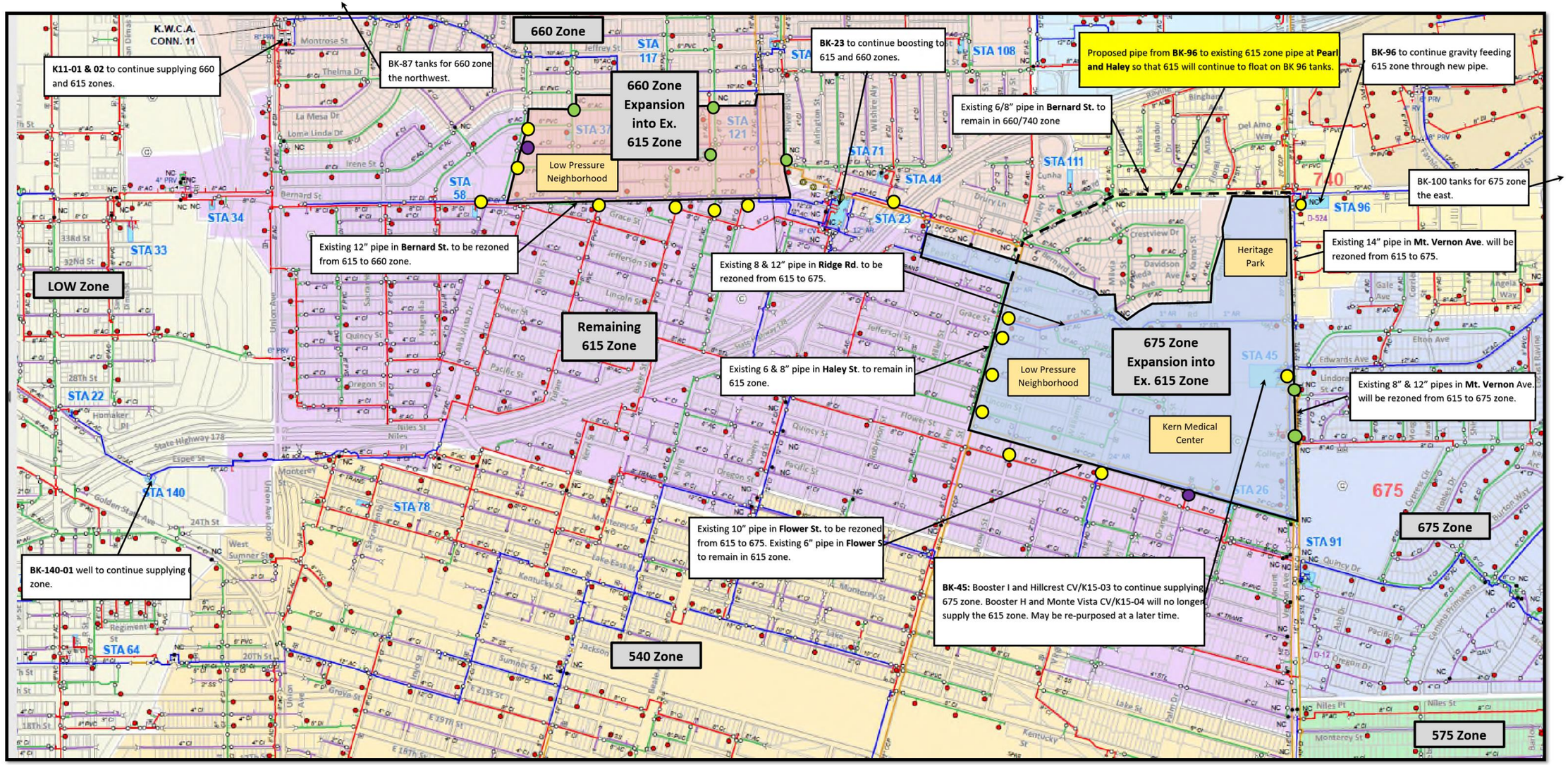
Sub-total = $1,462,860.76
Direct Cost = $1,595,032.99

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123170 Attachments

Attachment A
PID: 123170



Legend:

- Close existing valve for re-zone.
- Open existing valve for re-zone.
- Install new valve for re-zone.
- Portion of 615 zone changed to 675 zone.
- Portion of 615 zone changed to 660 zone.

Attachment A - Bakersfield Zone 615 Re-Zone Plan

Attachment B
PID: 123170

CPUC INFORMAL COMPLAINT REPORT

File Date: 8/22/18	Complaint Number: 462360	
District: Bakersfield	Co. Rep. Contacting Complaint: Doretta Dea	
Customer Name: Kern Medical		
Address: 1700 Flower St		
City: Bakersfield	State: CA	ZIP Code: 93305
Account Number: 0068176422		

NATURE OF COMPLAINT

POLICY AND PRACTICES-Water Rationing/Allocation

08/22/2018 11:23 Customer Writes: "I have been trying to contact a Cal Water rep through their online portal and leaving phone messages as well for a while. The 222 bed hospital (Kern Medical) is getting low pressure alarms on a constant basis. Our incoming pressure is on average 24-28psi with a max of 29 and a low of 11psi. Our systems are having trouble keeping up with the low incoming pressure and want to resolve the situation fast as this is a hospital.

Utility Comment: no response; just a auto form for my submission dated July 2, 2018

Request of CPUC: I would greatly appreciate a couple things if possible. First, I am assuming there are minimum PSI regulations for hospitals that water utilities have to meet; curious to how to get a copy of that. And the second would be an on site meeting with the Cal Water rep to discuss a plan going forward.

Utility Name: California Water Service Co"

Customer has attempted to contact Cal Water on numerous occasions without success. This is a hospital and customer states their incoming pressure is on average 24-28 PSI with a max of 29 and a low of 11 PSI. Their system is experiencing difficulty in keeping up with the low incoming pressure and he wants to discuss this situation with Cal Water for a resolution as soon as possible. He also would like to know the PSI regulations for hospitals that the water utility has to meet. Please address all the issues raised in customer's letter regarding the PSI and respond in writing to BOTH consumer and the CPUC. Those responses must be included in the written letter to the consumer, a copy of which may serve as a report to the CPUC.

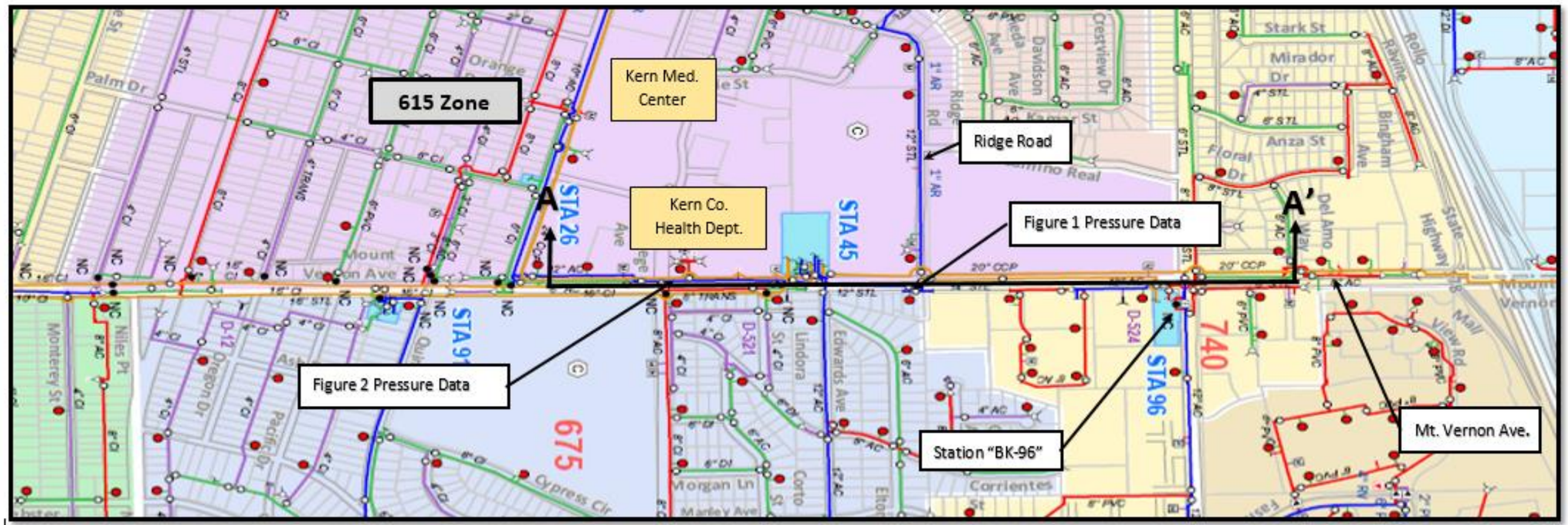
NOT REGULATED - NO JURISDICTION-Nj Customer Service

COMPLIANCE QUESTIONS/CAL WATER RESPONSE

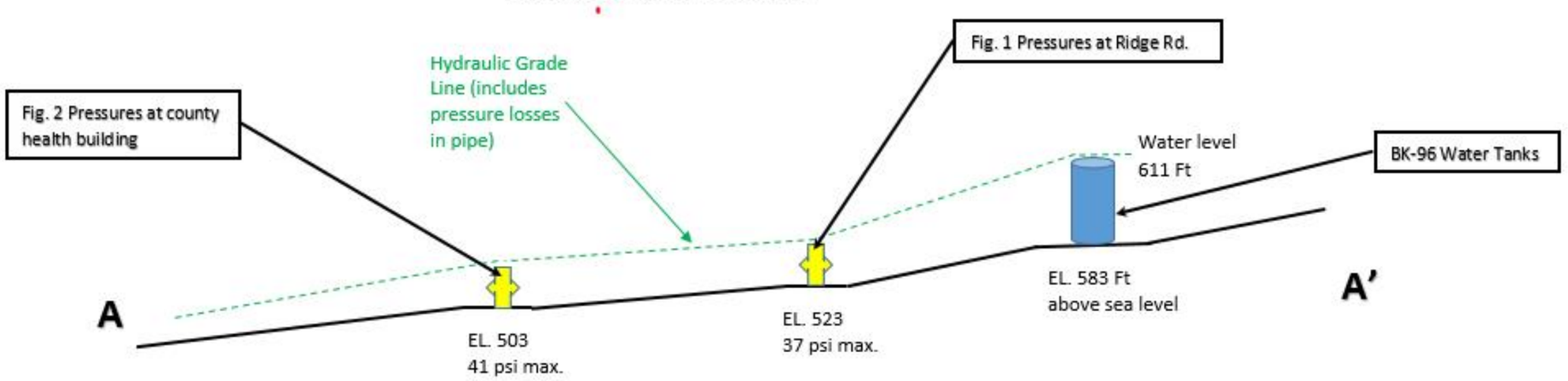
Compliance:

1. Provide tariff reference or cite authority for utility action.
2. Contact customer to resolve complaints.
3. Explain company's position.
4. Suggest means of resolving this complaint.
5. Furnish answer within twenty business days. (If more time is needed, please advise contact representative approximately how much additional time is needed to respond to complaint).
6. Provide all pertinent information including a copy of all related correspondence with the customer.

Attachment C
PID: 123170



Plan View (Not to Scale)

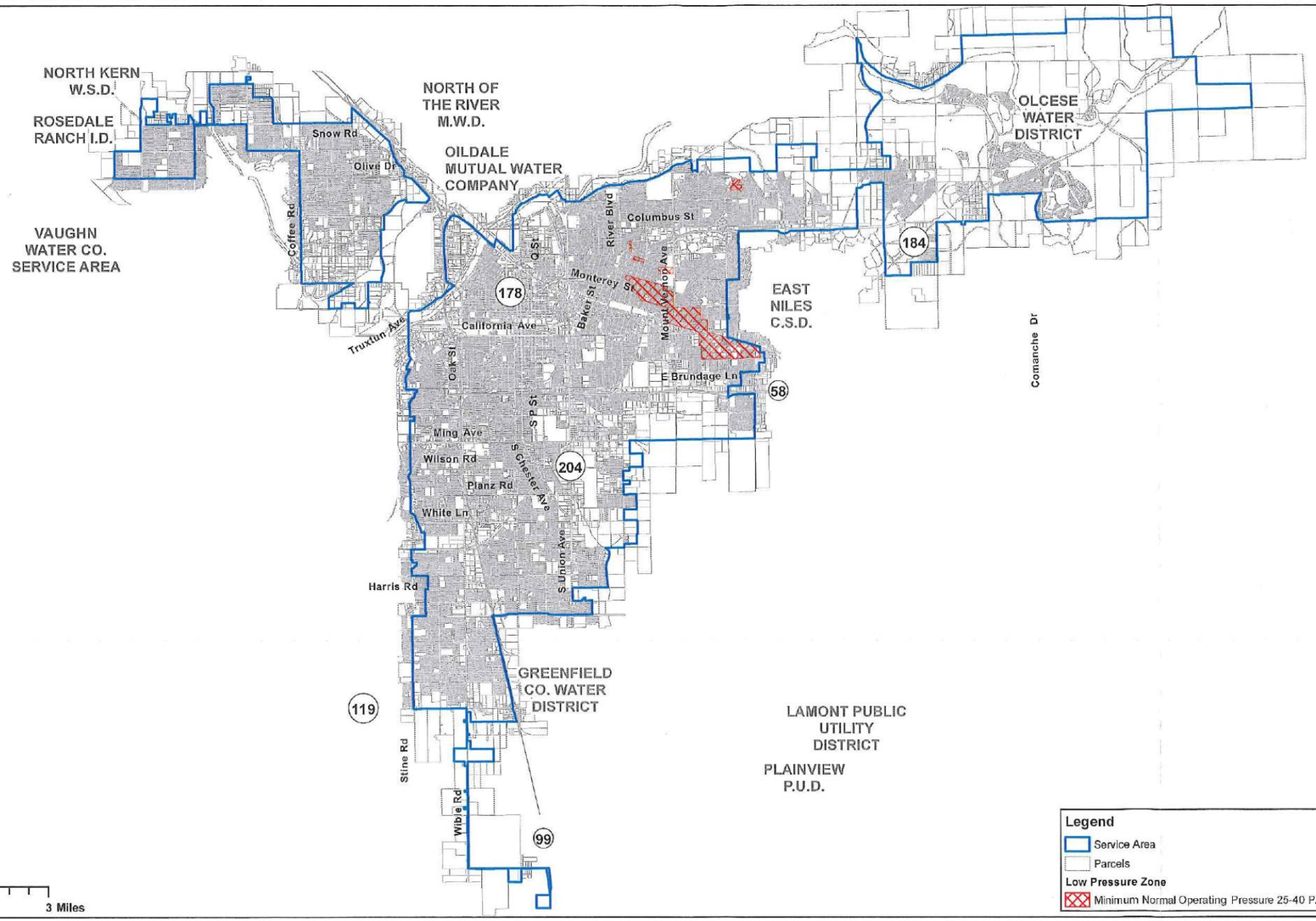


Cross Section A-A' (NTS)

Attachment D
PID: 123170

CALIFORNIA WATER SERVICE
1720 North First Street, San Jose, CA 95112
(408) 367 - 8200

Revised Cal. P.U.C. Sheet No. TBD
Approved by CPUC - Effective 10/31/16
Cancelling Revised Cal. P.U.C. Sheet No. 10186-W



Legend
- Service Area
- Parcels
- Low Pressure Zone
- Minimum Normal Operating Pressure 25-40 P.S.I.

SERVICE AREA MAP FOR BAKERSFIELD DISTRICT

Updated : March 2016

NOTE :
This map may not be considered by the Public Utilities Commission of the State of California as a final conclusive determination or establishment of the dedicated area of service or any other portion thereof.

(To be inserted by Utility)
Advice Letter No. : 2228
Decision No. :

Issued By
Paul Townsley
NAME
Vice President of Rates
TITLE

(To be inserted by Cal. P.U.C.)
Date Filed :
Effective :
Resolution No. :

BK PJ - 106

District – Bakersfield
PID # 123185
Partial Rebuild Station 87

Problem Statement

Bakersfield Station 87 is an existing tank and booster facility that was constructed in 1954 and is slated for pump, motor, discharge piping, and electrical equipment replacement based on condition and performance. Additionally, the existing building and pump shelters that house the existing equipment are in poor condition and require replacement.

Station 87 structures, components, and equipment are under consideration for replacement due to the following factors:

- The existing pump building is over 65 years old. The existing steel building has deteriorated and no longer meets the requirements of the California Building Code.
- There is concern about the vulnerability of the station structures and equipment to environmental factors, including weather and vandalism, due to the integrity. Station 87 is located within a high crime area of Bakersfield.
- Station 87 has lead based paint that needs to be removed and properly disposed.
- All pumps at this station operate below 30% efficiency and are scheduled for replacement.
- The booster pump piping is in poor condition and has been clamped many times due to leaks.
- Station 87 has an inactive well onsite that is out of service due to water quality. Cal Water does not plan to return the well to service and needs to be properly abandoned.
- Multiple upgrades are needed to the electrical components in the existing panelboard, including the starter, motor breaker, and main breaker.
- The existing panelboard has reached its full capacity in terms of space, therefore, a new panelboard is needed to accommodate future station upgrades and have room for the replacement of existing parts.
- The original electrical service installation is not current with PG&E's design standards. Locating routine maintenance and emergency replacement parts is challenging and in the event of an emergency can be costly.

Project Justification

Station 87 is an existing tank and booster station that gravity feeds the 660 zone (Skyline) and pumps to the 780 zone (University). In the event of an emergency, operation staff are able to utilize Station 87 as an emergency booster due to the onsite available storage. For the concerns listed above, Cal Water proposes to replace the existing pump building, three (3) in-building booster pumps, pump shelter, (1) one in-shelter pump, panelboard and components, and abandon the onsite, inactive well. The replacement of the pump building, panelboard, and pumps require extensive site work including relocation of station piping and conduits, replacement of two flowmeters installed on existing piping, and

foundation modifications. Construction of all these components in the same project is recommended to be completed concurrently to minimize station down-time and reduce contractor costs.

Alternative Analysis

1. Replace Recommended Station 87 Components and Abandon Well
    - This project includes the replacement of the existing pump building, three (3) in-building booster pumps, one (1) pump shelter, one (1) in-shelter pump, pump motors and controls, panelboard and components, electrical service and abandon the onsite, inactive well.
    - The project replacements require extensive site work including relocation of station piping and conduits, replacement of two flowmeters installed on existing piping, and foundation modifications.
    - The existing metal-frame pump building will be replaced with a CMU block building. The improved pump building and pump shelter replacement will meet the current California Building Code and provide improved security and access for the equipment and facility.
    - The abandonment of the well includes removal of the existing, metal well-house building.
    - The existing electrical conduit is inside and immediately adjacent to the existing building and therefore, replacement of the existing building will require replacement of the conduit. The new conduit will be configured to ensure both efficient and reliable operation of the rebuilt station
    - Construction of all components in the same project is recommended to be completed concurrently to minimize station down-time and reduce contractor costs.

2. Do Nothing
    - To avoid potential emergency situations, Cal Water is committed to a proactive approach in keeping all necessary assets in fair working condition and providing reliable service to customers. The do nothing alternative will not achieve this and was therefore deemed imprudent and not in the customers' best interest.

Recommended Solution

Replace Station 87 existing pump building, pump shelter, panelboard and electrical components, electrical service, station piping, and conduits, abandon inactive well, with associated site work. For the 2021 General Rate Case (GRC) application, Cal Water is proposing to complete only the design and permitting of the recommended solution given the significant number of unknowns, design challenges, and timing required to complete the design and secure all the necessary permits. Moreover, this approach will enable Cal Water to present a final design as part of the 2024 GRC with a more accurate final project cost and schedule to complete. Design and permitting costs for this project are presented in the attachments below. Total cost for this project, including design and permitting, is estimated to be approximately $700,000 - $1,100,000.

Detailed Project Scope

The scope for the 2021 GRC includes:

- Perform survey, design, and secure all permits.

The proposed scope for the 2024 GRC includes:

- Removal of existing structures, pumps, panelboard, and associated infrastructure.
- Remove old well building, abandon old well, remove well piping and electrical equipment.
- Install replacement pump building and pump shelter.
- Install three (3) vertical turbine pumps/motors and controls.
- Relocation and replacement of necessary station piping and conduits.
- Install replacement flowmeter and vault.
- Install replacement panelboard and components.
- Install replacement electrical service.
- Install station communications.

Customer Benefits

Customers will benefit from a more reliable and up-to-date water system. Pumping efficiency will increase, saving energy expenses.

Project Attachments

Figure 1 – Existing Pump Building
Figure 2 – Inactive Well Building
Figure 3 – Existing Pump Shelter
Figure 4 – Booster Pumps in Building

Cost Estimates

Attachment A – Station 87 Schematic

Figure 1 – Existing Pump Building

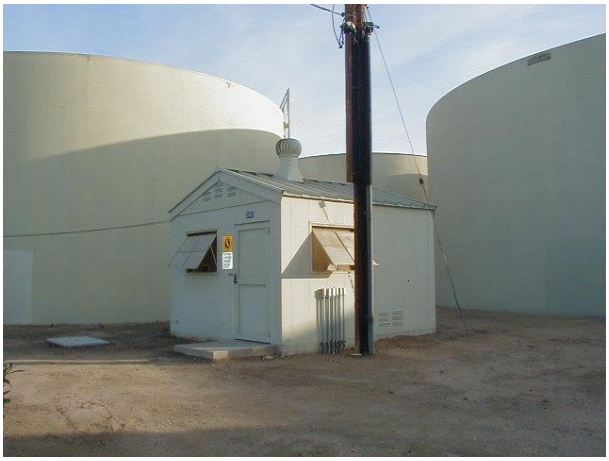


Figure 2 – Inactive Well Building

Figure 3 – Existing Pump Shelter

Figure 4 – Booster Pumps in Building

123185 Cost Estimate

Capital Project Cost Estimate

Project No. : 123185
Description BK 87 Station Rebuild - Design
District / Department: Bakersfield
Project Start Date: 01/01/2023
Project Completion Date: 12/01/2024
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $203,201
Direct Cost: $216,157

Cost Table:

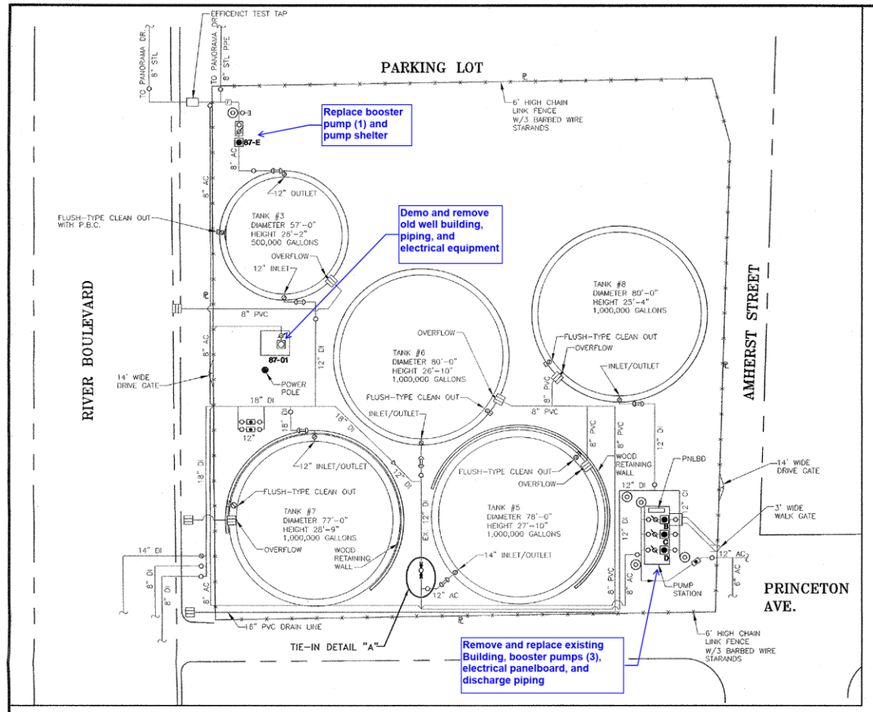
Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CITY PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	20	$107.03	$2,140.60	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	120	$75.29	$9,034.80	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	120	$97.22	$11,666.40	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	200	$93.13	$18,626.00	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	200	$121.41	$24,282.00	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	60	$89.85	$5,391.00	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	260	$121.41	$31,566.60	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	260	$121.41	$31,566.60	Labor SKU
GEOTECH INVESTIGATION	2 Borings [LS]	1	$8,387.63	$8,387.63	Cost Catalog No. E.8-1
LEAD BASE PAINT SURVEY	[EA]	1	$7,638.41	$7,638.41	Engineer's Estimate
SITE SURVEY	Topography Survey [LS]	1	$5,760.92	$5,760.92	Cost Catalog No. E.6-9
STRUCTURAL ENG (BUILDING)	Design for Block Building [EA]	1	$5,785.85	$5,785.85	Cost Catalog No. E.4-2
STRUCTURAL ENG (PANELBOARD)	DesignforEquipmentFoundatn[EA]	1	$932.06	$932.06	Cost Catalog No. E.4-1
CONTINGENCY (20%)	[EA]	1	$33,866.88	$33,866.88	Engineer's Estimate

Sub-total = $203,201.30
Direct Cost = $216,157.12

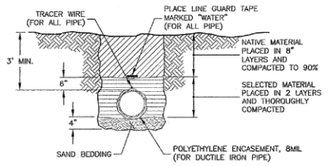
Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

Attachment A
PID: 123185



SITE PLAN
SCALE: 1"=30'



ON-SITE TRENCH DETAIL
N.T.S.

LEGEND:

- TEE
- ELBOW, 45°
- ELBOW, 90°
- BLOWOFF (PROPOSED)
- BLOWOFF (EXISTING)
- GATE VALVE (PROPOSED)
- GATE VALVE (EXISTING)
- REDUCER (PROPOSED)
- REDUCER (EXISTING)
- SOLID PLUG
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- WALL
- SANITARY SEWER
- STORM DRAIN
- FIRE HYDRANT (PROPOSED)
- FIRE HYDRANT (EXISTING)
- BUTTERFLY VALVE
- CHECK VALVE
- FLEX CPLG.
- ALTITUDE VALVE

VICINITY MAP
N.T.S.

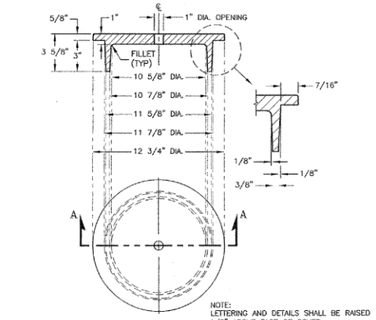
GENERAL NOTES:

1. CONTRACTOR SHALL BECOME FAMILIAR WITH PROJECT SURROUNDINGS, WORKING CONDITIONS, AND SITE LIMITATIONS AND WILL INCLUDE ALLOWANCES IN THEIR BID TO COVER ANY PROJECT CONSTRAINTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO AND COMPLYING WITH LOCAL GOVERNING AGENCY PERMIT RESTRICTIONS, WHICH MAY AFFECT ALLOWABLE WORKING HOURS AND NOISE LEVELS.
3. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AS REQUIRED BY APPLICABLE LOCAL GOVERNING AGENCY. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN PER CALTRANS STANDARDS TO OWNER PRIOR TO CONSTRUCTION, IF REQUIRED. WORK REQUIRING TRAFFIC CONTROL SHALL BE CONDUCTED BETWEEN THE HOURS OF 9:00 A.M. AND 3:30 P.M., MONDAY THRU FRIDAY, OR AS OTHERWISE AUTHORIZED BY LOCAL GOVERNING AGENCY REPRESENTATIVE.
4. CONTRACTOR SHALL APPLY CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) BEST MANAGEMENT PRACTICES TO PREVENT WATER AND SEDIMENT FROM ENTERING NAVIGABLE WATERWAYS. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND INSTALLING THE APPLICABLE AND APPROPRIATE BMPs IDENTIFIED IN THE CASQA – STORMWATER BEST MANAGEMENT PRACTICES HANDBOOK AVAILABLE ONLINE AT WWW.CABMPHANDBOOKS.COM. SOME OF THE REQUIRED PRACTICES MAY OR MAY NOT BE SHOWN ON THIS SITE PLAN.
5. CONTRACTOR TO CONTACT "UNDERGROUND SERVICE ALERT" 48 HOURS PRIOR TO ANY EXCAVATION.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES.
7. TRENCH TO BE SHORED IN ACCORDANCE WITH CALIFORNIA OSHA REGULATIONS.
8. PLACE A CONTINUOUS WIRE AND STRIP OF DETECTOR TAPE OVER ALL PIPES AND EXTEND UP INTO ALL VALVE BOXES. TRACER WIRE IS REQUIRED ON ALL PIPE. (SEE LATEST REVISION OF DRAWING CW-850).
9. SEE LATEST REVISION OF DRAWING CW-435 FOR TYPICAL THRUST BLOCK INSTALLATION.
10. FACILITIES SEPARATION:
    A) WATER MAIN SHALL BE INSTALLED AT LEAST 10 FEET HORIZONTALLY FROM AND ONE FOOT VERTICALLY ABOVE ANY PARALLEL PIPELINE CONVEYING SEWAGE (UNTREATED, PRIMARY, OR SECONDARY), DISINFECTED SECONDARY RECYCLED WATER, OR HAZARDOUS FLUIDS.
    B) WATER MAIN SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM AND ONE FOOT VERTICALLY ABOVE ANY PIPELINE CONVEYING TERTIARY RECYCLED WATER OR STORM DRAINAGE.
    C) AT CROSSINGS, WATER MAIN SHALL BE CONSTRUCTED NO LESS THAN 45-DEGREES TO AND AT LEAST ONE FOOT VERTICALLY ABOVE ANY PIPELINES INDICATED IN A AND B ABOVE.
    D) NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN EIGHT (8) HORIZONTAL FEET OF CROSSING ANY PIPELINES INDICATED IN A AND B ABOVE.
    E) WATER MAIN SHALL NOT BE INSTALLED WITHIN 100 HORIZONTAL FEET OF ANY SANITARY LANDFILL, WASTEWATER DISPOSAL POND, OR HAZARDOUS WASTE DISPOSAL SITE.
    F) WATER MAIN SHALL NOT BE INSTALLED WITHIN 25 HORIZONTAL FEET OF ANY CESSPOOL, SEPTIC TANK, SEWAGE LEACH FIELD, SEEPAGE PIT, UNDERGROUND HAZARDOUS MATERIAL STORAGE TANK, OR GROUNDWATER RECHARGE PROJECT SITE.
11. WHEN ASSEMBLING A PVC C-900 PIPE TO AN IRON FITTING (PUSH-ON OR MECHANICAL JOINT), REMOVE ALL BUT 1/4 INCH OF THE FACTORY-MADE BEVEL FROM THE SPIGOT END OF THE PIPE PRIOR TO INSTALLATION.
12. VALVE CANS AND COVERS SHALL BE PLACED OVER ALL VALVES. COVERS SHALL BE SET TO EXISTING FINISHED GRADE AND RESET IF NECESSARY ONCE THE STREET IS AT FINAL GRADE. (SEE LATEST REVISION OF DRAWINGS CW-14 AND CW-439).
13. NO VALVE COVERS ARE TO LIE IN SIDEWALKS, CROSS GUTTER, CURB OR DRIVEWAYS. EACH SERVICE SHOULD ALSO BE LOCATED TO PROVIDE PROTECTION TO THE METER BOX FROM VEHICLE TRAFFIC AND PARKING.
14. PROTECT UNDERGROUND FLEXIBLE COUPLINGS, BARE STEEL, MJ x MJ SLEEVES, AND ALL BOLTS (INCLUDING STAINLESS STEEL) AS FOLLOWS:
    A) THE ENTIRE AREA OF THE FITTING MUST BE DRY AND FREE OF DUST, DIRT, AND OTHER FOREIGN MATTER. RUST OR OTHER FOREIGN MATTER MUST BE REMOVED BY SCRAPING OR WIRE BRUSHING. WIPING WITH A DRY CLEAN CLOTH MAY BE NECESSARY TO REMOVE THE PARTICLES FROM BRUSH CLEANING. ANY OIL OR GREASE MUST BE REMOVED BY USING A LOW RESIDUE, VOLATILE PETROLEUM SOLVENT BEFORE APPLICATION OF GREASE AND WRAPPING.
    B) THE EXPOSED AREA SHOULD BE COATED WITH A HEAVY COATING OF METALGUARD 301 GREASE BY THE GLOVE METHOD TO A THICKNESS OF AT LEAST 1/4".
    C) FIRMLY WRAP THE ENTIRE GREASE AREA WITH ONE LAYER, HALF-LAPPED, OF A WOVEN GLASS FILAMENT MESH (8ES OR BIT WRAP, 4" WIDE).
    D) APPLY A SECOND LAYER OF METALGUARD 301 GREASE ON TOP OF THE GLASS FILAMENT BY THE GLOVE METHOD TO A THICKNESS OF AT LEAST 1/4".
    E) FIRMLY WRAP THE ENTIRE GREASE AREA WITH A SECOND LAYER, HALF-LAPPED, OF THE WOVEN GLASS FILAMENT MESH.
    F) COVER THE ENTIRE MESH WRAPPED AREA OF THE FITTING WITH A THIRD AND FINAL COATING AT LEAST 1/4" THICK OF METALGUARD 301 GREASE BY THE GLOVE METHOD.
    G) FIRMLY APPLY 2 LAYERS OF POLYWRAP, HALF-LAPPED, OVER ALL AREAS OF THE COATED AND WRAPPED FITTING. BACKFILLING MAY FOLLOW IMMEDIATELY AFTER THIS WRAPPING.
15. TRENCH BACKFILL AND PAVING SHALL CONFORM TO TRENCH SECTION DETAILS AND ALL GOVERNING AGENCY REQUIREMENTS.
16. NEW PIPELINE SHALL BE INSTALLED WITH 4 FEET OF COVER, EXCEPT WHERE SPECIFIED.
17. CONTRACTOR SHALL LIMIT DAILY TRENCHING OPERATIONS TO THE LENGTH OF PIPE THAT CAN BE INSTALLED AND BACKFILLED THAT DAY.
18. CONTRACTOR SHALL INSTALL NEW MAIN AND ADJUST FROM NOMINAL LINE AND GRADE TO MATCH THE EXISTING FACILITIES AT ALL LOCATIONS. THE CONTRACTOR SHALL INSTALL A TEMPORARY CAP AND BLOW-OFF AT TIE-IN LOCATIONS FOR TESTING. (SEE LATEST REVISION OF DRAWINGS CW-122 & CW-638). CONTRACTOR WILL TIE THE NEW MAIN FROM THIS LOCATION.
19. THE NEW PIPELINE SHALL BE TESTED AT 150 PSI FOR A PERIOD OF 4 HOURS. SEE SPECIFICATIONS TO DETERMINE EXACT TESTING REQUIREMENTS.
20. TIE-INS TO BE MADE AT A TIME THAT IS CONVENIENT TO OWNER WHICH MAY BE AT NIGHTS OR WEEKENDS. THE ADDITIONAL COST DUE TO OVERTIME PAY SHALL BE AT OWNER'S EXPENSE.
21. CONTRACTOR SHALL PROVIDE MISC. MATERIAL REQUIRED TO COMPLETE THE TIE-IN SUCH AS, BUT NOT LIMITED TO: PROTECTION COATING MATERIAL FOR PIPE AND FITTINGS, LINEGUARD TAPE, CONCRETE FOR THRUST BLOCKS, EMBEDMENT BACKFILL AROUND AND OVER THE PIPE, FINAL BACKFILL TO MEET COMPACTION REQUIREMENTS, AND PAVEMENT REPLACEMENT.
22. CONTRACTOR SHALL BE RESPONSIBLE TO ABANDON ALL PIPE ENDS BY PLUGGING WITH BRICK AND MORTAR. ABANDON ALL GATE VALVES BY REMOVING COVER, CUT CASING DOWN TO SUBGRADE, AND BACKFILL VALVE CASING WITH CONCRETE SLURRY TO REMOVE VOIDS. REPLACE BASE ROCK AND PERMANENT PAVEMENT AS NECESSARY. WHEN REMOVING EXISTING FITTINGS, CONTRACTOR SHALL ALSO REMOVE EXISTING CONCRETE THRUST BLOCK.
23. CONTRACTOR SHALL RESTORE LAWN, GUTTER, PAVEMENT, BERM, AND CURB TO MATCH EXISTING PER GOVERNING AGENCY'S STANDARDS.
24. SPOILS SHALL NOT REMAIN ON-SITE. DISPOSAL OF ALL PROJECT-GENERATED SPOILS SHALL BE AT A FACILITY LICENSED AND CLASSIFIED TO ACCEPT THE MATERIALS. CONTRACTOR TO PROVIDE OWNER WITH A FORMAL RECEIPT FROM THE ACCEPTING FACILITY. ALL MATERIALS THAT WILL REQUIRE TESTING PRIOR TO DISPOSAL SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE DISPOSAL FACILITY IN ADVANCE OF THE NEED FOR DISPOSAL.
25. THE LIST OF MATERIALS FOR THIS PROJECT IS FOR CWS CO. ESTIMATING AND REFERENCE PURPOSES ONLY, AND IS NOT INTENDED AS A FULL TAKE-OFF OF ALL MATERIALS REQUIRED TO COMPLETE THE PROJECT PER CWS CO. STANDARD SPECIFICATIONS.
26. AT TIE-INS, CONTRACTOR SHALL SPRAY OR SWAB ALL FITTINGS WITH CHLORINE SOLUTION FOR DISINFECTION PRIOR TO FINAL CONNECTIONS.
27. CONTRACTOR TO ENSURE AIR IN THE PIPELINE IS REMOVED USING EXISTING OUTLETS SUCH AS FIRE HYDRANTS AND BLOW OFFS. CONTRACTOR IS RESPONSIBLE FOR INSTALLING AIR RELEASES IF EXISTING OUTLETS ARE INSUFFICIENT.
28. ALL WORK SHALL COMPLY WITH CAL WATER SPECIFICATIONS FOR MATERIALS, INSTALLATION, DISINFECTION AND DECHLORINATION PER LATEST REVISION OF DRAWING CW-863.
29. ALL SLIP-ON WELDING FLANGES SHALL BE RAISED-FACE SLIP-ON WELDING FLANGES.

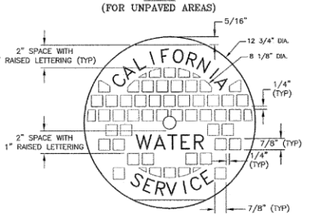
BILL OF MATERIAL

QTY	DESCRIPTION
±6'	12" DI PIPE
1	12" GATE VALVE PO, 125# w/FIELD-LOK GASKET
2	12" SOLID SLEEVE MJ
1	VALVE CASING AND COVER ASSEMBLY
AS NEEDED	POLY WRAP FOR DI PIPE
AS REQ'D	TRACER WIRE #12 AWG STRANDED COPPER
AS REQ'D	LINEGUARD TAPE
AS REQ'D	METAL GUARD

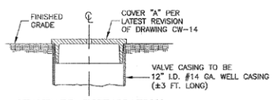
REFERENCE LIST ONLY – CONTRACTOR TO VERIFY AND OBTAIN ALL MATERIALS REQUIRED TO COMPLETE THE PROJECT.



COVER
(FOR UNPAVED AREAS)

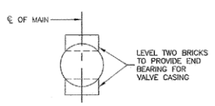


TOP VIEW OF COVER

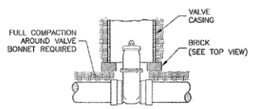


STANDARD INSTALLATION
(IN UNPAVED AREAS)

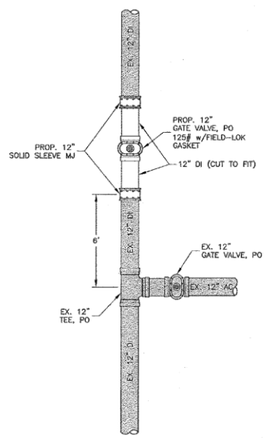
NOTE:
TO EXTEND AN EXISTING STANDARD UNPAVED INSTALLATION: REMOVE COVER, TACK WELD ADDITIONAL STEEL CASING AS REQUIRED, AND REPLACE COVER.



VALVE CASING FOOTING
TOP VIEW
N.T.S.



VALVE CASING FOOTING
SIDE VIEW
N.T.S.



TIE-IN DETAIL "A"
N.T.S.

ENGINEERING
CALIFORNIA WATER SERVICE
DEPARTMENT

REVISIONS:

	DATE:	INIT.
CONSTRUCTION MAP		
PLAT SHEET		
SYSTEM SCHEMATIC		
STATION SCHEMATIC		

PLAT SHEET NO.:

SCALE:

DRAWN BY: D.HEARN
DESIGNED BY: J.HUYNH
CHECKED BY: DATE:
APPROVED BY: DATE: 1/3/16

REGISTERED PROFESSIONAL ENGINEER
ERIN MAUREEN MCCALLEY
No. C68004
CIVIL
STATE OF CALIFORNIA

TITLE:
BAKERSFIELD STATION 87
ISOLATION VALVE INSTALLATION

DISTRICT: BAKERSFIELD
DATE: 1-6-2015
PROJECT ID.: 00101575
DRAWING NO.: BK-11299
SHT 1 OF 1

District – Bakersfield
PID # 123190
Flowmeter & Building, Panelboard Replacement Station 116

Problem Statement

Station 116 is an existing tank and booster facility that was acquired in the acquisition of the Crest Water Company. The existing site has four (4) existing tanks and five (5) booster pumps that supply water to the 780, 880, and 930 pressure zones. Due to its age, the existing pump house building has deteriorated and no longer meets the requirements of the California Building Code. The existing electrical panelboard, pump house building, and adjacent single-pump (Pump G) shelter have been identified for replacement based on age, risk of failure, and current condition.

Project Justification

Station 116 is a tank and booster facility that was acquired with the acquisition of the Crest Water Company. The existing onsite storage tanks gravity feed the 780 zone and pump to the 880 and 930 zones. The 930 zone is solely dependent on the booster pumps at Station 116, 148, and 147 to set and maintain the pressure within the zone. Station 147 is currently out of service due to the condition of the onsite storage tank and Cal Water plans to address this issue with PID # 124745.

The Station 116 components are under consideration for replacement due to the following factors:

- Most of the electrical components within the station are more than 50 years old and have reached the end of their service life.
- Station 116 has lead based paint that needs to be removed and properly disposed.
- The existing electrical conduits are inside and immediately adjacent to the existing building and therefore, replacement of the existing building will require replacement of the conduit.
- Station 116 is located within a high crime area of Bakersfield and the integrity of the building has left it and the equipment inside vulnerable to vandalism and the elements. Cal Water proposes to replace the existing metal frame building pump building with a CMU block building and replace Booster G's pump enclosure.
- Multiple upgrades are needed to the electrical components in the existing panelboard, including the starter, motor breaker, and main breaker. The size of the existing enclosure will not be able to accommodate the replacement of existing parts, nor station upgrades to pump and/or motor size, as the panelboard has reached its full capacity in terms of space, therefore, a new panelboard is needed.
- There is currently no flowmeter to track production from Booster Pumps F & G at Station 116 A new flowmeter with vault is combined with this project scope to help minimize station down time for construction and reduce contractor costs.

In order to assure safety for Cal Water's operators and continued reliability of the water supply and distribution system in the area of Station 116, the following components should be replaced: electrical panelboard, pump house building, pump shelter, and electrical conduits. In order to accurately record flow from Station 116, a flowmeter and vault will be installed as part of this project.

Alternative Analysis

1. Replace Pump House, Pump Shelter, Panelboard, Conduits and Install Flowmeter
    - The new structures will meet the current California Building Code and provide improved protection and access for the equipment and facility.
    - The new panelboard will be sized to accommodate necessary component upgrades and ensure reliable station operations.
    - The new conduit will be configured to ensure both efficient and reliable operation of the rebuilt station.
    - A new flowmeter will allow for accurate metering and demand analysis.

2. Replace Panelboard Without Replacing the Building
    - Due to the high crime rate in the neighborhood, Cal Water would prefer to replace the electrical panel in a secure building to reduce chance of vandalism and/or damage.

3. Do Nothing
    - Repair/replace electrical components as needed based on failure.
    - Does not provide additional reliability to station/zone.
    - Failure of equipment could lead to loss of pressure.

Recommended Solution

Cal Water proposes to replace the existing pump house building, single-pump shelter, electrical panelboard, and conduits at Station 116 to provide additional reliability to the 780, 880, and 930 zones and install a new flowmeter for accurate metering and demand analysis.

Detailed Project Scope

- Remove existing electrical panelboard, building, foundation, pump shelter, and associated appurtenances.
- Install new electrical panelboard, conduits, foundation, flowmeter and vault, pump house building, pump shelter, and associated appurtenances.

Customer Benefits

The Station 116 panelboard & building replacement project will ensure a reliable source of high quality water continues to be provided to customers and that the required fire flow capacity is maintained. This project will also provide additional reliability to the 780, 880, and 930 zones given the age and condition of the existing equipment at Station 116 and provide a needed flowmeter for accurate demand tracking.

Project Attachments

Figure 1 – Existing Pump House Building, Inside Peeling Paint
Figure 2 – Existing Panelboard
Figure 3 – Existing Pump Shelter
Figure 4 – Existing SCADA Controls & Pressure Switches

Cost Estimates

Attachment A – Station Schematic
Attachment B – Lead Paint Survey Quote
Attachment C – Shelter Install Quote

Figure 1 – Existing Pump House Building, Inside Peeling Paint

Figure 2 – Existing Panelboard

Figure 3 – Existing Pump Shelter

Figure 4 – Existing SCADA Controls & Pressure Switches

123190 Cost Estimate

Capital Project Cost Estimate

Project No. : 123190
Description BK 116 PB & Building Replacement
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/01/2023
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $706,988
Direct Cost: $752,064

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
BOOSTER SHELTER	4ftx7ftx3ftH [EA]	1	$11,379.00	$11,379.00	Cost Catalog No. C.1-6
BOOSTER SHELTER FOUNDATION	Equipment [EA]	1	$5,049.09	$5,049.09	Cost Catalog No. A.14-1
BOOSTER SHELTER INSTALL	[EA]	1	$6,167.94	$6,167.94	Engineer's Estimate
CITY PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CMU BUILDING	New Bldng <1,000 SF [SF]	440	$312.75	$137,610.00	Cost Catalog No. A.9-1
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	10	$107.03	$1,070.30	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	40	$75.29	$3,011.60	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	80	$145.83	$11,666.40	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	200	$121.41	$24,282.00	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	220	$93.13	$20,488.60	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	200	$121.41	$24,282.00	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	40	$89.85	$3,594.00	Labor SKU
ELEC PANELBOARD	600 Amp [EA]	1	$68,506.38	$68,506.38	Cost Catalog No. D.3-3
ELECTRICAL INSTALL	600 A, Indoor Panelboard [LS]	1	$137,731.60	$137,731.60	Cost Catalog No. B.3-6
FLOWMETER	12in Magmeter [EA]	1	$8,402.46	$8,402.46	Cost Catalog No. C.6-4
FLOWMETER (12")	12in Magmeter [EA]	1	$8,402.46	$8,402.46	Cost Catalog No. C.6-4
FLOWMETER INSTALL	New Flow meter and vault [LS]	1	$58,540.00	$58,540.00	Cost Catalog No. A.34-3
HYDRAULIC ENCLOSURE	Hydraulic Enclosure [EA]	1	$7,435.35	$7,435.35	Cost Catalog No. D.7-1
LEAD PAINT SURVEY	[EA]	1	$7,638.41	$7,638.41	Engineer's Estimate
PRESSURE TRANDUCERS	Pressure Transducer [EA]	5	$790.63	$3,953.15	Cost Catalog No. D.8-1
RTU PANEL	RTU Panel/Radio Panel [EA]	1	$6,766.23	$6,766.23	Cost Catalog No. D.5-1
SPECIAL INSPECTION/CM	[EA]	1	$25,574.33	$25,574.33	Engineer's Estimate
STRUCTURAL ENG	Design for Block Building [EA]	1	$5,785.85	$5,785.85	Cost Catalog No. E.4-2
CONTINGENCY	[EA]	1	$113,095.36	$113,095.36	Engineer's Estimate

Sub-total = $706,988.06
Direct Cost = $752,063.73

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123190 Cost Basis Worksheet

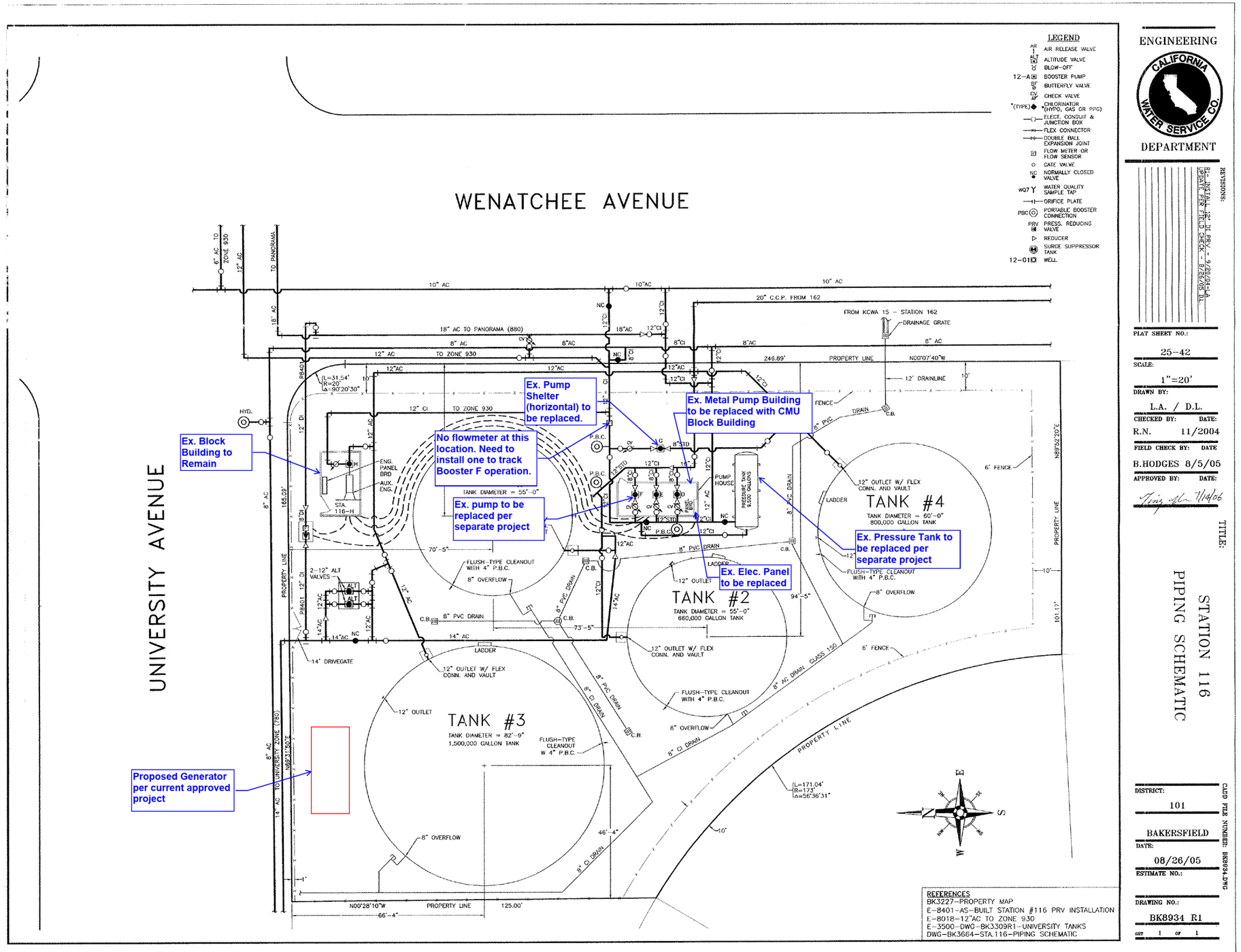
Cost Basis Worksheet

Funding Project ID	123190
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 6,000.00	1	2018	$ 6,167.94	Shelter Install	BK 129 Bid List, Item 12
2	$ 6,915.00	1	2016	$ 7,638.41	Lead Paint Survey (Env)	PO#0000099376 Line 2

Attachment A
PID: 123190

123190 Attachments



ENGINEERING
CALIFORNIA WATER SERVICE CO.
DEPARTMENT

REVISIONS:
B:- INSTALL 12" DI PRV - 9/29/04-LA
UPDATE PER FIELD CHECK - 8/26/05 DL

PLAT SHEET NO.: 25-42
SCALE: 1"=20'
DRAWN BY: L.A. / D.L.
CHECKED BY: R.N. DATE: 11/2004
FIELD CHECK BY: B.HODGES 8/5/05 DATE
APPROVED BY: DATE: 7/14/06

TITLE:
STATION 116
PIPING SCHEMATIC

DISTRICT: 101
BAKERSFIELD
DATE: 08/26/05
ESTIMATE NO.:
DRAWING NO.: BK8934 R1
SHT 1 OF 1

CADD FILE NUMBER: BK8934.DWG

Attachment B
PID: 123190

Purchase Order

Dispatch via E-Mail

Purchase Order	Date	Revision	Page
CWSCO 0000099376	12/27/2016		2
Payment Terms	**Freight Terms**		**Ship Via**
N30	DESTINATION		BST METHOD
Buyer	**Phone**		**Currency**
Soria, Kelly (ENG)			USD

CALIFORNIA WATER SERVICE CO.
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598
Phone: 408-367-8200
Fax: 408-392-9797

Ship To: General Office
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598

Supplier: 0000033970
E2 MANAGETECH, INC.
5000 E. SPRING ST., SUITE 720
LONG BEACH CA 90815
Fax: 5627401070

Bill To: accountspayable@calwater.com
OR
PO Box 49033
San Jose CA 95161-9033

Tax Exempt? N **Tax Exempt** **Replenishment Option:** Standard

Line-Sch	Item/Description	Vendor Item-ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	Station 45		1.00	AMT	6,915.00	6,915.00	12/31/2016
		Schedule Total				6,915.00	
	CWS Item ID:	**Item Total**				6,915.00	
2- 1	Station 129		1.00	AMT	6,915.00	6,915.00	12/31/2016
		Schedule Total				6,915.00	
	CWS Item ID:	**Item Total**				6,915.00	

PER ATTACHED PROPOSAL DATED 11/22/2016 (REVISED 11/23).

Total PO Amount 13,830.00

PLEASE SIGN AND EMAIL TO PURCHASEORDER@CALWATER.COM OR FAX PURCHASE ORDER TO (408) 392-9797 PRIOR TO SHIPPING GOODS OR COMMENCING SERVICE

	Unauthorized	

BK PJ - 120

Attachment C
PID: 123190

rev. 1/15

CONSTRUCTION AGREEMENT

THIS AGREEMENT made and entered into this _____ day of _____, 2_____ by and between **Bronco Electric, Inc.** (hereinafter "Contractor"), and **CALIFORNIA WATER SERVICE COMPANY,** a California corporation (hereinafter "Owner").

RECITALS

A. Owner desires to have Contractor do the work herein provided to be done and Contractor has fully familiarized himself with the Contract as defined in Paragraph 8 of the Construction Agreement (including the contract form, Drawings and Specifications) and has visited the site and fully satisfied himself as to existing conditions that might in any manner affect the work under this Contract, and desires to do the work provided to be done in this Contract; and

B. Contractor represents that he is licensed to engage in the construction of the work contemplated by this Contract pursuant to the California Business and Professions Code.

AGREEMENT

NOW, THEREFORE, the parties hereto, in consideration of the covenants, conditions and other considerations hereinafter set forth, agree as follows:

1. CONTRACT PRICE. Contractor agrees to perform all of the work to be done under this Contract in the manner required for the sum specified or to be determined as provided below, and Owner agrees to pay Contractor said sum, viz:

Item	Description	Unit	Quantity	Unit Price	Total Cost
1	Mobilization, Demobilization, site clean-up, and restoration	LS	1	3,500.00	3,500.00
2	Demolish & dispose of existing 12'x12' Pump Building per EnSafe Inc.'s Hazardous Materials Report (attached) recommendations and all applicable Federal & California OSHA Material Abatement Standards. Contractor to employ certified third party Lead/Asbestos Abatement Contractor to perform the removal and disposal of the Existing Pump Building.	LS	1	9,150.00	9,150.00
3	Remove & dispose of existing Panelboard, RTU Panel, & miscellaneous equipment inside Pump Building per Pre-Bid Site Walk. Contractor to coordinate with CWS to allow CWS to salvage any existing equipment from the Pump Building prior to disposal.	LS	1	1,200.00	1,200.00
4	Remove & dispose of existing Pump Building concrete pad and stoop. Contractor to protect the existing pump pedestal and check valve support in place during the removal of the building foundation.	LS	1	4,300.00	4,300.00
5	Remove & dispose of existing onsite service pole. Contractor to dispose of service pole per current standards.	LS	1	2,610.00	2,610.00
6	Remove & dispose of existing Conduits and wires not required per the contract drawings.	LS	1	3,500.00	3,500.00
7	Furnish & supply all equipment, labor, materials, and supervision necessary to install all underground and overhead conduits and conduit fittings shown on the Contract Drawings. Supply, pull, and terminate all required wiring in accordance with the project's Electrical Drawings & Details. Field wiring interconnections shall be in accordance with the Panelboard Manufacturer's drawings and recommendations. Contractor to notify CWS Engineer in the case that any	LS	1	12,550.00	12,550.00

Attachment C
PID: 123190

3/11 rev.

	problems or questions arise. Contractor to coordinate the inspection of eufer ground and all trenches and conduits with CWS prior to backfill. All work shall meet current NEC requirements.				
8	Furnish & supply all equipment, labor, materials, and supervision necessary to install all underground conduits and conduit fittings per PG&E Contract Drawings (PM-31336682 Dated 9/29/2017). Contractor to coordinate and schedule all required PG&E Inspections with PG&E Inspectors.	LS	1	2,650.00	2,650.00
9	Reroute & install new water supply lines from flowmeter vault and well discharge piping to the Hydraulic Enclosure per contract drawings and CWS Field directives.	LS	1	4,500.00	4,500.00
10	Construct outdoor Panelboard & Hydraulic Enclosure concrete foundation with underground conduit stub-ups per the contract drawings. Contractor to employ third party Testing/Inspection firm for compaction testing, rebar placement inspection, concrete placement inspection, and concrete sampling and testing. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	7,500.00	7,500.00
11	Construct Acoustical Shelter concrete foundation with underground conduit stub-ups per the contract drawings. Contractor to employ third party Testing/Inspection firm for compaction testing, rebar placement inspection, concrete placement inspection, and concrete sampling and testing. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	7,100.00	7,100.00
12	Offload, install, and anchor new Acoustical Shelter over existing well motor per the Contract Drawings and the Shelter manufacturer's recommendations. Contractor to field verify anchor bolt layout based on actual equipment furnished. Acoustical Shelter to be supplied by CWS. Contractor to coordinate delivery to site with CWS. Contractor to employ third party Testing/Inspection firm for anchorage and epoxy inspections. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	6,000.00	6,000.00
13	Offload, install, and anchor new Panelboard per Contract Drawings and the Panelboard manufacturer's recommendations. Contractor to field verify anchor bolt layout based on actual equipment furnished. Panelboard to be supplied by CWS. Contractor to coordinate delivery to site with CWS. Contractor to employ third party Testing/Inspection firm for anchorage and epoxy inspections. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	3,200.00	3,200.00
14	Furnish & supply all equipment, labor, materials, and supervision necessary to install & anchor the Hydraulic Enclosure Cabinet per the Contract Drawings. Hydraulic Enclosure Cabinet to be supplied by CWS. Contractor to furnish and supply all materials necessary to mount and anchor the proposed Cabinet. Contractor to employ third party Testing/Inspection firm for anchorage and epoxy inspections. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	1,200.00	1,200.00
15	Contractor to employ C&H Fence to furnish and install Shade Cover over Panelboard & Hydraulic Enclose per contract drawings.	LS	1	4,440.00	4,440.00

Attachment C
PID: 123190

rev. 1/15

16	Relocate existing Hose bibb and associated piping. Contractor to verify desired location with CWS Engineer prior to relocation.	LS	1	2,500	2,500.00
17	Startup and commission all electrical components shown in the Contract Drawings.	LS	1	1,800.00	1,800.00
				PROJECT TOTAL:	$77,700.00
				NOTE: ANY ADDITIONAL ITEMS NOT LISTED ABOVE, BUT THAT ARE SHOWN ON THE PLANS SHALL BE CONSIDERED PART OF THIS CONTRACT AMOUNT.	

Project Total : Seventy Seven Thousand seven hundred and no cents.

Such sum is subject to being decreased or increased and to withholdings and deductions as provided herein. It is understood that all sales, use and other taxes are included in the above sum and are not to be paid in addition by Owner.

2. COMMENCEMENT AND COMPLETION OF WORK. Contractor agrees to complete performance of the Contract work in accordance with Section 6 of the Construction Agreement. Contractor shall begin performance of this Contract not later than February 5, 2018, and shall diligently prosecute performance thereof until completion not later than April 2, 2018.

3. WORK TO BE DONE. The word "Work" used in the sense of the work to be done by Contractor in performance of this Contract includes all acts to be performed, labor to be supplied and all materials, tools, supplies, equipment, cartage, and other facilities, and Contractor's superintendence required for the full, timely and complete performance of the Contract. Power is included in such work, and provided by Contractor, unless and to the extent the Specifications may specifically provide it is to be furnished by Owner. Work means the materials, supplies, items, equipment and services set forth in the Drawings and Specifications identified in Paragraph 9 and any approved revisions or interpretations thereto, including field directives, change orders, requests for information, submittal endorsements or inspector non-compliance notices.

4. PERFORMANCE OF CONTRACT. All work to be done hereunder shall be done in a good, workmanlike and substantial manner and in strict accordance with the Drawings and Specifications, so as to satisfy the Engineer that this Contract and all its requirements have been fully observed, performed and completed.

5. COMPLETION. The Work shall not be deemed completed within the meaning hereof unless and until the Engineer has made his final inspection and has certified in writing to Owner that the Contract has been fully performed and a Notice of Completion filed. Owner agrees that the Engineer will promptly commence inspection upon actual receipt of written notice from Contractor that the Work has been completed and is ready for inspection.

6. LIQUIDATED DAMAGES. It is mutually agreed that since the Work to be completed hereunder will become an integral part of the water system whereby Owner renders its service of supplying water to public consumers and since Owner is relying upon completion of the Work on or before the date hereinbefore specified, it would in fact be impracticable, or at best extremely difficult, to determine the actual damage suffered by Owner in the event Contractor did not complete the Work within the time specified hereby. Accordingly, the parties agree that if the Work is not completed by Contractor within such time, the sum of $400 for every calendar day thereafter during which the Work remains uncompleted shall be conclusively presumed to be the amount of damages sustained by Owner by reason of Contractor's breach of his agreement to complete the Work within the specified time, and that this sum shall be and represents liquidated damages and shall not be or be deemed to be a penalty or a forfeiture. This provision for liquidated damages shall be applicable both to situations where Contractor completes the Work but completes it late and where Contractor abandons the Contract. **Strict performance of this Contract is hereby declared to be of the essence, and substantial performance of the terms of this Contract in good faith and without willful failure shall not be sufficient.**

7. TIME OF ESSENCE. Time is of the essence of this Contract and of each and every covenant and condition thereof.

8. CONTRACT. The Contract is made up of and includes the Construction Agreement, the Drawings and the Specifications identified in Paragraph 9 including, but not limited to, any approved written revisions to or interpretations of said Drawings and Specifications. The Contract is the entire contract between the parties and there are no other representations or warranties. The Contract may not be amended or modified in any way or at any time by oral agreements by any officers or representatives of either party, but shall be amended or modified only by written amendments or modifications executed by both parties.

9. IDENTIFICATION OF DRAWINGS AND SPECIFICATIONS.

The Drawings referred to herein and forming a part of this Contract are identified in the following manner:

Drawing Number: Drawing Description

BK-11412: Site Plan (1 Sheet)

BK-11413: Single-Line Diagram (1 Sheet)

BK-11414: Electrical Schematic (1 Sheet)

BK-11415: Conduit Layout Plan & Details, Electrical Details (2 Sheets)

BK-11416: Metering Panel & Panelboard Layout, Panelboard Details (3 Sheet)

District – Bakersfield
PID # 123193
Station 148 Building & Panelboard Replacement

Problem Statement

Station 148 is an existing tank and booster facility that was acquired in the acquisition of the Crest Water Company. The existing site has two 500,000 gallon tanks and two booster pumps that supply water to the 930 zone. Station 148 is also the only active station with emergency power that supports the 930 zone which makes it a critical station. In order to further ensure reliability for the 930 zone and continuous operation of this station, Cal Water proposes to replace the existing electrical panel board and building at Station 148. The existing electrical panelboard, building, and pump shelter have been identified for replacement based on age, risk of failure, and current condition.

Project Justification

Station 148 is a tank and booster facility that was acquired with the acquisition of the Crest Water Company. The existing onsite storage tanks are filled from the 880 zone and supply the boosters that pump to the 930 zone. The 930 zone is solely dependent on the booster pumps at Station 148, 116, and 147 to set and maintain the pressure within the zone, with Station 147 currently out of service due to mechanical failure of pumping equipment and deterioration of the onsite storage tank.

The Station 148 components are under consideration for replacement due to the following factors:

- Most of the components within the station are over 50 years old and reached the end of their service life.
- Due to its age, the existing building has deteriorated and no longer meets the requirements of the California Building Code.
- Station 148 also has lead based paint that needs to be removed and properly disposed.
- Station 148 is located within a high crime area of Bakersfield and the integrity of the building has left it and the equipment inside vulnerable to vandalism and the elements. Cal Water proposes to replace the existing metal frame building with a new wood frame building and replace the booster pump enclosure.
- The existing electrical conduit is inside and immediately adjacent to the existing building and therefore, replacement of the existing building will require replacement of the conduit.
- Multiple upgrades are needed to the electrical components in the existing panelboard, including the starter, motor breaker, and main breaker. The size of the existing enclosure will not be able to accommodate the replacement of existing parts, nor station upgrades to pump and/or motor size, as the paneboard has reached its full capacity in terms of space, therefore, a new panelboard is needed.

In order to assure safety for Cal Water's operators and continued reliability of the water supply and distribution system in the area of Station 148, the following components should be replaced: electrical panelboard, building, pump shelter, and electrical conduits.

The new structures will meet the current California Building Code and provide improved protection and access for the equipment and facility. The existing electrical conduit is inside and immediately adjacent to the existing building and therefore, replacement of the existing building will require replacement of the conduit. The new conduit will be configured to ensure both efficient and reliable operation of the rebuilt station. Station 148 has original panelboards with some updated components. Multiple upgrades are needed to the electrical components in the existing panelboard, including the starter, motor breaker, and main breaker. The size of the existing enclosure will not be able to accommodate the replacement of existing parts, nor station upgrades to pump and/or motor size, as the panelboard has reached its full capacity in terms of space, therefore, a new panelboard is needed.

Construction of all these components in the same project is recommended to be completed concurrently to minimize station down time and reduce contractor costs.

Alternative Analysis

1. Replace Building, Panelboard, Pump Shelter & Conduits
    - The new structures will meet the current California Building Code and provide improved protection and access for the equipment and facility.
    - The new panelboard will be sized to accommodate necessary component upgrades and ensure reliable station operations.
    - The new conduit will be configured to ensure both efficient and reliable operation of the rebuilt station.

2. Replace Panelboard Without Replacing the Building
    - Due to the high crime rate in the neighborhood, Cal Water plans to install an electrical panel in a secure location to reduce chance of vandalism and/or damage.

3. Do Nothing
    - Repair/replace electrical components as needed based on failure
    - Does not provide additional reliability to station/zone
    - Failure of equipment could lead to loss of pressure

Recommended Solution

Cal Water proposes to replace the existing electrical panelboard, building, conduits, and pump enclosures at Station 148 to provide additional reliability to the 930 zone.

Detailed Project Scope

- Remove existing electrical panelboard, building, foundation, pump shelter, and associated appurtenances.

- Install new electrical panelboard, conduits, foundation, building, pump enclosure, and associated appurtenances.

Customer Benefits

The Station 148 Panelboard & Building Replacement project will ensure a reliable source of high quality water continues to be provided to customers and that the required fire flow capacity is maintained. This project will also provide additional reliability to the 930 zone given the age and condition of the existing equipment at Station 148.

Project Attachments

Figure 1 – Existing Building – Front
Figure 2 – Existing Building – Back
Figure 3 – Existing Pump Shelter

Cost Estimates

Attachment A – Station Schematic
Attachment B – Lead Paint Survey Quote
Attachment C – Shelter Install Quote

Figure 1 – Existing Building – Front

Figure 2 – Existing Building – Back

Figure 3 – Existing Pump Shelter

123193 Cost Estimate

Capital Project Cost Estimate

Project No. : 123193
Description BK 148 PB & Building Replacement
District / Department: Bakersfield
Project Start Date: 01/01/2023
Project Completion Date: 12/01/2024
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $388,968
Direct Cost: $424,112

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
BOOSTER SHELTER	6ftx6ftx8ftH [EA]	1	$17,432.00	$17,432.00	Cost Catalog No. C.1-4
BOOSTER SHELTER FOUNDATION	Equipment [EA]	1	$5,049.09	$5,049.09	Cost Catalog No. A.14-1
BOOSTER SHELTER INSTALL	[EA]	1	$6,167.94	$6,167.94	Engineer's Estimate
BUILDING	New Bldng <1,000 SF [SF]	225	$312.75	$70,368.75	Cost Catalog No. A.9-1
CITY PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
CWS DISTRICT EMT LABOR	CW-EMT LABOR [HR]	80	$145.83	$11,666.40	Labor SKU
CWS DISTRICT FIELD LABOR	CW-LABOR-FIELD LABOR [HR]	40	$75.29	$3,011.60	Labor SKU
CWS DISTRICT MANAGER LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	10	$107.03	$1,070.30	Labor SKU
CWS ENG CIVIL LABOR	CW-Civil Eng LABOR [HR]	200	$58.33	$11,666.40	Labor SKU
CWS ENG DRAFTING LABOR	CW-LABOR-DRAFTING [HR]	200	$102.44	$20,488.60	Labor SKU
CWS ENG ELEC LABOR	CW-Elect Eng LABOR [HR]	160	$151.76	$24,282.00	Labor SKU
CWS ENG LABOR	CW-SCADA Tech LABOR [HR]	40	$89.85	$3,594.00	Labor SKU
ELEC PANELBOARD	200 Amp [EA]	1	$41,931.04	$41,931.04	Cost Catalog No. D.3-1
ELECTRICAL INSTALL	200 A, Indoor Panelboard [LS]	1	$66,429.75	$66,429.75	Cost Catalog No. B.3-5
LEAD PAINT SURVEY	[EA]	1	$7,638.41	$7,638.41	Engineer's Estimate
RTU	RTU Panel/Radio Panel [EA]	1	$6,766.23	$6,766.23	Cost Catalog No. D.5-1
SCADA PAK	SCADA Pack [EA]	1	$2,765.44	$2,765.44	Cost Catalog No. D.6-1
SPECIAL INSPECTION	[EA]	1	$14,071.47	$14,071.47	Engineer's Estimate
STRUCTURAL ENG	Design for Block Building [EA]	1	$5,785.85	$5,785.85	Cost Catalog No. E.4-2
CONTINGENCY	[EA]	1	$62,227.17	$62,227.17	Engineer's Estimate

Sub-total = $388,967.99
Direct Cost = $424,111.98

Notes:
1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123193 Cost Basis Worksheet

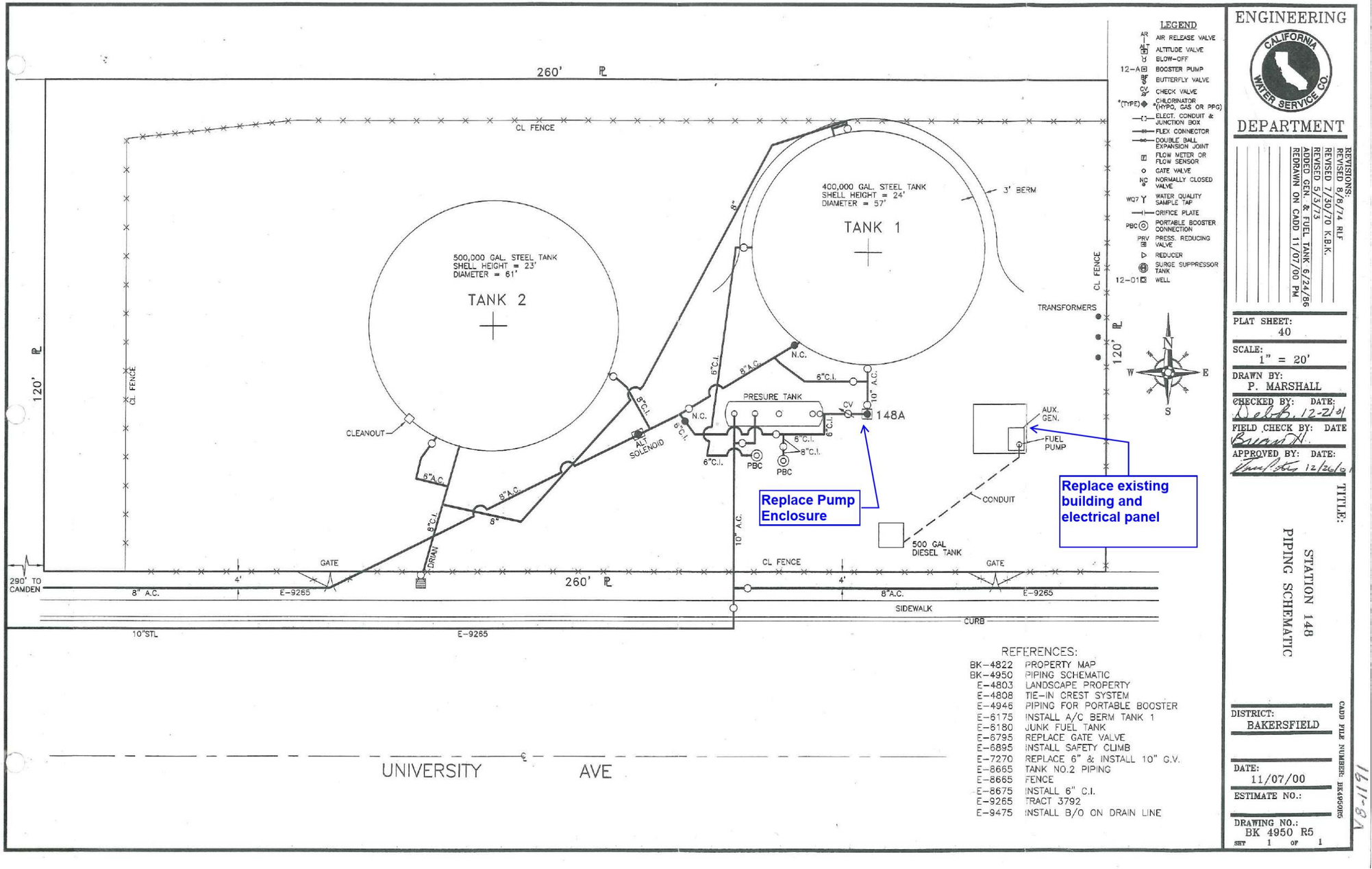
Cost Basis Worksheet

Funding Project ID	123190
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 6,000.00	1	2018	$ 6,167.94	Shelter Install	BK 129 Bid List, Item 12
2	$ 6,915.00	1	2016	$ 7,638.41	Lead Paint Survey (Env)	PO#0000099376 Line 2

Attachment A
PID: 123193

123193 Attachments



Attachment B
PID: 123193

Purchase Order

Dispatch via E-Mail

Purchase Order	Date	Revision	Page
CWSCO 0000099376	12/27/2016		2
Payment Terms	**Freight Terms**		**Ship Via**
N30	DESTINATION		BST METHOD
Buyer	**Phone**		**Currency**
Soria, Kelly (ENG)			USD

CALIFORNIA WATER SERVICE CO.
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598
Phone: 408-367-8200
Fax: 408-392-9797

Ship To: General Office
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598

Supplier: 0000033970
E2 MANAGETECH, INC.
5000 E. SPRING ST., SUITE 720
LONG BEACH CA 90815
Fax: 5627401070

Bill To: accountspayable@calwater.com
OR
PO Box 49033
San Jose CA 95161-9033

Tax Exempt? N **Tax Exempt** **Replenishment Option:** Standard

Line-Sch	Item/Description	Vendor Item-ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	Station 45		1.00	AMT	6,915.00	6,915.00	12/31/2016
			Schedule Total			6,915.00	
	CWS Item ID:		**Item Total**			6,915.00	
2- 1	Station 129		1.00	AMT	6,915.00	6,915.00	12/31/2016
			Schedule Total			6,915.00	
	CWS Item ID:		**Item Total**			6,915.00	

PER ATTACHED PROPOSAL DATED 11/22/2016 (REVISED 11/23).

Total PO Amount 13,830.00

PLEASE SIGN AND EMAIL TO PURCHASEORDER@CALWATER.COM OR FAX PURCHASE ORDER TO (408) 392-9797 PRIOR TO SHIPPING GOODS OR COMMENCING SERVICE

	Unauthorized	

Attachment C
PID: 123193

rev. 1/15

CONSTRUCTION AGREEMENT

THIS AGREEMENT made and entered into this _____ day of _____, 2_____ by and between **Bronco Electric, Inc.** (hereinafter "Contractor"), and **CALIFORNIA WATER SERVICE COMPANY,** a California corporation (hereinafter "Owner").

RECITALS

A. Owner desires to have Contractor do the work herein provided to be done and Contractor has fully familiarized himself with the Contract as defined in Paragraph 8 of the Construction Agreement (including the contract form, Drawings and Specifications) and has visited the site and fully satisfied himself as to existing conditions that might in any manner affect the work under this Contract, and desires to do the work provided to be done in this Contract; and

B. Contractor represents that he is licensed to engage in the construction of the work contemplated by this Contract pursuant to the California Business and Professions Code.

AGREEMENT

NOW, THEREFORE, the parties hereto, in consideration of the covenants, conditions and other considerations hereinafter set forth, agree as follows:

1. CONTRACT PRICE. Contractor agrees to perform all of the work to be done under this Contract in the manner required for the sum specified or to be determined as provided below, and Owner agrees to pay Contractor said sum, viz:

Item	Description	Unit	Quantity	Unit Price	Total Cost
1	Mobilization, Demobilization, site clean-up, and restoration	LS	1	3,500.00	3,500.00
2	Demolish & dispose of existing 12'x12' Pump Building per EnSafe Inc.'s Hazardous Materials Report (attached) recommendations and all applicable Federal & California OSHA Material Abatement Standards. Contractor to employ certified third party Lead/Asbestos Abatement Contractor to perform the removal and disposal of the Existing Pump Building.	LS	1	9,150.00	9,150.00
3	Remove & dispose of existing Panelboard, RTU Panel, & miscellaneous equipment inside Pump Building per Pre-Bid Site Walk. Contractor to coordinate with CWS to allow CWS to salvage any existing equipment from the Pump Building prior to disposal.	LS	1	1,200.00	1,200.00
4	Remove & dispose of existing Pump Building concrete pad and stoop. Contractor to protect the existing pump pedestal and check valve support in place during the removal of the building foundation.	LS	1	4,300.00	4,300.00
5	Remove & dispose of existing onsite service pole. Contractor to dispose of service pole per current standards.	LS	1	2,610.00	2,610.00
6	Remove & dispose of existing Conduits and wires not required per the contract drawings.	LS	1	3,500.00	3,500.00
7	Furnish & supply all equipment, labor, materials, and supervision necessary to install all underground and overhead conduits and conduit fittings shown on the Contract Drawings. Supply, pull, and terminate all required wiring in accordance with the project's Electrical Drawings & Details. Field wiring interconnections shall be in accordance with the Panelboard Manufacturer's drawings and recommendations. Contractor to notify CWS Engineer in the case that any	LS	1	12,550.00	12,550.00

Attachment C
PID: 123193

3/11 rev.

	problems or questions arise. Contractor to coordinate the inspection of eufer ground and all trenches and conduits with CWS prior to backfill. All work shall meet current NEC requirements.				
8	Furnish & supply all equipment, labor, materials, and supervision necessary to install all underground conduits and conduit fittings per PG&E Contract Drawings (PM-31336682 Dated 9/29/2017). Contractor to coordinate and schedule all required PG&E Inspections with PG&E Inspectors.	LS	1	2,650.00	2,650.00
9	Reroute & install new water supply lines from flowmeter vault and well discharge piping to the Hydraulic Enclosure per contract drawings and CWS Field directives.	LS	1	4,500.00	4,500.00
10	Construct outdoor Panelboard & Hydraulic Enclosure concrete foundation with underground conduit stub-ups per the contract drawings. Contractor to employ third party Testing/Inspection firm for compaction testing, rebar placement inspection, concrete placement inspection, and concrete sampling and testing. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	7,500.00	7,500.00
11	Construct Acoustical Shelter concrete foundation with underground conduit stub-ups per the contract drawings. Contractor to employ third party Testing/Inspection firm for compaction testing, rebar placement inspection, concrete placement inspection, and concrete sampling and testing. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	7,100.00	7,100.00
12	Offload, install, and anchor new Acoustical Shelter over existing well motor per the Contract Drawings and the Shelter manufacturer's recommendations. Contractor to field verify anchor bolt layout based on actual equipment furnished. Acoustical Shelter to be supplied by CWS. Contractor to coordinate delivery to site with CWS. Contractor to employ third party Testing/Inspection firm for anchorage and epoxy inspections. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	6,000.00	6,000.00
13	Offload, install, and anchor new Panelboard per Contract Drawings and the Panelboard manufacturer's recommendations. Contractor to field verify anchor bolt layout based on actual equipment furnished. Panelboard to be supplied by CWS. Contractor to coordinate delivery to site with CWS. Contractor to employ third party Testing/Inspection firm for anchorage and epoxy inspections. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	3,200.00	3,200.00
14	Furnish & supply all equipment, labor, materials, and supervision necessary to install & anchor the Hydraulic Enclosure Cabinet per the Contract Drawings. Hydraulic Enclosure Cabinet to be supplied by CWS. Contractor to furnish and supply all materials necessary to mount and anchor the proposed Cabinet. Contractor to employ third party Testing/Inspection firm for anchorage and epoxy inspections. Contractor to coordinate City of Bakersfield Construction Inspections per Permit Requirements.	LS	1	1,200.00	1,200.00
15	Contractor to employ C&H Fence to furnish and install Shade Cover over Panelboard & Hydraulic Enclose per contract drawings.	LS	1	4,440.00	4,440.00

Attachment C
PID: 123193

rev. 1/15

16	Relocate existing Hose bibb and associated piping. Contractor to verify desired location with CWS Engineer prior to relocation.	LS	1	2,500	2,500.00
17	Startup and commission all electrical components shown in the Contract Drawings.	LS	1	1,800.00	1,800.00
				PROJECT TOTAL:	$77,700.00
					NOTE: ANY ADDITIONAL ITEMS NOT LISTED ABOVE, BUT THAT ARE SHOWN ON THE PLANS SHALL BE CONSIDERED PART OF THIS CONTRACT AMOUNT.

Project Total : Seventy Seven Thousand seven hundred and no cents.

Such sum is subject to being decreased or increased and to withholdings and deductions as provided herein. It is understood that all sales, use and other taxes are included in the above sum and are not to be paid in addition by Owner.

2. COMMENCEMENT AND COMPLETION OF WORK. Contractor agrees to complete performance of the Contract work in accordance with Section 6 of the Construction Agreement. Contractor shall begin performance of this Contract not later than February 5, 2018, and shall diligently prosecute performance thereof until completion not later than April 2, 2018.

3. WORK TO BE DONE. The word "Work" used in the sense of the work to be done by Contractor in performance of this Contract includes all acts to be performed, labor to be supplied and all materials, tools, supplies, equipment, cartage, and other facilities, and Contractor's superintendence required for the full, timely and complete performance of the Contract. Power is included in such work, and provided by Contractor, unless and to the extent the Specifications may specifically provide it is to be furnished by Owner. Work means the materials, supplies, items, equipment and services set forth in the Drawings and Specifications identified in Paragraph 9 and any approved revisions or interpretations thereto, including field directives, change orders, requests for information, submittal endorsements or inspector non-compliance notices.

4. PERFORMANCE OF CONTRACT. All work to be done hereunder shall be done in a good, workmanlike and substantial manner and in strict accordance with the Drawings and Specifications, so as to satisfy the Engineer that this Contract and all its requirements have been fully observed, performed and completed.

5. COMPLETION. The Work shall not be deemed completed within the meaning hereof unless and until the Engineer has made his final inspection and has certified in writing to Owner that the Contract has been fully performed and a Notice of Completion filed. Owner agrees that the Engineer will promptly commence inspection upon actual receipt of written notice from Contractor that the Work has been completed and is ready for inspection.

6. LIQUIDATED DAMAGES. It is mutually agreed that since the Work to be completed hereunder will become an integral part of the water system whereby Owner renders its service of supplying water to public consumers and since Owner is relying upon completion of the Work on or before the date hereinbefore specified, it would in fact be impracticable, or at best extremely difficult, to determine the actual damage suffered by Owner in the event Contractor did not complete the Work within the time specified hereby. Accordingly, the parties agree that if the Work is not completed by Contractor within such time, the sum of $400 for every calendar day thereafter during which the Work remains uncompleted shall be conclusively presumed to be the amount of damages sustained by Owner by reason of Contractor's breach of his agreement to complete the Work within the specified time, and that this sum shall be and represents liquidated damages and shall not be or be deemed to be a penalty or a forfeiture. This provision for liquidated damages shall be applicable both to situations where Contractor completes the Work but completes it late and where Contractor abandons the Contract. **Strict performance of this Contract is hereby declared to be of the essence, and substantial performance of the terms of this Contract in good faith and without willful failure shall not be sufficient.**

7. TIME OF ESSENCE. Time is of the essence of this Contract and of each and every covenant and condition thereof.

8. CONTRACT. The Contract is made up of and includes the Construction Agreement, the Drawings and the Specifications identified in Paragraph 9 including, but not limited to, any approved written revisions to or interpretations of said Drawings and Specifications. The Contract is the entire contract between the parties and there are no other representations or warranties. The Contract may not be amended or modified in any way or at any time by oral agreements by any officers or representatives of either party, but shall be amended or modified only by written amendments or modifications executed by both parties.

9. IDENTIFICATION OF DRAWINGS AND SPECIFICATIONS.

The Drawings referred to herein and forming a part of this Contract are identified in the following manner:

Drawing Number: Drawing Description

BK-11412: Site Plan (1 Sheet)

BK-11413: Single-Line Diagram (1 Sheet)

BK-11414: Electrical Schematic (1 Sheet)

BK-11415: Conduit Layout Plan & Details, Electrical Details (2 Sheets)

BK-11416: Metering Panel & Panelboard Layout, Panelboard Details (3 Sheet)

District – Bakersfield
PID # 123195, 123196,…
Poly Service Replacements

Problem Statement

Aging poly service connections along with poor soil conditions are creating an environment prone to service failures in the Bakersfield distribution system. These failures contribute to a high number of emergency repairs throughout the year ranging from minor leaks to catastrophic blowouts. As a result, customers within these regions are more susceptible to a loss of service event or irregular pressure drops. Furthermore, minor, unapparent or unreported leaks, contribute to higher water losses, which thwart conservation efforts.

Project Justification

A programmatic approach to replacing existing poly service connections in known problematic areas of the distribution system ensures reliable access to drinking water for our customers. Based on recent emergency repairs, the area near Juniper Ridge in the 1000 zone is being proposed for service replacement. These streets are in older regions of the distribution system where a majority of the service connections were installed in the late 1970's and early 1980's. Based on the age and affected area, 25 problematic poly pipe services connections will be replaced with copper service connections each year over a three year period.

In addition to increasing reliability, this program will also reduce emergency repair costs. Past leak and blowout repair costs range from $6,000-$13,000 per repair, with many of these lines requiring multiple repairs. As a part of a risk mitigation strategy, the poly service connections will be replaced in order to reduce the number of yearly emergency call outs, while providing a safer, more reliable customer service connection. If action is not taken, leak and service failures will become more frequent as existing service connections continue to fatigue. This will negatively affect our customers by providing a more expensive, less reliable service connection.

Cost estimates for this multi-year project are based on final invoices from previous poly service replacement projects in Bakersfield in 2020 (PID # 114580).

Alternative Analysis

1. Replace services with copper pipe.
    - Cal Water has determined that replacing existing poly pipe service connections with copper piping is the most advantageous based on soil conditions and operating experience in the

area. Past replacements with copper piping have proven to be the most promising long term solution.

2. Replace poly pipe in kind.
    - Due to rocky soil conditions, replacement in kind would only prolong the underlying issue of installing assets not fit for the existing environmental conditions.

3. Do Nothing
    - If Cal Water does nothing, service connections will continue to fail more frequently as existing piping ages. This will negatively affect our customers by providing a less reliable service connection as well as higher maintenance costs.

Recommended Solution

Replace existing poly service connections in problematic areas with copper service lines.

Detailed Project Scope

- Obtain encroachment permit.
- Locate existing utilities.
- Trench, demo, and replace existing poly service line with copper service line.
- Backfill and pave affected area.

Customer Benefits

Replacing problematic services with new, more reliable piping will ensure our customers have long term access to drinking water.

Project Attachments

Cost Estimates

123195 Cost Estimate

Capital Project Cost Estimate

Project No. : 123195
Description BK 2022 Poly Service Replacements
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/30/2022
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $634,702
Direct Cost: $666,834

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
1" SERVICES	[EA]	25	$18,438.26	$460,956.47	Engineer's Estimate
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	200	$107.03	$21,406.00	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	300	$75.29	$22,587.00	Labor SKU
PERMIT FEE	[EA]	1	$1,855.00	$1,855.00	Engineer's Estimate
R&B MATERIALS	[EA]	25	$1,389.30	$34,732.56	Engineer's Estimate
TRAFFIC CONTROL	[EA]	25	$1,418.60	$35,465.00	Engineer's Estimate
CONTINGENCY (10%)	[EA]	1	$57,700.20	$57,700.20	Engineer's Estimate

Sub-total = $634,702.23
Direct Cost = $666,834.15

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

123196 Cost Estimate

Capital Project Cost Estimate

Project No. :	123196
Description	BK 2023 Poly Service Replacements
District / Department:	Bakersfield
Project Start Date:	01/01/2023
Project Completion Date:	12/30/2023
Prepared By:	jnorthrop
Date Initiated:	08/11/2020
Base Year:	2020
Sub-Total:	$634,702
Direct Cost:	$683,505

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
1" SERVICES	[EA]	25	$18,438.26	$460,956.47	Engineer's Estimate
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	200	$107.03	$21,406.00	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	300	$75.29	$22,587.00	Labor SKU
PERMIT FEE	[EA]	1	$1,855.00	$1,855.00	Engineer's Estimate
R&B MATERIALS	[EA]	25	$1,389.30	$34,732.56	Engineer's Estimate
TRAFFIC CONTROL	[EA]	25	$1,418.60	$35,465.00	Engineer's Estimate
CONTINGENCY (10%)	[EA]	1	$57,700.20	$57,700.20	Engineer's Estimate

Sub-total =	$634,702.23
Direct Cost =	$683,504.91

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

123197 Cost Estimate

Capital Project Cost Estimate

Project No. : 123197
Description BK 2024 Poly Service Replacements
District / Department: Bakersfield
Project Start Date: 01/01/2024
Project Completion Date: 12/30/2024
Prepared By: jnorthrop
Date Initiated: 08/11/2020
Base Year: 2020
Sub-Total: $634,702
Direct Cost: $700,592

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
1" SERVICES	[EA]	25	$18,438.26	$460,956.47	Engineer's Estimate
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	200	$107.03	$21,406.00	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	300	$75.29	$22,587.00	Labor SKU
PERMIT FEE	[EA]	1	$1,855.00	$1,855.00	Engineer's Estimate
R&B MATERIALS	[EA]	25	$1,389.30	$34,732.56	Engineer's Estimate
TRAFFIC CONTROL	[EA]	25	$1,418.60	$35,465.00	Engineer's Estimate
CONTINGENCY (10%)	[EA]	1	$57,700.20	$57,700.20	Engineer's Estimate

Sub-total = $634,702.23
Direct Cost = $700,592.44

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

District – Bakersfield
PID # 123434
BK 2024 Well Replacement Program

Problem Statement

California Water Service (Cal Water) is committed to managing its infrastructure in order to provide safe and reliable water to its customers. An important component of this effort is the proactive management of Cal Water's groundwater well supply by constructing new wells or renewing existing wells to ensure customers have a reliable source of available water. Failure to do so can lead to unexpected well failure, which can result in reduced service to customers from the reduction in available water supply capacity to meet customers' demands and fire flow requirements.

The Bakersfield District (District) is currently comprised of 82 active well sources which supply approximately 45% of max day demand (MDD) as discussed in the *Supply Demand Analysis* report included in Section E. The median expected service life of wells in the Bakersfield region is 61 years. Of these 82 active well sources, 33 wells (or 40%) of all active well sources will surpass this service life by the end of 2024 (Figure 1). As a result of this, there is significant risk in Cal Water's long-term ability to supply groundwater to meet system demand.

Project Justification

The need to address the groundwater well infrastructure in the District stems from three key factors: (1) condition of existing groundwater infrastructure, (2) supply diversification and operational flexibility, and (3) wildfire reliability needs. Each of these topics are discuss in more detail below.

Condition of Existing Groundwater Infrastructure

In order to make effective decisions regarding groundwater assets, Cal Water engaged Kayuga, an engineering asset management consulting firm, to develop a plan that would help map out the future of Cal Water's groundwater assets and enable more informed decision on how to effectively and proactively manage these groundwater assets. The results of the study were compiled into the 2021 *Well Infrastructure Renewal Program* (WIRP) are available in the Common Plant Issues justification book, as well as additional program justification. The WIRP formed the basis of decision based on the available information and site investigation completed by Cal Water to date. For the Bakersfield District, it was the WIRP recommendation to renew or replace up to at least half of the wells with a condition 5 in the near future. Cal Water is proposing the drilling of one new well in the 2021 GRC to serve as a replacement for wells approaching the end of life.

Water Supply Diversification & Operational Flexibility

The District includes two separate water systems, the Bakersfield main system and the North Garden system. Both systems are supplied by groundwater, purchased surface water from Kern County Water Agency (KCWA), and a Cal Water-owned surface water treatment plant. KCWA supply is limited by the pump capacity at the KCWA treatment plant, the pipelines that supply each system, and the control valves

used to regulate supply to specific areas of the systems. Additional limitations happen with water supply from KCWA when their supplies are restricted from the Department of Water Resources due to drought or other supply issues, although KCWA has banked water for just this sort of situation and may have multiple years' worth of supply available during short-term droughts. While KCWA supply is pretty stable, there is just a single treatment plant that is subject to failures. While these failures may be rare, Cal Water has experienced complete outages of supply from KCWA in the past year due to electrical equipment failure at the KCWA treatment plant. On May 29th, 2020, a power outage at the treatment plant along with a failure of the backup generator at the KCWA treatment plant resulted in a complete outage of supply from KCWA for a period of five hours. While this was not a prolonged outage, it created several operational challenges due to the time of year of the outage and that Cal Water had no control over the timeline for the repairs. Regardless of past events, Cal Water needs to be prepared for supply outage from KCWA for a prolonged period of time. Groundwater supply is one of the main methods in which Cal Water will provide backup supply to purchased water sources.

The Northeast Bakersfield Treatment Plant (NEBKTP) supplies water to the Bakersfield main system and the Northwest (NWBKTP) supplies the North Garden system. Raw water from the Kern River supplies both treatment plants. Because of the common source of raw water, both plants are at risk of loss of supply at the same time. Power outages can also impact the ability to supply water from each plant. Each plant has a backup generator; however, there are capacity limits to what is available on backup power.

A reasonable supply strategy for the Bakersfield main system and the North Garden system is to anticipate a complete outage of KCWA supplies or a complete outage of surface water supply during max demand periods, but not both at the same time. In order to supply the entire Bakersfield main system and the North Garden system, each system needs to be able to meet MDD without either KCWA supplies or surface water supplies. In other words, Cal Water should be able to meet MDD under the following conditions:

- North Garden system without KCWA supply.
- North Garden system without supply from NWBKTP.
- Bakersfield main system without KCWA supply.
- Bakersfield main system without supply from NEBKTP.

Groundwater is a major supply for the entire Bakersfield system, satisfying a yearly average of forty-six percent of the water requirements for the District as discussed in the *Supply Demand Analysis* report included in Section E. This proportion of supply, combined with high cost of imported water and limited treated surface water, makes groundwater a critical source for the Bakersfield system to maintain to provide customers with a reliable supply at reasonable rates. Although there currently is a sufficient quantity of groundwater available to meet the conditions stated above, the age of 43% of the wells is beyond the anticipated life for a typical well (see Kayuga's analysis and findings in the WIRP presented in detail in the Common Plant Issues justification book). A reasonable plan is to replace these wells before their anticipated life ends so that the system remains resilient under the conditions identified above. Moreover, drilling and equipping a new well source will enable Cal Water to utilize the storage capacity

of the ground water aquifer to mitigate low pressures and large pressure fluctuations, by providing a reliable source of production and pressure for the District. This will fully support Cal Water's long-term supply reliability concerns for the system.

Wildfire Risks

This District is also within CalFire's "Very High" wildfire threat area. In 2019, Cal Water evaluated the capacity and capability all of its current infrastructure and stations in the event of a wildfire and proposed a number of measures necessary to mitigate the potential risks. The results of this analysis were compiled into the 2020 *California Water Service Wildfire Risk Assessment*, which is described in more detail in the Common Plant Issues justification book. In the next decade, the capital projects will be focused on replacing degraded wells, and when possible, extending the life with various renewal techniques.

Alternative Analysis

1. Install New Emergency Interconnect
   - Construct an emergency interconnection with a surrounding water system.
   - Portions of Cal Water's service area is adjacent to the City of Bakersfield's water system. Although there are existing interconnections between the systems that can be relied on in the event of an emergency, there are limitations with each system that cannot support the long-term demands in this configuration. Cal Water is looking to improve the reliability of their supply assets on a programmatic basis and emergency interconnections are a short term solution for a programmatic replacement approach.

2. Rehabilitate Existing Inactive Well
   - Rehabilitate an existing inactive well source to increase supply reliability.
   - This solution is not feasible as the existing inactive wells exceed the maximum contaminant level (MCL) for several water quality constituents and would require onsite treatment. Furthermore, it is unclear what the potential to improve these wells is and how long the existing inactive well will last can operate as the average age of this population is 58 years. Finally, many of these wells produce water of poor quality and may not be treatable.

3. Expand Surface Water Treatment Capacity
   - Expansion of surface water treatment is limited. Additionally, the unit cost of treated surface water is greater than groundwater, which negatively impacts affordability.

4. Do Nothing
   - Does not address the unreliable infrastructure, loss of supply, or other identified problems. This alternative will continue to expose Cal Water customers in this service area to a potential loss of supply during high-demand periods, loss of pressure in the distribution system, and/or impact to fire flow capacities. Given the risks and magnitude of the deficiencies, the do nothing alternative was deemed an inappropriate solution.

Recommended Solution

Cal Water ultimately recommends to design, drill, construct, develop, and equip a new well in Bakersfield as the recommend solution based on customer water supply needs, supply diversification, and aging existing groundwater well infrastructure. Anticipated production for such a new well is anticipated to produce approximately 1,000 gallons per minute (gpm).

Cal Water anticipates that this project will require more than three years to design, permit, and construct, and, therefore, Cal Water is recommending that this project start in the 2021 GRC although it will not close until the following GRC period. As discussed in the WIRP, "compared to other asset types, a well has a unique life cycle because it required extensive pre-construction activities such as finding potential sites, land acquisition, and planning design." Based on Cal Water's experience and industry best practice, the WIRP noted that proper study, planning, design and construction of well could take between 3 – 10 years to complete. Proactive and advance planning are critical for these type of long duration projects to maintain water supply reliability and meeting customer demands due to these extended timeframe requirements.

Unlike other design/permitting projects Cal Water is proposing, Cal Water is submitting a Special Request for this new well project in order proceed on this project in the 2021 GRC with the understanding that it will be resubmitted and close as part of the 2024 GRC filing. Other design/permitting projects are anticipated to close as Plant Held for Future Use and there will be break in activity until the next GRC awaiting CPUC approval for construction. However, the this new well project in Bakersfield cannot wait and needs to continue from design into construction giving the extensive permitting requirements and in order to close in the 2024 GRC period as anticipated (see Common Plant book for a summary and additional discussion on Special Requested projects in 2021 GRC). Therefore, this project is presented in detail below but will not impact customer rates as part of the 2021 GRC since it will be in-service and become useful to customers in the 2024 GRC period.

Detailed Project Scope

- Complete geotechnical inspection.
- Design, permitting, and bidding.
- Drill and develop well.
- Construct well house.
- Install onsite backup power.
- Install electrical control systems and instrumentation.
- Install piping and tie-in to existing distribution system.
- Perform water quality testing.
- Perform necessary site work and landscaping.

Customer Benefits

Drilling and equipping a 1,000 gpm well provides high-quality water to customers and increases the District's supply reliability. This new capacity will also provide a sufficient and reliable source to meet fire-flow and pressure requirements in the distribution system.

Project Attachments

Figure 1 – Well Age List

Cost Estimates

Attachment A – Title 22 Testing Quote
Attachment B – Landscaping Quote
Attachment C – Landscaping Architect Quote
Attachment D – Panelboard and Meter Quote
Attachment E – BK 225 Quote
Attachment F – Foundation Design Quote

Asset	System	Station	Status	Criticality	Asset Type	Description	Location	Location Description	Install Date
100005	BK	2	ACTIVE	2	WATER-WELL	Well - Rotary	BK-002-W10	Well 2-10	11/17/1948
102744	BK	79	ACTIVE	2	WATER-WELL	Well - Cable Tool	BK-079-W1	Well 79-01	2/10/1949
102835	BK	81	ACTIVE	6	WATER-WELL	Well - Rotary	BK-081-W1	Well 81-01	8/1/1949
103303	BK	86	ACTIVE	2	WATER-WELL	Well - Rotary	BK-086-W1	Well 86-01	1/11/1950
103016	BK	82	ACTIVE	8	WATER-WELL	Well - Rotary	BK-082-W1	Well 82-01	5/1/1950
103498	BK	88	ACTIVE	6	WATER-WELL	Well - Gravel Envelope -	BK-088-W1	Well 88-01	11/1/1950
106028	BK	29	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-029-W2	Well 29-02	1/15/1951
103588	BK	89	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-089-W1	Well 89-01	3/1/1951
101619	BK	47	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-047-W2	Well 47-02	3/6/1951
101298	BK	42	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-042-W2	Well 42-02	1/1/1952
102561	BK	77	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-077-W2	Well 77-02	1/30/1952
101596	BK	3	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-003-W4	Well 3-04	3/13/1953
104276	BK	101	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-101-W1	Well 101-01	4/1/1954
106815	BK	32	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-032-W2	Well 32-02	12/1/1954
104458	BK	105	ACTIVE	6	WATER-WELL	Well - Gravel Envelope -	BK-105-W1	Well 105-01	3/29/1955
102546	BK	5	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-005-W5	Well 5-05	1/1/1956
104875	BK	112	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-112-W1	Well 112-01	5/1/1957
104372	BK	102	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-102-W1	Well 102-01	12/18/1958
105710	BK	125	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-125-W1	Well 125-01	1/12/1959
102932	BK	81	ACTIVE	6	WATER-WELL	Well - Gravel Envelope -	BK-081-W2	Well 81-02	1/1/1960
101068	BK	40	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-040-W2	Well 40-02	3/1/1960
100489	BK	36	ACTIVE	6	WATER-WELL	Well - Gravel Envelope -	BK-036-W2	Well 36-02	12/1/1960
106134	BK	130	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-130-W1	Well 130-01	1/1/1961
106208	BK	132	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-132-W1	Well 132-01	1/1/1961
105947	BK	128	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-128-W1	Well 128-01	1/14/1961
106046	BK	129	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-129-W1	Well 129-01	3/1/1961
106958	BK	142	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-142-W1	Well 142-01	9/19/1961
103213	BK	85	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-085-W2	Well 85-02	1/1/1962
104356	BK	10	ACTIVE	3	WATER-WELL	Well - Gravel Envelope -	BK-010-W2	Well 10-02	2/1/1962
106290	BK	133	ACTIVE	2	WATER-WELL	Well - Rotary	BK-133-W1	Well 133-01	2/1/1962
106460	BK	135	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-135-W1	Well 135-01	3/1/1962
126213	BK	137	ACTIVE	2	WATER-WELL	Well - Water - 16 In - 670 ft	BK-137-W1	Well 137-01	11/30/1962
100327	BK	180	ACTIVE	2	WATER-WELL	Well - Rotary	BK-180-W1	Well 180-01	2/3/1963
106695	BK	138	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-138-W1	Well 138-01	2/8/1963
103491	BK	7	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-007-W7	Well 7-07	2/28/1963
106374	BK	134	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-134-W1	Well 134-01	1/27/1964
106887	BK	141	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-141-W1	Well 141-01	2/28/1964
106833	BK	140	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-140-W1	Well 140-01	3/11/1964
105547	BK	123	ACTIVE	6	WATER-WELL	Well	BK-123-W1	Well 123-01	4/9/1964
105626	BK	123	ACTIVE	6	WATER-WELL	Well	BK-123-W2	Well 123-02	2/10/1965
107073	BK	144	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-144-W1	Well 144-01	3/15/1965
107014	BK	143	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-143-W1	Well 143-01	4/14/1965
107206	BK	146	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-146-W1	Well 146-01	1/13/1966
107263	BK	146	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-146-W2	Well 146-02	2/5/1966
107312	BK	146	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-146-W3	Well 146-03	3/8/1966
107142	BK	145	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-145-W1	Well 145-01	4/7/1966
107430	BK	146	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-146-W5	Well 146-05	1/4/1967
107365	BK	146	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-146-W4	Well 146-04	1/15/1967
100117	BK	164	ACTIVE	3	WATER-WELL	Well - Gravel Envelope -	BK-164-W1	Well 164-01	5/19/1967
101703	BK	49	ACTIVE	8	WATER-WELL	Well - Gravel Envelope -	BK-049-W2	Well 49-02	6/6/1967
107487	BK	149	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-149-W1	Well 149-01	1/15/1968
101799	BK	54	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-054-W2	Well 54-02	6/7/1968
107538	BK	150	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-150-W1	Well 150-01	9/11/1968
107588	BK	151	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-151-W1	Well 151-01	2/25/1970
107686	BK	154	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-154-W1	Well 154-01	8/10/1970
107725	BK	156	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-156-W1	Well 156-01	3/16/1971
107806	BK	158	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-158-W1	Well 158-01	3/22/1972
100216	BKNG	174	ACTIVE	3	WATER-WELL	Well - Reverse Circulation -	BKNG-174-W1	Well 174-	3/1/1973
107765	BK	157	ACTIVE	2	WATER-WELL	Well - Gravel Envelope	BK-157-W1	Well 157-01	4/23/1974
100236	BKNG	175	ACTIVE	1	WATER-WELL	Well - Gravel Envelope	BKNG-175-W1	Well 175-	3/1/1977
100258	BK	177	ACTIVE	3	WATER-WELL	Well - Gravel Envelope	BK-177-W1	Well 177-01	4/1/1978
100454	BKNG	188	ACTIVE	3	WATER-WELL	Well - Rotary	BKNG-188-W1	Well 188-	7/28/1978
100289	BKNG	178	ACTIVE	3	WATER-WELL	Well - Gravel Envelope	BKNG-178-W1	Well 178-	11/1/1978
100527	BK	191	ACTIVE	2	WATER-WELL	Well	BK-191-W1	Well 191-01	5/23/1979
100351	BK	182	ACTIVE	2	WATER-WELL	Well - Gravel Envelope	BK-182-W1	Well 182-01	5/1/1980
100371	BK	183	ACTIVE	6	WATER-WELL	Well - Gravel Envelope	BK-183-W1	Well 183-01	5/1/1980
100387	BK	184	ACTIVE	2	WATER-WELL	Well - Gravel Envelope	BK-184-W1	Well 184-01	3/1/1981
100416	BK	185	ACTIVE	6	WATER-WELL	Well - Gravel Envelope	BK-185-W1	Well 185-01	4/1/1981
138025	BK	189	ACTIVE	2	WATER-WELL	Well	BK-189-W1	Well 189-01	4/11/1983
100467	BKNG	189	ACTIVE	2	WATER-WELL	Well - Gravel Envelope	BKNG-189-W1	Well 189-01	4/11/1983
100502	BKNG	190	ACTIVE	2	WATER-WELL	Well - Gravel Envelope	BKNG-190-W1	Well 190-	9/13/1984
100548	BK	192	ACTIVE	3	WATER-WELL	Well - Gravel Envelope	BK-192-W1	Well 192-01	1/15/1987
102082	BK	62	ACTIVE	8	WATER-WELL	Well - Gravel Envelope	BK-062-W2	Well 62-02	8/1/1987
126745	BKNG	196	ACTIVE	2	WATER-WELL	Well - Reverse Rotary	BKNG-196-W1	Well 196-	2/29/1988
100581	BK	195	ACTIVE	2	WATER-WELL	Well - Reverse Rotary	BK-195-W1	Well 195-01	5/1/1988
100625	BKNG	197	ACTIVE	2	WATER-WELL	Well - Reverse Rotary	BKNG-197-W1	Well 197-	7/1/1989
100721	BKNG	201	ACTIVE	3	WATER-WELL	Well	BKNG-201-W1	Well 201-	7/1/1990
100775	BKNG	214	ACTIVE	4	WATER-WELL	Well	BKNG-214-W1	Well 214-	12/18/2002
126214	BKNG	219	ACTIVE	4	WATER-WELL	Well - Reverse Circulation	BKNG-219-W1	Well 219-	9/13/2004
125979	BKNG	220	ACTIVE	4	WATER-WELL	Well - Reverse Rotary	BKNG-220-W1	Well 220-	6/1/2005
101396	BK	43	ACTIVE	2	WATER-WELL	Well - Gravel Envelope -	BK-043-W2	Well 43-02	5/30/2006
138030	BK	102	ACTIVE	2	WATER-WELL	Well	BK-102-W2	Well 102-02	
105845	BK	161	ACTIVE	2	WATER-WELL	Well	BK-161-W1	Well 161-01	
137995	BK	174	ACTIVE	6	WATER-WELL	Well - Gravel Envelope	BK-174-W1	Well 174-01	
100797	BKNG	217	ACTIVE	2	WATER-WELL	Well	BKNG-217-W1	Well 217-	

Figure 1 – Well Age List

123434 Cost Estimate

Capital Project Cost Estimate

Project No. : 123434
Description BK 2024 Well Replacement
District / Department: Bakersfield
Project Start Date: 01/01/2024
Project Completion Date: 12/30/2025
Prepared By: jnorthrop
Date Initiated: 08/18/2020
Base Year: 2020
Sub-Total: $2,613,077
Direct Cost: $2,920,402

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
AQUIFER TESTING	Zone Specific [EA Zone]	6	$13,656.92	$81,941.52	Cost Catalog No. A.7-1
BLOCK BUILDING	[EA]	480	$403.79	$193,818.24	Engineer's Estimate
CEQA CONSULTANT	Initial Study - CmplxScope[LS]	1	$50,020.87	$50,020.87	Cost Catalog No. E.1-2
CHEMICAL INJECTION FACILITY	InjectionSystemw/Enclosure[LS]	1	$22,742.19	$22,742.19	Cost Catalog No. A.16-1
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	110	$107.03	$11,773.30	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	80	$75.29	$6,023.20	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	80	$97.22	$7,777.60	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	24	$121.41	$2,913.84	Labor SKU
CWS ENG LABOR	CW-Civil Eng LABOR [HR]	953	$121.41	$115,703.73	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	216	$121.41	$26,224.56	Labor SKU
CWS ENG LABOR	CW-Oper Eng LABOR [HR]	24	$121.41	$2,913.84	Labor SKU
CWS ENG LABOR	CW-Eng Tech LABOR [HR]	326	$89.85	$29,291.10	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	40	$121.41	$4,856.40	Labor SKU
CWS MANAGER SCADA LABOR	CW-SCADA Prog LABOR [HR]	8	$143.13	$1,145.04	Labor SKU
CWS SCADA LABOR	CW-SCADA Prog LABOR [HR]	40	$143.13	$5,725.20	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	40	$121.41	$4,856.40	Labor SKU
DRILL AND DEVELOP WELL	16in (CBS & SS) [FT]	800	$795.86	$636,688.00	Cost Catalog No. A.3-1
DRIVEWAY AND APPROACH	Concrete - 16ft W x 50ft L [EA]	1	$16,576.35	$16,576.35	Cost Catalog No. A.13-2
ELEC PANELBOARD FOUNDATION	Equipment [EA]	1	$5,049.09	$5,049.09	Cost Catalog No. A.14-1
ELEC SERVICE EXTENSION	Utility Cost [LS]	1	$11,332.83	$11,332.83	Cost Catalog No. B.4-1
FENCE AND GATE	6ft-H Chain Link FT]	500	$43.90	$21,950.00	Cost Catalog No. A.12-1
FLOWMETER	12in Magmeter [EA]	1	$8,402.46	$8,402.46	Cost Catalog No. C.6-4
GENERATOR SET	300 KW [EA]	1	$106,300.18	$106,300.18	Cost Catalog No. D.1-2
GENERATOR SET FOUNDATION	Equipment [EA]	1	$5,049.09	$5,049.09	Cost Catalog No. A.14-1
GEOTECH	4 Borings [LS]	1	$10,343.14	$10,343.14	Cost Catalog No. E.8-2
HYDRAULIC ENCLOSURE	Hydraulic Enclosure [EA]	1	$7,435.35	$7,435.35	Cost Catalog No. D.7-1
LANDSCAPE CONSULTANT	[EA]	1	$6,527.40	$6,527.40	Engineer's Estimate
LANDSCAPING AND IRRIGATION	[EA]	1	$38,709.00	$38,709.00	Engineer's Estimate
MAINTENANCE AREA	4in depth 100ft x 100ft lot [LS]	1	$38,678.53	$38,678.53	Cost Catalog No. A.15-1
NPDES COMPLIANCE	Typical Scope [LS]	1	$14,368.03	$14,368.03	Cost Catalog No. A.4-2

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
ON SITE DRAINAGE CATCH BASIN	[EA]	1	$117,594.40	$117,594.40	Engineer's Estimate
ON-SITE CONCRETE CURB	Concrete [FT]	100	$209.24	$20,924.00	Cost Catalog No. F.10-1
PANELBOARD & METER	[EA]	1	$120,428.00	$120,428.00	Engineer's Estimate
PERMIT FEE	CUP Permit [LS]	1	$17,566.35	$17,566.35	Cost Catalog No. F.1-1
PRESSURE TRANSDUCER	Pressure Transducer [EA]	2	$790.63	$1,581.26	Cost Catalog No. D.8-1
SCADA PAK	RTU Panel/Radio Panel [EA]	1	$6,766.23	$6,766.23	Cost Catalog No. D.5-1
SITE GRADING	[EA]	1	$43,516.00	$43,516.00	Engineer's Estimate
SITE SURVEY	TopographyW/LegalDescriptn[LS]	1	$8,396.23	$8,396.23	Cost Catalog No. E.6-11
SOUND CURTAIN	Sound Curtain [EA Side]	3	$27,104.11	$81,312.33	Cost Catalog No. A.6-1
SPECIAL INSPECTION	[EA]	1	$102,742.20	$102,742.20	Engineer's Estimate
STATION PIPING	Well [LS]	1	$153,766.44	$153,766.44	Cost Catalog No. A.8-1
STRUCTURAL ENGINEER	[EA]	1	$9,108.00	$9,108.00	Engineer's Estimate
WATER QUALITY TESTING	[EA]	1	$2,221.49	$2,221.49	Engineer's Estimate
WELL CONSULTANT	Constructn/DesignServices[LS]	1	$86,455.57	$86,455.57	Cost Catalog No. E.2-1
WELL PUMP	200 HP - Top Drive [EA]	1	$108,570.71	$108,570.71	Cost Catalog No. C.5-2
WELL PUMP FOUNDATION	[EA]	1	$9,816.40	$9,816.40	Engineer's Estimate
CONTINGENCY (10%)	[EA]	1	$227,174.41	$227,174.41	Engineer's Estimate

Sub-total = $2,598,708.47
Direct Cost = $2,920,401.91

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

123434 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID
District

Line	Unit Cost	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 6,450.00	$ 6,527.40	Landscape Consultant	Attachment C
2	$ 9,000.00	$ 9,108.00	Foundation Design	Attachment F
3	$ 9,700.00	$ 9,816.40	Well Foundation	Attachment E
4	$ 38,250.00	$ 38,709.00	Landscaping	Attachment B
5	$ 43,000.00	$ 43,516.00	Site Grading	Attachment E
6	$ 116,200.00	$ 117,594.40	Storm Drain	Attachment E
7	$ 191,520.00	$ 193,818.24	Pump Building	Attachment E
8	$ 119,000.00	$ 120,428.00	Panelboard	Attachment D
9	$ 2,161.00	$ 2,221.49	Title 22	Attachment A

Attachment A
PID: 123434

123434 Attachments

Analytical Services Quotation

Jose Ventura
California Water Service
3725 South H St.
Bakersfield, CA 93304
(661) 872-6400
(661) 872-9695 (Fax)

Bid ID: 17027
Printed: 10/12/18
Effective: 09/19/18
Expires: 03/18/19
Client Code: CLFWT
Title 22

Pricing Summary

Parameter	Method	Quantity	TAT (days)	Unit Price	Extended Price
Water					
EPA 504.1 - DBCP & EDB	EPA-504.1	1	10	$30.00	$30.00
EPA 508 - Organo-Chlorine Pesticides & PCBs	EPA-508	1	10	$120.00	$120.00
EPA 515.1 - Chlorinated Herbicides	EPA-515.1	1	10	$114.00	$114.00
EPA 524.2 - Purgeable Halogenated & Aromatics	EPA-524.2	1	10	$75.00	$75.00
EPA 525.2 - Acid Extractables and Base Neutrals	EPA-525.2	1	10	$100.00	$100.00
EPA 548.1	EPA-548.1	1	10	$200.00	$200.00
EPA 549.2	EPA-549.2	1	10	$200.00	$200.00
EPA 218.6 - Dissolved Hexavalent Chromium	EPA-218.6	1	10	$40.00	$40.00
EPA 300.0 - Nitrate as NO3, Ion Chromatograph	EPA-300.0	1	10	$15.00	$15.00
EPA 314.0 - Perchlorate, Ion Chromatograph	EPA-314.0	1	10	$30.00	$30.00
EPA 200.8 - Total Recoverable Uranium, ICP-MS	EPA-200.8	1	10	$50.00	$50.00
EPA 1613B - 2,3,7,8-TCDD (Subcontract)	EPA-1613B	1	21	$188.00	$188.00
EPA 531.1 - Carbamate & Urea Pesticides (Subcontract)	EPA-531.1	1	10	$90.00	$90.00
EPA 547 - Glyphosate (Subcontract)	EPA-547	1	10	$90.00	$90.00
EPA 100.2 - Asbestos (Subcontract)	EPA-100.2	1	10	$200.00	$200.00
EPA 900.0 Gross Alpha (Subcontract)	EPA-900.0	1	10	$50.00	$50.00
EPA 903.1 Radium 226 (Subcontract)	EPA-903.1	1	20	$201.00	$201.00
EPA 904.0 Radium 228 (Subcontract)	EPA-904.0	1	20	$148.00	$148.00
Title 22 - General Mineral, Physical, Inorganic	varies	1	10	$220.00	$220.00
				Bid Total:	**$2,161.00**

Cal Cotton
Business Development Specialist

All quotes are confidential. Please do not release quote information without prior approval of BC Laboratories.
4100 Atlas Court · Bakersfield, CA 93308 · (661) 327-4911 · Fax (661) 327-1918 · www.bclabs.com

Attachment B
PID: 123434

Professional Landscape Management

PROPOSAL

To: California Water Service Co.
Contact Name: Jordan Dickson

DATE: November 14, 2019

Project Name: Bakersfield Station 225-01
Location: Bakersfield
Plan Date: 8-21-19

JOB NO.: EMTS 19-276
Addenda: NA
Sheets: 2 of 2

SCOPE OF WORK:

Irrigation		**(Spec Section: Per Plan)**
Controller	Sleeving	
Weather Sensor	Remote Control Valves	
Backflow	Lateral Line	
Mainline	Root Watering Zones	
Master Valve	Drip Emitters	
Flow Sensor		

Planting		**(Spec Section: Per Plan)**
Fine Grading, Soil Preparation	Sod Turf	
Cedar Chip Mulch Top Dressing	24" Box Trees	
Plant Pit Amendments	5 Gal. Shrubs	
Root Barriers	1 Gal. Shrubs	
Tree Staking	90-Day Maintenance Period	

Base Bid Total	**$ 38,250.00**
Add Alternate No 1:	**$ 2,500.00**
Redwood Bark Chips, not cedar chips	

LANDSCAPE MAINTENANCE / COMMERCIAL CONSTRUCTION / LANDSCAPE DESIGN
2972 Larkin Ave., Clovis, CA 93612 estimating@EliteTeamOffices.com Office: 559.292.2900
LICENSE NO. #: 911565

Attachment C
PID: 123434

901 East Main Street | Visalia, CA 93292

February 14, 2019

Jordan Dickson, Assistant Engineer
California Water Service Company
Bakersfield District-3725 South H Street
Bakersfield, CA 93304

Subject: **Bakersfield Station 224 & 225: Landscape Design**

Dear Mr. Dickson:

It is our understanding that California Water Service (CWS) is requesting a proposal for the design of landscaping along the site frontage of two proposed project sites, one located at 4500 Hughes Lane and the other at 8403 Wible Road. QK is pleased to provide this proposal for landscape design services to CWS.

Attached is our scope and fee for this work which includes a "time and materials" amount for each site separately. We have also included our current Charge Rate Schedule showing hourly rates for labor hours. Additionally, we have included an estimated schedule of work for both sites.

QK acknowledges an expiration of our offer of 60 days from CWS receipt of proposal. QK will agree to begin work within two weeks of the issuance of CWS Purchase Order. All work shall conform to CWS specifications and insurance requirements.

We have also reviewed CWS's Professional Services Agreement that was provided as an addendum on February 1. 2019. QK is currently in the process of extending a Master Contract with CWS that was issued on September 18, 2015. As part of that process, we have requested several changes to the contract language which are currently under review. We are proposing that those same changes be made to the Professional Services Agreement for this project. We have taken the liberty of redlining the attached agreement with those changes. These changes are to Section 12.1 Indemnification as the law recently changed with regards to indemnification and duty to defend for Design Professionals. We would respectfully request that CWS consider changes to the existing indemnity language (Section 12.1) that we believe is in conformance with current Civil Code Section 2782.8.

Sincerely,

Rich Freeman
Senior Associate Project Manager

Ronald J. Wathen, PE
President

Enclosures: Scope of Services and Fee Estimate
2019 Charge Rate Schedule
Professional Services Contract Proposed Revisions

P190059
RAF/RW/JF

Attachment C
PID: 123434

Scope of Services and Fee Estimate

PROJECT UNDERSTANDING

QK understands that furnished and prepared Landscape Plans must meet the following CWS criteria:

- Include all necessary landscaping details, specifications, and general notes in sufficient detail to secure a building Permit from the City of Bakersfield and serve as construction documents. Design shall comply with the latest State and City codes/regulations.
- Final plans shall be provided electronically and in hard copy format (stamped/signed by a Landscape Architect licensed in the State of California).
- Preliminary Plans to be provided to CWS for review and approval prior to finalizing for submittal to the City of Bakersfield for plan check.
- Address CWS and City of Bakersfield plan check comments. Assumes one round of comments and revisions.

APPROACH/SCOPE OF SERVICES

TASK NO. 1: 8403 WIBLE ROAD – WELL 225-01

- Provide a planting plan for the area from the back of sidewalk to the fence, along Wible Road. The design will meet the requirements of the Model Water Efficient Landscape Ordinance (MWELO) and the City of Bakersfield Design Standards.

- Provide a water efficient irrigation design to sustain the above planting plan and meet the requirements of MWELO and the City of Bakersfield Design Standards.

- Prepare water use calculations as required by MWELO.

Deliverables:

- Preliminary Plans to be provided to CWS for review and approval prior to Submittal to the City of Bakersfield for Plan Check.
- Final plans shall be provided electronically and in hard copy format (stamped/signed by a Landscape Architect licensed in the State of California).

Fee: Time & Materials Cost not to exceed $6,450.00 per attached QK Charge Rate Schedule.

ASSUMPTIONS

Assume two (2) weeks from Notice to Proceed and execution of Contract to Preliminary Plans Submittal to CWS for approval and two (2) days for CWS submittal to the City of Bakersfield.

TASK NO. 2: HUGHES LANE – STATION 224

- Provide a planting plan for the area from the back of walk to the fence, along Hughes Lane approximately 200'. The design will meet the requirements of the Model Water Efficient Landscape Ordinance (MWELO) and the City of Bakersfield.

- Provide a water efficient irrigation design to sustain the above planting plan and meet the requirements of MWELO and the City of Bakersfield.

- Prepare water use calculations as required by MWELO.

Attachment C
PID: 123434

Deliverables:

- Preliminary Plans to be provided to CWS for review and approval prior to submittal to the City of Bakersfield for Plan Check.
- Final plans shall be provided electronically and in hard copy format (stamped/signed by a Landscape Architect licensed in the State of California).

Fee: Time & Materials Cost not to exceed **$5,450.00** per attached QK Charge Rate Schedule.

ASSUMPTIONS

Assume two (2) weeks from Notice to Proceed and execution of Contract to Preliminary Plans Submittal to CWS for approval and two (2) days for CWS submittal to the City of Bakersfield.

EXCLUSIONS

Scope and fees do not include lighting or signage components.

Attachment D
PID: 123434

TESCO CONTROLS, INC. www.TescoControls.com

Corporate Office
8440 Florin Road, Sacramento, CA 95828
P.O. Box 299007, Sacramento, CA 95829
PH: 916.395.8800 FX: 916.429.2817

To: California Water Service Comapny
Attn: Mandy Macatiag
Re: California Water Service (CWSC) – Bakersfield Station 225

Quote Date: July 5, 2019
Quote No.: **19G029Q01**

Mandy,

Thank you for your continued interest in TESCO products, services, and solutions. We are pleased to quote the following scope of work pertaining to the above-referenced project. This scope of work is quoted in general conformance with the requirements of the applicable portions of plan sheets BK-11606, BK-11611, BK-11612, and BK-11613.

Scope of Work

Item	Qty	Description
1	1	**Meter Panel to include:** ▪ Freestanding NEMA 3R Three (3) Section Enclosure ▪ Powder Coated "Grouse Tan" per CWSC Standards ▪ Provisions for Utility Metering ▪ 600A Main Breaker ▪ Distribution Breakers as required ▪ 600A Automatic Transfer Switch 'ATS' (Provided by CWSC, Installed by Tesco) ▪ 3KVA Transformer ▪ Lighting Panel 'LC1' ▪ Two (2) Panel Lights with Switches ▪ Two (2) Panel Cooling Fans with Filtered louvers ▪ Two (2) Panel Heaters with Thermostat ▪ Terminal Blocks, Relays, and Nameplates as required

BK PJ - 154

Attachment D
PID: 123434

Item	Qty	Description

2	1	**Panelboard to include:**
		▪ Freestanding NEMA 12 Four (4) Section Enclosure
		▪ 600A Main Breaker
		▪ Distribution Breakers as required
		▪ Power Monitor with Remote Human Machine Interface 'HMI'
		▪ 350A Pump Disconnect
		▪ 200HP Reduced-Voltage Solid-State 'RVSS' Motor Starter
		▪ RVSS Programmable Keypad
		▪ Pump Controls to include:
		  ▪ HOA Switch
		  ▪ Pushbuttons
		  ▪ Indicating Lights
		  ▪ Elapsed Time Meter
		▪ 7.5KVA Transformer
		▪ Lighting Panel 'LC2'
		▪ RTU Backpan (Supplied by CWSC, Installed by Tesco)
		▪ Operator Interface Terminal 'OIT'
		▪ Flow Transmitter (Supplied by CWSC, Installed by Tesco)
		▪ Uninterruptable Power Supply 'UPS (Supplied by CWSC, Installed by Tesco)
		▪ Duplex GFCI Receptacle
		▪ Four (4) Panel Cooling Fans with filtered Louvers
		▪ Panel Heater with Thermostat
		▪ Terminal blocks, Relays, and Nameplates as required

3	Lot	**Professional Services:** ▪ Engineering ▪ Manufacturing Services – fabrication, manufacturing, assembly, equipment wiring, factory testing ▪ Field Service – installation verification, instrument calibrations, field testing, and startup ▪ O&M Manuals
		TOTAL (not including tax): $119,000.00

Optional Bid Adder

Item	Qty	Description
4	1	**Meter Panel Sunshade to include:** ▪ 36" Overhanging Sunshade (Similar in design to Tesco T-48147 as seen during factory acceptance testing at Tesco)
5	Lot	**Professional Services:** ▪ Engineering ▪ Manufacturing Services – fabrication, manufacturing, assembly, equipment wiring, factory testing ▪ Field Service – installation verification, instrument calibrations, field testing, and startup ▪ O&M Manuals
		TOTAL (not including tax): $2,250.00

BK PJ - 155

Attachment E
PID: 123434

BID SCHEDULE BK 225 WELL PROJECT **EXHIBIT A**

PROJECT # 99821
PROJECT NAME: BK 225 New Low Zone Well
PROJECT LOCATION: 8403 Wible Rd Bakersfield, CA 93313
BID DUE DATE 11/1/2019
CONTRACTOR NAME: W. M. Lyles Co.

The following ITEMS shall include the cost of all necessary tools, materials, labor, transportation, and equipment necessary to install the described facilities in accordance with California Water Service Co. standards and specifications included in the attached bid package or referenced on the drawings. The BID ITEMS shall also include miscellaneous items such as freight costs, taxes, temporary security fencing (if the contractor feels this is necessary), off-hauling of excavation spoils, and site clean-up.

TABLE 1: BID ITEMS					
BID ITEMS	**DESCRIPTION**	**Unit Cost**	**# of Units**	**Unit**	**ITEM TOTAL**
1	Mobilization, survey/staking, demobilization, site clean-up, and restoration.	$ 32,500.00	1	LS	$ 32,500.00
2	Coordinate pick-up and offload of CWS supplied materials from Bakersfield District storage yard.	$ 4,800.00	1	LS	$ 4,800.00
3	Final grading per Contract Drawings and prepare building, well pedestal, generator, panelboard and meter cabinet foundations. Contractor to coordinate compaction testing/inspection with SEI. Contractor to coordinate City of Bakersfield Inspection as applicable.	$ 43,000.00	1	LS	$ 43,000.00
4	Haul off excess soil cuttings.	$ 87.00	25	CY	$ 2,175.00
5	Install privacy slat chain-link fence and access gates per Contract Drawings.	$ 81.00	800	FT	$ 64,800.00
6	Install 6' tall concrete block wall per Contract Drawings.	$ 312.00	200	FT	$ 62,400.00
7	Install 18" storm drain piping, catch basins, concrete aprons and drain inlet per Contract Drawings. Contractor to coordinate inspection with CWS prior to backfill. Contractor to supply As-Built drawing prior to final invoicing.	$ 166.00	700	FT	$ 116,200.00
8	Install driveway and building walkway per contract drawings. Contractor to coordinate testing/inspection services with SEI.	$ 15.00	900	SF	$ 13,500.00
9	Install sidewalk and curb/gutter per Contract Drawings. Contractor to coordinate testing/inspection services with SEI.	$ 203.00	100	FT	$ 20,300.00
10	Street improvements per Contract Drawings. Contractor to coordinate testing/inspection services with SEI. Contractor to coordinate obtaining street permit with CWS personnel.	$ 32.40	2650	SF	$ 85,860.00

Attachment E
PID: 123434

11	Install all underground and overhead conduits and conduit fittings shown on the Contract Drawings. Supply, pull, and terminate all required wiring in accordance with the project's Electrical Drawings & Details. Contractor to coordinate the inspection of all trenches and conduits with CWS prior to backfill. Contractor to provide Electrical As-Built prior to final invoicing.	$ 39,900.00	1	LS	$ 39,900.00
12	Install 300kVa PG&E transformer foundation and 3-5" conduits. Contractor to coordinate and schedule all required PG&E inspections with PG&E Inspectors.	$ 39,400.00	1	LS	$ 39,400.00
13	Install building electrical conduits, lighting, fans, and applicable electrical components per Contract Drawing. Contractor to coordinate inspection with CWS PM.	$ 17,500.00	1	LS	$ 17,500.00
14	Install 12" station piping and plumbing appurtenances per Contract Drawings and Specifications. Contractor to coordinate inspection with CWS prior to backfill. Contractor to supply As-Built drawing prior to final invoicing.	$ 863.00	120	FT	$ 103,560.00
15	Construct generator, panelboard, and meter cabinet foundation per Contract drawings. Contractor to coordinate testing/inspection with SEI.	$ 18,200.00	1	LS	$ 18,200.00
16	Construct well pedestal per Contract Drawings. Contractor to coordinate well pedestal construction and appurtenances with Bakersfield Well and Pump (Well Pump Supplier).	$ 9,700.00	1	LS	$ 9,700.00
17	Construct concrete block building and foundation per Contract Drawings. Contractor to coordinate with CWS PM for well pump/motor and panelboard installation prior completion. Contractor to coordinate testing/inspection with SEI.	$ 399.00	480	SF	$ 191,520.00
18	Install and anchor electrical generator, panelboard, and meter cabinet per Contract Drawings. Contractor to coordinate equipment delivery with CWS PM prior to install. Contractor to coordinate testing/inspection with SEI.	$ 15,300.00	1	LS	$ 15,300.00
19	Install all chemical room equipment per Contract Drawings. Equipment to be supplied by Owner.	$ 11,500.00	1	LS	$ 11,500.00
20	Pour station gravel per Contract Drawings.	$ 2.50	5000	SF	$ 12,500.00
21	Install landscape and irrigation per Contract Drawings. Contractor to coordinate inspection with City of Bakersfield.	$ 92,900.00	1	LS	
22	Pressure test station piping. Contractor to coordinate pressure test with PM & District personnel.	$ 4,900.00	1	LS	$ 4,900.00
23	Disinfect station piping. Contractor to coordinate disinfection with PM & District personnel.	$ 600.00	1	LS	$ 600.00

Attachment E
PID: 123434

24	SWPPP compliance and coordination with Porter & Associates for onsite monitoring and inspection.	$ 6,800.00	1	LS	$ 6,800.00
25	Startup and commission all electrical/mechanical components shown in the Contract Drawings.	$ 4,900.00	1	LS	$ 4,900.00
26	Procurement and install of removable vehicle bollards per Contract Drawings. Location, type, and quantity to be determined in the field by CWS Representative.	$ 1,000.00	5	LS	$ 5,000.00
27	Procurement and install of fixed vehicle bollards per Contract Drawings. Location, type, and quantity to be determined in the field by CWS Representative.	$ 700.00	23	LS	$ 16,100.00
TOTAL COST FOR BID ITEMS (1 THROUGH 27)					$942,915.00

TABLE 2: COST OF BONDS					
1	Performance Bond for a lump sum price	$ 1,885.00	1	LS	$ 1,885.00
2	Payment Bond for a lump sum price	$ 1,885.00	1	LS	$ 1,885.00

Contractor Authorized Agent Name (Type Name):	Kevin R. Shigematsu
Contractor Authorized Agent Title (Type Title):	Vice President

I hereby confirm that proposal herein constitutes an irrevocable bid good for 60 days from the bid submission due date.

Attachment F
PID: 123434

Pacific Engineering Group, Inc.

30 Ryan Court, Suite 200, Monterey, CA 93940 ph: (831) 333-0644 fax: (831) 333-0645

PROFESSIONAL SERVICES AGREEMENT

I - CLIENT: California Water Service Company
1720 North First Street
San Jose, CA 95112
Attn: Jordan Dickson

Date: March 19, 2019

II - JOB TITLE: CWSC Bakersfield Station 225 Pump House & Equipment

III - SCOPE OF SERVICES: Prepare Structural Drawings and Structural Calculations for proposed Bakersfield Station 225 Pump House & Foundation & Anchorage for Panelboard, PG&E Meter Cabinet & Generator as indicated in drawings provided by client on 03/19/19. Design of Panelboard, PG&E Meter Cabinet & Generator and all associated elements are not included in scope. Scope of work includes plan check response. Construction Phase and Site Visits are NOT included and will be billed as an extra service if requested at the hourly rates listed below. We will provide 2 signed copies of the Structural Calculations and 3 signed copies of the Structural Drawings as part of our fee. Additional copies will be charged at cost + 10%. Electronic signed copies of the calculations & drawings will NOT be provided.

IV - CONSULTANT'S COMPENSATION:
In consideration for Consultant providing services noted above, the Client agrees to compensate the Consultant as follows:

Well Building & Foundation	**$6,000.00**
Panel board & PG&E Meter Cabinet Foundation & Anchorage	**$2,000.00**
Generator Foundation & Anchorage	**$1,000.00**
Not-to-Exceed	**$9,000.00**

2019 Billing Rates:
Principal $195.00
Project Engineer $155.00

V - SPECIAL CONDITIONS:

1) This proposal is good for sixty (60) days from date noted at top. Basis of design is the 2016 CBC.
2) Services will commence upon receipt of signed Professional Service Agreement.
3) Services do not include the preparation of Architectural, Electrical, Mechanical, Plumbing or Title 24 or any other documents that may be required for submittal to the Building Department.
4) Client is responsible for all submittals and permits.
5) Changes to the project that require revisions to or additional engineering will be considered to be 'extras' and will be billed separately at hourly rates.
6) Consultant is not responsible for damages to personal property, architectural finishes or structural elements as a result of moisture due to the omission of, improper installation of, or failure, of waterproofing measures, components or systems.
7) Fee assumes conventional spread pad foundation system for class 5 soils, with maximum values as indicated in Table 1806.2 of the 2016 CBC. Changes per updated soils report (if required by the Building Official) will be considered as "extra" & may be billed at hourly rates as indicated above.
8) Structural Observations (per CBC Section 1704.6) may be required by the Building Official and or the Engineer of Record as indicated in the final permitted construction documents. These services are not included in the fee indicated (above) & may be provided as required upon request.

The terms and conditions on the following page (included below) are part of the Agreement.

In witness whereof, the parties hereto have accepted made and executed the Agreement upon the term conditions and provisions above stated, the day and year first above written.

Client: _____
(Signature)

Name: _____

Title: _____

Address: _____

_____

Consultant: **Pacific Engineering Group, Inc.**

Offered by: _____

Name/Title: Alicia Garcia, P.E.

Registration: Civil #87143

Job No.: 19-042

District – Bakersfield
PID # 124358, 124364,…
Routine Granular Activated Carbon Changeout

Problem Statement

Cal Water has granular activated carbon (GAC) treatment units in the Bakersfield District. The GAC treatment units remove organic contaminants to below the maximum contaminant level (MCL) as required by the permit to operate (permit) issued by the State Water Resources Control Board Division of Drinking Water (DDW). The GAC media must be replaced when a contaminant is detected in the treated water or at certain points in the treatment train above the limit set in the permit.

Project Justification

GAC filtration is listed by the DDW as a best available technology to control 55 of the 60 regulated organic contaminants (Title 22, Section 64447.4). A photo of a typical GAC treatment unit is shown in Attachment A. GAC is commercially available from many vendors and is simple to operate. Groundwater wells often produce water intermittently in response to fluctuations in water demand. GAC's treatment performance for organic contaminants is not negatively impacted after a well is turned on again after a period of inactivity, which is another advantage of using GAC to treat organic contaminants in groundwater.

GAC removes organic contaminants through adsorption, which occurs when organic contaminants attach to the surface of an adsorbent (e.g., GAC) and are held tightly. GAC has large surface areas (> 500 m^2/g) because it is highly porous. Its large surface area provides an abundance of adsorption sites to remove organic contaminants. However, as GAC continues to treat water, eventually its adsorption sites are filled by organic contaminants until there is no surface area available that can adsorb and remove organic contaminants. When GAC can no longer remove organic contaminants, it is considered exhausted and filtration vessels must be replaced with new GAC. Therefore, GAC media needs to be periodically replaced in order to continue to produce water that meets permit requirements and regulatory limits.

When GAC is replaced it is called a changeout. GAC changeouts typically account for the bulk of ongoing treatment costs. GAC media that lasts longer than 1 year is considered a capital expenditure. Because GAC is highly efficient for removing organic contaminants, owing to its large surface area, it can often treat organic contaminants for greater than 1 year without the need for a changeout, although this is highly dependent on the contaminant concentration in the source water and other water quality conditions. Changeouts need to be performed to maintain compliance with the permit requirements, which can be stricter than the regulatory limit.

Alternative Analysis

1. Replace GAC Treatment Technology
    - GAC is considered a best available technology (Title 22, Section 64447.4).
    - Although there are other best available technologies for organic contaminants, it would be significantly more costly to replace the entire treatment technology than to simply replace

the GAC media and utilize the existing equipment so that additional capital costs are not incurred.

The GAC treatment units are performing as expected, and replacement of the GAC treatment unit with another technology is not recommended.

2. Changeout GAC Media
   - GAC media changeout is necessary maintenance for this type of treatment.
   - Media changeouts have been ongoing since GAC treatment was installed.

3. Do Nothing
   - Not changing out the GAC media would breach the permit and require the well to be placed on standby to avoid receiving a violation from the DDW.
   - This option is not viable and is not recommended.

Recommended Solution

Routine GAC media changeouts are recommended in order to stay in compliance with permits and water quality regulations.

Detailed Project Scope

- Routine exhausted GAC media removal and proper disposal or return to GAC vendor
- Routine replacement with new GAC media

Customer Benefits

This project will ensure the continued delivery to customers of reliable high quality drinking water that is well within compliance of all state and federal water quality requirements.

Project Attachments

Figure 1 – Example GAC Treatment Unit

Cost Estimates

Attachment A – GAC Media Changeout Cost Basis

Figure 1 – Example GAC Treatment Unit

124358 Cost Estimate

Capital Project Cost Estimate

Project No. : 124358
Description BK 2022 GAC Media Replacement
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/30/2022
Prepared By: jnorthrop
Date Initiated: 09/10/2020
Base Year: 2020
Sub-Total: $939,358
Direct Cost: $986,913

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CWS DISTRICT FIELD LABOR	CW-LABOR-FIELD LABOR [HR]	260	$75.29	$19,575.40	Labor SKU
CWS DISTRICT SUPERINTEDENT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	200	$107.03	$21,406.00	Labor SKU
GAC MEDIA (PER SITE)	[EA]	7	$115,697.14	$809,880.00	Engineer's Estimate
WQ LAB FEES	[EA]	7	$1,000.00	$7,000.00	Engineer's Estimate
CONTINGENCY	[EA]	1	$81,496.83	$81,496.83	Engineer's Estimate

Sub-total = $939,358.23
Direct Cost = $986,913.17

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

124364 Cost Estimate

Capital Project Cost Estimate

Project No. :	124364
Description	BK 2023 GAC Media Replacement
District / Department:	Bakersfield
Project Start Date:	01/01/2023
Project Completion Date:	12/30/2023
Prepared By:	jnorthrop
Date Initiated:	09/10/2020
Base Year:	2020
Sub-Total:	$315,357
Direct Cost:	$339,605

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CWS DISTRICT FIELD LABOR	CW-LABOR-FIELD LABOR [HR]	120	$75.29	$9,034.80	Labor SKU
CWS DISTRICT SUPERINTEDENT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	80	$107.03	$8,562.40	Labor SKU
GAC MEDIA (PER SITE)	[EA]	3	$89,133.33	$267,400.00	Engineer's Estimate
WQ LAB FEES	[EA]	3	$1,000.00	$3,000.00	Engineer's Estimate
CONTINGENCY	[EA]	1	$27,359.73	$27,359.73	Engineer's Estimate

Sub-total =	$315,356.93
Direct Cost =	$339,604.86

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

124365 Cost Estimate

Capital Project Cost Estimate

Project No. :	124365
Description	BK 2024 GAC Media Replacement
District / Department:	Bakersfield
Project Start Date:	01/01/2024
Project Completion Date:	12/30/2024
Prepared By:	jnorthrop
Date Initiated:	09/10/2020
Base Year:	2020
Sub-Total:	$72,000
Direct Cost:	$79,475

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CWS DISTRICT FIELD LABOR	CW-LABOR-FIELD LABOR [HR]	80	$75.29	$6,023.20	Labor SKU
CWS DISTRICT SUPERINTEDENT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	20	$107.03	$2,140.60	Labor SKU
GAC MEDIA (PER SITE)	[EA]	1	$56,590.00	$56,590.00	Engineer's Estimate
WQ LAB FEES	[EA]	1	$1,000.00	$1,000.00	Engineer's Estimate
CONTINGENCY	[EA]	1	$6,246.61	$6,246.61	Engineer's Estimate

Sub-total = $72,000.41
Direct Cost = $79,474.98

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

Attachment A
PID: 124358

Attachment C - Pricing
CORRECTED - Effective March 13, 2019

					NEW GAC pricing				NEW Field Service/Labor Costs INCLUDE decant water				NEW Field Service/Labor Costs EXCLUDE decant water				Transportation/Freight INCLUDE decant water				Transportation/Freight EXCLUDE decant water				NEW Total Exchange Price (GAC+Field Service+Freight) EXCLUDE decant water				NEW Total Exchange Price (GAC+Field Service+Freight) INCLUDE decant water			
					NEW VIRGIN				Prices below include GAC for sacrifical bed trailers				Prices below include GAC for sacrifical bed trailers				Prices below include freight for sacrifical bed trailers				Prices below include freight for sacrifical bed trailers				VIRGIN GAC				VIRGIN GAC			
					Quantity				Quantity				Quantity				Quantity				Quantity				Quantity				Quantity			
Region	District	Station	Name of NEW GAC	GAC Type	20000	40000	60000	80000	20000	40000	60000	80000	20000	40000	60000	80000	20000	40000	60000	80000	20000	40000	60000	80000	20000	40000	60000	80000	20000	40000	60000	80000
Region 1	ELA	10-03	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$29,090	$49,915	$77,525	$97,410	$34,990	$54,715	$82,325	$103,310
	ELA	22-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$27,810	$47,355	$73,685	$92,290	$33,710	$52,155	$78,485	$98,190
	ELA	43-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$29,090	$49,915	$77,525	$97,410	$34,990	$54,715	$82,325	$103,310
	ELA	54-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$27,810	$47,355	$73,685	$92,290	$33,710	$52,155	$78,485	$98,190
	ELA	62-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$29,090	$49,915	$77,525	$97,410	$34,990	$54,715	$82,325	$103,310
	ELA	62-02	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$29,090	$49,915	$77,525	$97,410	$34,990	$54,715	$82,325	$103,310
	CC	006-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 7,900	$ 9,325	$ 14,700	$ 17,225	$5,375	$7,900	$13,275	$14,700	$27,810	$47,355	$73,685	$92,290	$33,710	$52,155	$78,485	$98,190
Region 2	BK	125-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	129-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$28,955	$48,855	$76,910	$95,290	$35,210	$54,050	$81,485	$101,565
	BK	133-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	135-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	146-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	146-02	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	146-03	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	146-05	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	153-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	174-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	178-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	178-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BK	180-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	183-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	185-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	189-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	190-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	190-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BK	191-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BK	192-01	Centaur 12X40	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BKNG	197-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BKNG	197-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	201-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	201-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BK	202-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	214-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	216-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BKNG	217-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	217-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BKNG	219-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	219-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	BKNG	220-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	BKNG	220-01	Centaur HSL	Coal	$ 27,667	$ 55,333	$ 83,000	$ 110,667	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$39,382	$69,948	$107,950	$137,877	$45,657	$75,123	$113,125	$144,152
	KERV	SWT Plant	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	11-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	13-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$28,955	$48,855	$76,910	$95,290	$35,210	$54,050	$81,485	$101,565
	VIS	13-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	16-02	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	19-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	23-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	25-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$28,955	$48,855	$76,910	$95,290	$35,210	$54,050	$81,485	$101,565
	VIS	27-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	32-01	Filtrasorb 300	Coal	$ 17,220	$ 34,440	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$28,955	$49,055	$76,910	$95,290	$35,210	$54,250	$81,485	$101,565
	VIS	34-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	40-01	Filtrasorb 400	Coal	$ 18,500	$ 34,240	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$48,855	$80,150	$100,410	$36,490	$54,050	$85,325	$106,685
	VIS	41-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,215	$51,415	$80,150	$100,410	$36,490	$56,990	$85,325	$106,685
	VIS	69-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$8,590	$8,590	$12,425	$12,885	$5,215	$5,215	$9,050	$9,510	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$28,955	$48,855	$76,910	$95,290	$35,210	$54,050	$81,485	$101,565
	VIS	79-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,675	$51,875	$80,380	$100,870	$36,950	$57,050	$85,555	$107,145
	VIS	82-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,675	$51,875	$80,380	$100,870	$36,950	$57,050	$85,555	$107,145
	VIS	83-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,675	$51,875	$80,380	$100,870	$36,950	$57,050	$85,555	$107,145
	TUL	201-02	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 9,400	$ 11,200	$ 17,700	$ 20,600	$6,500	$9,400	$15,900	$17,700	$30,675	$51,875	$80,380	$100,870	$36,950	$57,050	$85,555	$107,145
Region 3	LIV	10-01	Filtrasorb 300	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 11,800	$ 14,200	$ 22,500	$ 28,000	$8,300	$11,800	$20,100	$22,500	$32,475	$54,275	$84,580	$105,670	$39,350	$60,050	$90,355	$112,545
	LIV	14-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 11,800	$ 14,200	$ 22,500	$ 28,000	$8,300	$11,800	$20,100	$22,500	$32,475	$54,275	$84,580	$105,670	$39,350	$60,050	$90,355	$112,545
	SEL	13-02	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 11,800	$ 14,200	$ 22,500	$ 28,000	$8,300	$11,800	$20,100	$22,500	$32,475	$54,275	$84,580	$105,670	$39,350	$60,050	$90,355	$112,545
	SEL	11-01	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 11,800	$ 14,200	$ 22,500	$ 28,000	$8,300	$11,800	$20,100	$22,500	$32,475	$54,275	$84,580	$105,670	$39,350	$60,050	$90,355	$112,545
	SSF	Sta. 1	Filtrasorb 400	Coal	$ 18,500	$ 36,800	$ 55,200	$ 73,200	$9,050	$9,050	$12,655	$13,345	$5,675	$5,675	$9,280	$9,970	$ 11,800	$ 14,200	$ 22,500	$ 28,000	$8,300	$11,800	$20,100	$22,500	$32,475	$54,275	$84,580	$105,670	$39,350	$60,050	$90,355	$112,545
Region 4	STK	75	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$9,510	$9,510	$13,805	$14,495	$6,135	$6,135	$10,430	$11,120	$ 12,000	$ 14,450	$ 22,900	$ 26,450	$8,450	$12,000	$20,450	$22,900	$31,805	$52,375	$82,240	$102,100	$38,730	$58,200	$88,065	$109,025
	MRL	10	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$9,510	$9,510	$13,805	$14,495	$6,135	$6,135	$10,430	$11,120	$ 12,000	$ 14,450	$ 22,900	$ 26,450	$8,450	$12,000	$20,450	$22,900	$31,805	$52,375	$82,240	$102,100	$38,730	$58,200	$88,065	$109,025
	CHICC	21-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$9,510	$9,510	$13,805	$14,495	$6,135	$6,135	$10,430	$11,120	$ 12,000	$ 14,450	$ 22,900	$ 26,450	$8,450	$12,000	$20,450	$22,900	$31,805	$52,375	$82,240	$102,100	$38,730	$58,200	$88,065	$109,025
	CHICC	40-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$9,510	$9,510	$13,805	$14,495	$6,135	$6,135	$10,430	$11,120	$ 12,000	$ 14,450	$ 22,900	$ 26,450	$8,450	$12,000	$20,450	$22,900	$31,805	$52,375	$82,240	$102,100	$38,730	$58,200	$88,065	$109,025
	CHICC	46-01	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$9,510	$9,510	$13,805	$14,495	$6,135	$6,135	$10,430	$11,120	$ 12,000	$ 14,450	$ 22,900	$ 26,450	$8,450	$12,000	$20,450	$22,900	$31,805	$52,375	$82,240	$102,100	$38,730	$58,200	$88,065	$109,025
	CHICC	5-01,02,03, 04	Filtrasorb 300	Coal	$ 17,220	$ 34,240	$ 51,360	$ 68,080	$9,510	$9,510	$13,805	$14,495	$6,135	$6,135	$10,430	$11,120	$ 12,000	$ 14,450	$ 22,900	$ 26,450	$8,450	$12,000	$20,450	$22,900	$31,805	$52,375	$82,240	$102,100	$38,730	$58,200	$88,065	$109,025

District – Bakersfield
PID # 124412, 124419,…
Flat to Meter Conversions

Problem Statement

California Water Code 527 requires all flat rate services to be converted to metered service before January 1, 2025.

Project Justification

California Water Code 527 was used to evaluate the need for these projects since it is a government mandate with a deadline for completion. The proposed conversions are shown in Table 1.

Table 1. Flat to Meter Conversions – Bakersfield District

PID	Quantity	Year
124412	2,000	2022
124419	2,000	2023
124420	2,000	2024

Cost estimates for this multi-year project are based on final invoices from previous flat to meter conversion projects in Bakersfield (2016 – 2018).

Recommended Solution

Replace existing flat rate services with metered services.

Detailed Project Scope

- Obtain encroachment permit.
- Locate existing utilities.
- Replace existing flat rate service with metered service.

Customer Benefits

The conversions will allow us to comply with State law and not be subject to penalty in 2025 when all flat rate services are to be metered. Converted flat rate customers will also be able to review their usage based on metered consumption and have some control over their monthly billing. Meters will also allow Cal Water to monitor consumption and inform customers of their conservation compliance during periods of drought.

Project Attachments

Cost Estimates

124412 Cost Estimate

Capital Project Cost Estimate

Project No. :	124412
Description	BK 2022 Flat to Meter
District / Department:	Bakersfield
Project Start Date:	01/01/2022
Project Completion Date:	12/31/2022
Prepared By:	smartin
Date Initiated:	09/10/2020
Base Year:	2020
Sub-Total:	$2,535,392
Direct Cost:	$2,663,746

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTRACTOR COST	[EA]	2000	$1,152.45	$2,304,902.00	Engineer's Estimate
10 % CONTINGENCY	[EA]	2000	$115.25	$230,490.20	Engineer's Estimate

Sub-total =	$2,535,392.20
Direct Cost =	$2,663,746.47

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

124419 Cost Estimate

Capital Project Cost Estimate

Project No. :	124419
Description	BK 2023 Flat to Meter
District / Department:	Bakersfield
Project Start Date:	01/01/2023
Project Completion Date:	12/31/2023
Prepared By:	smartin
Date Initiated:	09/10/2020
Base Year:	2020
Sub-Total:	$2,586,100
Direct Cost:	$2,784,947

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTRACTOR COST	[EA]	2000	$1,175.50	$2,351,000.00	Engineer's Estimate
10% CONTINGENCY	[EA]	2000	$117.55	$235,100.00	Engineer's Estimate

Sub-total =	$2,586,100.00
Direct Cost =	$2,784,946.94

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

124420 Cost Estimate

Capital Project Cost Estimate

Project No. :	124420
Description	BK 2024 Flat to Meter
District / Department:	Bakersfield
Project Start Date:	01/01/2024
Project Completion Date:	12/31/2024
Prepared By:	smartin
Date Initiated:	09/10/2020
Base Year:	2020
Sub-Total:	$2,637,822
Direct Cost:	$2,911,662

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTRACTOR COST	[EA]	2000	$1,199.01	$2,398,020.00	Engineer's Estimate
10% CONTINGENCY	[EA]	2000	$119.90	$239,802.00	Engineer's Estimate

Sub-total =	$2,637,822.00
Direct Cost =	$2,911,661.88

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs

2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate

3. See Common Plant Book for additional details on cost estimating methodology and justification

District – Bakersfield
PID # 124745
Storage Tank Replacement Station 147

Problem Statement

The existing 200,000 gallon ground-level bolted-steel storage tank (T4) at Station 147 in Bakersfield is in disrepair and requires replacement to provide operational and emergency supply reliability.

Project Justification

Station 147 is a tank and booster facility that was acquired with the acquisition of the Crest Water Company in the 1950s. The existing onsite storage tank is filled from the 880 zone. The onsite booster pump boosts out of the tank to the 930 zone. The 930 zone is solely dependent on the booster pumps at Station 147, 116, and 148 to set and maintain the pressure within the zone.

In 2014, the tank (T4) was inspected by Cal Water's Asset Management Tank Group and identified for demolition due to failure of multiple tank components (Figure 1 through Figure 5). The tank coating system failed resulting in corrosion on the tank floor, ceiling column, and shell. The level and extent of corrosion would require extensive and costly maintenance repairs to return the tank to service. Additionally, the external tank coating is chipping and deteriorating.

Separately, the northern portion of the 930 zone will be expanded to increase pressure and fire flow to Bakersfield College. Reliable storage is needed at Station 147 to implement this strategy and provide fire protection to the campus.

Alternative Analysis

1. Replace Existing Tank
    - A new 500,000 gallon welded steel tank sized to accommodate an emergency fire flow rate of 1,500 gallons per minute for 4 hours with an additional 100,000 gallons for normal demand.
    - The new tank will improve worker safety for operational and maintenance access requirements.

2. Repair Existing Tank
    - Internal and external coatings required costing upwards of $250,000.
    - Tank retrofits including safety feature, manways, and shell patching.
    - Floor repair and patch welding due to pitting and blistering.
    - Volume restrictions based on zone fire flow requirements.
    - Large maintenance expense that will not extend life of tank past 3-5 years.

3. Do Nothing
    - Reactively repair/replace tank and associated components as needed based on failure.
    - Does not provide additional reliability to station/zone.

- Failure of equipment could lead to loss of supply and pressure.
- Safety Concern for Operators and neighbors.

Recommended Solution

Demolish the existing 200,000 gallon ground level bolted steel tank at Station 147 and replace with a 500,000 gallon welded steel tank.

Detailed Project Scope

- Demolish existing 200,000 gallon, ground level bolted steel tank.
- Build new 500,000 gallon welded steel tank.
- Equip the tank with flex-tend connections, control valves, level instrumentation, and SCADA equipment.
- Install station piping to connect the tank to the onsite booster system.
- Install an underground storm drain system to discharge storm run-off and emergency overflow offsite.

Customer Benefits

The proposed project will provide operational and emergency storage for supply reliability, while minimizing maintenance expense costs to ratepayers.

Project Attachments

Figure 1 – Tank 4
Figure 2 – Outside Tank Wall Coating
Figure 3 – Tank Roof Coating
Figure 4 – Inside Tank Wall Corrosion
Figure 5 – Inside Center Support Corrosion

Cost Estimates

Attachment A – Station Schematic
Attachment B – Lead Paint Survey Quote

Figure 1 – Tank 4

Figure 2 – Outside Tank Wall Coating

Figure 3 – Tank Roof Coating

Figure 4 – Inside Tank Wall Corrosion

Figure 5 – Inside Center Support Corrosion

124745 Cost Estimate

Capital Project Cost Estimate

Project No. : 124745
Description BKD 147 Storage Tank Replacement
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/01/2022
Prepared By: jnorthrop
Date Initiated: 09/22/2020
Base Year: 2020
Sub-Total: $930,016
Direct Cost: $977,098

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CONTROL VALVE	12in dia [EA]	1	$15,577.40	$15,577.40	Cost Catalog No. C.3-5
CONTROL VALVE INSTALL	Inside Vault [LS]	1	$44,811.20	$44,811.20	Cost Catalog No. A.29-1
CWS DISTRICT LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	10	$107.03	$1,070.30	Labor SKU
CWS DISTRICT LABOR	CW-LABOR-FIELD LABOR [HR]	80	$75.29	$6,023.20	Labor SKU
CWS DISTRICT LABOR	CW-EMT LABOR [HR]	80	$97.22	$7,777.60	Labor SKU
CWS ENG LABOR	CW-LABOR-PROJ DESIGN - ENG [HR]	220	$121.41	$26,710.20	Labor SKU
CWS ENG LABOR	CW-LABOR-DRAFTING [HR]	160	$93.13	$14,900.80	Labor SKU
CWS ENG LABOR	CW-Elect Eng LABOR [HR]	80	$121.41	$9,712.80	Labor SKU
CWS ENG SCADA LABOR	CW-SCADA Tech LABOR [HR]	40	$89.85	$3,594.00	Labor SKU
CWS ENV LABOR	CW-EA Proj MGR LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
CWS OPERATIONS ENGINEERING	CW-Oper Eng LABOR [HR]	40	$121.41	$4,856.40	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	10	$121.41	$1,214.10	Labor SKU
ELEC WORK FOR TANK & CV	Tank Level Transducers [LS]	1	$12,241.93	$12,241.93	Cost Catalog No. B.4-3
FLEX-TEND CONNECTION	Double Ball EBAA, 16in dia [EA]	2	$11,684.55	$23,369.10	Cost Catalog No. C.8-4
GEOTECHNICAL REPORT	2 Borings [LS]	1	$8,387.63	$8,387.63	Cost Catalog No. E.8-1
LEAD PAINT SURVEY	[EA]	1	$7,638.41	$7,638.41	Engineer's Estimate
ON SITE DRAINAGE CATCH BASIN	36in x 36in CB [EA]	1	$33,724.64	$33,724.64	Cost Catalog No. F.9-1
ON SITE DRAINAGE PIPE	On-site, Drainage Pipe [FT]	100	$414.04	$41,404.00	Cost Catalog No. F.8-1
PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
SITE CURBING	Concrete [FT]	150	$209.24	$31,386.00	Cost Catalog No. F.10-1
SITE GRADING	Minor Excave/Embank [LS]	1	$7,115.72	$7,115.72	Cost Catalog No. F.7-2
SPECIAL INSPECTION	[EA]	1	$70,101.71	$70,101.71	Engineer's Estimate
STATION PIPING	New Well (shortrun)[LS]	1	$38,408.69	$38,408.69	Cost Catalog No. A.8-6
STORAGE TANK AND FOUNDATION	500-750K Gal [GAL]	500000	$0.86	$430,000.00	Cost Catalog No. A.18-2
CONTINGENCY	[EA]	1	$81,006.42	$81,006.42	Engineer's Estimate

Sub-total = $930,016.00
Direct Cost = $977,098.05

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

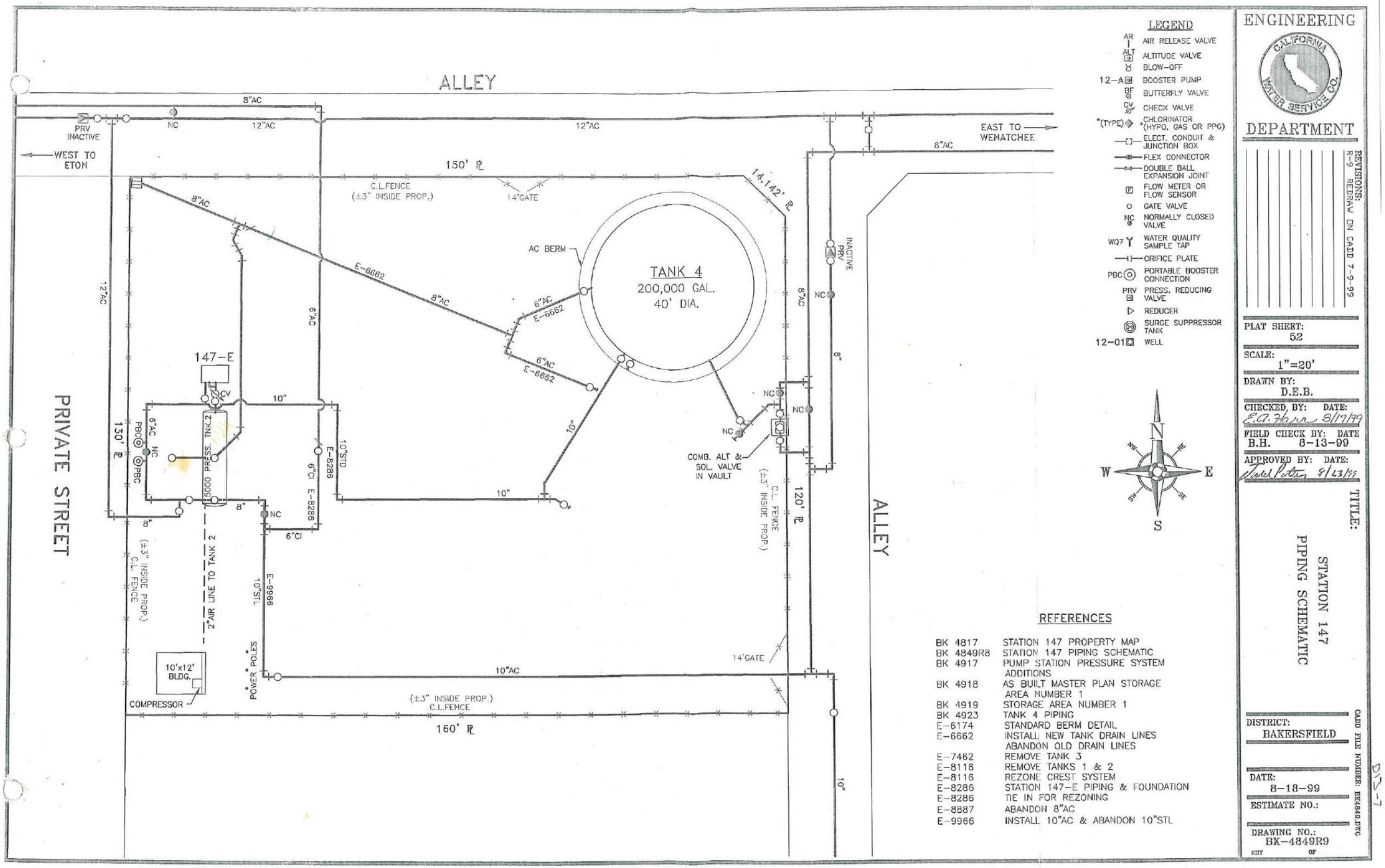
124745 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	124745
District	Bakersfield

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 6,915.00	1	2016	$ 7,638.41	Lead Paint Survey (Env)	PO#0000099376 Line 2

Attachment A
PID: 124745



LEGEND

- AR — AIR RELEASE VALVE
- ALT — ALTITUDE VALVE
- BLOW-OFF
- 12-A — BOOSTER PUMP
- BF — BUTTERFLY VALVE
- CV — CHECK VALVE
- *(TYPE) — CHLORINATOR *(HYPO, GAS OR PPG)
- ELECT. CONDUIT & JUNCTION BOX
- FLEX CONNECTOR
- DOUBLE BALL EXPANSION JOINT
- F — FLOW METER OR FLOW SENSOR
- GATE VALVE
- NC — NORMALLY CLOSED VALVE
- WQ? — WATER QUALITY SAMPLE TAP
- ORIFICE PLATE
- PBC — PORTABLE BOOSTER CONNECTION
- PRV — PRESS. REDUCING VALVE
- REDUCER
- SURGE SUPPRESSOR TANK
- 12-01 — WELL

N, NE, E, SE, S, SW, W, NW

REFERENCES

BK 4817	STATION 147 PROPERTY MAP
BK 4849R8	STATION 147 PIPING SCHEMATIC
BK 4917	PUMP STATION PRESSURE SYSTEM ADDITIONS
BK 4918	AS BUILT MASTER PLAN STORAGE AREA NUMBER 1
BK 4919	STORAGE AREA NUMBER 1
BK 4923	TANK 4 PIPING
E-6174	STANDARD BERM DETAIL
E-6662	INSTALL NEW TANK DRAIN LINES ABANDON OLD DRAIN LINES
E-7462	REMOVE TANK 3
E-8116	REMOVE TANKS 1 & 2
E-8116	REZONE CREST SYSTEM
E-8286	STATION 147-E PIPING & FOUNDATION
E-8286	TIE IN FOR REZONING
E-8887	ABANDON 8"AC
E-9966	INSTALL 10"AC & ABANDON 10"STL

ENGINEERING

CALIFORNIA WATER SERVICE CO.

DEPARTMENT

REVISIONS: R-9 REDRAW ON CADD 7-9-99

PLAT SHEET: 52

SCALE: 1"=20'

DRAWN BY: D.E.B.

CHECKED BY: E.A. Horn DATE: 8/19/99

FIELD CHECK BY: B.H. DATE 8-13-99

APPROVED BY: Neil Peter DATE: 8/23/99

TITLE:
STATION 147
PIPING SCHEMATIC

DISTRICT: BAKERSFIELD

DATE: 8-18-99

ESTIMATE NO.:

DRAWING NO.: BK-4849R9

SHT OF

CADD FILE NUMBER: BK4849.DTG

D13-7

Attachment B
PID: 124745

Purchase Order

Dispatch via E-Mail

Purchase Order	Date	Revision	Page
CWSCO 0000099376	12/27/2016		2
Payment Terms	**Freight Terms**		**Ship Via**
N30	DESTINATION		BST METHOD
Buyer	**Phone**		**Currency**
Soria, Kelly (ENG)			USD

CALIFORNIA WATER SERVICE CO.
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598
Phone: 408-367-8200
Fax: 408-392-9797

Ship To: General Office
1720 NORTH FIRST ST.
SAN JOSE CA 95112-4598

Supplier: 0000033970
E2 MANAGETECH, INC.
5000 E. SPRING ST., SUITE 720
LONG BEACH CA 90815
Fax: 5627401070

Bill To: accountspayable@calwater.com
OR
PO Box 49033
San Jose CA 95161-9033

Tax Exempt? N **Tax Exempt** **Replenishment Option:** Standard

Line-Sch	Item/Description	Vendor Item-ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	Station 45		1.00	AMT	6,915.00	6,915.00	12/31/2016
			Schedule Total			6,915.00	
	CWS Item ID:		**Item Total**			6,915.00	
2- 1	Station 129		1.00	AMT	6,915.00	6,915.00	12/31/2016
			Schedule Total			6,915.00	
	CWS Item ID:		**Item Total**			6,915.00	

PER ATTACHED PROPOSAL DATED 11/22/2016 (REVISED 11/23).

Total PO Amount 13,830.00

PLEASE SIGN AND EMAIL TO PURCHASEORDER@CALWATER.COM OR FAX PURCHASE ORDER TO (408) 392-9797 PRIOR TO SHIPPING GOODS OR COMMENCING SERVICE

	Unauthorized	

District – Bakersfield
PID # 125251
Well PFAS Treatment at Station 49

Problem Statement

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), GenX, and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. PFOA and PFOS have been the most extensively produced and studied of the PFAS group of chemicals. PFOA and PFOS are very persistent in the environment and in the human body; they don't break down and they can accumulate over time. There is evidence that exposure to PFAS can lead to adverse human health effects. PFAS regulations are actively being developed at both the federal level by the United States Environmental Protection Agency (USEPA) and state level by the State Water Resources Control Board Division of Drinking Water (DDW).

Federal Level:

- 2019, the USEPA released a PFAS Action Plan that describes several efforts the USEPA is taking to regulate PFAS.
- USEPA has proposed to regulate both PFOA and PFOS under the Safe Drinking Water Act (SDWA).
- USEAP is currently developing toxicity values, or oral reference doses (RfDs)[4], for PFAS chemicals GenX[5] and PFBS, which could lead to the regulation of these PFAS group chemicals in drinking water, as well.

State Level:

- In August 2019, DDW established notification limits (NLs) for PFOA and PFOS. NLs require Cal Water to report exceedances to the governing board and Water Board and are urged to report this information to customers.[6]
- On February 6, 2020, DDW announced response levels (RLs) for PFOA and PFOS. Under a new California law (Assembly Bill 756), if a water system finds that the PFOA or PFOS concentration exceeds a RL, the system is required to take the water source out of service, provide treatment, or notify their customers in writing. Water systems are also required to take several other measures to communicate the test results to the public.[7]

[4] A reference dose is an estimate of the amount of a chemical a person can ingest daily over a lifetime (chronic RfD) or less (subchronic RfD) that is unlikely to lead to adverse health effects.
[5] hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt
[6] https://www.waterboards.ca.gov/press_room/press_releases/2019/pr082319_pfoa_pfos_guidelines_news_release.pdf
[7] https://www.waterboards.ca.gov/press_room/press_releases/2020/pr02062020_pfoa_pfos_response_levels.pdf

- In August 2019, DDW requested that California Office of Environmental Health and Hazard Assessment (OEHHA) develop public health goals (PHGs) for PFOA and PFOS as the next step in developing regulatory standards. In California, maximum containment levels (MCLs) in drinking water are set as close to the PHGs as is technologically and financially feasible. Other PFAS chemicals may be considered for PHG and MCL development.

The groundwater from Station 49 in the Bakersfield system has been found to contain PFOS at concentrations greater than or near the DDW's NLs and RLs. There is currently no treatment installed at Station 49 that can remove PFAS. Due to its location in the distribution system relative to other sources of supply, Station 49 is a critical source that typically runs approximately 12 hours a day. The station is located on the west side of Highway 99 and there are limited highway crossings available to maintain supply from sources on the eastern side. Treatment needs to be implemented at this well to remove PFAS so that the well can operate in order to maintain a safe supply of potable drinking water for the Bakersfield system. Additionally, PFAS treatment that is installed now will remove concerns about risks to public health and ensure compliance with current and future PFAS regulations. Once the PFOA and PFAS MCL are promulgated, treatment will be required the first quarter of the next calendar year, and Cal Water has a limited timeline to plan for PFAS treatment.

Project Justification

Station 49 Well 3 is a new well that was drilled in 2018 and equipped with pumping equipment in 2020 under PID # 108919. The new well was part of a Bakersfield City-funded well relocation project to accommodate the City's Centennial Corridor Freeway project. During facility startup in September 2020, Cal Water collected Title 22 samples for State permitting purposes. The results from this sampling event detected PFOS in the raw well groundwater at 7.6 parts per trillion (ppt). In order to confirm the results were accurate, Cal Water re-sampled two additional times and the results were detections of 7.6 ppt and 8 ppt which exceeds the State's NL of 6.5 ppt and would require Cal Water to notify its customers of a water quality exceedance in the Customer Confidence Report. Based on local supply challenges in the vicinity of Station 49 due to other inactive wells tied out for water quality reasons and a highway project, Cal Water will need to install GAC treatment to ensure continuous supply for this portion of the system.

Groundwater is the majority of supply for the entire Bakersfield system. In order to make effective decisions regarding groundwater assets, Cal Water engaged Kayuga, an engineering asset management consulting firm, to develop a plan that would help map out the future of Cal Water's groundwater assets and enable more informed decision on how to effectively and proactively manage these groundwater assets. The results of the study were compiled into the 2021 *Well Infrastructure Renewal Program* (WIRP) are available in the Common Plant Issues justification book, as well as additional program justification. The WIRP formed the basis of decision based on the available information and site investigation completed by Cal Water to date. For the Bakersfield District, the WIRP identified that many of the wells in Bakersfield are reaching the end of their service life and need replacement. In addition, it also identified to continue to meet water supply needs from groundwater, Bakersfield needs to install new treatment facilities as required.

Alternative Analysis

1. Install PFAS Treatment at Station 49
    - An industry standard treatment for PFAS is granular activated carbon (GAC). GAC has been demonstrated to not only remove PFOA and PFOS, but many other PFAS chemicals as well, including GenX and PFBS.
    - GAC is the most established treatment technology for PFAS, however, anion exchange (IX) has more recently been demonstrated to efficiently remove PFAS, as well. There are multiple factors that need to be considered before selecting the optimum PFAS treatment for any given well. Source water quality, beyond PFAS, and the associated treatment objectives require consideration. GAC is included for this proposal due to its successful installation at previous Cal Water sites, and the costs of IX and GAC at this phase of planning are very similar.
    - This proposed solution will allow Station 49 to supply water to the Bakersfield system and support system supply during critical peak hour demand while staying compliant with current and known future water quality regulations. Treatment represents a lower cost option to drilling and equipping a new well for the system.

2. Install Conventional Treatment Option
    - Previous research has shown that various treatment options, including conventional treatment (coagulation, flocculation, and sedimentation), oxidation and advanced oxidation processes, UV irradiation, and biodegradation, are not effective for the removal of PFAS under typical drinking water conditions.

3. Do Nothing
    - The Water Board is in the process of establishing legally enforceable regulatory standards for PFOA and PFOS. Standards will require PFAS treatment soon after being promulgated for all active wells that are not able to comply with MCLs. In California, drinking water quality must comply with regulations during the first quarter of the calendar year after MCLs are promulgated. There is not an additional compliance period for a system to plan treatment in California. Therefore, without treatment installed at Station 49, it is anticipated the well will not be able to be used to meet water demands after the state establishes PFAS standards.

Recommended Solution

The recommend solution is to install a new treatment facility for PFAS removal at Station 49. Either GAC or IX are expected to be effective. The costs of GAC and IX at this phase of planning are very similar. For budgetary purposes, GAC was selected because Cal Water has installed several GAC treatment facilities and more reliable cost estimates can be provided at this stage of planning.

Detailed Project Scope

- Procure two (2) 12-foot-diameter vessels for lead-lag operation (design based on 20 minutes of empty-bed contact time required to remove PFC).

- Construct treatment foundation and anchor vessels – foundation size to be determined by third party after review of soils report and vessel shop drawings.
- Install 10-inch diameter station piping, fittings and storm drain connection.
- Install pressure transducers, hydraulic enclosure, and relocate chemical injection.
- Install carbon media and collect water quality samples.

Customer Benefits

The proposed project will enable the Bakersfield system to place Well 3 at Station 49 into operation, which is needed to ensure that there will be adequate water supplies to serve customer needs. Additionally, the proposed treatment will ensure public health is protected when the well is in operation by removing PFAS which, without treatment, is present at concentrations that exceed the existing PFAS NLs and anticipated future MCLs.

Project Attachments

Cost Estimates

Attachment A – GAC Vessels Quote
Attachment B – Title 22 Testing Quote
Attachment C – Foundation Design Quote

125251 Cost Estimate

Capital Project Cost Estimate

Project No. : 125251
Description BK 49-03 GAC Treatment
District / Department: Bakersfield
Project Start Date: 01/01/2022
Project Completion Date: 12/01/2022
Prepared By: jnorthrop
Date Initiated: 10/23/2020
Base Year: 2020
Sub-Total: $1,242,341
Direct Cost: $1,305,235

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
CHEMICAL EQUIPMENT	InjectionSystemw /Enclosure[LS]	1	$22,742.19	$22,742.19	Cost Catalog No. A.16-1
CM & SPECIAL INSPECTION	[EA]	1	$44,939.99	$44,939.99	Engineer's Estimate
CWS CIVIL LABOR	CW-EA Proj MGR LABOR [HR]	400	$121.41	$48,564.00	Labor SKU
CWS DISTRICT FIELD LABOR	CW-LABOR-FIELD LABOR [HR]	120	$75.29	$9,034.80	Labor SKU
CWS DISTRICT MGR/SUP LABOR	CW-LABOR-FIELD MGR/SUPV [HR]	20	$107.03	$2,140.60	Labor SKU
CWS ELEC ENG LABOR	CW-Elect Eng LABOR [HR]	120	$121.41	$14,569.20	Labor SKU
CWS EMT LABOR	CW-EMT LABOR [HR]	80	$97.22	$7,777.60	Labor SKU
CWS ENG DRAFTING LABOR	CW-LABOR-DRAFTING [HR]	200	$93.13	$18,626.00	Labor SKU
CWS ENG SCAD TECH LABOR	CW-SCADA Tech LABOR [HR]	20	$89.85	$1,797.00	Labor SKU
CWS WQ LABOR	CW-WQ Proj MGR LABOR [HR]	20	$121.41	$2,428.20	Labor SKU
ELECTRICAL INSTALLATION	Treatment Facility [LS]	1	$81,420.00	$81,420.00	Cost Catalog No. B.1-3
FOUNDATION DESIGN	[EA]	1	$2,500.00	$2,500.00	Engineer's Estimate
GAC FOUNDATION	Treatment System [EA]	1	$66,442.33	$66,442.33	Cost Catalog No. A.14-4
GAC VESSELS (12X40)	[EA]	1	$525,000.00	$525,000.00	Engineer's Estimate
HYDRAULIC ENCLOSURE	Hydraulic Enclosure [EA]	1	$7,435.35	$7,435.35	Cost Catalog No. D.7-1
LANDSCAPING AND IRR	Typical Scope [LS]	1	$20,100.31	$20,100.31	Cost Catalog No. A.10-1
NPDES PERMIT	NPDES Permit [LS]	1	$2,443.40	$2,443.40	Cost Catalog No. F.3-1
PERMIT FEE	Building Permit [LS]	1	$6,555.55	$6,555.55	Cost Catalog No. F.1-2
PRESSURE TRANSDUCER	Pressure Transducer [EA]	4	$790.63	$3,162.52	Cost Catalog No. D.8-1
STATION PIPING	Well [LS]	1	$153,766.44	$153,766.44	Cost Catalog No. A.8-1
WQ TESTING	[EA]	1	$2,161.00	$2,161.00	Engineer's Estimate
20% CONTINGENCY	[EA]	1	$198,734.63	$198,734.63	Engineer's Estimate

Sub-total = $1,242,341.11
Direct Cost = $1,305,234.55

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalated Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

125251 Cost Basis Worksheet

Cost Basis Worksheet

Funding Project ID	125251
District	BK

Line	Unit Cost	# of Units	Cost Year	2020 Cost (Do not edit this column)	Item Description (as noted in Project Estimate)	Cost Basis Reference (PO, Quote, etc.)
1	$ 2,161.00	1	2018	$ 2,221.49	Title 22 Testing	BK 225 Quote
2	$ 525,000.00	1	2020	$ 525,000.00	GAC Vessels (12x40)	Calgon Email Budget Quote
3	$ 2,500.00	1	2020	$ 2,500.00	Foundation Design	

Attachment A
PID: 125251

125251 Attachments

Northrop, John

From: Goecke, Benjamin J. <Benjamin.Goecke@kuraray.com>
Sent: Friday, October 23, 2020 1:22 PM
To: Northrop, John
Subject: Re: Cal Water BK PFOS Project

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.

Copy that, thanks John. Keep me posted on how we can help.

Thanks~

Ben Goecke
Calgon Carbon Corporation
Drinking Water Solutions
425.286.0754

From: Northrop, John <jnorthrop@calwater.com>
Sent: Friday, October 23, 2020 12:19 PM
To: Goecke, Benjamin J. <Benjamin.Goecke@kuraray.com>
Subject: RE: Cal Water BK PFOS Project

Hey Ben,

This is for BK 49-03. New well just drilled to replace a well in conflict with City freeway project. Levels under DLR from UCMRs.

From: Goecke, Benjamin J. <Benjamin.Goecke@kuraray.com>
Sent: Friday, October 23, 2020 12:17 PM
To: Northrop, John <jnorthrop@calwater.com>
Subject: Re: Cal Water BK PFOS Project

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.
Hey John,

Normally the budgetary is about $475k or so (with GAC and delivery), but for Cal Water scope (which would include ladders/platforms and sac bed), probably closer to $525k would be a good budgetary estimate.

See attached GA for the ELA 63 vessels to get an idea of dimensions and layout.

Please let me know what site this is regarding when you can.

Thanks~

Ben Goecke
Calgon Carbon Corporation
Drinking Water Solutions

Attachment A
PID: 125251

425.286.0754

From: Northrop, John <jnorthrop@calwater.com>
Sent: Friday, October 23, 2020 11:34 AM
To: Goecke, Benjamin J. <Benjamin.Goecke@kuraray.com>
Subject: RE: Cal Water BK PFOS Project

Hey Ben,

Thanks for the insight. This helps.

How much do the Model 12-40's cost? How tall are they?

Please let me know!

Thanks,
John

From: Goecke, Benjamin J. <Benjamin.Goecke@kuraray.com>
Sent: Friday, October 23, 2020 11:27 AM
To: Northrop, John <jnorthrop@calwater.com>
Subject: Re: Cal Water BK PFOS Project

This is an EXTERNAL EMAIL. Stop and think before clicking a link or opening attachments.
Hey John,

There's a couple of options. The most cost effective way to go would be a Model 12-40 system with F400 (the ELA 63 project is 3,000 gpm, this would just be 1/3 of that). You could also go with 2 x Model 10 or Model 12 systems and get the same EBCT, but it'd cost about 30-40% more that way.

Hope this helps, which site are we talking about?

Thanks~

Ben Goecke
Calgon Carbon Corporation
Drinking Water Solutions
425.286.0754

From: Northrop, John <jnorthrop@calwater.com>
Sent: Friday, October 23, 2020 8:54 AM
To: Goecke, Benjamin J. <Benjamin.Goecke@kuraray.com>
Subject: Cal Water BK PFOS Project

Hello Ben,

I hope this email reaches you well.

When you have a chance, can you please provide your company's recommendations for GAC treatment sizing for a 1000 gpm well with 7.6 ppt of PFOS?

Attachment A
PID: 125251

Please also provide a budgetary cost for the system for our estimating purposes.

Please review and let me know if this is something you can help out with!

Thanks,

John Northrop
P-3 Project Engineer
C: 661-529-0495; EXT: 77608
CALIFORNIA WATER SERVICE

Quality. Service. Value.
calwater.com

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Attachment B
PID: 125251

BC LABORATORIES, INC
4100 Atlas Ct. Bakersfield, Ca. 93308 Tel: (800) 878 - 4911 Website: www.bclabs.com

Analytical Services Quotation

Jose Ventura
California Water Service
3725 South H St.
Bakersfield, CA 93304
(661) 872-6400
(661) 872-9695 (Fax)

Bid ID: 17027
Printed: 10/12/18
Effective: 09/19/18
Expires: 03/18/19
Client Code: CLFWT
Title 22

Pricing Summary

Parameter	Method	Quantity	TAT (days)	Unit Price	Extended Price
Water					
EPA 504.1 - DBCP & EDB	EPA-504.1	1	10	$30.00	$30.00
EPA 508 - Organo-Chlorine Pesticides & PCBs	EPA-508	1	10	$120.00	$120.00
EPA 515.1 - Chlorinated Herbicides	EPA-515.1	1	10	$114.00	$114.00
EPA 524.2 - Purgeable Halogenated & Aromatics	EPA-524.2	1	10	$75.00	$75.00
EPA 525.2 - Acid Extractables and Base Neutrals	EPA-525.2	1	10	$100.00	$100.00
EPA 548.1	EPA-548.1	1	10	$200.00	$200.00
EPA 549.2	EPA-549.2	1	10	$200.00	$200.00
EPA 218.6 - Dissolved Hexavalent Chromium	EPA-218.6	1	10	$40.00	$40.00
EPA 300.0 - Nitrate as NO3, Ion Chromatograph	EPA-300.0	1	10	$15.00	$15.00
EPA 314.0 - Perchlorate, Ion Chromatograph	EPA-314.0	1	10	$30.00	$30.00
EPA 200.8 - Total Recoverable Uranium, ICP-MS	EPA-200.8	1	10	$50.00	$50.00
EPA 1613B - 2,3,7,8-TCDD (Subcontract)	EPA-1613B	1	21	$188.00	$188.00
EPA 531.1 - Carbamate & Urea Pesticides (Subcontract)	EPA-531.1	1	10	$90.00	$90.00
EPA 547 - Glyphosate (Subcontract)	EPA-547	1	10	$90.00	$90.00
EPA 100.2 - Asbestos (Subcontract)	EPA-100.2	1	10	$200.00	$200.00
EPA 900.0 Gross Alpha (Subcontract)	EPA-900.0	1	10	$50.00	$50.00
EPA 903.1 Radium 226 (Subcontract)	EPA-903.1	1	20	$201.00	$201.00
EPA 904.0 Radium 228 (Subcontract)	EPA-904.0	1	20	$148.00	$148.00
Title 22 - General Mineral, Physical, Inorganic	varies	1	10	$220.00	$220.00
				Bid Total:	**$2,161.00**

Cal Cotton
Business Development Specialist

All quotes are confidential. Please do not release quote information without prior approval of BC Laboratories.
4100 Atlas Court · Bakersfield, CA 93308 · (661) 327-4911 · Fax (661) 327-1918 · www.bclabs.com

Attachment C
PID: 125251

Pacific Engineering Group, Inc.

9699 Blue Larkspur Lane, Suite 104, Monterey, CA 93940 ph: (831) 333-0644 fax: (831) 333-0645

PROFESSIONAL SERVICES AGREEMENT

I - CLIENT: California Water Service Company
1720 North First Street
San Jose, CA 95112
Attn: John Northrop

Date: February 14, 2020

II - JOB TITLE: CWSC Visalia Station 77 GAC Vessels Foundation & Anchorage

III - SCOPE OF SERVICES: Site: Near 9265 W. Airport Drive, Visalia, CA 93277
Prepare Structural Drawings and Structural Calculations for proposed Visalia Station 77 GAC Vessels Foundation & Anchorage. Design of GAC Vessels and all associated elements are not included in scope. Scope of work includes plan check response. Construction Phase and Site Visits are NOT included and will be billed as an extra service if requested at the hourly rates listed below. We will provide 3 signed copies of the Structural Calculations and 5 signed copies of the Structural Drawings as part of our fee. Additional copies will be charged at cost + 10%. Electronic signed copies of the calculations & drawings will NOT be provided.

IV - CONSULTANT'S COMPENSATION:
In consideration for Consultant providing services noted above, the Client agrees to compensate the Consultant as follows: **Not-to-Exceed $2,500.00.**

2020 Billing Rates:
Principal $195.00
Project Engineer $155.00

V - SPECIAL CONDITIONS:

1) This proposal is good for sixty (60) days from date noted at top. Basis of design is the 2019 CBC.
2) Services will commence upon receipt of signed Professional Service Agreement.
3) Services do not include the preparation of Architectural, Electrical, Mechanical, Plumbing or Title 24 or any other documents that may be required for submittal to the Building Department.
4) Client is responsible for all submittals and permits.
5) Changes to the project that require revisions to or additional engineering will be considered to be 'extras' and will be billed separately at hourly rates.
6) Consultant is not responsible for damages to personal property, architectural finishes or structural elements as a result of moisture due to the omission of, improper installation of, or failure, of waterproofing measures, components or systems.
7) Fee assumes conventional spread pad foundation system for class 5 soils, with maximum values as indicated in Soils Report prepared by Salem Engineering Group, Inc. dated 06/06/19. Changes due to updated soils report (if required by the Building Official) will be considered as "extra" & may be billed at hourly rates as indicated above.
8) Structural Observations (per CBC Section 1704.6) may be required by the Building Official and or the Engineer of Record as indicated in the final permitted construction documents. These services are not included in the fee indicated (above) & may be provided as required upon request.

The terms and conditions on the following page (included below) are part of the Agreement.

In witness whereof, the parties hereto have accepted made and executed the Agreement upon the term conditions and provisions above stated, the day and year first above written.

Client: _____
(Signature)

Name: _____

Title: _____

Address: _____

_____

Consultant: **Pacific Engineering Group, Inc.**

Offered by: _____

Name/Title: Alicia Garcia, P.E.

Registration: Civil #87143

Job No.: 20-029

Section D.

Cost Summary Table

Section A - Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.1-1	Well Drill	16" CBS, Rock [FT]	FT	752.64	
A.1-2	Well Drill	16"/18" CBS [FT]	FT	718.43	
A.1-3	Well Drill	20" CBS [FT]	FT	647.10	
A.1-4	Well Drill	8"/10" CBS [FT]	FT	782.87	
A.2-1	Well Drill	16"/18" HSLA [FT]	FT	853.60	
A.2-2	Well Drill	18" SS [FT]	FT	1,101	
A.2-3	Well Drill	10"/12" SS Casing [FT]	FT	867.97	
A.3-1	Well Drill	16" (CBS & SS) [FT]	FT	795.86	
A.3-2	Well Drill	18" (CBS & SS) [FT]	FT	1,028	
A.3-3	Well Drill	16" (HSLA & SS) [FT]	FT	1,218	
A.3-4	Well Drill	12" (HSLA & SS) [FT]	FT	1,118	
A.4-1	NPDES Compliance	Simple Scope [LS]	LS	5,910	
A.4-2	NPDES Compliance	Typical Scope [LS]	LS	14,368	
A.4-3	NPDES Compliance	Complex Scope [LS]	LS	28,283	
A.5-1	NPDES Compliance	Treatment System [LS]	LS	130,003	
A.6-1	Sound Curtain	Sound Curtain [EA Side]	EA	27,104	
A.7-1	AquiferTesting	Zone Specific [EA Zone]	EA	13,657	
A.8-1	Station Piping	Well [LS]	LS	153,766	
A.8-2	Station Piping	Tank Station [LS]	LS	229,968	
A.8-3	Station Piping	Complex Station [LS]	LS	254,706	
A.8-4	Station Piping	Hydropneumatic Tank [LS]	LS	21,530	
A.8-5	Station Piping	Treatment Facility - Complex Scope	LS	263,881	
A.8-6	Station Piping	Existing Station, New Well (short run) [LS]	LS	38,409	
A.8-7	Street Piping	Street Piping (See Section A1)	FT		
A.9-1	Block Building	New Building Less Than 1,000 SF	SF	312.75	
A.10-1	Landscape	Typical Scope [LS]	LS	7,306	
A.10-2	Landscape	Complex Scope [LS]	LS	27,669	
A.11-1	Block Wall	6' H Wall [FT]	FT	225.45	
A.11-2	Block Wall	6-8' H Wall [FT]	FT	219.19	
A.11-3	Block Wall	8' H Wall with Stucco [FT]	FT	410.55	
A.12-1	Fence & Gate	6'-H Chain Link FT]	FT	43.90	
A.12-1	Fence & Gate	6' H Chain Link - 100' x 100' Lot [LS]	EA	17,559	
A.12-2	Fence & Gate	7'-8' H Chain Link [FT]	FT	60.19	
A.12-2	Fence & Gate	7-8' H Chain Link - 100' x 100' Lot [LS]	EA	24,075	
A.12-3	Fence & Gate	6'-8' H Iron Fence [FT]	FT	201.29	
A12.4	Fence & Gate	6'-8' H Redwood Fence [FT]	FT	47.99	
A.13-1	Driveway & App	Asphalt [SF]	SF	14.60	
A.13-1	Driveway & App	Asphalt - 16' W x 50' L [EA]	EA	11,677	
A.13-2	Driveway & App	Concrete [SF]	SF	20.72	
A.13-2	Driveway & App	Concrete - 16' W x 50' L [EA]	EA	16,576	
A.14-1	Foundation	Equipment [EA]	EA	5,049	
A.14-2	Foundation	Hydro.Tank, 2500 gal [EA]	EA	12,997	

Section A - Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.14-3	Foundation	Hydro.Tank, 5000 gal [EA]	EA	14,231	
A.14-4	Foundation	Treatment System [EA]	EA	66,442	
A.14-5	Foundation	Well Foundation [EA]	EA	5,705	
A.14-6	Foundation	Hydro Tank, 10,000 gal [EA}	EA	21,288	
A.14-7	Foundation	Hydro Tank, 500 gal [EA]	EA	2,755	
A.14-8	Foundation	Hydro Tank, greater than 10,000 [EA]	EA	61,983	
A.15-1	Maintenance Area	4" depth [SF]	SF	3.87	
A.15-1	Maintenance Area	4" depth 50' x 50' lot [LS]	EA	9,669.63	
A.15-1	Maintenance Area	4" depth 100' x 100' lot [LS]	EA	38,678.53	
A.15-1	Maintenance Area	4" depth 150' x 150' lot [LS]	EA	87,026.68	
A.16-1	Chemical Facility	Injection System with Enclosure [LS]	LS	22,742	
A.16-2	Chemical Facility	Chemical Enclosure [LS]	LS	16,749	
A.17-1	Asphalt Paving	R&R Paving [SF]	SF	12.61	
A.18-1	Storage Tank - Welded Stl	300K Gal [GAL]	GAL	1.56	
A.18-2	Storage Tank - Welded Stl	500-750K Gal [GAL]	GAL	0.86	
A.18-3	Storage Tank - Welded Stl	1.0-1.5M Gal [GAL]	GAL	0.69	
A.18-4	Storage Tank - Welded Stl	2.5-3M Gal [GAL]	GAL	0.57	
A.19-3	Storage Tank - Bolted Stl	50K Gal [GAL]	GAL	2.34	
A.19-4	Storage Tank - Bolted Stl	100K Gal [GAL]	GAL	1.49	
A.19-5	Storage Tank - Bolted Stl	125-150k Gal [GAL]	GAL	1.89	
A.19-6	Storage Tank - Bolted Stl	350k Gal [GAL]	GAL	0.95	
A.20-5	Tideflex Mixing System	TMS Installation [LS]	LS	24,286	
A.20-6	Active Mixing	Pax with Dosing & Install [LS]	LS	171,657	
A.20-7	Active Mixing	Pax and Installation [LS]	LS	101,635	
A.21-1	Chloramination	Design/Build System with Block Building [LS]	LS	343,265	
A.21-2	Chloramination	System with Shelter [LS]	LS	261,037	
A.21-3	Chloramination	Chloramination System [LS]	LS	115,109	
A.23-2	GAC Treatment	1 Train, 12' Dia GAC [EA]	LS	420,000	
A.23-3	GAC Treatment	1 Train, 12' Dia GAC (PFAS) [EA]	LS	475,000	
A.24-3	16" DI Pipe	16" DI TR Flex [FT]	FT	240.11	
A.25-2	CL&C Pipe	6" CL&C/10"Casing, Open Trench [FT]	FT	336	
A.25-3	CL&C Pipe	18" CL&C/30"Casing, Open Trench [FT]	FT	968	
A.26-1	Pipe Additional Depth Cost	Below 4' Pipe Depth [FT]	FT	70.17	
A.27-1	6" Fire Hydrant	Reconnect, Short Run [EA]	EA	7,550	
A.27-2	6" Fire Hydrant	Reconnect, Long Run [EA]	EA	10,932	
A.27-3	6" Fire Hydrant	New Install [EA]	EA	9,183	
A.29-1	Control Valve Install	Inside Vault [LS]	LS	44,811	
A.29-2	Control Valve Install	Inside Vault - Complex Work [LS]	LS	117,973	
A.30-1	Hydro Tank Install	HydroTank Install [LS]	LS	38,638	
A.30-2	Hydro Tank Controls Install	Hydropneumatic Tank Controls Installation [LS]	LS	19,825	

Section A - Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.31-1	Retaining Wall	3-4' H Wooden Wall[FT]	FT	58.06	
A.31-2	Retaining Wall	4'-6' H Block Wall [FT]	FT	238.62	
A.31-3	Retaining Wall	9'H Concrete Retaining Wall [FT]	FT	1,453	
A.31-4	Retaining Wall	4'H Keystone Wall [FT]	FT	2,024	
A.31-5	Retaining Wall	6'H Wooden Retaining Wall [FT]	FT	696.35	
A.31-6	Retaining Wall	9'H Wooden Retaining Wall [FT]	FT	1,668	
A.33-X	Tank Retrofits	Please refer to Section A2			
A.34-1	Flowmeter Install	Flowmeter above ground [LS]	LS	21,358.44	
A.34-2	Flowmeter Install	Flowmeter and Vault Replace [LS]	LS	14,178.14	
A.34-3	Flowmeter Install	New Flowmeter and Vault [LS]	LS	58,540.33	

Section A1 - Contractor Cost (Street Piping)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.8-7	Street Piping	Street Piping - AV - Standard [FT]	FT	236.00	
A.8-8	Street Piping	Street Piping - AV - Mod Complex [FT]	FT	354.00	
A.8-9	Street Piping	Street Piping - AV - Complex [FT]	FT	472.00	
A.8-10	Street Piping	Street Piping - BK - Standard [FT]	FT	308.00	
A.8-11	Street Piping	Street Piping - BK - Mod Complex [FT]	FT	462.00	
A.8-12	Street Piping	Street Piping - BK - Complex [FT]	FT	616.00	
A.8-13	Street Piping	Street Piping - BAY - Standard [FT]	FT	348.00	
A.8-14	Street Piping	Street Piping - BAY - Mod Complex [FT]	FT	522.00	
A.8-15	Street Piping	Street Piping - BAY - Complex [FT]	FT	696.00	
A.8-16	Street Piping	Street Piping - BG - Standard [FT]	FT	406.40	
A.8-17	Street Piping	Street Piping - BG - Mod Complex [FT]	FT	609.60	
A.8-18	Street Piping	Street Piping - BG - Complex [FT]	FT	812.80	
A.8-19	Street Piping	Street Piping - CH - Standard [FT]	FT	213.60	
A.8-20	Street Piping	Street Piping - CH - Mod Complex [FT]	FT	320.40	
A.8-21	Street Piping	Street Piping - CH - Complex [FT]	FT	427.20	
A.8-22	Street Piping	Street Piping - DIX - Standard [FT]	FT	335.20	
A.8-23	Street Piping	Street Piping - DIX - Mod Complex [FT]	FT	502.80	
A.8-24	Street Piping	Street Piping - DIX - Complex [FT]	FT	670.40	
A.8-25	Street Piping	Street Piping - DOM - Standard [FT]	FT	328.00	
A.8-26	Street Piping	Street Piping - DOM - Mod Complex [FT]	FT	492.00	
A.8-27	Street Piping	Street Piping - DOM - Complex [FT]	FT	656.00	
A.8-28	Street Piping	Street Piping - ELA - Standard [FT]	FT	324.80	
A.8-29	Street Piping	Street Piping - ELA - Mod Complex [FT]	FT	487.20	
A.8-30	Street Piping	Street Piping - ELA - Complex [FT]	FT	649.60	
A.8-31	Street Piping	Street Piping - HR - Standard [FT]	FT	290.40	
A.8-32	Street Piping	Street Piping - HR - Mod Complex [FT]	FT	435.60	
A.8-33	Street Piping	Street Piping - HR - Complex [FT]	FT	580.80	
A.8-34	Street Piping	Street Piping - KRV - Standard [FT]	FT	163.20	
A.8-35	Street Piping	Street Piping - KRV - Mod Complex [FT]	FT	244.80	
A.8-36	Street Piping	Street Piping - KRV - Complex [FT]	FT	326.40	
A.8-37	Street Piping	Street Piping - KC - Standard [FT]	FT	384.80	
A.8-38	Street Piping	Street Piping - KC - Mod Complex [FT]	FT	577.20	
A.8-39	Street Piping	Street Piping - KC - Complex [FT]	FT	769.60	
A.8-40	Street Piping	Street Piping - LAS - Standard [FT]	FT	374.40	
A.8-41	Street Piping	Street Piping - LAS - Mod Complex [FT]	FT	561.60	
A.8-42	Street Piping	Street Piping - LAS - Complex [FT]	FT	748.80	
A.8-43	Street Piping	Street Piping - LIV - Standard [FT]	FT	531.20	
A.8-44	Street Piping	Street Piping - LIV - Mod Complex [FT]	FT	796.80	
A.8-45	Street Piping	Street Piping - LIV - Complex [FT]	FT	1062	
A.8-46	Street Piping	Street Piping - MRL - Standard [FT]	FT	345.60	
A.8-47	Street Piping	Street Piping - MRL - Mod Complex [FT]	FT	518.40	
A.8-48	Street Piping	Street Piping - MRL - Complex [FT]	FT	691.20	

Section A1 - Contractor Cost (Street Piping)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.8-49	Street Piping	Street Piping - ORO - Standard [FT]	FT	265.60	
A.8-50	Street Piping	Street Piping - ORO - Mod Complex [FT]	FT	398.40	
A.8-51	Street Piping	Street Piping - ORO - Complex [FT]	FT	531.20	
A.8-52	Street Piping	Street Piping - PV - Standard [FT]	FT	469.60	
A.8-53	Street Piping	Street Piping - PV - Mod Complex [FT]	FT	704.40	
A.8-54	Street Piping	Street Piping - PV - Complex [FT]	FT	939.20	
A.8-55	Street Piping	Street Piping - RDV - Standard [FT]	FT	348.00	
A.8-56	Street Piping	Street Piping - RDV - Mod Complex [FT]	FT	522.00	
A.8-57	Street Piping	Street Piping - RDV - Complex [FT]	FT	696.00	
A.8-58	Street Piping	Street Piping - SLN - Standard [FT]	FT	316.80	
A.8-59	Street Piping	Street Piping - SLN - Mod Complex [FT]	FT	475.20	
A.8-60	Street Piping	Street Piping - SLN - Complex [FT]	FT	633.60	
A.8-61	Street Piping	Street Piping - SEL - Standard [FT]	FT	219.20	
A.8-62	Street Piping	Street Piping - SEL - Mod Complex [FT]	FT	328.80	
A.8-63	Street Piping	Street Piping - SEL - Complex [FT]	FT	438.40	
A.8-64	Street Piping	Street Piping - STK - Standard [FT]	FT	344.00	
A.8-65	Street Piping	Street Piping - STK - Mod Complex [FT]	FT	516.00	
A.8-66	Street Piping	Street Piping - STK - Complex [FT]	FT	688.00	
A.8-67	Street Piping	Street Piping - VIS - Standard [FT]	FT	219.20	
A.8-68	Street Piping	Street Piping - VIS - Mod Complex [FT]	FT	328.80	
A.8-69	Street Piping	Street Piping - VIS - Complex [FT]	FT	438.40	
A.8-70	Street Piping	Street Piping - WLK - Standard [FT]	FT	683.20	
A.8-71	Street Piping	Street Piping - WLK - Mod Complex [FT]	FT	1,025	
A.8-72	Street Piping	Street Piping - WLK - Complex [FT]	FT	1,366.40	
A.8-73	Street Piping	Street Piping - WIL - Standard [FT]	FT	270.40	
A.8-74	Street Piping	Street Piping - WIL - Mod Complex [FT]	FT	405.60	
A.8-75	Street Piping	Street Piping - WIL - Complex [FT]	FT	540.80	

Section A2 - Contractor Cost (Tank Retrofits)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.33-2	Tank Retrofit	30" Manway [EA]	EA	7,908	
A.33-3	Tank Retrofit	24" Cupola Vent [EA]	EA	6,320	
A.33-4	Tank Retrofit	36" Cupola Vent [EA]	EA	7,660	
A.33-5	Tank Retrofit	48" Cupola Vent [EA]	EA	9,175	
A.33-6	Tank Retrofit	Flush Cleanout [EA]	EA	8,767	
A.33-7	Tank Retrofit	Ladder (steel perm top 8') [8FT]	8 FT	1,777	
A.33-8	Tank Retrofit	Ladder (steel perm 30'-36')	EA	4,893	
A.33-9	Tank Retrofit	Ladder (steel perm 22'-28')	EA	4,340	
A.33-10	Tank Retrofit	Ladder (steel perm 14'-20')	EA	2,971	
A.33-11	Tank Retrofit	12" Overflow Welded Flange [EA]	EA	5,010	
A.33-12	Tank Retrofit	8" Overflow Welded Flange [EA]	EA	4,544	
A.33-13	Tank Retrofit	6" Overflow Welded Flange [EA]	EA	3,845	
A.33-14	Tank Retrofit	4" Overflow Welded Flange [EA]	EA	2,971	
A.33-15	Tank Retrofit	Roof Hatch (30"x30" steel) [EA]	EA	4,456	
A.33-16	Tank Retrofit	Roof Hatch (39"x39" steel) [EA]	EA	5,359	
A.33-17	Tank Retrofit	Roof Hatch (24"x24" steel) [EA]	EA	3,816	
A.33-18	Tank Retrofit	Ladder Saf-T-Climb (30-36 FT) [EA]	EA	4,194	
A.33-19	Tank Retrofit	Ladder Saf-T-Climb (22-28 FT) [EA]	EA	3,583	
A.33-20	Tank Retrofit	Ladder Saf-T-Climb (14-20 FT) [EA]	EA	2,942	
A.33-21	Tank Retrofit	Replace Wellded Hinge for Roof Hatch [EA]	EA	655.34	
A.33-22	Tank Retrofit	Handhole Doubler Plate [EA]	EA	320.39	
A.33-23	Tank Retrofit	2" Threaded Weld-O-Let Coupling [EA]	EA	932.04	
A.33-24	Tank Retrofit	1" Threaded Weld-O-Let Coupling [EA]	EA	771.85	
A.33-25	Tank Retrofit	Anti-climb Door [EA]	EA	3,451	
A.33-26	Tank Retrofit	Welded Hinge for Anti-Climb Door [EA]	EA	349.52	
A.33-27	Tank Retrofit	Safety Railing with OSHA Self-Close Gates [EA]	EA	5,505	
A.33-28	Tank Retrofit	Safety Railing (Moderate) [EA]	EA	4,587	
A.33-29	Tank Retrofit	Single Roof D-ring/tie-off [EA]	EA	467.50	
A.33-30	Tank Retrofit	Four Roof D-Rings [EA]	EA	961.17	
A.33-31	Tank Retrofit	Rafter Replacement [EA]	EA	1075	
A.33-32	Tank Retrofit	Rafter Repair (3' section) [EA]	EA	712.14	
A.33-33	Tank Retrofit	12" Inlet/Outlet Nozzle [EA]	EA	1,704	
A.33-34	Tank Retrofit	8" Inlet/Outlet Nozzle [EA]	EA	1,573	
A.33-35	Tank Retrofit	6" Inlet/Outlet Nozzle [EA]	EA	1,398	
A.33-36	Tank Retrofit	Cupola Vent Doubler Plate [EA]	EA	3,173	
A.33-37	Tank Retrofit	5-inch Handhole [EA]	EA	446.25	
A.33-38	Tank Retrofit	Relocation of hatch & interior ladder [EA]	EA	1,785	
A.33-39	Tank Retrofit	CP Junction Box Relocation [EA]	EA	2,366	
A.33-40	Tank Retrofit	Overflow pipe replacement [EA]	EA	24,480	
A.33-41	Tank Retrofit	Berm Replacement [LF]	EA	25.81	

Section A2 - Contractor Cost (Tank Retrofits)					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
A.33-42	Tank Retrofit	Roof drains [EA]	EA	1,128	
A.33-43	Tank Retrofit	Earthquake Rods [EA]	EA	172.04	
A.33-44	Tank Retrofit	20' Tank Ext. Lifeline (one-off) [EA]	EA	3,732	
A.33-45	Tank Retrofit	20' Tank Ext. Lifeline (on-site) [EA]	EA	3,222	
A.33-46	Tank Retrofit	40' Tank Ext. Lifeline (one-off) [EA]	EA	3,910	
A.33-47	Tank Retrofit	40' Tank Ext. Lifeline (on-site) [EA]	EA	3,400	
A.33-48	Tank Retrofit	CP System (IC) [EA]	EA	9,108	
A.33-49	Tank Retrofit	CP System (galv) [EA]	EA	8,441	

Section B - Electrical Contractor Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
B.1-1	Electrical Installation	New Well Station [LS]	LS	122,034	
B.1-2	Electrical Installation	Complex Station / Pumped Storage Facility [LS]	LS	145,405	
B.1-3	Electrical Installation	Treatment Facility [LS]	LS	319,041	
B.2-1	Electrical Installation	Gen Set w/ Foundation, 15-80 KW [LS]	LS	52,994	
B.2-2	Electrical Installation	Gen Set, 100-125 KW [LS]	LS	59,649	
B.2-3	Electrical Installation	Gen Set w/ Foundation, 150-300 KW [LS]	LS	62,781	
B.2-5	Electrical Installation	Gen Set w/ Foundation. 350-400 KW [LS]	LS	93,275	
B.3-1	Electrical Installation	100-200 A, Outdoor Panelboard [LS]	LS	81,824	
B.3-2	Electrical Installation	400 A, Outdoor Panelboard [LS]	LS	125,736	
B.3-3	Electrical Installation	600 A, Outdoor Panelboard [LS]	LS	139,116	
B.3-4	Electrical Installation	800 A, Outdoor Panelboard [LS]	LS	158,901	
B.3-5	Electrical Installation	200 A, Indoor Panelboard [LS]	LS	66,430	
B.3-6	Electrical Installation	600 A, Indoor Panelboard [LS]	LS	137,732	
B.3-7	Electrical Installation	400 A, Indoor Panelboard [LS]	LS	118,380	
B.3-8	Electrical Installation	100 A, Outdoor Panelboard [LS]	LS	94,305	
B.4-1	Electrical Installation	Utility Cost [LS]	LS	11,333	
B.4-3	Electrical Installation	Tank Level Transducers [LS]	LS	12,242	
B.4-4	Electrical Installation	Pump Upgrade [LS]	LS	27,552	
B.4-5	Electrical Installation	Pump Upgrade (horizontal) [LS]	LS	11,820	
B.4-6	Electrical Installation	RTU [LS]	LS	10,156	
B.5-4	Electrical Installation	VFD Install [EA]	LS	14,642	

Section C - Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
C.1-1	Acoustical Shelter	4'x5'x3'H [EA]	EA	3,398	
C.1-2	Acoustical Shelter	4'x4'x8'H [EA]	EA	9,086	
C.1-3	Acoustical Shelter	5'x5'x8'H [EA]	EA	14,003	
C.1-4	Acoustical Shelter	6'x6'x8'H [EA]	EA	17,432	
C.1-5	Acoustical Shelter	6'x6'x12'H [EA]	EA	26,593	
C.1-6	Acoustical Shelter	4'x7'x3'H [EA]	EA	11,379	
C.1-7	Acoustical Shelter	6'x6'x9'H [EA]	EA	19,506	
C.2-1	Hydropneumatic Tank	1,600-1,700 gal [EA]	EA	21,625	
C.2-2	Hydropneumatic Tank	2,000-2,800 gal [EA]	EA	25,897	
C.2-3	Hydropneumatic Tank	3,200 gal [EA]	EA	28,844	
C.2-4	Hydropneumatic Tank	5,000 gal [EA]	EA	37,817	
C.2-5	Hydropneumatic Tank	5,800 gal [EA]	EA	42,932	
C.2-6	Hydropneumatic Tank	10,000 gal [EA]	EA	48,982	
C.2-7	Hydropneumatic Tank	500 gal [EA]	EA	16,837	
C.2-8	Hydropneumatic Tank	25,000 gal [EA]	EA	199,042	
C.2-9	Hydropneumatic Tank	12,500 gal [EA]	EA	133,020	
C.2-10	Hydropneumatic Tank	6,275 gal [EA]	EA	93,057	
C.3-1	Control Valve	3" dia, well service [EA]	EA	2,990	
C.3-2	Control Valve	6" dia [EA]	EA	6,017	
C.3-3	Control Valve	8" dia [EA]	EA	10,244	
C.3-4	Control Valve	10" dia [EA]	EA	11,568	
C.3-5	Control Valve	12" dia [EA]	EA	15,577	
C.3-6	Control Valve	16" dia [EA]	EA	25,742	
C.3-7	Control Valve	4" and <4" Control Valve [EA]	EA	4,160	
C.3-8	Control Valve	14" dia [EA]	EA	27,819	
C.4-1	Hydropneumatic Tank Controls	Hydropneumatic Tank Cla-Valve Controls [EA]	EA	2,655	
C.4-2	Hydropneumatic Tank Controls	Hydropneumatic Tank Sight Glass & Electrodes [EA]	EA	1,936	
C.4-3	Hydropneumatic Tank Controls	Hydropneumatic Tank Pressure Diff. Trasmitter [EA]	EA	1,844	
C.5-1	Well Pump	250 HP - Top Drive [EA]	EA	106,340	
C.5-2	Well Pump	200 HP - Top Drive [EA]	EA	108,571	
C.5-3	Well Pump	150 HP - Top Drive [EA]	EA	94,162	
C.5-4	Well Pump	125 HP - Top Drive [EA]	EA	92,944	
C.5-5	Well Pump	60-75 HP - Top Drive [EA]	EA	64,694	
C.5-6	Well Pump	200 HP - Sub [EA]	EA	137,954	
C.5-7	Well Pump	125 HP - Sub [EA]	EA	134,936	
C.5-8	Well Pump	50 HP - Sub [EA]	EA	46,924	
C.5-9	Well Pump	15-25 HP - Sub [EA]	EA	23,423	
C.5-10	Well Pump	25-30 HP - Top Drive [EA]	EA	41,686	
C.5-11	Well Pump	100 HP - Top Drive [EA]	EA	64,156	

Section C - Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
C.5-12	Well Pump	5-10 HP - Sub [EA]	EA	18,301	
C.5-13	Well Pump	60-75 HP - Sub [EA]	EA	56,409	
C.5-14	Well Pump	40-50 HP - Top Drive [EA]	EA	57,110	
C.5-15	Well Pump	30-40 HP - Sub [EA]	EA	33,848	
C.5-16	Well Pump	400 HP - Top Drive [EA]	EA	160,439	
C.6-1	Flowmeter	Data Industrial [EA]	EA	2,904	
C.6-2	Flowmeter	6" Magmeter [EA]	EA	4,877	
C.6-3	Flowmeter	8" Magmeter [EA]	EA	5,184	
C.6-4	Flowmeter	12" Magmeter [EA]	EA	8,402	
C.6-5	Flowmeter	2" Magmeter [EA]	EA	3,393	
C.6-6	Flowmeter	10" Magmeter [EA]	EA	8,571	
C.6-7	Flowmeter	16" Magmeter [EA]	EA	10,913	
C.6-8	Flowmeter	24" Magmeter [EA]	EA	12,229	
C.7-1	Booster Pump	7.5 hp [EA]	EA	23,249	
C.7-2	Booster Pump	20 - 40 hp [EA]	EA	33,797	
C.7-3	Booster Pump	50 hp [EA]	EA	35,592	
C.7-4	Booster Pump	75 -100 hp [EA]	EA	54,054	
C.7-5	Booster Pump	125 hp [EA]	EA	55,437	
C.7-6	Booster Pump	250 hp [EA]	EA	71,237	
C.7-8	Booster Pump	20"X120" Suction Can [EA]	EA	9,907	
C.8-1	Flex-Tend	Double Ball EBAA, 8" dia [EA]	EA	4,318	
C.8-2	Flex-Tend	Double Ball EBAA, 10" dia [EA]	EA	5,943	
C.8-3	Flex-Tend	Double Ball EBAA, 12 " dia [EA]	EA	8,577	
C.8-4	Flex-Tend	Double Ball EBAA, 16" dia [EA]	EA	11,685	
C.8-5	Flex-Tend	Double Ball EBAA, 18"dia [EA]	EA	14,891	
C.8-6	Flex-Tend	Double Ball EBAA, 6" and <6"dia [EA]	EA	2,724	
C.10	Static Mixer	Wafer type [EA]	EA	6,264	
C.11-1	Sand Separator	850 gpm [EA]	EA	25,794	
C.11-3	Sand Separator	225-525 gpm [EA]	EA	21,969	
C.11-4	Sand Separator	Pump Protection Separator	EA	13,572	
C.11-2	Sand Separator	400 - 550 gpm [EA]	EA	8,266	
C.12-1	Nitrate Analyzer	Unit [EA]	EA	22,316	
C.12-2	Chlorine Analyzer	Chlorine Analyzer Unit [EA]	EA	5,770	
C.17-1	Vault	4.5'x6'x4' [LS]	LS	7,395	
C.17-2	Vault	4'x6'x4' [LS]	LS	4,074	
C.17-3	Vault	4'x4'x4' [LS]	LS	2,746	
C.17-4	Vault	6'x6'x4' [LS]	LS	2,849	
C.17-5	Vault	4'x5'x5' [LS]	LS	5,179	
C.17-6	Vault	Vault, Lid/Ladder [EA]	EA	7,062	
C.18-1	Chemical Shed	Tuff Shed	LS	3,109	

Section C - Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
C.20-1	Ion Exchange System	<600 GPM [LS]	LS	542,167	
C.20-2	Ion Exchange System	>600 GPM [LS]	LS	602,974	
C.20-3	Ion Exchange System	>1100 GPM [LS]	LS	930,165	

Section D - Electrical Equipment Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
D.1-1	Gen Set w/ ATS	350-400 KW [EA]	EA	99,241	
D.1-2	Gen Set w/ ATS	300 KW [EA]	EA	106,300	
D.1-3	Gen Set w/ ATS	250 KW [EA]	EA	88,065	
D.1-4	Gen Set w/ ATS	200 KW [EA]	EA	65,018	
D.1-5	Gen Set w/ ATS	125-150 KW [EA]	EA	58,205	
D.1-6	Gen Set w/ ATS	100 KW [EA]	EA	53,851	
D.1-7	Gen Set w/ ATS	50-80 KW [EA]	EA	46,245	
D.1-8	Gen Set w/ ATS	450 KW [EA]	EA	127,794	
D.1-9	Gen Set w/ ATS	>50 KW [EA]	EA	31,991	
D.2-1	Air Compressor	Air Compressor [EA]	EA	1,724	
D.3-1	Elec Panelboard	200 Amp [EA]	EA	41,931	
D.3-2	Elec Panelboard	400 Amp[EA]	EA	59,146	
D.3-3	Elec Panelboard	600 Amp [EA]	EA	68,506	
D.3-4	Elec Panelboard	800 Amp [EA]	EA	84,477	
D.3-5	Elec Panelboard	1200 Amp [EA]	EA	326,563	
D.3-6	Elec Panelboard	Panelboard Sunshade [EA]	EA	2,783	
D.4-1	Metering Panel	Meter Panel, 100 - 200A [EA]	EA	13,131	
D.4-2	Metering Panel	Meter Panel 400 - 600A [EA]	EA	17,347	
D.4-4	Metering Panel	Meter Panel, 800A with ATS [EA]	EA	38,384	
D.5-1	SCADA	RTU Panel/Radio Panel [EA]	EA	6,766	
D.6-1	SCADA	SCADA Pack [EA]	EA	2,765	
D.6-2	SCADA	Orbit LN Radio [EA]	EA	947.84	
D.6-3	SCADA	SCADA Antenna [EA]	EA	392.35	
D.6-4	SCADA	SCADA Tower for Antenna [EA]	EA	6,717	
D.6-5	SCADA	SCADA RTU UPS [EA]	EA	2,314	
D.7-1	Hydraulic Enclosure	Hydraulic Enclosure [EA]	EA	7,435	
D.8-1	Transducer	Pressure Transducer [EA]	EA	790.6286122	
D.8-2	Transducer	Tank Level Transducer [EA]	EA	2671.637502	
D.8-3	Transducer	Well Level Transducer [EA]	EA	1,226	
D.9-1	VFD	VFD, 75 HP [EA]	EA	7,683	
D.9-2	VFD	VFD, 100 HP [EA]	EA	10,987	

Section E - Consultant Cost					
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Notes
E.1-1	CEQA Consultant	Initial Study - Typical [LS]	LS	22,575	
E.1-2	CEQA Consultant	Initial Study - Complicated Scope [LS]	LS	50,021	
E.1-3	CEQA Consultant	Initial Study - Partial Scope [LS]	LS	11,876	
E.2-1	Well Consultant	Construction/Design Services [LS]	LS	86,456	
E.2-2	Well Consultant	Geohydrologic Investigation [LS]	LS	71,798	
E.2-3	Well Consultant	Drilling Inspection [LS]	LS	39,466	
E.2-4	Well Consultant	Well Sealing and Testing [LS]	LS	14,975	
E.3-2	Surge Analysis	Complex Scope of Work [LS]	LS	12,978	
E.4-1	Structural Eng	Design for Equipment Foundation [EA]	EA	932.06	
E.4-2	Structural Eng	Design for Block Building [EA]	EA	5,786	
E.4-3	Structural Eng	Treatment Facility [EA]	EA	1,519	
E.4-4	Structural Eng	Seismic Capacity Design Review [EA]	EA	7,297	
E.6-9	Site Survey	Topography Survey [LS]	LS	5,761	
E.6-10	Site Survey	Topography with Staking [LS]	LS	6,958	
E.6-11	Site Survey	Topography with Legal Description [LS]	LS	8,396	
E.6-12	Site Survey	Pipeline Alignment (<2000') [LS]	LS	7,525	
E.6-13	Site Survey	Complex (>2,000' pipeline or 2+ days) [LS]	LS	11,238	
E.7-1	Biological /Cultural Assess	Cultural Literature Review [LS]	LS	8,338	
E.7-2	Biological /Cultural Assess	Prelim Survey [LS]	LS	2,936	
E.7-3	Biological /Cultural Assess	Acoustical Survey [LS]	LS	3,897	
E.7-4	Biological /Cultural Assess	Focused Survey [LS]	LS	6,348	
E.7-5	Biological /Cultural Assess	On-site Monitoring [LS]	LS	20,753	
E.7-6	Biological /Cultural Assess	On-Site Monitoring (Complex Scope) [LS]	LS	57,234	
E.8-1	Geotech Report	2 Borings [LS]	LS	8,388	
E.8-2	Geotech Report	4 Borings [LS]	LS	10,343	
E.8-3	Geotech Report	4 Deep Borings/Complex Scope [LS]	LS	16,604.84	

Section F - Other Cost					
Cost Basis	Item	Description [Unit]	Unit	SKU Unit Cost, $	Note
F.1-1	City Permit Fee	CUP Permit [LS]	LS	17,566	
F.1-2	City Permit Fee	Building Permit [LS]	LS	6,556	
F.1-3	City Permit Fee	Encroachment Permit [LS]	LS	4,041	
F.2-1	WQ Testing	WQ Testing for New Well [LS]	LS	72,419	
F.3-2	NPDES Permit Fee	NPDES Permit [LS]	LS	2,443	
F.4-1	Air Quality Permit fee	Air Quality Permit fee [LS]	LS	2,192	
F.5-1	Traffic Control	Traffic Control (Simple Scope) [LS]	LS	20,255	
F.5-2	Traffic Control	Traffic Control Complex Scope [LS]	LS	81,658	
F.7-1	On-Site Grading	Excavation-Embankment [CF]	CF	0.95	
F.7-2	On-Site Grading	Minor Excave/Embank [LS]	LS	7,116	
F.7-3	On-Site Grading	Excave/Embank, Tank Site [LS]	LS	37,950	
F.7-4	On-Site Grading	Import-Export [CF]	CF	1.39	
F.8-1	Drainage Piping	On-site, Drainage Pipe [FT]	FT	414.04	
F.9-1	Catch Basin	36" x 36" CB [EA]	EA	33,725	
F.9-2	Catch Basin	24" x 24" CB [EA]	EA	18,369	
F.10-1	Curb and Gutter	Concrete [FT]	FT	209.24	

Section E.

Supply Demand Report

CALIFORNIA WATER SERVICE
1720 North First Street
San Jose, CA 95112-4598 *Tel:* (408) 367-8200

Water Supply-Demand Analysis Report

Water System: 101 – Bakersfield

Updated: February 11, 2021

The Supply-Demand Analysis is an inventory of water production and pump assets for the Cal Water Bakersfield System (BK) that provide direct and indirect sources of supply to meet customer demands in accordance with CPUC General Order 103-A and CCR Title 22 Waterworks Standards. This report provides an outline of the methodology built into Supply-Demand Analysis Tool (herein referred to as "tool") used to determine the results of the system analysis based on a combination of regulatory requirements, professional consultant recommendations, and industry standard practices, including those from the American Water Works Association (AWWA) and American Society of Civil Engineers (ASCE). Additional alternative analyses may be conducted using the tool for a variety of situations as part of individual project justifications.

Analysis Methodology

Determining Production Capacities

Capacities are determined from the aggregate of individual production capacities of all contributing active assets (e.g. wells, booster pumps and control valves). Individual production capacities are determined from electronically-stored flowmeter data (i.e. SCADA) where available, using the latest calculated full year non-zero average; if no SCADA data is available, the rated design capacity or pump test data are used. Interzonal and interconnects (purchased water) control valves are assigned a flow rate matching flow velocities of 5-7 feet per second where flow metering and SCADA data are not available. All production rates were verified by water system staff for accuracy and adjusted where necessary. The following are supply capacity definitions used in this analysis and the tool:

- **Supply Capacity:** Sources of supply such as wells, surface water treatment plants, and interconnections. Zone supplies include interzonal valves and pumps.
- **Supply & Pump Capacity:** Sources of supply plus booster pumps at storage sites.
- **Firm Capacities:** Sum total of supply or pump capacity minus the largest contributing asset. This may be a single well, booster pump, interconnection valve etc., not the entire station. This approach is based on industry standard practice to ensure water system can reliably meet customer demands in the event of equipment failure, and is strongly encourage by USPEA, FEMA,

Ten State Standards, AWWA, Water Environmental Research Foundation (WERF) and state requirements.[8,9]

- **Tank Storage Capacity:** Nominal capacity of storage tanks. Actual usable or effective capacity is determined by facility specific physical and operational constraints.

Each supply & pump asset can be attributed to a respective zone, however, the total capacity of all contributing assets cannot always be quantified due to lack of flow metering. This applies particularly to zones floated by tanks or supplied exclusively via unmetered control valves. These zones may then be consolidated into District Metered Areas (DMA).

Allocating Demand per Zone or DMA

Demand per zone is determined using the latest full year (2019 for this report) billing records overlaid on maps of the distribution system pressure zones and adjusted based on max day demand as recorded from production records. Each customer service and the monthly amount metered/billed is attributed to the pressure zone it lies within or is closest to and a percentage of total system demand is calculated for each zone. By allocating the ratio of demand billed per zone for the entire system, the analyses can be done for an individual zone, group of zones (DMA) or the entire system. Bakersfield still has a significant number of flat-metered services which means that billing data does not reflect the zones entire demand. Additionally, the flat-metered services are clustered in areas such that each zone needs to be adjusted by a different factor to accurately estimate demand by zone. Based on the percentage of metered services in each pressure zone, the total billing data for that zone was scaled up by dividing by the percentage of metered services to account for flat-metered connections.

Determining Factors for Demands and Storage Needs

The max day demand (MDD) is the amount of water utilized by customers during the highest day of use as recorded in the last 10 years or calculated per the performance criteria and respective requirements. For zone-specific applied criteria, a ratio of the total is used. The ratio is obtained by the sum of customer metered (for each zone or DMA) divided by the total amount billed for each month in the system which is used as a multiplier with the system-wide MDD. The peak hour demand (PHD) level of service requirement is a 1.5 multiplier of the MDD. The storage requirement in this analysis is calculated for a 4-hour duration of PHD that cannot be met by supply capacity.

[8] FEMA, *Water Supply System and Evaluation Methods Volume I: Water Supply System Concepts* (October 2008)
[9] USEPA, 600/R-11/054 *Planning for an Emergency Drinking Water Supply* (June 2011)

Performance Criteria/Level of Service

Performance criteria used to maintain a regulatory required and operational adequate level of service.

Item	General Description	Reference
System Demand	Water system shall meet the max day demand using sources of supply with the largest source out of service. Peak hour demand shall be met using the sources of supply and storage reserves for a period of 4 hours.	General Order 103 § II.2.B.(3)(b) Title 22, Chapter 16: Waterworks Standards § 64554
Zone Demand	Each zone shall meet the respective max day demand using sources and interzonal supply with the largest supply out of service. Peak hour demand shall be met using the sources of supply and storage reserves a period of 4 hours.	General Order 103 § II.2.B.(3)(b) Title 22, Chapter 16: Waterworks Standards § 64554
Storage	Storage shall be adequate to provide the 4 hours of booster pumping or gravity flow necessary to meet peak hour demands that are not met by sources or interzonal supplies.	AWWA M42 Cal Water Design Guidelines
Other Criteria Not Built Into Tool Analyses		
Total Storage	Sum of operation, fire and emergency storage outlined below.	2008 BK Water Supply and Facilities Master Plan
Operational Storage	Satisfy diurnal variations in demand, reducing peak treatment plant output and transmission pipeline capacity required to service peak demands.	2008 BK Water Supply and Facilities Master Plan
Fire Flow (General)	Minimum: 1,000 gpm for 1 hour (residential < 3.6 Ksqft)	California Fire Code (CFC)
Fire Flow	1,000 gpm for 2 hours (R1) 2,000 gpm for 2 hours (R2/R4) 3,500 gpm for 2 hours (commercial) 4,000 gpm for 2 hours (industrial)	2008 BK Water Supply and Facilities Master Plan
Fire Storage	0.12 MG (residential) 0.24 MG (residential > 3.5 Ksqft) 0.42 MG (commercial) 0.48 MG (industrial)	General Order 103 § VI.1.A AWWA M42 Local Agency
Emergency Storage	One average day demand for each pressure zone or independent system.	2008 BK Water Supply and Facilities Master Plan

Water System Information: Bakersfield (including North Garden)

Located in the Central Valley, the Bakersfield Water System provides drinking water to approximately 286,310 customers through 72,150 service connections in the majority portion of the City of Bakersfield and in the entire communities of Olcese and North Garden. The sources of water supplies to meet the needs of customers is provided by eight interconnections with the Kern County Water Agency and with 78 active wells that are owned by Cal Water. The total BK system has 29 booster stations and 55 storage tanks. This system has two surface water treatment plants. The distribution system is hydraulically divided up into 21 pressure zones. DMAs were not used in this analysis. For the year 2020, groundwater wells supplied, on average, 46% of the total supply, purchased water (KCWA) supplied 27%, and surface water (treatment plants) supplied 27% (see Appendix B).

Supply Capacity:	**110,906**	gpm
Supply & Pump Capacity:	**151,561**	gpm
Tank Storage Capacity:	**45.540**	MG

MDD and PHD Level of Service Analysis Results

The MDD and PHD are compared to supply capacities to identify deficiencies.

System Wide

System	Month of Max Demand	Firm Supply Capacity (gpm)	MDD (gpm)	Firm Supply & Pump Capacity (gpm)	PHD (gpm)
Bakersfield	August	84,414	77,911	118,738	116,687

The Bakersfield system as a whole is sufficient in meeting the MDD and PHD.

By Zones

Zone	Month of Max Demand	Firm Supply Capacity (gpm)	MDD (gpm)	Firm Supply & Pump Capacity (gpm)	PHD (gpm)
LOW	August	38,844	45,693	40,853	68,540
540	August	16,569	7,699	17,430	11,548
575	August	2,600	637	2,600	956

Zone	Month of Max Demand	Firm Supply Capacity (gpm)	MDD (gpm)	Firm Supply & Pump Capacity (gpm)	PHD (gpm)
615	August	3,780	2,918	3,780	4,377
660	August	6,210	2,480	6,210	3,720
675	August	3,125	2,151	3,125	3,227
740	August	890	408	890	612
760	August	1,930	458	1,930	687
770	August	0	388	0	583
780	August	5,266	3,157	5,266	4,736
790	August	375	60	375	90
820	August	0	139	0	209
880	August	22,600	3,565	22,600	5,348
930-A	August	3,568	1,992	3,568	2,988
930-C	August	1,800	538	1,800	807
1000	August	4,931	2,779	4,931	4,168
1010	August	3,603	2,032	3,603	3,048
1025	August	50	139	50	209
1130	August	2,225	418	2,225	627
1200	August	595	259	595	388
BKNG	August	13,247	13,116	19,805	19,675

RED: Capacity is less than MDD/PHD.

In the LOW, 575, 615, 770, 820, and 1025 zones, the available firm supply and supply & pump capacities are inadequate to meet both or one of the MDD and PHD.

- LOW: This zone has eight interzonal connections, two interconnections, three booster pumps and 56 wells with a supply capacity of 5,571 gpm, 1,056 gpm, 2009 gpm, and 35,114 gpm, respectively. When the largest well is removed (1285 gpm), this yields a firm capacity of 40,456 gpm for the MDD and 42,465 gpm for the PHD. Although deficient in meeting MDD and PHD, the estimated capacity for the interzonal connections is conservative and there are emergency connections that can supply the LOW zone from the 540 zone in the event that peak demand exceeds supply.

- 615: This zone has three boosters with a combined supply capacity of 3,100 gpm and two interconnections with a combined supply capacity of 1,980 gpm. Removing the largest booster (1,300 gpm) yields a firm capacity of 3,780 gpm.

- 675: This zone has three booster pumps and an interzonal valve that can supply water from KCWA directly to the zone. PHD deficiency can be met with the 3.5 MG of storage at Station 100. There are also emergency connections that can supply this zone from the 760 zone.

- 770: This zone has one interzonal connection with a supply capacity of 489 gpm. Removing this sole connection yields a firm capacity of zero gpm.

- 820: This zone has one interzonal connection with a supply capacity of 200 gpm. Removing this sole connection yields a firm capacity of zero gpm.

- 1025: This zone has two interzonal connection with a combined supply capacity of 490 gpm. Removing the larger connection (440 gpm) yields a firm capacity of 50 gpm. This is a conservative estimate of the capacity of the control valves, so the deficiency may not be as significant. Also, there is a check valve that can supply the 1025 zone from the 1010 zone at a slightly lower pressure.

The Bakersfield system has most of its groundwater sources in the south and west parts of the system and surface water sources in the north and east parts of the system. In addition to the KCWA connections, Cal Water has two surface water treatment plants that use water from the Kern River. In order to improve reliability and flexibility, Cal Water is evaluating system operations and infrastructure (i.e. pipelines/interzonal connections/booster stations) to determine better ways to send its treated surface water to the southwest. This would better utilize the treatment plants and make them an effective alternative to groundwater use during widespread power outages that impact wells without backup power. This evaluation will also address sending groundwater from the south to the north areas of the system. This will give Cal Water more latitude in handling seasonal variations in demand and supply, wet-year/dry-year conditions and expected regulatory requirements (e.g. SGMA).

A summary report of these results is provided in Appendix A (Zone Summary Report).

Appendix A

Zone Summary Report

Max Day Demand and Peak Hour Demand Level of Service

CALIFORNIA WATER SERVICE
Operations Engineering 1720 North First Street
San Jose, CA 95112-4598

District-Wide Table Summary of Supply-Demand Analysis Report by System/Zone
Max Day Demand (MDD) and Peak Hour Demand (PHD) Levels Of Service (LOS)

District: 101-Bakersfield

Date of Analysis: February-2021
Demand Data Used: 2019 MDD: (10-Year Analysis)
Production Data Used: 2019 Avg Production or Last 5-Year Tests
Consumption Allocation: 2019 Service Connections

District Summary Table (gpm)

Sys	Zone	Max Month	Supply Capacity	Firm Supply	MDD	Surplus (Deficit)	Firm Supply & Pump	PHD	PHD Surplus (Deficit)	Storage Needed (MG)	Storage Avail (MG)	Surplus (Deficit) (MG)	Notes
BK	System	Aug	92,814	84,414	77,911	6,503	118,738	116,867	1,871	7.789	39.825	32.036	
BK	LOW	Aug	40,128	38,844	45,693	(6,849)	40,853	68,540	(27,687)	7.127	0.840	(6.287)	Capability to increase RR turnouts.
BK	540	Aug	18,579	16,569	7,699	8,871	17,430	11,548	5,882	-	7.450	-	
BK	575	Aug	3,850	2,600	637	1,963	2,600	956	1,644	-	1.010	-	
BK	615	Aug	5,080	3,780	2,918	862	3,780	4,377	(597)	0.143	2.000	1.857	
BK	660	Aug	8,887	6,210	2,480	3,730	6,210	3,720	2,490	-	4.500	-	
BK	675	Aug	4,325	3,125	2,151	974	3,125	3,227	(102)	0.024	3.500	3.476	
BK	740	Aug	1,365	890	408	482	890	612	278	-	0.000	-	
BK	760	Aug	2,930	1,930	458	1,472	1,930	687	1,243	-	0.000	-	
BK	770	Aug	489	0	388	(388)	0	583	(583)	0.140	0.000	(0.140)	
BK	780	Aug	6,816	5,266	3,157	2,109	5,266	4,736	531	-	3.620	-	
BK	790	Aug	750	375	60	315	375	90	285	-	0.162	-	
BK	820	Aug	200	0	139	(139)	0	209	(209)	0.050	0.000	(0.050)	
BK	880	Aug	31,000	22,600	3,565	19,035	22,600	5,348	17,252	-	13.000	-	
BK	930-A	Aug	4,668	3,568	1,992	1,576	3,568	2,988	580	-	1.100	-	
BK	930-C	Aug	3,850	1,800	538	1,262	1,800	807	993	-	1.398	-	
BK	1000	Aug	7,211	4,931	2,779	2,152	4,931	4,168	763	-	0.000	-	
BK	1010	Aug	5,468	3,603	2,032	1,571	3,603	3,048	555	-	0.000	-	221-C Unknown Capacity
BK	1025	Aug	490	50	139	(89)	50	209	(159)	0.038	0.000	(0.038)	
BK	1130	Aug	3,615	2,225	418	1,807	2,225	627	1,598	-	0.500	-	Sta 208 Unknown Capacities
BK	1200	Aug	1,470	595	259	336	595	388	207	-	0.745	-	Sta 212 Unknown Capacities

Sys	Zone	Max Month	Sources Only	Firm Supply	MDD	Surplus (Deficit)	Firm Supply & Pump	PHD	PHD Surplus (Deficit)	Storage Needed (MG)	Storage Avail (MG)	Surplus (Deficit) (MG)	Notes
BK	District	Aug	107,462	99,062	91,028	8,034	139,943	136,542	3,401	8.995	45.540	36.545	
BK	System	Aug	92,814	84,414	77,911	6,503	118,738	116,867	1,871	7.789	39.825	32.036	
BKNG	System	Aug	14,647	13,247	13,116	131	19,805	19,675	130	1.543	5.715	4.172	Capability to increase NW turnouts.

Appendix B

2020 Water Production Report (WPR) Table

Monthly
Bakersfield

Supply Type	January	February	March	April	May	June	July	August	September	October	November	December	Average
Wells	431,849	451,190	544,520	507,030	842,698	1,210,994	1,171,412	1,146,601	1,098,233	852,721	678,846	594,640	
Leased	-	-	-	-					-		-		
Purchased	254,815	295,873	276,322	319,334	451,955	495,619	771,941	642,904	557,857	602,498	386,133	421,325	
Recycled													
Surface	277,639	357,773	401,316	393,715	589,978	725,162	645,734	636,480	478,791	408,829	392,431	271,970	
Well Total	431849.00	451,190	544,520	507,030	842,698	1,210,994	1,171,412	1,146,601	1,098,233	852,721	678,846	594,640	794,228
Purchased Total	254,815	295,873	276,322	319,334	451,955	495,619	771,941	642,904	557,857	602,498	386,133	421,325	456,381
Surface Total	277,639	357,773	401,316	393,715	589,978	725,162	645,734	636,480	478,791	408,829	392,431	271,970	464,985
Total Production	964,304	1,104,836	1,222,157	1,220,079	1,884,631	2,431,775	2,589,087	2,425,985	2,134,881	1,864,049	1,457,410	1,287,936	1,715,594
						MDD	45.24%					Ave. Well	46.29%
												Ave. Purchase	26.60%
												Ave. Surface	27.10%

California Water Service Company

Bakersfield District Project Justification Book
2021 General Rate Case

www.calwater.com

LIST OF ATTACHMENTS FOR CHAPTER 9

	Attachment #	Description
1	Attachment 9-1	Common Plant_2021_GRC_Justification Book
2	Attachment 9-2	CWS Response to DR KN3-011

Attachment 9-1:
A.21-7-002 2021 GRC Common Plant Project
Justification Book

CAPITAL PROJECT JUSTIFICATION

Common Plant Issues

2021 GENERAL RATE CASE

A.21-07-____ (For Test Year 2023)

July 2021

California Water Service

Quality. Service. Value.

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Table of Contents

Section A. Common Plant Issues Overview 1

Common Plant Issues Overview 2

Engineering Process Improvements & 2021 GRC Settlement Requests 2

Section B. Common Issues Discussion 9

a. Pipeline Replacement Program 10

b. Meter Replacement Program 28

c. Flowmeter Replacements 30

d. Vehicle Replacement Program 35

e. Pump & Motor Replacements 38

f. Extraordinary Maintenance Program: Tank Coatings 56

g. Cathodic Protection Systems and Components 63

h. Control Valve Overhaul and Replacement 65

i. Water Quality Analyzers 71

j. Tank Retrofits 75

k. Customer Meter Vault Lid Replacement Program 80

l. SB 1398 Service Replacement Program 82

m. Pressure Vessel 84

n. Water Quality Sample Sites 90

o. Wildfire Hardening Program 92

p. Well Infrastructure Renewal Program 94

q. Non-Specific Capital Budgets 105

r. Cost Catalog Report 114

s. Additional Cost Factors 121

t. Design & Permitting Only Projects 159

u. Multi-GRC Projects for Special Treatment in Special Request #5 162

Section C. Background Reports 164

Table 1. Acronyms

Acronym	Definition
ACB	Advance Capital Budget
AFB	Air Force Base
AFCEC	Air Force Civil Engineering Center
AFUDC	Allowance for Funds Used During Construction
AL	Advice Letter
AMI	Advanced Metering Infrastructure
AV	Antelope Valley
AWWA	American Water Works Association
BG	Bear Gulch
BK	Bakersfield
BP	British Petroleum
CCR	California Code of Regulations
CL&C	Concrete Lined And Coated
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
Cr6 / CrVI	Hexavalent Chromium/ Chromium-6
CSS	Customer Support Services
CW	Cal Water
CWS	California Water Service
DBPs	Disinfection Byproducts
DDW	Division of Drinking Water (a division of SWRCB)
DLA	Defense Logistics Agency
DoD / DOD	Department of Defense
DOM	Dominguez
DSOD	Division of Safety of Dams
ENR	Engineering News Record
EPA	Environmental Protection Agency
ft	Feet
GAC	Granular Activated Carbon
GO	General Office
gpm	Gallons per minute
GRC	General Rate Case
HAA5	Haloacetic Acids Five
IDC	Interest During Construction
L	Liter
LA	Los Angeles
LAR	Los Angeles County Region
MA	Memorandum Account
MCBA	Modified Cost Balancing Account
MCL	Maximum Contaminant Level

Acronym	Definition
MDD	Maximum Day Demand
MG	Million Gallons
MRP	Main Replacement Program
N-T-G	Net-to-Gross
OPE	Overall Plant Efficiencies
PA	Public Advocates
PFOA	Perfluorooctanesulfonic Acid
PFOS	Perfluorooctanesulfonate
PHD	Peak Hour Demand
PHFU	Plant Held For Future Use
PID	Project Identification Number
PSPS	Public Safety Power Shutoff Program
PV	Palos Verdes or Portola Valley (depending on the context)
RBO	Rate Base Offset
RO	Results of Operations
RS	Robert Snow
SCADA	Supervisory Control and Data Acquisition
SRM	Sales Reconciliation Mechanism
STA	Station
SWRCB	State Water Resource Control Board
SWRCB T-2	Tier 2
TOC	Total Organic Carbon
UPRR	Union Pacific Railroad
VFD	Variable Frequency Drive
WRAM	Water Revenue Adjustment Mechanism
WS&FMP	Water Supply and Facility Master Plan
µg	Micro Gram

Section A.

Common Plant Issues Overview

Introduction

Common Plant Issues Overview

The upkeep, improvement, and expansion of a major water utility requires a large portfolio of programs and projects to address a wide range of needs. Sometimes the scope of such projects is highly specialized, requiring a justification that is tailored to the specific parameters of the problem it attempts to solve. Often, however, there are repeated themes throughout the remaining project lists that can be generalized across an entire class of problems.

"Common Plant Issues" are a collection of projects whose justifications and scope do not vary greatly from project to project. This Common Plant Issues Project Justification book is used to explain these matters on a global basis, but the specific district project(s) that fit the Common Plant characteristics are included in each district's Project Justification book for the project(s) above the district threshold or Results of Operation (RO) book.

Engineering Process Improvements & 2021 GRC Settlement Requests

The purpose of this section is to explain the processes used and improvements made by Cal Water in the Capital Planning, Capital Budgeting, and Capital Delivery areas.

A. Methodology

Cal Water continues to use the planning process developed during the 2015 General Rate Case (GRC). The Company continued to implement a thorough capital planning process that included eight milestones to identify the most important capital projects required to maintain and operate the water systems while meeting the regulatory requirements and customer needs. Based on the lessons learned from the 2018 GRC, Cal Water implemented certain improvements to the process within the milestones for the 2021 GRC. The proposed projects were reviewed by district operations and the executive management multiple times to ensure that capital needs and customer affordability were balanced.

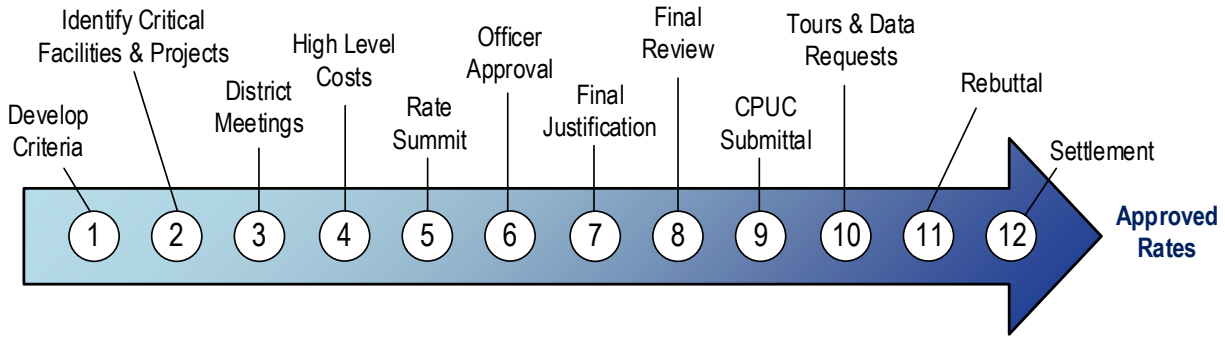

Figure 1 – Overview of Cal Water Approach to GRC Application Process

The following is a summary of the key steps involved in the Cal Water methodology to file the GRC with the Commission:

1. Develop Criteria & Analysis: Cal Water conducted a conditional assessment of the existing assets and developed a project scoring system based on the physical condition, capacity, level of service reliability, and efficiency. Cal Water then conducted a supply demand analysis by hydraulic zone for each water system and identified water supply and storage needs. Cal Water then generated further demand projections and compared them with the available supply to identify current and future water supply deficiencies. For this process, Cal Water calculated maximum day demands, storage volume requirements, and source capacities in accordance with Title 22 of the California Regulations, CPUC GO 103-A, and the guidelines stipulated in the AWWA manuals. Water quality analysis was conducted for all the ground water supply sources by creating water quality trending charts for the sources affected by various contaminants including regulated primary and secondary contaminants and non-regulated emerging contaminants to identify treatment projects needed to maintain water quality standards.

2. Create List of Problems: A complete list of all the problems and possible solutions was created based on the water supply and water quality analysis, conditional assessment of the assets, and the operational needs for the next three rate cases. This step in the process required at least two meetings with each district to finalize a master list of projects.

3. District Kick-Off Meetings: With each district, the subject matter experts from Engineering and Operations reviewed the initial list of problems and solutions and discussed the comprehensive Capital Improvement Plan. Cal Water reviewed Operations optimization, safety projects, and environmental compliance as part of this effort. These efforts included identifying the big picture scope and exploring projects and problems over three rate case cycles or nine years of capital planning. This multiple rate case planning approach allowed for tight coordination of different components at any given location. For example, for some pump stations, piping, pump, electrical, routine asset replacements and structural issues were identified as problems. This process allowed for consolidation of multiple projects into one all-inclusive project to optimize life cycle, construction impacts, and budget.

4. Create High-Level Costs: High-level costs were created for each potential project to the better understand the scope of work involved, magnitude of the impact on the overall budget, feasibility of construction, and optimum scheduling given the other proposed projects.

5. Capital Impact Review: A Capital Summit was organized that included all District Managers, Engineering Managers and an Executive Officer Team to review the operational needs, proposed capital costs, and affordability for customers. Balancing rate affordability for our customers, Cal Water decided to defer some capital projects to the future and focus on the most important capital projects needed to maintain and operate the water systems.

6. Officer Review/Approval: The proposed projects and high-level budgets were presented to the Executive Management Committee meeting for approval to proceed with creating detailed cost estimates and justifications for the selected projects.

7. Final Justifications: Subject matter experts completed the justifications, and then Engineering and District Management reviewed the collated justification books for each district. The Capital Planning team also conducted a Quality Assurance/Quality Control check of the proposed projects and cost estimates. Supply demand analyses by hydraulic zone for each district were developed in a standardized format for each district and included in the district specific project justification books.

8. Final Review & Approval: Rate and revenue impacts were calculated based on the refined cost estimates and reviewed with the Officer team. Project priorities were reviewed several times during this process in an attempt to achieve a balance between the operational needs and affordability for the customers.

B. Improvements to Capital Planning

Preparation of the 2015 and 2018 GRC filing showed very clearly the value of having a centralized Project Manager to coordinate the capital planning efforts for all 24 districts. Communication, coordination, and quality increased throughout the process of identifying projects, as well as in the project justifications. Lessons were learned from this process for the preparation of the next GRC filing, as well as for how to best facilitate and coordinate capital planning throughout the Engineering department.

Cal Water's capital planning efforts for the 2021 GRC continues to be coordinated through Cal Water's Capital Planning and Budgeting group located within the Engineering Department. The Capital Planning and Budget group activities include GRC project justification preparation and review, capital budgeting, and coordinating with other engineering groups on water resources planning, new business growth planning, main replacement planning, and asset management.

The Capital Planning and Budgeting group oversees all budget and capital planning related activities, as well as the Capital Program Management Committee (CPMC). Having all of these areas under one group facilitates communication, as many of the activities are interrelated. The Capital Planning and Budget group create capital budget forecasts that are built upon proposed capital projects. Capital projects are coordinated by the Capital Planning and Budgeting group that makes use of cost estimating tools and other additional cost factors, such as contingency recommendations. Individually, the Capital Budget team approves future capital project cost estimates in Cal Water's project accounting system (PowerPlan), while the Capital Planning team helps facilitate those estimates being created by other Engineers. The group monitors capital budgets and spending, and alerts managers of over costs that need to go to the CPMC for special approval. Coordinating these activities together creates efficiencies and quality assurance to make sure that projects are estimated and budgeted properly. Having this coordination in place consistently allowed for better management of capital spending and carryover project monitoring, as well as reduced the time required to enter projects and approve them within PowerPlan.

The CPMC was first created during the 2015 GRC process and has also been expanded to allow for better review and oversight of capital projects. The Capital Planning and Budget group reviews projects to see if they meet certain triggers requiring CPMC approval and includes these projects on the monthly CPMC agenda. These triggers specify certain project over costs and schedule change scenarios that require executive officer level review prior to approval. These meetings include executive officers from Engineering, Operations, Finance, and Rates, and include the Project Manager and District staff providing a presentation and documentation for the change in cost, scope, or schedule.

These CPMC triggers were expanded in in the 2018 GRC period to include review of certain non-specific, land purchase, and relocation projects due to their high dollar nature. In each of these cases, new processes were created to clarify which projects needed to be reviewed, and which ones could be moved forward. These expanded triggers have led to greater awareness of non-specific spending, consideration of whether proposed projects should be shifted to the next rate case submittal, and the knowledge that large potential cost overruns require additional approvals.

Having this organizational structure has also led to increased communication between Capital Planning, Capital Delivery, Water Resources, New Business, Engineering Operations, and Asset Management.

This interaction between Capital Planning, Engineering, and the CPMC has improved capital planning and has allowed for real needs to be discussed and planned, ultimately creating a more reliable water supply for customers.

C. Improvements to Capital Budgeting

Cal Water has continued to build on the foundation with regards to capital budgeting and cost estimating in the 2021 GRC. The company is continuing to use its capital project templates and stock keeping units (SKUs) and has updated the SKUs in its cost catalog to reflect the pricing and costs incurred in the company's capital projects through 2020. In addition, in order to address rising costs and design uncertainties, the company has implemented the contingency calculation as agreed upon in the 2018 GRC Settlement Agreement to estimate contingency based on the type of project. With the 2021 GRC, construction management/special inspections have also been added in an effort to move more towards standard industry best management practices. Further discussion and analysis pertaining to the company's cost catalog and construction management cost factors are provided in subsequent sections of this book.

Cal Water has also updated their project templates (new wells, pump replacements, control valve replacements, etc.) to continue to add consistency to capital project estimates. For mainline replacement projects, as well as new main installations, Cal Water utilized an estimate based on the average cost of main replacement projects to develop a "street piping" standard cost per linear foot. This average cost was found by evaluating past projects' total costs and dividing by the total footage to estimate an average cost per foot in each district. Proposed street piping projects were further evaluated to determine if they were standard, moderately complex, or complex due to such factors as permitting, utility crossings, creek crossings, freeway crossings, traffic control, and the overall complexity of projects. Cal Water utilized

Jacobs Engineering (Jacobs) to complete conceptual design and preliminary cost estimates for eleven large main projects located in Bear Gulch, Livermore, Los Altos, Salinas, Palos Verdes, and Dominguez Districts. The Jacobs design report is included as a backup report for those district project justification books.

D. Improvements to Capital Delivery

Cal Water has continued to build on the following project improvement efforts that were implemented in since the 2018 GRC submittal:

- **Tracking and Reporting** – Cal Water maintains a project tracking/reporting system and has created project based targets and goals for each department and Project Manager with tracking to the goals. Performance on goals is a factor in each Project Manager's annual performance assessment.
- **Project Alerts Dashboard** – An alert dashboard was added to Cal Water's project accounting system (PowerPlan) which gives a clear view of projects that are over budget, behind schedule, or whose project data is inaccurate. The system provides a clear snapshot of projects needing focus and attention.
- **Capital Program Oversight** – Cal Water completes a standing cross-functional meeting to discuss capital program performance with Department Head and Officer level participation. Progress to targets/goals, at risk projects, alerts and strategies to recover projects are the core focus for this team.
- **Quarterly Project Sign-Off** – Cal Water maintains a quarterly Sarbanes Oxley (SOX) control and project sign-off companywide that validates key project schedule and budget information, ensures visibility of targets, and requires commentary for projects that are off track.
- **Capital Program Metrics** – Cal Water developed a metric that tracks overall budget versus actual cost for ongoing and completed projects. This metric is aggregated by department, responsible group, and down to the Project Manager level for the ability to drill down on trends. Reporting includes metric trends over time. Cal Water is working to implement a similar metric for schedule.
- **Workflow Task Tracking System for Design Technicians** – This system was developed to track tasks of a critical capital support function, our technician team, whose primary responsibility it is to develop design plans using Computer Aided Design (CAD) software. The system tracks tasks, schedule requirements, progress, and actual performance. It is used to balance workload across our multiple offices. The system will also be used to assess resource requirements over time.
- **Enhanced Planning for Better Scope and Cost Definition** – To date, Cal Water has improved the data used to generate project cost estimates to include an evaluation of approximate contingency (class 4 or class 5 estimate) and location factor adjustments to ensure projects are accurately estimated and budgets set are attainable. In addition, to move towards industry best management practices, a Construction Management (CM) and Special Inspection (SI) factor was incorporated into projects. This additional CM/SI factor will ensure there is sufficient resources allocated to ensure the quality of construction work, minimize change orders and cost overruns,

and improve safety and efficiency on the project. Finally, the Cost Catalog used for project justifications in the 2015 and 2018 GRC, has also continued to be updated and expanded to provide more accurate cost data for project cost estimates presented as part of the 2021 GRC.

- **Program Management Office** – Cal Water instituted a Project Management Office (PMO) for high dollar optimization projects. The goal of this office is to ensure that discretionary projects that are proposed for efficiency and cost savings are properly evaluated and vetted to ensure that they are beneficial to the customer and that these projects are efficiently delivered. This PMO is now meeting monthly with Officer and Director level involvement as part of the CPMC meetings.
- **Stakeholder Review Process** – The intent of this process is to ensure that each project starts off with a review of the agreed to/authorized scope and a discussion on the required project functionality in order to secure early agreement from all stakeholders on the scope for each project. Early scope definition improves overall design process efficiency and minimizes costs as change orders during construction.
- **Technical Design Guides and Tools** – Cal Water continues to develop enhanced technical design guides/tools to ensure consistent design approach, efficient completion, and improved quality.
- **Focus on Safety** – Additional focus has been given to safety communication and signage prior to and all throughout construction. Enhanced Personal Protective Equipment (PPE) standards have been developed for entering project stations both for regular work and construction work. These enhancements help protect employees and prevent additional costs due to injury, especially during the COVID-19 pandemic.
- **Design and Standards Training** – Design processes, permitting, and construction standards consistently change with changing conditions and regions. Specific trainings have been developed and given that bring all design staff together throughout the state to make sure design standards and procedures are consistent. Consistent designs and construction practices allow for lessons learned to be shared and overall design and construction costs to be reduced.

E. Project Change Control Improvements

Cal Water has continued to build and expand on the following project change control efforts that were implemented since the 2018 GRC submittal:

- **Capital Program Change Control Process** – The Capital Program Management Committee (CPMC) continues to become a standard process to help evaluate and control project changes. This committee consists of company executive officers, and is charged with evaluating project budget and schedule changes based on specific scenario triggers. Formal documentation noting the authorized budget, the justification of the scope or cost change and the options considered, are discussed for each project. The goal is to evaluate potential project changes prior to contract approval, and projects are consistently asked to provide more information, defer work to the next rate case cycle, or provide alternatives before moving forward. This group has also been involved

in creating new approval processes for land purchases, non-specific projects, and mandatory City relocations.

- **Main Replacement Program Steering Committee** – An additional committee of Officers, Regional Directors, and Main Replacement Program (MRP) Management are involved in a committee that meets three to four times a year to discuss the progress of the MRP. This group evaluates the completion of project footage and cost compared to GRC authorized budgets. In some cases, if projects costs have been higher than expected, recommendations have been made to stop or slow replacement footage so that there is less impact to customer rates in the next GRC. This committee also discusses program improvements including tracking systems, needed staff, and program challenges, such as permit and material delays.

Summary

Cal Water believes that the processes and improvements described above will ensure efficient and effective capital project delivery thereby ensuring a reliable source of water can be delivered to customers at a reasonable cost.

Section B.

Common Issues Discussion

a. Pipeline Replacement Program

Problem Summary

The following table is a summary of the total capital investments by year and district that is proposed to be completed as part of the 2021 GRC:

Table 1. Pipeline Replacement Program Breakdown by District

Districts	Proposed Replacement Rate (%/yr)	Unit Cost[(a)] ($/ft)	Average Replaced (ft/yr)	Direct Cost[(b)]		
				2022	2023	2024
AV	0.60%	$236.00	1,057	$288,289	$295,496	$302,883
BAY	0.75%	$421.60	20,832	$10,150,139	$10,403,892	$10,663,990
BG	1.00%	$503.08	17,774	$10,333,862	$10,592,208	$10,857,014
BK	0.70%	$357.26	35,969	$14,850,914	$15,222,187	$15,602,741
CH	0.60%	$285.30	12,901	$4,253,687	$4,360,030	$4,469,030
DIX	0.60%	$413.42	1,097	$262,590	$671,418	$688,204
DOM	0.50%	$444.00	9,664	$4,958,842	$5,082,813	$5,209,884
ELA	0.60%	$331.41	8,354	$3,199,635	$3,279,626	$3,361,617
HR	0.60%	$472.58	6,641	$3,627,014	$3,717,689	$3,810,632
KC	0.60%	$534.39	1,102	$680,582	$697,596	$715,036
KRV	0.60%[(c)]	$200.03	3,159	-	$1,497,059	$767,243
LAS	0.70%	$418.77	10,686	$5,171,674	$5,300,966	$5,433,490
LIV	0.60%	$650.81	7,051	$5,303,290	$5,435,872	$5,571,769
MRL	0.40%[(d)]	$375.67	1,122	$365,560	$499,303	$639,959
ORO	0.30%	$375.76	943	$409,509	$419,746	$430,240
PV	0.51%	$444.84	8,989	$2,310,862	$5,920,793	$6,068,812
RDV	0.60%	$310.15	1,056	$378,509	$387,972	$397,671
SEL	0.50%	$219.20	2,349	$595,064	$609,941	$625,190
SLN	0.60%	$369.89	10,720	$4,582,556	$4,697,120	$4,814,548
STK	1.56%	$411.89	43,394	$20,656,244	$21,172,650	$21,701,966
VIS	0.40%	$243.83	12,437	$3,504,638	$3,592,254	$3,682,060
WIL	0.40%	$346.72	796	$318,957	$326,931	$335,104
WLK	0.25%	$774.65	1,487	$1,331,242	$1,364,523	$1,398,636
Total	**-**	**-**	**219,582**	**$100,835,819**	**$103,481,318**	**$106,196,525**

Notes:

(a) Unit Cost ($/feet) is direct cost for the base year 2020 without escalation.

(b) Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

(c) Average replacement rate during the 2022 – 2024 time period is 0.6%/yr however pipeline projects completed in 2022 will close in 2023 for rate making purposes.

(d) Marysville replacement changes per year: 0.3% in 2022, 0.4% in 2023, and 0.5% in 2024.

Problem Statement

Cal Water is committed to managing its infrastructure in order to provide safe and reliable water to its customers. An important component of this effort is the regular replacement of pipelines. Failure to do so can lead to catastrophic failures, damage to the environment, reduced service to customers, and higher costs in the long term due to increased repair needs. The American Water Works Association (AWWA) reports that average pipe lives range between 50 and 130 years.[1] Consistently, water utilities with significant pipeline replacement needs are finding that a 1% and 1.6% replacement (100 year and 60 year replacement) is needed to properly replace pipelines and prevent interruptions in service to customers.[2] In order to address the increasing need to renew its infrastructure, provide service to customers, and manage risk, Cal Water developed and deployed a comprehensive and systematic main replacement program (MRP) in 2015 and is proposing to continue this program as part of the 2021 GRC.

Background

America's infrastructure is aging and is in need of renewal. In 2002, the Environmental Protection Agency (EPA) published a report "The Clean Water and Drinking Water Infrastructure Gap Analysis" in which "a significant funding gap could develop"[2] if the current spending levels are maintained and concludes that a "combination on increased spending and innovative management practices"[3] are necessary to meet future needs.

The American Society of Civil Engineers (ASCE), came to a similar conclusion that "Water infrastructure in the United States is clearly aging, and investment is not able to keep up with the need."[4] Furthermore, the ASCE identifies additional implications of not addressing the infrastructure renewal gap: "unreliable water service" and "mounting costs to businesses and households".[5] This analysis is summarily reaffirmed in the ASCE's 2019 Infrastructure Report Card where the water infrastructure in California was rated as a "C", or "mediocre" and "requires attention" (Attachment A).

The AWWA is also in agreement with the EPA, and the ASCE. "We face the need for massive reinvestment in our water infrastructure over the coming decades…Delaying the investment can result in degrading service, increasing water service disruptions, and increasing expenditures for emergency repairs…the more we delay the harder the job will be when the day of reckoning comes."[6]

Historically, Cal Water has not been much different from other utilities. The average rate of Cal Water pipeline replacement prior to 2016 was approximately 0.3% per year. This equates to a 330 year replacement cycle for Cal Water's pipelines. Recognizing that this rate was not consistent with the direction industry needed to move towards, Cal Water has moved forward in increasing the main replacement program replacement rate in the last two rate cases.

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[1] AWWA, *Buried No Longer: Confronting America's Water Infrastructure Challenge*, 2012
[2] Utah State University, *Water Main Break Rates in the USA and Canada: A Comprehensive Study*,2018
[3] Ibid, pg. 43
[4] ASCE, *The Economic Impact of Current Investment Trends in Water and Waste Water Infrastructure*, 2011, pg. v
[5] Ibid
[6] AWWA, *Buried No Longer: Confronting America's Water Infrastructure Challenge*, 2012, pg. 3-4

Starting in 2016, the program increased the rate to approximately 0.5% per year, reducing the replacement cycle to 200 years. While this is a significant improvement over 330 years, the overall average age of Cal Water's pipelines would continue to increase and there will be pipelines that reach 200+ years of age before they are replaced. Since this is not a realistic lifespan for a pipeline, Cal Water has responded by continuing to develop a comprehensive Asset Management Program focusing on pipelines, and improving the efficiency and capacity of interdepartmental coordination of planning and implementation of main replacement construction activities. The following is a timeline that describes the activities that were undertaken to develop the current program:

- 2006 – Office of Rate Payer Advocates (ORA) recommended developing an Asset Management (AM) Program
- 2007 – Cal Water engages Westin Engineering to perform AM assessment
- 2009 – ORA and Cal Water agree to pilot a new main replacement program
- 2012 – Pipeline asset data collection; collected age, materials, size
- 2012 – Risk Management study identified several risks from the distribution system
- 2012 – Kick off main replacement pilot with the ORA
- 2013 – Piloted KANEW software and RIVA decision support tool
- 2013 – Presented results of pilot to ORA for the Stockton district
- 2014 – Deployed AWWA forecasting tool, developed and deployed Asset Management program for pipelines in preparation for the 2015 GRC
- 2015 – Main Replacement Project Manager position created to manage program of replacement projects
- 2016-2018 Implemented changes to program as recommended in the 2015 GRC, and successfully increased footage replacement
- 2016 – Developed and implemented a 5 x 5 Risk Model and identified most at risk pipelines in each district
- 2016 – Developed and implemented a GIS based Redlining project planning and creation tool to allow real time review of proposed pipelines for replacement
- 2017 – Reviewed, assessed and refined our Main Replacement Program (MRP) program for 2019-2021 through district visits and individual system review.
- 2018 – Developed an asset plan to guide decision making regarding pipeline assets. A third party consultant aided in the development of the plan.
- 2019 – Updating of the risk model.
- 2020 – Review and assessment of pipeline assessment and pipeline rehabilitation methodologies.

In addition, a Cal Water memorandum reviewing the main replacement program from the 2018 GRC has been included in Section C – *Background Reports.* This memorandum provides a summary of all pipeline projects agreed in Settlement for the 2018 GRC and their outcome as of June 2021 with actual costs.

Program Process Overview

The current MRP process is a blend of data driven inputs, institutional knowledge, expert judgement, and support and leadership agreements between engineering and district operations throughout various

phases of the program. The process is replicated for each rate case to allow for the generation of a Proposed Candidate List that can be submitted with each GRC.

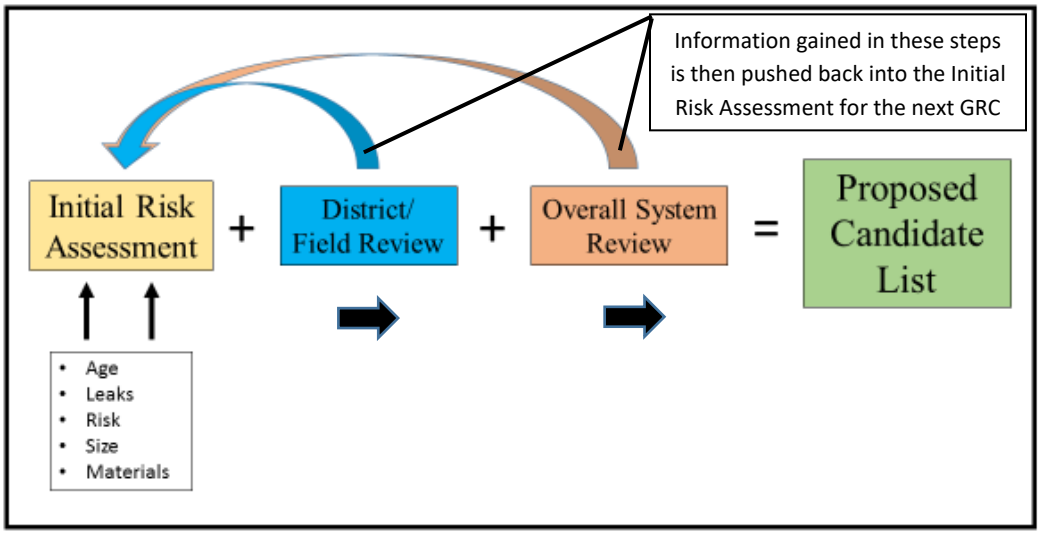

Figure 1 – MRP Process Overview

The overall process (shown in Figure 1) represents six primary elements, which are described in greater detail in subsequent sections:

- Distribution and Transmission System Performance Analysis
- Qualitative Risk Analysis
- District Operations Assessment
- Engineering Assessment
- Implementation
- Program Enhancements

The first two segments, system performance and risk analysis, are purely data driven inputs that are used to generate a list of potential candidates for replacement based on high probability of failure, high consequence of failure, and generate a bracketing range of how much pipeline should be replaced in each district to keep current with the estimated remaining useful age distribution of assets in that district.

This list is then presented to the district operations personnel and evaluated against institutional knowledge and modified as needed to reflect minor data discrepancies, and other considerations that are not easily incorporated into the risk model, such as consumer complaints, regional low pressure issues, or emerging water quality problems.

The recommendations from the district are then presented to engineering personnel with expert knowledge of Cal Water systems operation to evaluate opportunities to improve overall hydraulic performance, compliance with best industry practices and CUPA agency requirements, and long term supply strategies.

With this input, the final list of project maps is created. The resulting set of projects contains a mixture of pipelines that address operational concerns, long term system improvements, risk mitigation and pipelines at the financial end of their life. The proposed projects are the highest priority projects to meet renewal needs. The number of pipelines meeting these criteria are large, and this will have to be accomplished over several GRC cycles. Once the total needs are defined, the planned replacement projects are distributed as evenly as possible for each year, 2022 to 2024, to maintain a consistent workload and then implemented. Feedback is then considered from all parts of the process and re-introduced for the next round of analysis.

Distribution and Transmission System Performance Analysis

As outlined in Figure 2, there are several key performance indicators (KPIs) Cal Water uses to determine the overall performance of pipelines in its inventory that come from the a variety of sources, and then ultimate goal of this part of the process is to determine the first input to the planning process: *likelihood of failure*. All pipelines that have a high chance of failure by model analysis appear on the initial candidate list, to be given further validation and prioritization by operations and engineering personnel. The primary KPIs used are break history, age, and material type.

The other parameters do not differ greatly from the 2018 justification, and an overview is presented below. Greater detail can be obtained from the previous filing.

One basic tenet of asset management is the concept of remaining useful life (RUL). This is typically calculated by first determining an overall average expected life of an asset, and then modifying this parameter based on unique conditions the asset is in to lengthen or shorten that estimated life. The generally accepted useful service life of a distribution pipeline is 100 years. However, other environmental and operational factors may influence this number to shorten the life of a pipeline. These interactions are complicated, and industry is still researching which factors have the largest influence on pipeline condition. Further, because these assets are buried underground, obtaining cost effective, accurate data on condition is very challenging with current technology. In the interim, comparing material, age, and break history can help predict RUL of a pipeline.

The materials of construction are likely to have a large impact on the adjusted RUL, and as more information on correlations becomes available, Cal Water will continue to refine its predictions in the model. A summary of the system assets are summarized in Table 2 and Figure 2.

Table 2. Combined Summary of Pipelines in Cal Water Service Areas

Length	6,657 miles
Age Range	1 to 117 years
Average Age	47 years
Diameter Range	1 inch to 54 inches

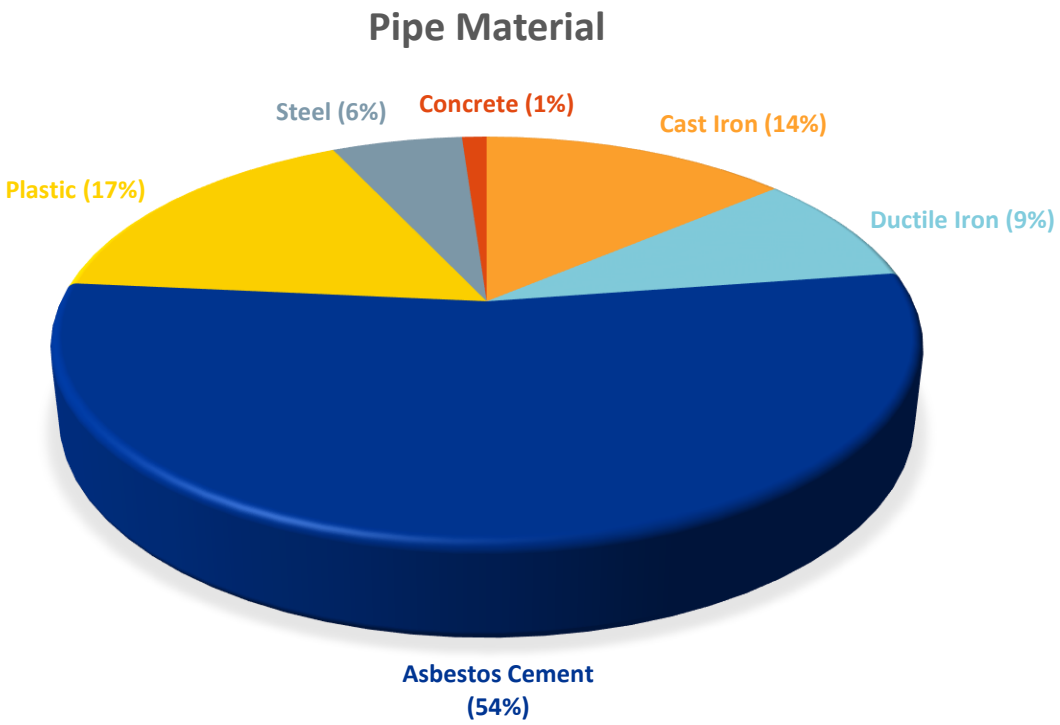

Figure 2 – Distribution of Pipeline Materials by Type, All Districts

Cal Water has a wide range of pipelines with various materials, sizes, and ages. Each attribute must be considered when determining when a pipeline should be replaced.

Because pipeline configurations can be complex and continuous within a distribution system, they must be segmented to define the boundaries on an individual pipeline. Cal Water defines a single pipeline as one that has like material, diameter, age, and project code of installation. Within this pipeline boundary, the portions of pipe were installed with the same practices, same supplier, and are exposed to the same conditions that influence degradation. Therefore all reaches of pipelines defined in this manner age at a similar rate and should be retired in its entirety at the end of life. Each pipeline defined by these boundaries is assigned a Pipe ID number that is unique in each district.

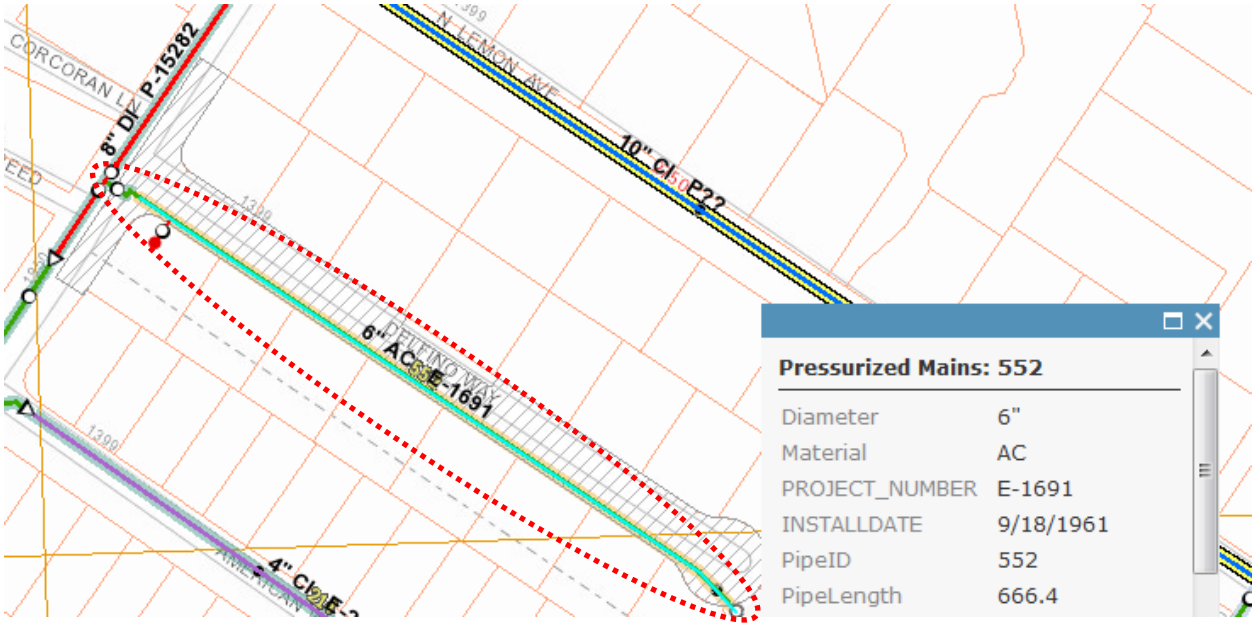

Figure 3 – Example Pipeline *(Circled in Red)*

Presented here in Figure 4 is Pipe ID 552. It is a 6-inch diameter, 666.4 feet in length, asbestos cement (AC) pipeline installed in 1961. It is considered as a separate pipeline from the 8-inch ductile iron (DI) pipeline it is connected to due to differing age, material, and diameter.

Another useful predictor of impending failure is pipeline age, however when it is coupled with break history, it becomes a very powerful performance indicator. Break analysis by age demonstrates that as a pipe ages, the condition becomes worse. The break density on Cal Water pipelines less than 60 years of age is relatively low. Assets above this cutoff typically see a break density increase, until it reaches a maximum at approximately 100 years of age, upon which it then decreases. This is due to replacement of pipelines in older age groups.

Cal Water experienced approximately 451 natural pipeline breaks companywide in 2019. Note that the count was increasing from 2012 through 2014, but begins to drop starting in 2016 with the initiation of the increased main replacement program. There appears to be an uptick in 2018 however this can be attributed to variation in conditions from year to year. The general trend is still downward since 2016. This trend benefits customers as breaks result in costly repairs, damage to the infrastructure and environment, reduced service, and can result in unsanitary conditions that threaten the health and safety of our customers.

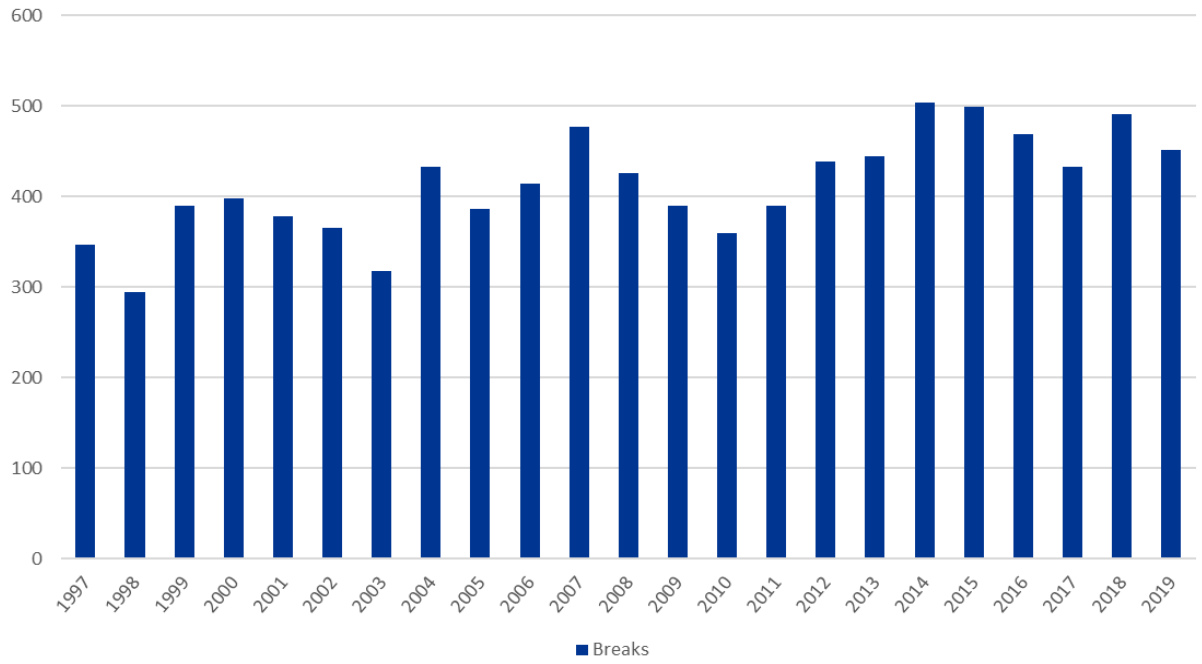

Figure 4 – Total Company Annual Breaks

Break analysis by material type demonstrates that steel pipe in the Cal Water system is in the worst overall condition and the most likely to leak in the future. The current inventory of steel pipe has a break density of 474 breaks / 100 miles.

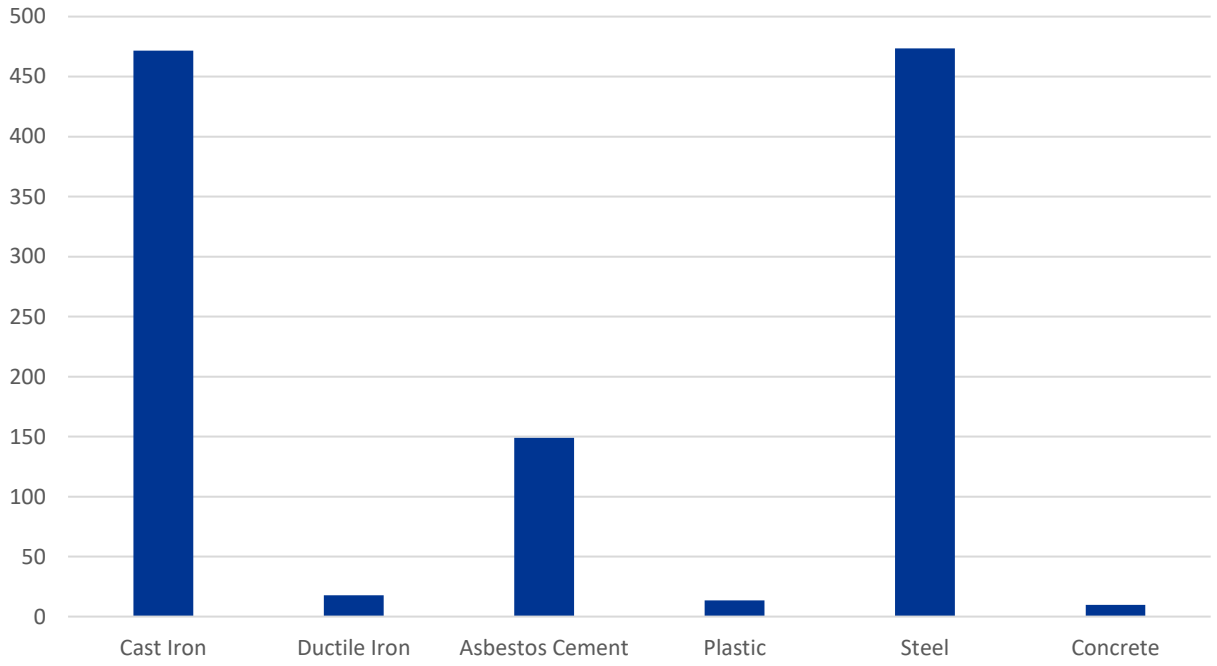

Figure 5 – No. of Breaks per 100 Miles

Break analysis by pipe diameter demonstrates that relatively small pipes (pipe that are 6-inch and less in diameter) are in the worst overall condition and are the most likely to break in the future in terms of size. Small diameter pipes suffer from nearly 553 breaks / 100 miles over the entire recorded leak history.

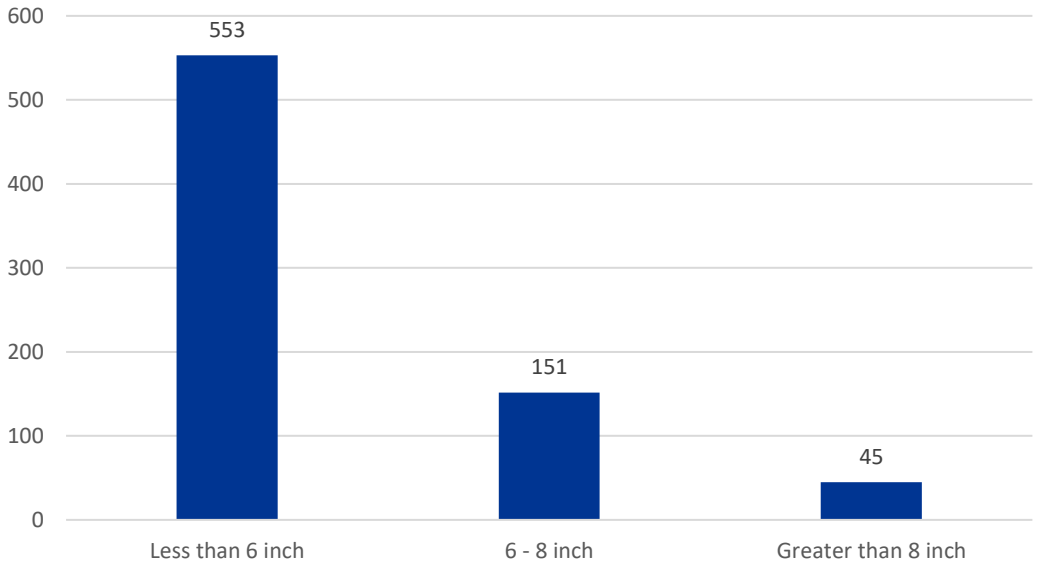

Figure 6 – Breaks per 100 Miles by Diameter

Break analysis by age demonstrates that as a pipe ages, the condition becomes worse. The break density on Cal Water pipelines less than 60 years of age is relatively low. The break density increases to a maximum at approximately 100 years of age then decreases. The sharp decline in break density of pipes at 110 years of age is due to the small amount of this old pipe in the inventory and that much of that pipe being replaced as breaks occur.

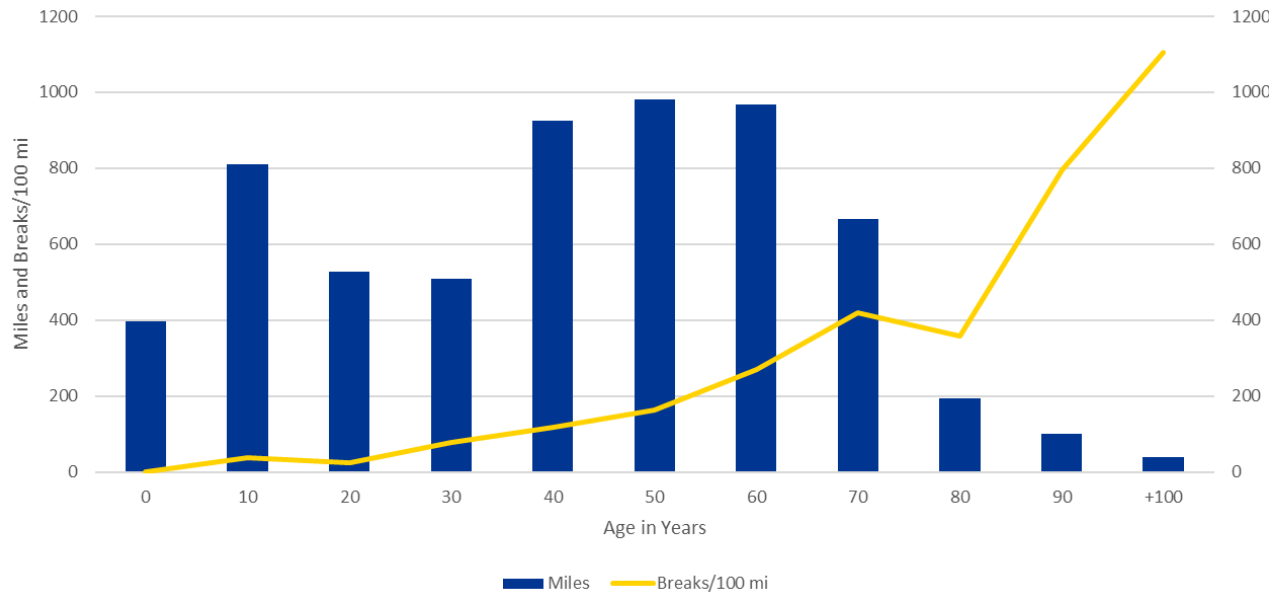

Figure 7 – Pipeline Breaks by Age

A primary indicator of RUL is how often a pipeline breaks. As the number of breaks increase on a pipeline, the condition is inferred to be deteriorating. After a certain threshold, the pipeline failure is assumed to be imminent. Cal Water defines this threshold as two or more breaks, and with this classification, three categories comprise the "condition" component of the analysis:

Table 1. Pipe Classification

Total Breaks	Condition	Description
0	Good	Pipeline is intact with no recorded breaks. Without additional data, there is no expectation for breaks in the immediate future.
1	Moderate	Pipeline has some history of failure. It is clear that the pipeline is no longer in good condition and is degraded.
2+	Poor	With 2 or more leaks, a pattern of breaks is established and future breaks can be expected.

89% of Cal Water's pipelines have no recorded leaks and are considered in good condition from a break history perspective. Seven percent (7%) of the inventory have one recorded break, posing some risk to the company. However, three percent (4%) have two or more breaks with some pipelines having up to 33 historical breaks, which is substantially more than the 1% replacement rate required for a 100 year cycle.

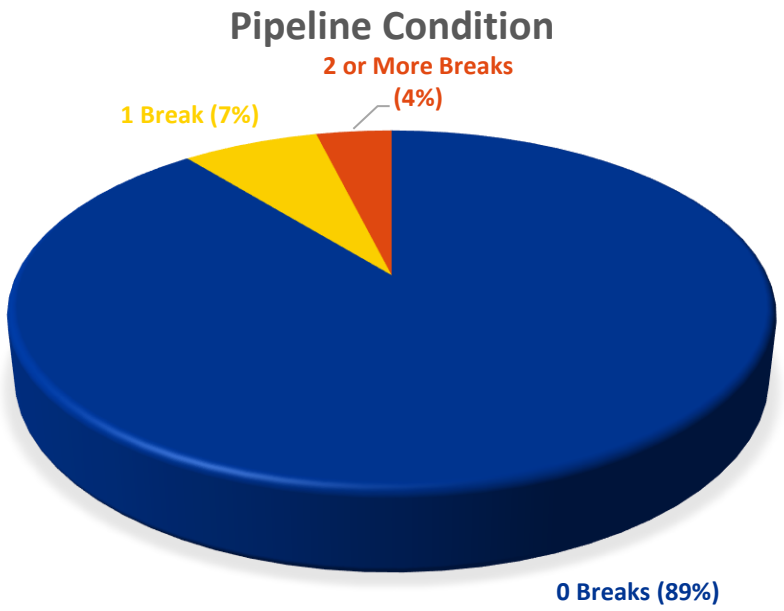

Figure 8 – Pipeline Condition

Qualitative Risk Analysis

When pipelines experience a break, the resulting effects and magnitude of the required repairs can range from routine to catastrophic. To determine which pipelines are candidates for replacement, Cal Water has developed a Risk Exposure Model to quantify risk exposure from pipelines, using the model outputs as inputs into the risk assessment process. To better understand the risks Cal Water and its customers are facing, Cal Water conducted a high level Risk Management study in 2012. The study found large pipelines, pipeline failure, and pipeline performance to be among the top risks.

Cal Water analyzed sources of potential risk within Table 3. Data on the locations of these facilities or land features were sourced from numerous agencies and uploaded into Cal Water's Geographic Information System (GIS). Spatial analysis was then performed to determine which pipelines came in close proximity or intersected these facilities or land features. These pipelines were then characterized as "High Consequence of Failure"; in other words a break on these pipelines could result in significant damage to the environment, community, infrastructure, result in large scale water service outage, and ultimately result in high cost repairs.

Table 3. Risk Categories

Business Risk Exposure	Source	Description
Cal Water Easements	Cal Water	Pipelines within easements are often on private property, very close to buildings, often times have poor drainage, and can be very difficult to access for repair. As a result breaks can cause flooding and property damage.
Delta Zones	CA DWR	Water main breaks that occur near a body of water can result in a discharge of chlorinated drinking water into these bodies. Disinfectants used in drinking water can cause damage to wildlife and plant life. Additionally, erosion damage can occur as well. Finally, unplanned discharges can result in large monetary fines from governing agencies.
Emergency Centers	FEMA	Water main breaks that occur near essential facilities may disrupt the operation of the facility and access to and from the facility.
Fire Stations	FEMA	Water main breaks that occur near essential facilities may disrupt the operation of the facility and access to and from the facility.
Healthcare Facilities	CA OSHPD	Water main breaks that occur near essential facilities may disrupt the operation of the facility and access to and from the facility.
Landslide Hazard	CA Geological Survey	Water main breaks that occur in a landslide hazard zone can cause erosion damage, and damage to buildings, residents, and infrastructure due to a slide. Additionally, access to repair these breaks can be very difficult due to the slope of the land.
Major Road	ESRI	Water main breaks that occur on major roads can cause disruption to traffic due to flowing water and repair crews. Additionally, erosion underneath these roadways can cause sinkholes which are a safety risk to drivers. Roadway classes A1, A2, and A3 are considered a major roadway in this study.
Marine Protected Area	NOAA	Water main breaks that occur near a body of water can result in a discharge of chlorinated drinking water into these bodies. Disinfectants used in drinking water can cause damage to wildlife and plant life. Additionally, erosion damage can occur as well. Finally, unplanned discharged can result in large monetary fines from governing agencies.

Business Risk Exposure	Source	Description
National Wetlands	FWS	Water main breaks that occur near a body of water can result in a discharge of chlorinated drinking water into these bodies. Disinfectants used in drinking water can cause damage to wildlife and plant life. Additionally, erosion damage can occur as well. Finally, unplanned discharged can result in large monetary fines from governing agencies.
Police Stations	FEMA	Water main breaks that occur near essential facilities may disrupt the operation of the facility and access to and from the facility.
Railroads	ESRI	Water main breaks near or underneath railroads can cause damage to railway tracks.
Schools	FEMA	Water main breaks that occur near essential facilities may disrupt the operation of the facility and access to and from the facility.
Water Bodies	Numerous	Water main breaks that occur near a body of water can result in a discharge of chlorinated drinking water into these bodies. Disinfectants used in drinking water can cause damage to wildlife and plant life. Additionally, erosion damage can occur as well. Finally, unplanned discharged can result in large monetary fines from governing agencies.

Cal Water evaluated existing infrastructure that were in areas of high fire risk (see Wildfire Hardening Program Assessment included in this Common Plant justification issues book) to ensure wildfire risks were mitigated as soon as possible.

With an understanding of pipeline condition and consequence of failure, a risk matrix can be developed to better understand which pipelines expose Cal Water, its customers, and the community to higher levels of risk. Cal Water adopted a 3 x 3 matrix to capture these findings in the 2015 GRC filing. However, in 2016 this model was updated to a 5 x 5 matrix to reflect a more mature understanding of risk.

The resulting matrix is shown in Figure 9. On the ordinate axis is the Likelihood of Failure (LOF) that is derived from the system performance data in the previous section. On the abscissa is the Consequence of Failure which is calculated as described from the factors in Table 3. All mains with an LOF of 5, and/or a COF of 3 or higher are submitted to the MRP Manager as candidates for replacement, along with the recommended replacement rate range from the AWWA Pipeline Replacement Tool.

The current risk matrix uses all of the same input elements as the previous 2018 version, however; both the LOF and COF have been augmented. The LOF now integrates a calculated remaining life based on AWWA expected life spans as provided in the *Buried No Longer* report as well as break history. The COF uses an aggregate of number of weighted factors rather than the strict triple-bottom-line approach used in previous iterations. The methodology was developed with a third party consultant.

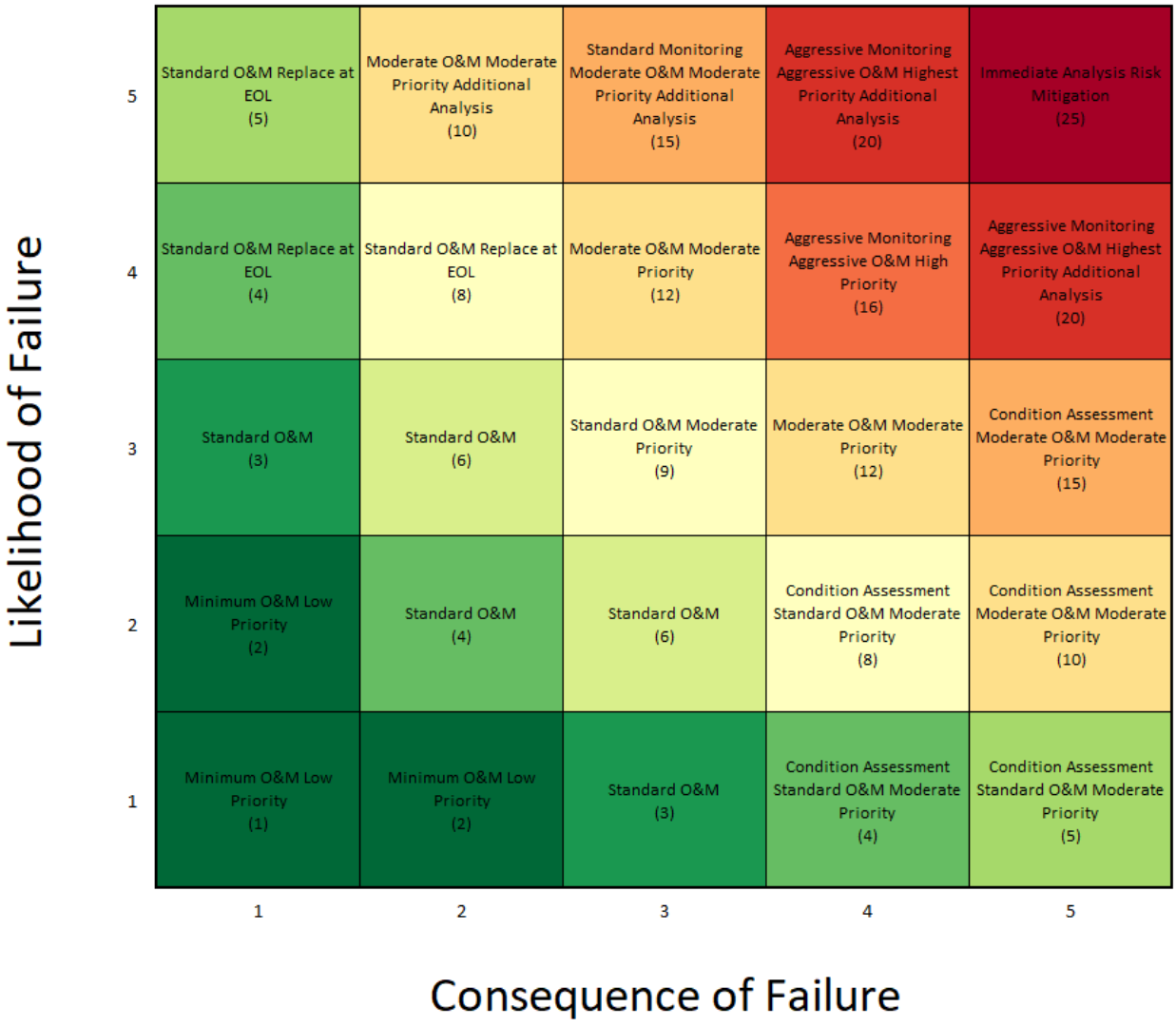

Figure 9 – Risk Matrix (Scores shown in Brackets)

Using this model, there are 213 miles (3.2%) of pipelines within Cal Water that are categorized as high risk and 762 miles (4.6%) categorized as medium-high risk. Cal Water is targeting these higher risk pipes as candidates for replacement in order to reduce the risk exposure to the community and environment. The company wide summary of mains that fall into each of the 25 categories within the matrix can be found in Figure 10 below; however, individual breakdowns by district are located in the district specific justification books.

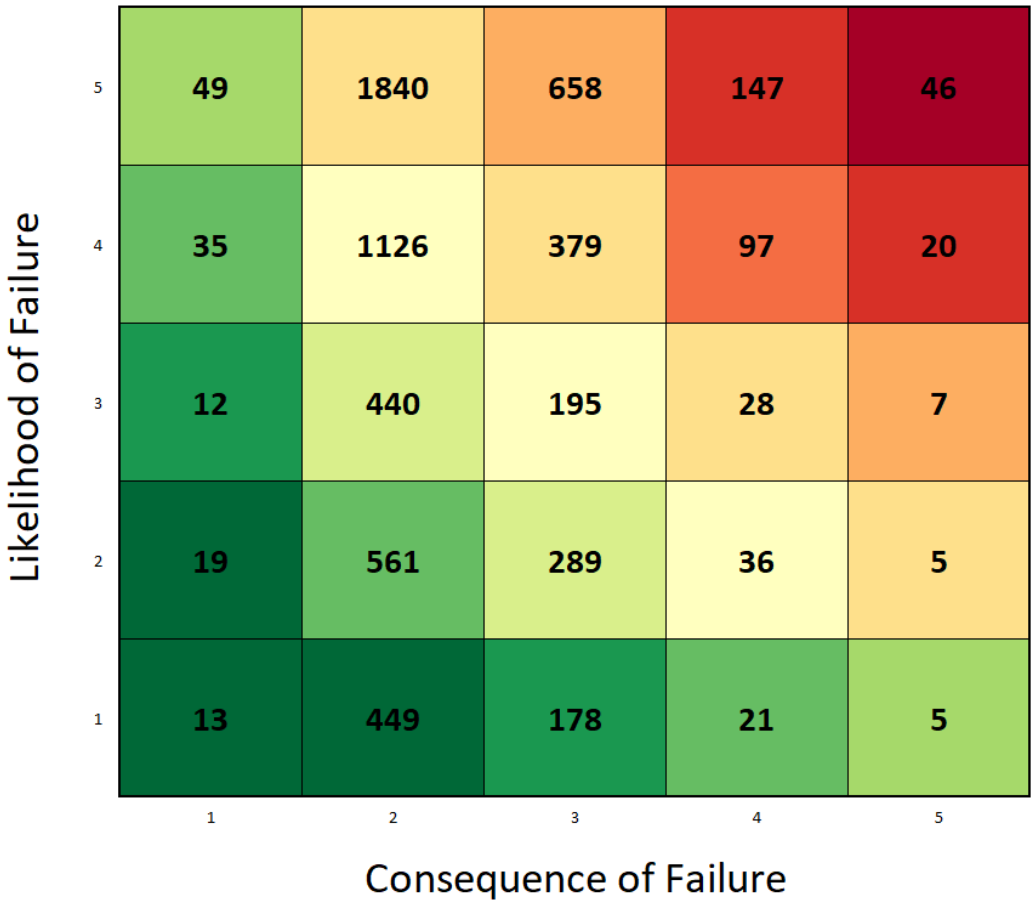

Figure 10 – Updated Risk Matrix for all of Cal Water

District Operations Assessment

No one database contains all information; therefore, data analysis such as the risk model presented above cannot encompass all the factors required to evaluate when a main needs to be replaced. Recognizing this fact, the Cal Water main replacement program has evolved to include, as a second step in the process, input from field personnel in each district who have specialized knowledge of the system.

For example, a database cannot capture data that is not entered. But, a leak crew can certainly offer input on a main they know to be compromised but perhaps not recorded as having had leaks. Another area that would be difficult to integrate would be consumer complaints about pressure and water quality.

The program has grown in this area through the use of our "Red-lining tool", which is a GIS based representation of the pipeline asset inventory. As one input layer, it has the risk matrix that allows for the program manager and the district to visualize and discuss suggested inputs into the project list. Very quickly, upon looking at the entire District map, pipes of all risk levels can be seen and prioritized. Ideas can be marked, color coded and saved into other layers for future discussions. Previously, this process took many weeks, as it required GIS technicians frantically printing revised project maps for review and

discussion. Now, because it can be done digitally in an integrated manner, the process merely takes a few days for each district.

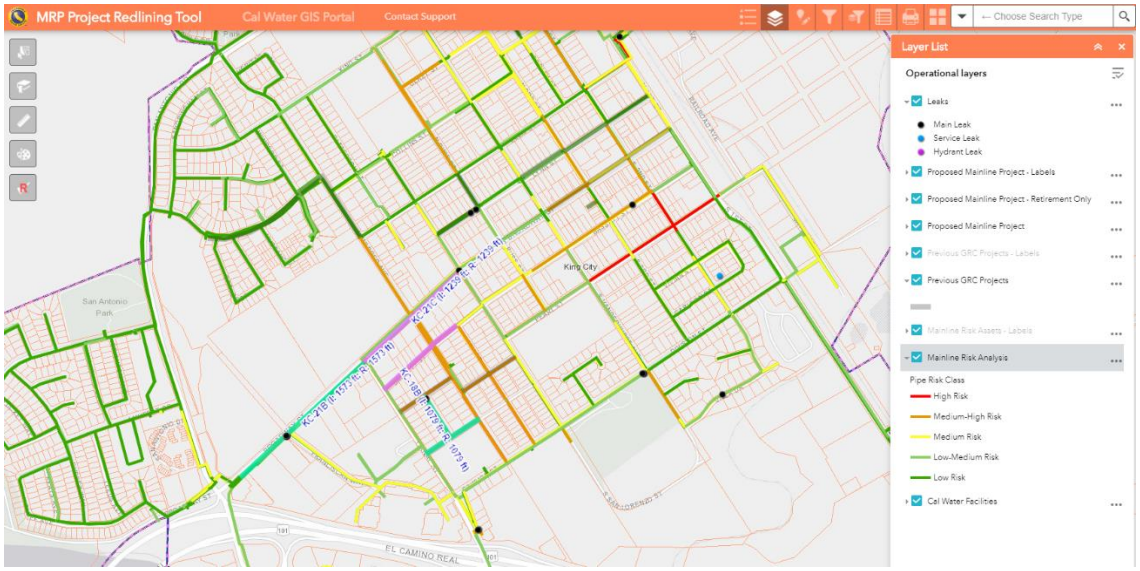

Figure 11 – MRP Redlining Tool

As can be seen in Figure 11, each mainline is marked by different colors to designate either the risk analysis or past/future projects. The red, brown, yellow, and green colors represent the risk class for each pipe. The blue, cyan and pink colors represent future projects, and the darker shaded colors represent past projects. These colors, along with the leak representations, allow for quicker choosing of future pipeline projects that address both risk and leaks.

Once engineering has provided their input (see next section), District operations also primarily drives the permitting and construction process.

Engineering Assessment

Lastly, the main replacement program should have a mechanism for ensuring that replacements are also in alignment with the long term strategic plan for the district distribution system. To better ensure these components get captured, the Main Replacement Program (MRP) also discusses proposed projects with Engineering Managers with intimate knowledge of problematic system hydraulics, long term plans to improve system flow, and other opportunities to connect mains in the system that were not possible due to past constraints.

Once this final list is developed, the Manager - MRP and the district break it up in to three year bins to create the GRC projects. This list is re-evaluated quarterly and yearly, and compared against ongoing construction, sensitive areas, etc and adjusted as needed to meet the most current needs of the system.

Implementation

The Manager - MRP, housed in Engineering, coordinates resources for all of the districts which have personnel dedicated exclusively to the program. These district staff perform daily inspections of materials

as they arrive on site, ensure that the quantities of ordered materials match, and that materials meet quality standards. Additionally, the MRP Superintendent in each district supervises the installation of main and confirms that pressure and water quality testing is being performed on each project. Finally, they ensure that proper as-builts are being generated and sent back to engineering to be entered into the GIS database

Program Enhancements

Throughout all of these steps, feedback loops are built into the program through the Manager - MRP. Cal Water will continue to develop and enhance the program to improve decision making and enable Cal Water to provide the highest level of service at a reasonable cost. Some areas to be considered:

- Enhanced risk models: Analyze failure mode effects from a hydraulic and service perspective using the company's hydraulic model and piping network; include seismic vulnerability; develop statistical probabilities of the likelihood of failures; analyze the potential for optimization of water quality and system operation by pipeline replacement; utilizing condition assessments to support risk analysis
- Automation: Utilizing Cal Water's GIS, computerized maintenance management system (CMMS), asset decision support system (DSS), and leveraging IT system integration, Cal Water can obtain real-time data, analysis, and replacement prioritization
- Process: Include lessons learned into the Redlining project creation and planning tool to improve project planning, documentation and record keeping; develop pipeline asset plan to guide the Mainline Replacement Program
- Investigate the most beneficial way to incorporate data from Validated Water Loss Audits conducted using the AWWA M-36 water loss software,as required under recently enacted SB 555 and information from Cal Water's Water Loss Auditing and Control Program to enhance the main replacement program.

As Cal Water gathers more data, a better understanding of the pipeline assets, and increased capabilities to analyze the data, Cal Water can constantly identify replacement candidates, enhance cost estimating, and reprioritize the pipelines to be replaced to those that are most logical and economically effective.

Summary

In order to renew an aging infrastructure, mitigate risk, and deliver safe reliable water to its customers, Cal Water has developed and implemented a pipeline asset management program. The program is a fully integrated, cross disciplinary endeavor that has been highly successful. The ultimate goal of a water system is to provide safe, reliable water to customers. Pipes are the key transport device within a system to make this happen. Providing for the consistent replacement of pipelines allows for water to consistently be delivered to customers, and prevents interruptions of service due to pipeline breaks.

Project Attachments

Attachment A - *ASCE's 2019 Infrastructure Report Card*
Cal Water Memorandum – *Review of the 2018 GRC Main Replacement Program* (see Section C)

CALIFORNIA GRADES

GPA C-

AVIATION	C+	PORTS	C+
BRIDGES	C-	PUBLIC PARKS	D+
DAMS	C-	RAIL	C
DRINKING WATER	C	ROADS	D
ENERGY	D-	SCHOOLS	C
HAZARDOUS WASTE	C-	SOLID WASTE	C-
INLAND WATERWAYS	D	STORMWATER	D+
LEVEES	D	TRANSIT	C-
		WASTEWATER	C+

ABOUT THE GRADES

Across the country, budget issues and deferred maintenance are taking their toll on critical infrastructure systems constructed by the generations before us and which now must be maintained and modernized. The analysis in this report card and associated grades are intended to increase understanding by the public and the state and local legislators of the importance and value of long-term consistent infrastructure investments, the role of leadership and planning, and the need to prepare for the future. The grades reflect the condition of the infrastructure, and not the diligent local agency personnel who are doing their best to manage, repair, renew, and replace aging systems, with the limited available resources. This Report Card is intended to reflect current infrastructure conditions and be a tool to help agencies request and receive the resources they need.

The 2019 Report Card for California's Infrastructure was completed by a committee of over 100 professionals and experts from California who dedicated their valuable time to collect and evaluate existing data, assess the infrastructure, document their findings, and develop recommendations. The committee worked with staff from ASCE National and ASCE's Committee on America's Infrastructure to provide a snapshot of our infrastructure, as it relates to us at home, and on a national basis.

A	B	C	D	F
Exceptional, Fit for the Future	Good, Adequate for Now	Mediocre, Requires Attention	Poor, At Risk	Failing/ Critical, Unfit for Purpose

WHAT CAN WE DO TO RAISE THE GRADES?

To raise California's infrastructure grade, ASCE developed the following four recommendations:

1. **PROMOTE EFFECTIVE AND COLLABORATIVE LEADERSHIP** ASCE encourages all levels of government, business, labor, and nonprofits to collaborate to address challenges associated with California's aging infrastructure. Effective leadership within agencies is critical, and those individuals should be empowered with applicable decision-making authority. Streamlining the project permitting process across infrastructure is also necessary, with safeguards to protect the national environment.

2. **DEVELOP SMART PLANS TO BETTER IDENTIFY FUNDING NEEDS** Asset management plans enable state and local agencies to make informed decisions on where – and when to spend limited public funds. Policies should be enacted that require high quality data gathering and regularly scheduled maintenance. Further, life cycle cost analysis and risk analysis, which are valuable strategies to extending the lifespan of an asset and saving the taxpayer money in the long run, should be employed for projects costing greater than $5 million.

3. **INCREASE STATE AND LOCAL FUNDING** Each category evaluated in this report indicates currently available funding to state and local agencies is not adequate to maintain sustainable and safe California infrastructure systems. Long-term funding strategies should be established, based on new and sustained revenue sources, including local and state revenue. Incentives may be appropriate, and adequate funding for innovative new materials, technologies, and processes is imperative.

4. **INFORM THE PUBLIC AND RAISE AWARENESS** There is a need for additional consumer education on the current funding needs and the negative impacts of delaying action to fund infrastructure improvements statewide. The education needs to also extend to the local and state legislators, locally elected boards and commissions, as well as to the media.

CONTACT US

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REPORT CARD FOR CALIFORNIA'S INFRASTRUCTURE 2019

CALIFORNIA'S INFRASTRUCTURE REPORT CARD

MAY 2019

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

WHY IS INFRASTRUCTURE IMPORTANT TO US?

Californians use infrastructure each day. Our roads, bridges, and transit networks allow us access to our iconic coastlines, lakes, and vineyards. Water systems deliver clean drinking water to our homes, communities, and businesses. School buildings provide a safe place for our children to learn. Wastewater collection and treatment systems protect our lakes, rivers, and beaches from raw sewage, E. coli and other toxins.

Our infrastructure systems play a critical role in continued economic prosperity and the preservation of our quality of life. Unfortunately, our state's infrastructure renewal and replacement programs have been significantly underfunded for a long time. While the state Legislature, municipalities, and California voters have made strides in recent years to raise additional revenue for our infrastructure, we have a lot of catch-up to do, and **large funding gaps remain**.

Additionally, we're facing significant new challenges. In May 2018, California's economy surpassed that of the United Kingdom to become the world's fifth largest. Over the next 20 years, California's population is expected to grow by another 25% by over 10 million people. This economic activity and new population requires additional supporting infrastructure. Meanwhile, the climate is changing. California is already grappling with precipitation whiplash – extreme periods of drought followed by extreme periods of rainfall – and sea level rise and increasingly severe storms are also expected.

As the stewards of our infrastructure, **California's civil engineers have a moral duty to advocate for sustainable infrastructure capable of supporting our state's robust economy, while maintaining public safety and our quality of our life.** Join us in our mission to increase infrastructure investment to repair our existing networks and plan for California's future.

THE FULL STORY

1. Get the full story behind this Report Card at infrastructurereportcard.org/california.

2. Find out the condition of the infrastructure near you on the Save America's Infrastructure app available on the Apple App store and GooglePlay.

2019 CALIFORNIA'S INFRASTRUCTURE REPORT CARD

The 2019 Report Card for California's Infrastructure gave the state an overall GPA of C-. The good news is there are solutions to these challenges and we can raise California's infrastructure grades.

AVIATION — C+

California has 26 commercial service airports and 217 general aviation airports. Based on the Federal Aviation Administration passenger boarding data, 11 airports in California rank nationally within the top 100 Commercial Service Airports, with Los Angeles International Airport ranking second nationally and San Francisco International Airport ranking seventh. The condition of the runways at California airports is healthy, but the airport capacity remains a challenge. On average, 17% of flights were delayed at the 11 busiest airports in California in 2017, just under the national average of 18% the same year. Looking ahead, sufficient investment in commercial and general aviation airports is needed to keep pace with a growing economy and population. According to the 10-year California Capital Improvement Plan published in 2017, there are 1,735 aviation projects that need a total of $2.77 billion in funding over the next 10 years.

BRIDGES — C-

Progress has been made over the past decade to increase the percentage of California bridges in good condition and to reduce the number that are classified as structurally deficient (SD). Today, California has fewer SD bridges than the national average, and this number is expected to continue declining thanks to the passage of the Road and Repair Accountability Act (SB 1), which increased funding for badly-needed repairs to the state's transportation system. However, much more remains to be done, especially as it relates to seismic retrofitting to improve the safety of bridges in the event of an earthquake. Approximately 50% of bridges in the state have exceeded their design life and the backlog of recommended maintenance, repair and replacement work continues to grow. California is home to the second largest percentage of "functionally obsolete" (FO) bridges, or bridges with outdated designs that frequently contribute to congestion chokepoints. Over 7% of California's bridges are structurally deficient and California has ranks among the top states for bridges in "poor" condition by bridge deck area. In other words, some of our largest bridges, along corridors such as I-5 in San Diego, Highway 101 in Los Angeles, and I-80 in Sacramento need major repair and rehabilitation.

DAMS — C-

Dams are a critical element of California's infrastructure. The public depends on them for 70% of state's water supply, 15% of the power, as well as for flood control, recreation, fisheries and wildlife habitat. Changes in climate and population growth require new operational strategies. Over half of California's 1,476 state, federal and locally owned dams are considered high hazard dams, meaning their failure would result in probable loss of human life and economic damage. Approximately 70% of the dams are greater than 50 years old. Aging dam infrastructure challenges must be met with increased resources to ensure their reliability and safety. Fortunately, funding for dam inspection has increased in recent years. In 2015, the California Division of Safety of Dams (DSOD) budget was approximately $13 million, up from $11 million in 2010. This increase kept funding on par with inflation. However, while DSOD's budget is significantly higher per regulated dam than the national average, it does not fully fund the necessary programs to ensure adequate dam safety.

DRINKING WATER — C

Providing effective water supply and treatment in California has always been challenging due to great variations in water availability and demand from year to year across the state. Historically, California has adapted to this challenge by building a vast network of water storage and conveyance facilities. Today, much of this network is aging. In San Francisco, approximately 150 of the 1,200 miles of water mains are over 100 years old. The Los Angeles Department of Water and Power reports that approximately 28% of the city's 6,780 mainline pipes were installed before 1938. And while California's urban centers generally have state-of-the-art water treatment facilities, many of the state's rural areas are dependent on wells, many of which are inadequate in dry years. To fund and finance necessary drinking water infrastructure projects, water rates have risen, and voters passed both Proposition 1 and Proposition 68 to finance water quality and supply projects. While the additional revenue is helpful, it does not cover all needs throughout the state.

ENERGY — D-

California receives and generates energy through a variety of sources, primarily from natural gas, nuclear, and utility-scale solar and wind. Although under duress, California's energy systems have generally met the needs of consumers. However, the threat of natural and anthropogenic stresses, including fires, seismic events, storms, and gas storage mishaps, as well as the elevated cost of service, threaten energy system sustainability. Aging equipment, inferior design, and poor right-of-way vegetation management have caused electrical and oil/gas infrastructure incidents and, in some cases, resulted in deadly wildfires. In another trend, the increased renewable energy contribution has had dramatic impacts on the overall capacity of the California electric grid. California now has a legislatively-mandated target of 100% clean energy by 2045, but the true cost of building infrastructure to support this goal is unknown. Meanwhile, natural gas continues to help meet peak electric and heating demands, but the state depends on in-state production and imports that requires extensive processing resulting in high pricing to the consumer.

HAZARDOUS WASTE — C-

California's hazardous waste infrastructure principally consists of the management of generated hazardous wastes and the cleanup of contaminated sites. In 2017, California entities generated 3.8 million tons of hazardous waste and cleaned up 1,800 contaminated sites. It is estimated that 90,000 properties in California are contaminated with some level of toxic substances. The cost of operating California's existing hazardous waste infrastructure is around $3.4 billion per year, with most of this funding coming from the private sector. The results of this spending are improved human health and a cleaner environment. Economic benefits result from reduced health-care costs for exposure-related illness and increased land values—putting surplus land towards productive reuses such as housing and conservation, and returning hazardous recyclables back into industrial production. The infrastructure is challenged by the fluctuating funding levels, new contaminants and new knowledge of health effects, a vast increase in use of consumer electronics, and rising compliance costs for private businesses and public entities. California does not meet its own hazardous waste disposal needs. Over half of all hazardous waste generated is exported to surrounding states for landfill disposal.

INLAND WATERWAYS — D

The U.S. Army Corp of Engineers operates and maintains two inland waterways in California: the Sacramento Deep Water Ship Canal (Sacramento DWSC), and the Stockton Deep Water Ship Channel (Stockton DWSC). Both waterways face similar issues of being neither wide enough nor deep enough for larger ships. Construction costs for projects to deepen the two waterways are estimated at $17 million for the Sacramento DWSC and between $175 and $225 million for the Stockton DWSC. Both projects have been on hold since 1990, while no funding is programmed for future fiscal years. Meanwhile, the current Sacramento DWSC width is unsafe, particularly for marine vessels navigating the canal in inclement weather. There are significant opportunities for improvement for both waterways when considering seismic readiness, ecological hazards, and lack of necessary inspections.

LEVEES — D

Over the last six years, unprecedented funding was invested in California's aging levee system, and many miles of levee were improved during that time. Yet the fiscal impacts of climate change, increased regulatory pressure, more rigorous maintenance, updated safety standards and higher cost estimates render this investment a mere down payment on the much larger bill. A capital investment of $45 billion is needed to rehabilitate and improve California's levees, and unfortunately, the path to this funding is unclear. Local agencies currently spend $1.3 billion annually on all flood management activities. However, additional annual funding of at least $100 million is necessary to repair infrequent but inevitable flood damage.

PORTS — C+

California ports play a vital role in maintaining waterborne trade essential to the nation's economy. In 2017, California's ports handled 40% of all containerized cargo entering the U.S. and 30% of the nation's exports. Since 2012, maritime traffic volumes have increased by over 16%, while other factors have also begun impacting port operations: the need to protect against potentially catastrophic natural disasters such as earthquakes and sea-level rise, increased demands for security and emergency management, tighter regulatory requirements including air quality regulations, and modernization to incorporate new technologies to maintain competitiveness. California ports are in satisfactory condition for the time being, but require significant improvements to maintain existing conditions and meet new demands. The funding gap is estimated at $10.7 billion over the next 10 years, and available revenue has been insufficient to fill the gap as needs continue to outpace available funds.

PUBLIC PARKS — D+

California is home to 28 national parks and monuments, two World Heritage Sites, 284 state parks, and 14,000 local parks managed by nearly 1,000 agencies. In total, 47 million acres of outdoor recreational areas and local parks are enjoyed by residents of, and visitors to, the state. Unfortunately, park budgets have declined significantly as a result of the 2008 recession and infrastructure deficiencies have been on the rise. Deferred maintenance at state parks is estimated at $1.2 billion, while local parks report an estimated $1 billion in unmet needs. The National Parks Service estimates the maintenance backlog for its parks in California is $1.8 billion. Meanwhile, access to parks continues to be insufficient. Sixty two percent of Californians live in areas that do not meet the California Department of Parks and Recreation recommendation of three acres of park land per 1,000 residents. Fortunately, the tide is turning, as voters approved Proposition 68 in 2018, which will provide $4 billion in bonds for state and local parks and water projects.

RAIL — C

California is home to an extensive network of freight and passenger rail. A major portion of California's passenger rail system operates on right-of-way owned by Class I freight railroads, which are also the major carrier of freight in the state. Passenger rail systems and smaller freight carriers (Class II and III), to a lesser degree, rely on public funding for operations and maintenance. Class I freight railroads are able to fund maintenance and capital investment from their revenues, and generally operate on infrastructure that is in good condition. Progress is being made on safety related Positive Train Control (PTC) systems and most of the state's railroads implemented the service by the December 31, 2018 statutory deadline. However, some of the challenges that remain include lack of adequate funding for grade crossing safety programs, and commuter rail and state-supported intercity passenger rail that lack a dedicated revenue source for operations, maintenance, and capital investment programs. California, and the public agencies managing passenger rail systems, are working to remedy the issues regarding funding, interconnectivity, and capital investment, which have been outlined in the 2018 California State Rail Plan.

ROADS — D

Driving on deficient roads costs Californians $61 billion annually due to congestion-related delays, traffic collisions, and increased vehicle operating costs caused by poor road conditions. The condition of California roads is among the worst in the nation, ranking 49th according to the latest US News & World Report Ranking. Meanwhile, Southern California and the Bay Area are the second and third most congested urban areas in the nation, respectively. Repair and improvement to these roads is vital to California's economic health and public safety. The Road and Repair Accountability Act (SB 1) passed in April 2017, provides $52 billion in additional funds for local and state roads over the next 10 years. However, a total of more than $130 billion over that same time is needed to bring the system back to a state of good repair. A good transportation system enables efficient movement of goods and people and is critical to California's economic well-being.

SCHOOLS — C

There are 1,026 school districts in California and over 10,000 public elementary and secondary schools serving more than 6,220,000 students statewide. In some municipalities, capacity is sufficient and overall population is declining, while in others, new facilities to accommodate growing enrollment rates are required. Today, most of California's K-12 school facilities are in fair to good condition thanks to upgrades to structures, roofing systems, fire alarms, ADA access, electrical, HVAC and technology. However, the outdoor environment of the K-12 school facilities, including parking lots, play areas and playfield areas, are only in fair condition. Looking ahead, there is a lack in adequate funding for future routine and major maintenance issues.

SOLID WASTE — C+

California has adequate infrastructure for the minimization, collection, processing, recycling, and disposing of solid waste to protect human health, public safety, and the environment with its 1,390 existing solid waste facilities and operations. However, the existing infrastructure is inadequate to meet existing and recent legislative and regulatory solid waste reduction and recycling goals. While well intentioned, these aspirational policies are being implemented without sufficient markets, planning, infrastructure development and funding, and consideration of recent restrictions by other countries on imported recyclables. Overall, the condition of the solid waste category has declined significantly in recent years, largely due to the insufficient infrastructure to meet new recycling goals and adequately manage the improper discharge of solid waste to the environment. California is considering policies to reduce both the generation and disposal of solid waste including greater manufacturer responsibility, waste reduction, improved recyclability, and increased waste fees. These approaches would likely be implemented through future legislation and regulations that would impose mandated restrictions on solid waste generation and handling, as well as penalties on stakeholders failing to comply. More importantly, California needs to refocus its attention on technologies and internal markets that can help meet its recycling goals/policies, including waste conversion technologies to safely and cost-effectively convert waste residuals (organics, paper, plastics) into low carbon fuels, energy, and chemicals.

STORMWATER — D+

Stormwater infrastructure in California includes storm drains, pipes, ditches, canals, and channels. It also includes green infrastructure like vegetated areas that provide habitat, flood protection, cleaner air and cleaner water. Much of the drainage infrastructure in California was constructed prior to the 1940s and needs repair or replacement. Further, the new and innovative drainage systems necessary to meet water quality standards and promote a sustainable environment are significantly underfunded. For example, over the next 20 years in Los Angeles County the cost of achieving water quality objectives is estimated at about $20 billion, and in San Diego County, it is estimated at about $5 billion. Clean water is fundamental to our way of life in California and significant investment is needed to insure sustainable clean water for future generations.

TRANSIT — C-

California needs robust, flexible, and reliable transit systems to reduce peak congestion on our highways, provide options for citizens who do not drive, and improve air quality. Public transit in California provides nearly 1.5 billion trips annually on 139 transit systems throughout the state. The California Transportation Commission estimated in 2011 the state needed approximately $174 billion for expansion and state of good repair transit projects over the next 10 years, but at the time only 45% of funding had been identified, leaving a shortfall of $96 billion. Fortunately, recent legislative initiatives and ballot measures are attempting to close the funding gap, including an additional $750 million annually for transit agencies across the state provided through the Road and Repair Accountability Act of 2017 (SB 1). Adequate resources must be provided to our transit systems or we risk retreat on sustainability gains as well as the current state of good repair.

WASTEWATER — C+

California wastewater systems serve a population of 40 million in over 13 million homes and treat 4 billion gallons of sewage per day while protecting surface waters, the coastline and public health. There are approximately 900 publicly-owned collection and treatment systems, while approximately 10% of the population is served by onsite wastewater systems such as septic tanks. The average age of collection system pipes and manholes is approximately 40 years. Most, although not all, systems and treatment plants appear to have adequate capacity and are prepared to meet the population needs for the next 10 to 20 years. Modest progress has been made in recent years to prioritize and invest in wastewater infrastructure. For example, in 2014 Proposition 1 authorized over $7.5 billion in general obligation bonds to fund ecosystems and watershed protection and restoration projects. California also continues to advance in technologies aimed at treating and discharging wastewater at a higher water quality standard. However, the cost to maintain wastewater systems continues to rise with the age of the systems. We must maintain the condition of the infrastructure, meet discharge requirements, and continue elimination of sanitary sewer overflows.

INFRASTRUCTUREREPORTCARD.ORG/CALIFORNIA

b. Meter Replacement Program

Description of Evaluation Criteria

The criteria which triggered the need for the small and large meter replacements are Government Mandate (CPUC General Order 103) and the routine programmatic replacement of large meters that have reached the end of their useful life cycle.

Detailed Project Scope

The Specific 0900 Small Meter Replacement Program is the routine removal and replacement of 5/8"-2" meters. General Order 103-A mandates meters be tested or replaced based on age criteria (see Table 1).

Table 1. Meter Replacement Criteria

Meter Size (inches)	Age (years)
5/8	25
1	15
1.5	10
2	10

The Specific 0900 Large Meter Replacement Program is the routine removal and replacement of obsolete meters that have reached the end of their useful life cycle. The program provides for the routine programmatic replacement of 3" and larger meters on a 20 year replacement cycle. However, prior to construction, Cal Water will re-evaluate the list of meter assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any meter no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative flowmeter as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

The district budgets proposed for the 2021 GRC are summarized in Table 2, below.

Table 2. Meter Replacement Program Breakdown by District

District	Total Annual Cost			District Total Cost
	2022	2023	2024	2022 - 2024
Antelope Valley	$10,335	$10,593	$10,858	$31,786
Bayshore	$479,140	$491,119	$503,397	$1,473,656
Bakersfield	$416,823	$427,244	$437,925	$1,281,991
Bear Gulch	$226,215	$231,870	$237,667	$695,753
Chico	$188,556	$193,270	$198,102	$579,928
Dixon	$14,189	$14,544	$14,908	$43,641
Dominguez	$755,103	$773,980	$793,330	$2,322,413

District	Total Annual Cost			District Total Cost
	2022	2023	2024	2022 - 2024
East Los Angeles	$183,282	$187,864	$192,561	$563,706
Hermosa Redondo	$454,176	$465,531	$477,169	$1,396,876
Kern River Valley	$10,539	$10,802	$11,072	$32,413
King City	$31,498	$32,285	$33,093	$96,876
Livermore	$147,994	$151,694	$155,486	$455,175
Los Altos	$205,410	$210,545	$215,808	$631,763
Marysville	$29,363	$30,097	$30,850	$90,310
Oroville	$34,328	$35,186	$36,066	$105,580
Palos Verdes	$388,698	$398,415	$408,375	$1,195,488
Salinas	$204,736	$209,854	$215,101	$629,691
Selma	$41,089	$42,116	$43,169	$126,375
Stockton	$243,118	$249,196	$255,426	$747,740
Visalia	$306,701	$314,368	$322,228	$943,297
Westlake	$82,522	$84,585	$86,700	$253,808
Willows	$19,543	$20,032	$20,532	$60,170
Total	**$4,473,358**	**$4,585,190**	**$4,699,823**	**$13,758,436**

Note: Direct Costs (loaded into ROM) are assumed to be 81.5% of the Sub-Total Costs, to discount for overhead and interest.

Customer Benefits

The benefit to the customer is the accurate billing and equitable distribution of the costs of providing water service through accurate water meters to all of our customers.

c. Flowmeter Replacements

Project Justification

A flowmeter is an instrument used to monitor, measure, and record the flow rate of water or chemicals. Production flowmeters specifically monitor the flow rate of water through well pumps, booster pumps, and treatment processes. Accurate flow measurements are important to determine water production, production costs, and pumping efficiency. There are various types of flowmeters in use, such as paddle-wheel insertion, magnetic, and propeller types. Each type has pros and cons depending on application and budget.

Flowmeters are tested and calibrated annually, and are repaired when they cannot hold their calibration. When repairs are no longer cost effective, the flowmeter must be replaced. Flowmeters are also replaced when they become obsolete and do not meet functional requirements, such as providing an accurate signal to SCADA for real-time monitoring and tracking. Data provided by flowmeters is beneficial in daily operations and for troubleshooting of the distribution system, leak detection, validated water loss audits, fire flows, etc.

Reliable and accurate flowmeters validate the efficiency of a pump when checked against the power consumption from the power utility meter. Accurate production reporting information is valuable in the creation of energy policy and energy planning.

Evaluation Criteria

Cal Water uses a risk-based asset management approach to assessing the condition of its flowmeters. To support this effort, a 5 x 5 matrix was developed (Attachment A) to score flowmeter condition. On one axis, the asset is graded into one of five degrees of severity, with 1 being the least severe and 5 being the most severe. Items with any rating of 5, shown in red, require immediate replacement.

On the other axis, condition is divided into five categories: (1) physical condition, (2) capacity, (3) level of service, (4) reliability, and (5) financial efficiency. The condition of an asset at any given time is dependent on several factors like age, environment, capacity, functionality, reliability and financial efficiency. The one factor that influences the rest the most is age; as the asset ages, the functionality of it degrades over time due to wear, causing more repairs and calibrations. The environment will affect the asset negatively over time, whether it is UV from the sun or extreme hot or cold temperatures, the environment multiplied by the age significantly degrades the asset. These degradations create more cost of maintenance in the form of corrective work and more frequent calibrations. Since our assets are spread over the entire state, the conditions are not the same for all; they may have a drier climate or an extreme hot weather like in the valley. Some districts may have a more corrosive environment close to the ocean. The condition assessment and the ratings for each classification are shown in Attachment A and further described below.

Asset Condition

The first category of condition assessment is the asset's physical condition, which is divided into five ratings that range from "excellent" to "virtually unserviceable". These defects may be rust, chipping,

tuberculation, or blemishes of a similar caliber. All flowmeters that are identified in the field as "virtually unserviceable" are proposed for immediate replacement.

Another method of predicting failure is to use the remaining useful life (RUL) of the asset. Cal Water uses a 15 year life expectancy for its flowmeters. All flowmeters with a RUL 20% or less of the life expectancy are proposed for replacement. Since this is an important factor, scores in this category are multiplied by 1.5 to add weight to the final assessment.

Finally, the asset's physical condition may be affected by environmental exposure, particularly if the flowmeter begins to deteriorate over time. Corrosive soils, submergence underwater in poorly draining vaults, disinfection chemical exposure, and temperature extremes can lower the life expectancy of a flowmeter as the exposure increases.

Capacity

Flowmeters are sized to meet particular system requirements. If those requirements change, the flowmeter may become obsolete due to inability to function over the required flow or pressure range. Evaluation of changes in zone capacity requirements in the distribution system and flow requirements within the station are required to monitor for trends that may lead to flowmeter performance issues as the flowmeter deviates from the design point. Flowmeters that no longer meet the flow design point are proposed for immediate replacement.

Level of Service (Functionality)

a. Code Compliance: Flowmeters are assets that are in physical contact with the water they measure. For this reason, Cal Water has adopted NSF 61 certification as a standard for all flow meters that measure potable water in use. This certification will ensure that the flowmeter has been put through rigorous testing and ensure it is safe and free from contaminants that would potentially affect our water quality.
b. Performance/Accuracy/Calibration: Flowmeters are tested and calibrated to +/-2% by our technicians once a year to ensure the accuracy of the measurement they take on a daily basis. Flowmeters that cannot be calibrated are replaced immediately.
c. Run-time/Cycling: Flowmeters are constant duty instrumentation devices that can run for days uninterrupted. They can also be cycled several times a day to accommodate the run times of the well pumps we use according to demand.

Reliability

Flowmeters have a high consequence of failure to the environment, property and personnel. Therefore, maintaining flowmeters for reliability is an extremely important factor in this asset's management. Cal Water evaluates the frequency of failure by comparing it to life expectancy (LE) divided by incrementally higher numbers. Scores in this category are multiplied by 2 to add weight to the final assessment. All flowmeters that fail more than four times (LE=40/10) are proposed for immediate replacement.

Financial Efficiency

A final consideration is a financial analysis of the replacement of flowmeters.

a. Payback Period: A qualitatively assessment of the impacts of the failure of a valve are made to identify the payback period.
b. Parts and Equipment: Flowmeters used are typically non-serviceable in that they do not have internal parts that can be replaced to bring back to an acceptable level of performance. This is a high tech device that is constantly being superseded by newer and better models as technological advances permit, rendering the existing units obsolete and no longer supported by manufacturer.
c. Technology: The preferred technology used in the industry is the magnetic resonant flowmeter. This technology uses a spool in which the water flows through. The spool has embedded coils that induce a magnetic field into the water. The faster the water flows, the more distorted the magnetic field will be. The magnitude of the distortion, factored in with the internal diameter of the pipe, will result in a very good measurement of how much water passes through a pipe in a determined period of time. When this technology becomes outdated (no longer supported or obsolete), the flowmeters will be scheduled for replacement.

Detailed Project Scope

The district budgets proposed for the 2021 GRC are summarized in Table 1, below. However, prior to construction, Cal Water will re-evaluate the list of flowmeter assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any flowmeter is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative flowmeter as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

Each flowmeter replacement project includes:

- Removal of old equipment.
- Installation of a new flowmeter and installation of a new pipe spool to house flowmeter or make up differences in instrument laying length, as required.
- Installation of adequately sized vault for safe entry during calibration and maintenance, as required.
- Installation of conduits per National Electric Code (NEC) from vault to the inside of pump station and into the panelboard where flow monitor and SCADA equipment are located.
- Completion of electrical connections, commissioning, programming and integration into SCADA.

Table 1. Flowmeter Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$35,129	$36,704	$37,695	$109,528
Bayshore	$142,943	$147,358	$99,448	$389,749
Bear Gulch	$93,545	-	-	$93,545
Bakersfield	$118,116	$137,382	$135,464	$412,181
Chico	$310,877	$328,530	$353,166	$1,042,086
Dominguez	$51,492	$98,928	$142,283	$306,966
East Los Angeles	$155,941	$137,623	$141,322	$474,496
Hermosa-Redondo	$128,775	$93,544	$96,055	$329,339
King City	$54,686	-	-	$56,986
Kern River Valley	$59,700	$61,294	$64,038	$232,190
Livermore	$310,933	$288,377	$296,733	$896,042
Los Altos	$88,291	$91,060	$95,032	$274,383
Marysville	$72,217	$74,022	-	$146,239
Oroville	$84,982	$49,367	-	$141,305
Redwood Valley	$44,146	$45,530	$93,929	$183,604
Selma	-	$44,805	$92,232	$137,037
Salinas	$174,443	$146,195	$150,423	$494,583
Stockton	$143,739	$147,875	$152,145	$493,234
Visalia	$307,374	$316,325	$360,531	$984,231
Travis	$28,815	-	-	$28,815
Westlake	$17,132	-	$156,928	174,060
Willows	$89,172	$44,266	-	$133,438
Total	**$2,512,448**	**$2,289,185**	**$2,467,424**	**$7,269,057**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Effective and accurate flowmeters help sustain better energy policy, planning, and implementation, and regular operation. This steady flow of accurate information would help provide a better service to our customers by keeping our production and distribution systems running in optimal condition with minimal downtime.

Attachment

Attachment A – Condition Assessment Matrix

Attachment A
Flowmeters

Attachments

	1. Condition		1.a. Environmental Degradation Risk	2. Capacity	3. Functionality - LOS			4. Reliability	5. Financial Efficiency		
Rating	**condition**	**age/RUL**	**environment - corrosion, heat, chemical, submergence, etc.**	**growth potential**	**code compliance**	**performance**	**runtime, cycling, loading per year**	**breakdown frequency**	**payback period**	**parts, equipment obsolescence**	**technology maturity**
Multiplier	**1**	**1.5**	**1**	**1**	**1**	**1.5**	**1.5**	**2**	**2**	**1.5**	**1.5**
1	excellent	80-100% RUL	protected/minimal exposure	significantly exceeds design capacity	exceeds all codes	exceeds all	< 1752 hrs, < 17520 starts, 70-80%	none	> 10 years	lead time < 1 month	current version, best available
2	minor defects	60-80% RUL	minor exposure	exceeds design capacity	--	exceeds some	1752-3504 hrs, 17520-26280 starts, 80-90%	LE/2	< 10 years	lead time > 1 month	--
3	moderate defects	40-60% RUL	moderate conditions	meets design capacity	meets codes	meets all	3504-5256 hrs, 26280-35040 starts, 90-100%	LE/5	< 5 years	lead time > 3 months	functionally meets requirements
4	significant deterioration	20-40% RUL	significant	fails design capacity	--	fails some	5256-7000 hrs, 35040-43800 starts, 100-115%	LE/10	< 3 years	special order/ long lead time	--
5	**virtually unserviceable**	**0-20% RUL**	severe exposure	**significantly fails design capacity**	**fails critical codes**	**fails all**	>7000-8760 hrs, >43800 starts, >115%	**LE/20**	**< 1 year**	**not available**	**not supported or obsolete**

d. Vehicle Replacement Program

Project Justification

Cal Water's Vehicle Replacement Program involves the routine replacement of the vehicles in the company's fleet based on specified criteria. Additional vehicle requests due to operational efficiencies and requests for new complement, as well as replacement requests for vehicles outside of these particular criteria, do not fall under the scope of this program and will be accounted for under separate Project IDs.

Evaluation Criteria

Cal Water continues to use a modified version of the criteria established by the California Department of General Services (DGS) Office of Fleet and Asset Management (OFAM). The OFAM guidelines regulate vehicle replacement for state agencies in California; the criteria established by OFAM is relatively straight forward, easy to follow, and has worked with the majority of Cal Water's fleet vehicles.

Currently, the DGS criteria for vehicle replacement, as noted in the OFAM handbook[7] is as follows:

Authorized emergency vehicles as defined in Section 165 of the Vehicle Code, that are equipped with emergency lamps or lights described in Section 25252 of the Vehicle Code	100,000 miles
Sedans, station wagons, vans and light duty trucks or vehicles having a gross vehicle weight rating (GVWR) or 8500 pounds or less	120,000 miles
Heavy duty trucks or vehicles (Class 3 and under) having a gross vehicle weight rating (GVWR) of 8501 pounds or more	150,000 miles
4-wheel drive vehicles	150,000 miles

Figure 1 – DGS Criteria for Vehicle Replacement

In the past, the DGS also included a capped vehicle age in its criteria, but in recent years has removed it. Additionally, the OFAM allows for a replacement of a vehicle outside of the mileage criteria when it would be cost-effective to do so. These cases are determined by comparing the current condition of the vehicle, the maintenance and repair record of the vehicle, and the repairs and maintenance needed for the vehicle in the near future to the current value of the vehicle.

Cal Water applies the 120,000 mile criteria to the vehicles in its fleet. Many of Cal Water's vehicles have a GVWR in excess of 8,500 lbs., which fall under the OFAM criteria of 150,000 miles. However, most of the company's vehicles could be considered "emergency vehicles" as they are used to maintain its system and respond to emergency situations at all hours. The mileage cut-off for emergency vehicles is 100,000 miles. The company has determined the 120,000 mile criteria to be adequate in all cases.

Alternative Analysis

Mileage is not the sole indicator of vehicle performance and if possible should not be the only factor to consider when assessing a fleet's replacement cycle. Cal Water has considered expanding the replacement criteria to include additional factors, including but not limited to number of years in service, cost of repairs,

[7] http://www.documents.dgs.ca.gov/OFA/handbook.pdf

projected value of the vehicle, and total cost of ownership of the vehicle to determine for each class, or application, of vehicle in its fleet the optimal time for replacement.

An alternative to mileage the company has considered would be to perform a similar but more focused periodic review of each individual asset in the company's fleet based on the criteria mentioned above. This alternative method would require more time and effort to properly isolate specific vehicles

Due to budgetary and resource restraints, the current method is the most effective. In order to most effectively project when individual vehicles are about to reach their optimal replacement level, vehicle review must be performed on an annual or even quarterly basis. Due to the current GRC filing format, vehicle replacements are budgeted up to four years in advance. This budget cycle restricts the company's ability to pinpoint the exact time when a particular vehicle, or class of vehicles, should be replaced.

Furthermore, Cal Water compiles vehicle related data in order to evaluate its fleet and determine which variables to add to its criteria. One example of a data point that should be included in the company's replacement criteria is engine runtime hours. Many vehicles in the company's fleet are used to power equipment through the engine. While these vehicles may not travel very far in a given day, their engines are being used for several hours to power jackhammers, valve machines or even high powered vacuums. Cal Water intends to expand its criteria in the future to better project replacement of its fleet vehicles, which will increase safety and reduce maintenance costs and downtime of vehicles that are in the shop.

Detailed Project Scope

The district budgets proposed for the 2021 GRC are summarized in Table 1, below. However, prior to purchasing vehicles, Cal Water will re-evaluate the list of vehicles recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any vehicle is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative vehicle as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

Table 1. Vehicle Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$92,718	-	-	$92,718
Bayshore	$197,107	$203,112	$103,543	$503,762
Bear Gulch	$355,985	-	$162,451	$518,436
Bakersfield	$690,000	$38,727	$521,706	$1,250,433
Chico	$40,210	$96,207	$291,505	$427,922
East Los Angeles	$368,513	$45,698	$140,524	$554,735
King City	$57,125	-	-	$57,125
Kern River Valley	$95,313	-	$46,841	$142,154
Livermore	-	$48,104	-	$48,104
Los Altos	$249,376	$50,509	$63,017	$362,902

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Marysville	-	$58,553	-	$58,553
Oroville	$46,930	-	-	$46,930
Redwood Valley	$109,258	$107,980	-	$217,238
Selma	$46,930	$58,553	-	$105,483
Salinas	$46,930	$96,207	$169,340	$312,477
Stockton	$237,501	$389,860	$296,389	$923,749
Visalia	$232,878	$233,669	$97,017	$563,564
Westlake	-	$45,698	-	$45,698
Willows	$46,930	-	-	$46,930
Total	**$2,783,452**	**$1,472,877**	**$1,892,333**	**$6,278,914**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Replacing the company's vehicles on a regular basis benefits the company's customers through increased safety and reliability of company employees, keeping driver's on the road and able to perform their jobs, and through reduced costs by keeping major maintenance and repairs to a minimum.

e. Pump & Motor Replacements

Project Justification and Background

Cal Water manages over 600 pumping equipment assets through a systematic approach including monitoring, evaluating and testing, resulting in maintenance, modification, or replacement of pumping equipment. Failure to do so can lead to declining efficiency, reliability, and eventually unpredicted failure. These declines result in increased energy costs and risk to provide reliable service to Cal Water's customers. Unpredicted failures can result in expensive emergency repairs and reliability; and even structural deterioration, collapse or complete failure of the groundwater production wells.

Below includes a description of the overall factors that are included in evaluating pumping equipment, types of pumping equipment, alternatives considered, and summary of the proposed pump and motor projects for the 2021 GRC.

Pumping Equipment Service Life Expectancy

The condition of a pump is a critical factor affecting overall productivity and reliability of a water system and continued service to customers. Under this justification, Cal Water has two pumping classification – booster pumps and groundwater well pumps. Over time, pumps become less efficient and reliable, and this is directly dependent on how the pump is installed, operated and maintained.

Provided below is a general guideline of the service life expectancy for the common types of pumping equipment that Cal Water operates and maintains. Cal Water is working to improve this guideline. The low estimate is based on a run to fail operation whereas the high estimate incorporates periodic maintenance of the equipment and ideal operating conditions.

Table 1. Pumping Equipment Service Life Expectancy

Equipment Type	Range of Reliable Service Life Expectancy
Boosters	*Low to High Estimate*
Split Case Booster	20- to 45-Years
End Suction Booster (ESB)	15- to 25-Years
Vertical Booster (Stack)	10- to 18-Years
Vertical Booster (Submersible)	8- to 12-Years
Vertical Booster (Submersible)	3- to 8-Years
Groundwater Well Pumps	
Well Pump (Oil Lubricated Lineshaft)	8- to 12-Years
Well Pump (Open or Water Lubricated Lineshaft)	3- to 8-Years
Well Pump (Submersible)	5- to 10 Years

Factors Affecting Pumping Equipment Service Life Expectancy

There are multiple factors that affect the service life expectancy of the pumping equipment. Factors affecting different types of pump's service life expectancy that Cal Water may assess include:

- Monitoring
- Maintenance
- Radial Forces
- Suction Pressure
- Driver Alignment
- Pipe Strain
- Fluid Properties
- Operational Service
- $NPSH_A/NPSH_R$ Margin
- Pump Speed
- Impeller Imbalance
- Pipe Geometry
- Suction Flow
- Declining Water Level
- Pump Placement

For more details about these factors, see Attachment A.

Booster Pumps

Booster pumps are used to add water volume, maintain system pressure, and move water through a system. Examples of booster pump include moving water from a storage tank and into the system; pushing water through a treatment vessel; and transferring water from one storage tank to a higher elevated storage tank. In some cases, tanks (storage and hydro pneumatic) maintain system pressure, but as system demand increases, pumps take over as the workhorse to balance the system's pressure.

Based on the application, a booster pump may be vertical or horizontal type. Each type have specific applications and in some cases both types meet the same application and either can be used. There are advantages and disadvantages to each pump type selected.

Vertical Booster Pumps

Advantages include:

- High efficiency and reduced energy costs;
- Smaller footprint;
- Greater flexibility where changes in flow and pressure are anticipated;
- Higher pressure rating due to multi-stages and ductile iron construction;
- Typically shorter equipment lead times and repair times (less service disruption and time to replace major components).

Disadvantages are:

- Shorter life expectancy than horizontal pumps;
- More wear points;
- Vibration and imbalance caused by mechanical seal and bushings with lower fit tolerances;
- More susceptible to corrosion by the water because the column and shaft are submerged.

Specifically for vertical can booster pumps, disadvantages may include:

- NPSH, can vortices, air entrainment and capture, and can velocities;
- Higher initial construction cost and construction durations are longer;

- Heavy duty or large crane trucks are required to remove the pump for maintenance;
- Few, if any repairs can be made in the field.

Horizontal Booster Pumps

Advantages include:

- Longer usable service life expectancy;
- Fewer wear and deflection points;
- Lower initial construction cost and duration as all equipment and piping are above ground with no excavation required;
- easier equipment maintenance including light duty lifting to remove and repair equipment
- In some cases, minor repairs can be made in the field;
- Less susceptible corrosion as bearings are isolated from the fluid being pumped, and the wetted areas can be coated to protect (cast iron) castings.

Disadvantages are:

- Lower efficiency and higher operating cost over time;
- Larger foot print;
- Less flexibility where changing heads and pressures are anticipated;
- Long lead time for major pump components (impeller and casing halves);
- Expensive major component replacement costs.

Groundwater Well Pumps (Well Pumps)

Groundwater well pumping equipment are installed in a vertical structure that includes perforations or openings to allow water to flow into the well. Wells pumps are designed and built to operate in highly variable, and harsh environmental conditions. Wells pumps are set to a depth below the static (non-operating) and pump (operating) water levels, to draw water from the aquifer(s) and lift that water to the surface. At the surface, groundwater is used in many parts of the water system. Groundwater, after chlorination, may be pumped directly into a system to maintain a set pressure and water supply; discharge to a surface storage tank to maintain tank levels; or hydro pneumatic tank to maintain system pressure.

Based on the application, there are two categories of well pumps - top drive (sub-categories include enclosed line shaft - oil or water lubricated, and open line shaft) and submersible (motor submerged and below the pump). Each type have specific applications and in some cases meet the same application. There are advantages and disadvantages to each pump type selected.

Vertical Top Drive Water Well Pumps

Advantages include:

- Higher motor efficiency and reduced energy costs;
- Some ability to modifications equipment based on environment;
- Easier motor maintenance, service and replacement – motor is at the surface;
- Variable Frequency Drive (VFD) application – readily available motors built for inverter duty or VFD application;

- Water lubricated – no downhole oil and no oil in water system.

Disadvantages are:

- Column and shaft alignment from surface to 50-feet below surface is critical;
- Strong bends and "dog-leg" well casings increases wear, and less service life;
- More shaft bearings and therefore more wear points;
- Downward water flow above pump and oil can get into the water system (oil lube equipment only).

Disadvantages (additional for product lubricated) are:

- Static water level >75-feet requires more pre-lubrication, up-hole water velocity on start-up is critical. As a result, product lubricated pumps are not recommended as deep set pumps.
- Deeper the static water level, the less equipment life expectancy.
- 10-foot column joints increases installation time.
- Sand production directly effects lineshaft wear at each 10-foot shaft bearings.
- Column and shaft alignment are critical.
- More susceptible to wear in minor bends and "dog-legs" in the well.

<u>Submersible Water Well Pumps</u>

Advantages include:

- No surface maintenance;
- Equipment is readily available, fast install and removal;
- Able to be installed in strong bends and "dog-leg" casing - no line shaft wear;
- Aesthetics with minimal surface construction;
- Low noise environment friendly.

Disadvantages are:

- Less life in sanding well environment;
- Lower OPE, motor efficiency is commonly < 90%;
- Requires a minimum water velocity flow across the motor;
- Higher motor speed – increases equipment wear;
- Limited load application on standard motors – high down thrust requires custom order motor with long-lead time;
- Limited motor manufacturers with available motors built inverter duty rated and longer lead times for the motor;
- Motor failure requires pump rig to pull all equipment out for troubleshooting and repair.

Common components that are used in all well pump are pump bowls and column pipe. Pump bowls can fail with sanding and abrasives; due to where the pump is set; from declining water levels; and when it breaks suction. The column pipe is susceptible to failure in aggressive and corrosive waters. In top drive enclosed line shaft (ELS) equipment, wear and failure mechanisms are commonly related to the well construction, well deterioration, the water produced, and changes in application. For more information about the applications and failure mechanisms for well pumps, see Attachment B.

Alternatives Analysis

Proactive and Planning Replacement – To maintain optimal system reliability and operational efficiency, a proactive and planned approach to managing pumping equipment is the best management practice. Being proactive includes on-going monitoring and testing of the pumping equipment, evaluation of system data, and evaluate equipment design conditions before changes to the application are implemented. As equipment efficiency declines, planned replacement is the optimal approach to upgrading the systems equipment. Planned maintenance includes a controlled shut down at an optimal time for that portion of the system, and with enough time planned so that the contractor has the right equipment available to effectively complete the work.

Run to fail – Reduces reliability, increases operating cost as the equipment progress to failure, and when the equipment fails the cost of repair increases. When running equipment to fail, timing of the failure is not optimal jeopardizing system reliability. As equipment runs to fail, the equipment efficiency declines and as a result operating costs increase. When the equipment fails, repair or replacement work is conducted on an "emergency" basis. When repairing equipment on an "emergency" basis, costs increase, ability to determine the cause of failure can be lost, and the probability for additional mistakes increase.

Modification – Not a common option as pumps are designed for specific parameters or narrow operating ranges, and would be difficult to adjust without an engineered re-design of the facility.

Failure Repair – The decline in equipment performance or failure is the result of one or more factors as discussed in the above "Factors Affecting Pumping Equipment Life Expectancy" section. A repair may return equipment back to operation, but may not resolve the failure factors. Re-engineering the system or ancillary component that resulted in the cause of failure can improve equipment reliability and efficiency. Examples of pumping equipment component repair, to restore equipment back to an operating condition, may include motor rewind, re-packing a pump or repairing a mechanical seal. Details about these repairs can be found in Attachment B.

Cal Water's pump replacement program is proactive in nature. Planned replacements provide the opportunity for engineering design and analysis which results in the best product. Additionally, Cal Water's desire to be proactive and planned replacements allow for advanced scheduling, which protects and maintains over distribution system reliability.

Historic Count of Specific and Non-Specific Projects

Specific projects are planned capital projects from past GRCs. Projects that are emergency or unplanned are referred to as Non-Specific projects. The number of recent Specific versus Non-Specific projects were reviewed to assess the annual number planned replacements versus the number of equipment failures actually found. Based on the past 10-years of data, the number of pumping equipment replacements being requested is reasonable and justifiable.

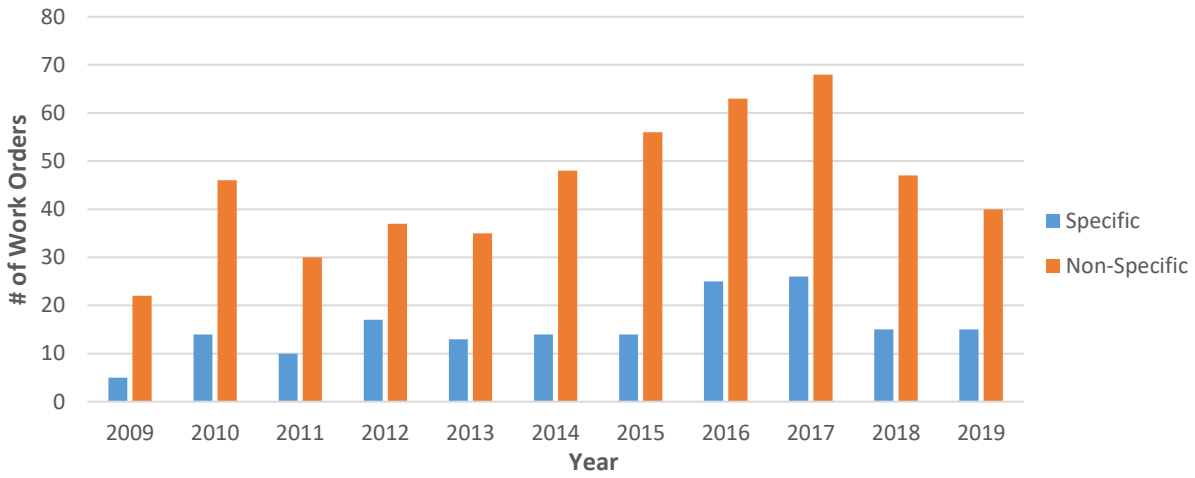


Figure 1 – Historical Pump Replacement Rate (Planned and Unplanned Replacement)

Cal Water operates through a collection of diverse systems with various equipment application and system needs. Pump operating conditions vary widely; it is challenging to provide a predictive replacement schedule that would apply to all systems and equipment. Over a 10-year period of specific and non-specific projects, the table above shows Cal Water's pursuit to improve a predictive replacement program. There are many factors that result in the performance failure of pumping equipment. One of which is Overall Plant Efficiency (OPE) which is the relationship between power consumed and water delivered, other performance failure criteria may include but may not be limited to corrective replacement – Environmental and Reliability factors. Using these two criteria, OPE and Corrective Replacement, provides a more accurate capture of predictive replacement program.

Evaluation Criteria

Cal Water's has three (3) Steps of Evaluation to develop a list of projects for the two predictive replacement programs – OPE & Corrective Replacement.

Step 1 – Last Work and Planned Work – Last Work - Pumping equipment with work completed or replaced in the last 5-years were marked as "less likely to fail", but could be evaluated further if deemed prudent as part of Steps 3 and 4. Planned Work - Pumping equipment that was planned to be replaced in 2020 or 2021 were also removed from the evaluation.

Step 2a – Pump Overall Plant Efficiency (OPE) – Overall Plant Efficiency (OPE) is the relationship between power consumed and water delivered, and is a key indicator of the pumping equipment performance and condition. With regular testing and those tests evaluated over time, the Company can improve predictability of the pumping equipment, driver, and well or system performance. Out of the over Cal Water 1,200 pumps, 1,000 pumps have been tested for efficiency by Southern California Edison or a Pacific Gas & Electric approved third party tester. The pumps that are not tested are mostly less than 25 horsepower and are only tested if critical with some pumps that are only used in an emergency or in inactive wells.

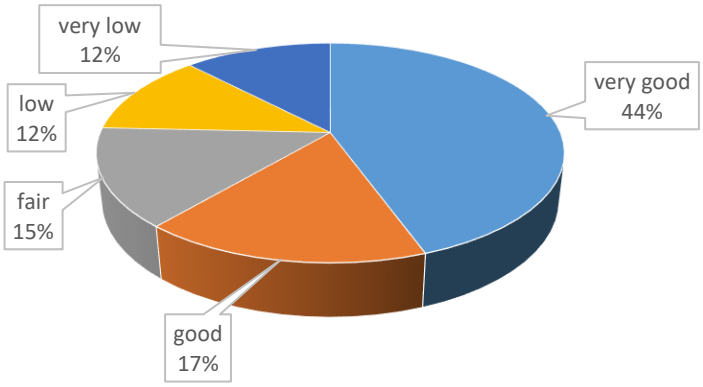


Figure 2 – Cal Water Pumps by PUC Rating

Pumping equipment from Step 1 are evaluated for OPE as compared to the California Public Utility Commission Efficiency Chart (Table 2).

- OPE's that fall within "Very Low" and "Low" were identified for replacement.
- OPE's that fall within "Fair" and "Good were identified to be evaluated further.
- OPE's that fall within "Very Good" were omitted from further evaluation.

Table 2. PUC Pump Efficiency Ratings

Rating	Very Low	Low	Fair	Good	Very Good
HP	OPE Range (%)	OPE Range (%)	OPE Range (%)	OPE Range (%)	OPE Range (%)
5-7.5	34.0 or less	44.0 or less	44.0 - 49.9	50.0 - 54.9	55.0 or above
10	36.0 or less	46.0 or less	46.0 - 52.9	53.0 - 57.9	58.0 or above
15	37.0 or less	47.0 or less	47.0 - 53.9	54.0 - 59.9	60.0 or above
20-25	37.9 or less	47.9 or less	50.0 - 56.9	57.0 - 60.9	61.8 or above
30-50	42.0 or less	52.0 or less	52.0 - 58.9	59.0 - 61.9	62.0 or above
60-75	45.9 or less	55.9 or less	56.0 - 60.9	61.0 - 65.9	66.0 or above
100	47.2 or less	57.2 or less	57.3 - 62.9	63.0 - 66.9	67.0 or above
150	48.0 or less	58.0 or less	58.1 - 63.4	63.5 - 68.9	69.0 or above
200	49.0 or less	59.0 or less	59.1 - 63.8	63.9 - 69.4	69.5 or above
250	49.0 or less	59.0 or less	59.1 - 63.8	63.9 - 69.4	69.5 or above
300-500	49.9 or less	59.9 or less	60.0 - 64.0	64.1 - 69.4	70.0 or above

Overall Plant Efficiency (OPE) or "wire to water" efficiency, of pumping equipment is provided based on PUC's table of OPE performance ranges for surface mounted and submersible pumps/motors. An OPE in the low to fair range suggests that a pump may need a retrofit, repair or adjustment, or that the pump is not matched to the current required operating conditions.

Additionally, the previous cycle hydraulic test was reviewed to verify the equipment is in declining performance. If found in a same or declining performed the pump equipment was added to the list if an increasing performance, the pump equipment removed or reevaluated.

Step 2b – Corrective Replacement – Corrective replacement is necessary when known problems already exist. In Step 2b, additional equipment were assessed under a corrective replacement program which evaluated Environmental and Reliability factors and those factors directly affect the service life of the

equipment. Those pump & motors evaluated under this program were not excluded from the OPE criteria under Step 2a. Pumping equipment remains critical to the operations of a water system.

Environmental

Oil Lubricated Shaft Pump – AWWA published an article in 1993 that confirmed there is an increase in HPC Bacteria in wells that utilize oil-lubricated pumps. In the early 2000's, Cal Water identified oil lubricated well pumps that directly contributed to bacteriological fouling resulting in failed bacteriological sample results. Because of these results, Cal Water has been approved through several GRC cycles to replace all oil lubricated shaft pumps. Additional oil lubricated pumps have been identified and are made part of this GRC.

Mercury Seal Submersible Motors – Historically, the use of Mercury as a shaft seal material in submersible motors was state of the art technology that dramatically improved equipment life expectancy by taking advantage of Mercury's physical properties in preventing water from entering into the motor structure. If the Mercury shaft seal were to leak or fail, would create an environmental hazard and human health risk resulting in the well or booster can being unusable. In 2019, Cal Water's Asset Management and Environmental group developed a program to safely remove, handle, transport, and environmentally dispose of Mercury shaft seal motors. Cal Water has identified Mercury shaft seal motors and are made part of this GRC.

Reliability

Functionality-Discontinued, Non-Supported Equipment– Some equipment technologies manufactured prior to the 1980's are found to not be supported today as manufacturer's equipment patterns were modified by new ownership making the aged equipment obsolete and not repairable. Standard split-case booster pumps utilize suction and discharge on opposite sides of the pump. Cal Water has identified De Laval pumps - a brand of horizontal split-case booster pumps with a unique orientation having the suction inlet and discharge outlet on the same side. (See Figure 3a & 3b below) De Laval no longer exists, replacement parts have runout of stock, and repairs of these equipment prove expensive and mostly unsuccessful.

In 2020, Cal Water successfully piloted a De Laval pump replacement (see Figure 3c below) as a Non-Specific project that included rerouting electrical wiring, new concrete base, and new piping for optimal flow into the pump. The success of this piloted replacement program has proved the pump can be replaced without requiring a full station to change station piping. Cal Water has identified other De Laval pumps and are made part of this GRC.

Figure 3 – Standard Horizontal split case pump with suction inlet & discharge outlet on opposite sides of the pump

Figure 4a – De Laval Horizontal split case Pump *(prior to site reconstruction)*

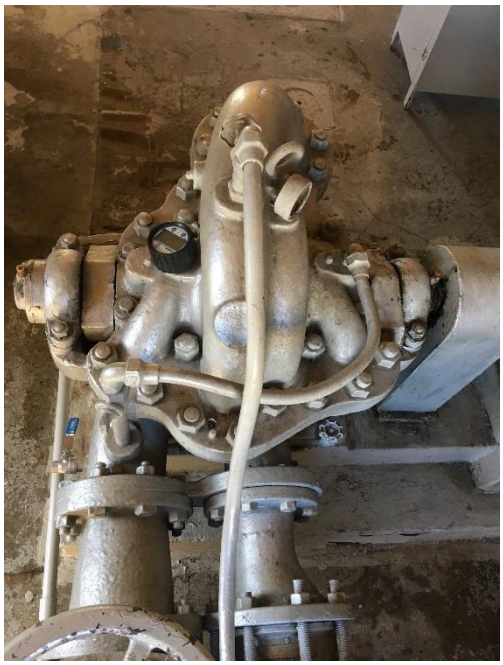


Figure 4b – Suction Inlet & Discharge Outlet *(same side of the pump)*

Figure 4c – Piloted Post Construction De Laval pump Replacement Project
Example *(replace De Laval pump with an end suction pump & new piping)*

Operational - System Changes – Water systems continue to expand to support new housing developments, businesses, and zone changes. Cal Water supports this expansion by including new treatment, well installation, booster stations, and purchased water to help support the growing demand and provide safe drinking water. These expansions may result in a change to the suction or discharge pressures of a pump changing the original design point and application of the pump equipment, resulting in a change to efficiency, horsepower and reliability. Cal Water has identified pumps that have been affected by system change, and are made part of this GRC.

Operational - Excessive Sand – California Groundwater Association (CGA), The United States Environmental Protection Agency (EPA), and the National Water Well Association (NGWA) have recommend a limit of 5 ppm for wells supplying water to municipalities (CGA Article 230, USEPA and NWWA, 1976, pp. 109-110). Excessive sand, if not corrected, abrades pumping components quickly over time decreasing its efficiency and eventual equipment failure. Cal Water follows guidelines outlined by professional agencies. Cal Water Districts monitor sand through field reports. Asset Management pump design program uses materials resistant to sand abrasion, and in some cases can improve the longevity and performance of the pumping equipment. Cal Water has identified pumps that have been affected by excessive sand, and are made part of this GRC.

Step 3 – District Input – Districts are responsible for operation of their system and as operators, Districts would have an intimate knowledge of those facilities that need repair, maintenance or have specific concerns to their operation. During the development of the evaluation and process, each Cal Water District was given the opportunity to provide input and feedback to local projects that need consideration or need further review. This input validates the analysis and allows for increased program confidence.

Recommended Solution

To maintain safe and reliable water system operations using the methodology described above, Cal Water is proposing to replace 84 pumping equipment units out of the 1268 total Cal Water pumps as part of the 2021 GRC. This program replaces an average of 27 pump units per year which renews approximately 2.15% of the total pumping system inventory each year. However, prior to construction, Cal Water will re-evaluate the list of pump assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any pump asset is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative pump as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

List of Projects Involved/Completion Year

The number of pumps recommended to be replaced per district is shown in Table 3 below. The pump project replacements were determined based on efficiency, run hours, criticality and remaining useful life.

Table 3. Number of Pump Replacement Projects

District Code	District	# of Pump Replacements Proposed – OPE Based	# of Pump Replacements Proposed – Non-OPE Based
101	Bakersfield	10	5
102	Bear Gulch	2	0
104	Chico	2	4
106	East Los Angeles	1	0
110	Livermore	4	4
111	Los Altos Suburban	11	1
113	Oroville	1	0
114	Salinas	2	0
116	Bayshore: Mid-Peninsula	4	2
117	Selma	1	0
118	Bayshore: South San Francisco	5	0
119	Stockton	2	2
120	Visalia	7	2
121	Willows	0	1
122	Palos Verdes	2	0
128	Dominguez	3	0
131	Antelope Valley: Fremont	1	0
133	Antelope Valley: Lake Hughes	3	0
136	KRV: Upper Bodfish	1	0
142	KRV: Squirrel Mountain	1	0
	Total	**63**	**21**
	Combined Total	**84**	

Table 4. Pump & Motor Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost 2022-2024
	2022	2023	2024	
Antelope Valley	-	$126,160	-	$126,160
Bayshore	$119,725	$228,515	$225,741	$573,981
Bear Gulch	$140,442	-	$38,774	$179,216
Bakersfield	$566,183	$277,875	$259,385	$1,103,443
Chico	$237,904	$254,731	-	$492,635
Dominguez	-	$291,976	-	$291,976
East Los Angeles	-	$46,096	-	$46,096
Kern River Valley	$78,894	$46,096	-	$124,990
Livermore	$121,988	$87,053	$199,886	$408,927
Los Altos	$324,223	$279,372	$137,139	$740,734
Oroville	-	$36,233	-	$36,233
Palos Verdes	-	$82,343	-	$82,343
Selma	-	$85,123	-	$85,123
Salinas	-	$35,649	$87,251	$122,900
Stockton	$117,102	$184,102	$86,598	$387,802
Visalia	$174,407	$353,435	$174,501	$702,343
Willows	$62,510	-	-	$62,510
Total	**$1,943,378**	**$2,414,759**	**$1,209,275**	**$5,567,412**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Sustained, safe, and reliable water system operation is threatened without dependable pump system assets and forward looking planning. Cal Water takes a proactive approach to managing its pumping system assets which enables the following:

- Provides sufficient time to analyze and design new assets to meet current and future demands
- Allows for the selection and procurement of the optimum materials, parts and equipment
- Enables advanced and coordinated scheduling of the station shutdown which protects system reliability and redundancy

Ultimately, Cal Water customers receive reliable, consistent, and safe water service.

Project Attachments

Attachment A – Factors Affecting Pumping Equipment Life Expectancy
Attachment B – Pumping Equipment Repair Examples

Attachment A: Factors Affecting Pumping Equipment Life Expectancy

Monitoring – A consistent and ongoing Monitoring Program is a critical factor to predict the life expectancy of a pump. The decline in pump efficiency signals equipment wear that affects reliability and

may ultimately lead to equipment failure. The challenge is when wear to the equipment exceed the net operating and repair cost or replacement of the equipment.

Maintenance - Maintenance to correct the factors causing wear to the pump is on-going part of Cal Water's monitoring and maintenance program. The ongoing maintenance and repairs needed to maintain the equipment at peak performance is critical to the higher estimated life expectancy and reliability.

Radial Forces - Industry statistics indicate that the biggest reason pumps are pulled from service is the failure of bearings and/or mechanical seals. The bearings and seals are early indicators of pump health and the harbingers or indicators of what is happening inside the pumping system.

Suction Pressure – Suction pressure is a key factor to bearing life, and other factors include driver alignment and, to some degree, pipe strain.

Driver Alignment - Misalignment of the pump and the driver overloads the radial bearings. Radial bearing life is an exponential factor when calculated with the amount of misalignment.

Pipe Strain - Pipe strain is caused by misalignment of the suction and/or discharge pipe to the pump flanges. Even in good pump designs, the resultant pipe strain can easily transmit these potentially high forces to the bearings and their respective housing fits.

Fluid Properties – Common fluid properties such as chlorine, chloride, alkalinity, sulfate, pH, are key factors. The amount of solids, abrasives and sand present in the fluid and their size, shape and abrasive qualities will all be factors. Air entrainment, either from the formation or cascading water is deteriorating to the rotating equipment. Pumping water with entrained air into a tank prior to going through a booster pump is not a solution – air needs to be physically removed in similar process to Volatile Organic Compound (VOC).

Operational Service - The severity of the service is another major factor - how often the pump starts and stops during a given period. This is especially bad on the motor and electrical panel, but in many cases the rotating equipment suffers as well. For submersible pumps, longer run times are critical to cool the motor as heat is one of the highest failure factors for a motor.

NPSHA/R Margin - The higher the margin of net positive suction head available (NPSHA) is over net positive suction head required (NPSHR), the less likely the pump will cavitate. Cavitation will create damage to the pump impeller, and resultant vibrations will affect the seals and bearings.

Pump Speed - The speed at which the pump operates is another key factor. For instance, a 3,550-rpm pump will wear out faster than a 1,750-rpm pump by a factor of 4 to 8 times.

Impeller Balance - An unbalanced impeller on an overhung pump or on some vertical designs can cause a condition known as shaft whip, which deflects the shaft just as a radial force does when the pump operates away from the best efficiency point (BEP). Radial deflection and whip can occur at the same time.

It is recommend the impeller be balanced at least to International Organization for Standardization (ISO) 1940 grade 6.3 standards. If the impeller is trimmed for any reason, it must be rebalanced.

Pipe Geometry - Another important consideration for extending pump life is the pipe geometry, or how the fluid is "loaded" into the pump.

Suction Flow – Laboratory tests at Johnston Pump showed that well pumps require a minimum of 5- to 8-feet straight suction before the water reaches the eye of the first impeller. This is even more important when the pump is set in the well perforations and water is moving to the pump suction from above and below.

Declining Water Levels – As water levels decline, additional monitoring of the equipment is key to understanding the change in application. Left unchecked, the pump can break suction, dead head, move past the manufacturer's safe operating condition, and impellers may drag in the bowls.

Pump Placement – In a groundwater well application, a pump set in a bend or to close after a bend in the well causes radial forces on the pump shaft, and can increase side loading wear resulting in vibration, impeller imbalance and eventually failure.

For groundwater well pumps, common components that are used are pump bowls and column pipe.

Pump Bowls – In general, the pump bowl for both well pump categories is similar in design. But there is a difference between the two with the top drive pump having the bowl shaft and line shaft directly connected to a driver (electric motor or engine driven gearhead) at ground surface. All bowls are vitreous enamel-lined for protection of the bowl cast and to maximize bowl efficiency.

For enclosed lineshaft designs, bypass ports cast in the top pump bowl, and bushing or lip-seal in the discharge case equalize the internal tube pressure and prevent the pumped fluid from entering the lubrication line and tube bearings. For open lineshaft and submersible well pump designs, the bypass ports are sealed with a long bushing or pipe plugs inserted depending on the manufacturer design.

In submersible pumps, the bowl shaft is connected directly to an electric submersible motor set below the pump, and the electrical cable runs to the surface.

Pump Bowl Failure Mechanism by Sand – Operating mechanisms that directly affect efficiency, reliability and life expectancy of a pump bowl include sand and abrasives (a leading cause of pump failure) present in the fluid and their size, shape and abrasive qualities will all be factors. Sand production is a leading indicator that the pump bowl and impeller are being worn oversized, and the well / aquifer communications are not being met. Sand is most damaging to the open lineshaft pumps as the water produced by the pump lubricates the bowl bearings and lineshaft bearings located every 10-feet.

Sanding can happen in any well and has variability as to the causes, but the solution to most sanding issues is the same – development and well maintenance. Well documented causes of sanding in a new well indicates that full development was not reached and additional well development is required. In a young

to middle aged well, sanding indicates mineral scale and / or bacteriological fouling of the well and the well structure is in need of maintenance. If there is a structural failure or a section of the well partially collapsed (possibly from prolonged and untreated sanding issues), this indicates the well is in need of repair and if successful, additional well maintenance. Sanding on pump start-up indicates too fast of an initial pump start-up or operational issue that could be corrected by adding more controls and additional development of the sanding area.

Pump Bowl Failure Mechanism from Pump Setting - Improper pump set location in the well when yielding perforations are above and below the pump can lead to water entering the pump suction from two directions resulting in a turbulent and imbalanced flow to the eye of the first impeller. A straight run of pipe and in some cases flow diffuser are added to change from turbulent to laminar flow before entering the first impeller.

Pump Bowl Failure Mechanism from Declining Water Levels – In groundwater wells, declining water levels directly affect efficiency, reliability and life expectancy of pumps. Declining water levels (static and pumping) as in a drought and / or overdraft situation moved the original pump application design left on the curve, decreasing efficiency and increasing the motor bearing load. Once the engineer's Hydraulic Institute (HI) standard design is exceeded, the impeller bottoms run into the top of the pump bowls and can result in equipment failure. In some cases, the bowl can be lowered, ie chasing water, but in most cases, this is a high risk option. Pulling the pumping equipment and redesigning the equipment to a more efficient and reliable condition is expensive, but the safest option.

Declining pumping water level in the absence of a similar declining static water level is the result of well plugging (mineral scale and / or bacteriological fouling), indicating the well and structure needs maintenance. To prolong this maintenance effort may result in sanding conditions discussed above and air entrainment discussed below.

Pump Bowl Failure Mechanism from Breaking Suction – During operation, the pump suction must have positive pressure over the eye of the first impeller at all times (minor design exception not covered in this work). When the pumping water level drops below the eye of the first impeller, zero pressure on the pump suction, the pump draws air and some water into the suction, the water in the pump column as no lift or momentum, and momentarily reverses back toward the pump. The pump continues, production stops, water level recovers to above the pump intake, the suction regains positive pressure in the column and the water regains upward acceleration or head pressure. In some instances, a pump can sustain a few of these episodes, but repeated or prolonged duration will destroy the pump suction case, pump impellers, snap the bowl and / or lineshaft(s), and fail motor thrust bearing – basically catastrophic failure. The solution to breaking suction is to collect the appropriate data (water levels, plugging or too large of a pump), make adjustments to the operation (short-term solution), and replace the equipment with an appropriately engineered solution. In most instances, well maintenance is necessary as part of the engineered solution.

Column Pipe - In general the column pipe for both type well pumps is similar with difference in lengths (top drive pipes come in 10 or 20-ft sections, and pipe for submersible pumps come in 21-ft long sections)

and column connection type. In top drive pumps, inside the column is a supported lineshaft connected between the bowl shaft and driver. The lineshaft is either an enclosed lineshaft (enclosing tube that allows surface fluid of either oil or water continually added to the tubes to lubricate the line shaft) or an open lineshaft (water being pumped is in direct contact with the line shaft, and water is the shaft lubricant). In both applications, the shaft is supported by a bushing a maximum of every 5-feet of the enclosing tube or maximum of 10-feet in the open lineshaft application.

For submersible pumps, the column pipe is open to the surface pipe less an inline check valve to protect water from falling back through the pump, spinning the motor in reverse after equipment shut-off. Without a good check valve, back spinning of the motor can result in motor failure – i.e, heat, current generation, lack of thrust on the bearing, and motor bearing separation and lubrication. The electric motor cable runs along the outside of the column pipe to the surface and connected to an applicable motor starter and power source.

Column Pipe Failure Mechanisms are common in aggressive and corrosive waters. When the water in the well and being produced is corrosive, the corrosive water deteriorates the column pipe and creates small holes. The pressure inside the pipe is higher than outside the pipe and once the pipe is compromised water jets through. These jet holes can enlarge and result in pipe failure, but also the jetting can damage or jet through the well casing resulting in structural damage. The damaged well casing can result in sand entering the well and ultimately the pump, and in some cases complete failure of the well casing.

Top drive well pumps enclosed lineshaft (ELS) pumps can be lubricated with oil or a clean water flush from the surface. In shallow settings (10-feet or less), grease can also be used.

Top drive ELS applications vary from small shallow set single stage pumps to deep 900-foot below ground surface (bgs) set; multiple stage; and bowl and discharge pressures up to 400-psi at the surface. The pump set depth is based on the maximum anticipated pumping water level in the well. Top drive ESL isolates the lineshaft and tube bearings (bushing) from the pumped liquid, minimizing maintenance in abrasive and sand applications and corrosive water. Alternative lubricants such as clean water is used with enclosed lineshaft construction. Line shafts lubricated with water are made of stainless steel to protect the shaft from rusting, and it is suggested that the water is chlorinated to minimize bacteria growth. The well must be straight, deviated in one direction, or with bends in the well casing gradual over long section enough to not bend or deflect the line shaft.

Top Drive ELS Equipment Wear and Failure Mechanisms are commonly related to the well construction, well deterioration, water produced, and changes in application. Well construction challenges (deviation or bends in the well casing) place the pumping equipment in a bind forcing the lineshaft to one side resulting in tube bearing wear, vibration and premature failure. To evaluate the well casing, a deviation survey is performed in the well to measure angle and declination every 10-feet. The surveys are assessed for deviation(s) in the well where the pump and column will be set. If the deviation or bend(s) are too great, the engineer may select a better set-location in the well for the equipment or change to a submersible pump for the application.

Minimum radial clearance between the impeller and skirt and the bowl also creates a dynamic sealing surface.

Attachment B: Pumping Equipment Repair Examples

Motor rewind – When motor winding fail as a result of age, use and heat, the motor can be repaired or rewound to bring the motor to a “like new” condition.

Booster or Vertical Turbine water passage packing – packing has a limited life expectancy and the glad is repacked as the material breaks down with age and use.

Mechanical Seal – Depending on the cause of the seal failure, a mechanical seal can be repaired. The process to determine if a mechanical seal is repairable is to have the mechanical seal evaluated by a mechanical seal repair shop to determine the failure factor(s). Once the failure factor(s) is known, the repair shop can advise the Engineer if the seal can be repaired or if system or ancillary factors need corrected first.

Two (2) Examples of Mechanical Seal Failure:

> *Example 1 (Non-Repairable Failure)* - Sand wear to the mechanical seal faces as the result of a well producing sand to the suction side of a booster. The seal is repairable, but if sand being produced from the well is not resolved, the seal will fail again.
>
> *Example 2 (Repairable Failure)* - Calcium carbonate build-up on the seal faces and seal body as the result of change in water chemistry. In some cases, changing the seal face material will make the seal more compatible to the change in water chemistry, and as a result the repair is successful

f. Extraordinary Maintenance Program: Tank Coatings

Project Justification

At Cal Water, tanks are defined as a vessel that is atmospherically vented through a roof, has a capacity of 5,000 gallons or greater, and contains potable or non-potable water. The function of tanks vary greatly. They may provide storage, function as a forebay, maintain the hydraulic grade line of a pressure zone, or a variety of other functions. In most cases, tanks will provide many rather than just one function. This capacity to serve in an assortment of duties establishes tanks as a vital component of the distribution system. Some general statistics regarding Cal Water's tank inventory is shown in Table 1.

Table 1. Cal Water Tank Inventory

Number of Tank in Inventory	447
Oldest Tank	115 Years
Smallest Tank	6,500 gallons
Largest Tank	9,500,000 gallons
Total Volume of Storage	296,000,000 gallons

Given the importance of the tank infrastructure, it is vital that each tank is maintained to be reliable in all operating conditions. One of the largest threats to tank reliability is corrosion. Corrosion can lead to leakage or complete infrastructure failure. There are several methods to reduce corrosion in tanks; however, engineered protective coatings are by far the most efficient. The following sections detail the process of evaluating tank coating condition, budgeting, and the overall need for engineered protective coating projects.

Description of Programmatic Replacement

All of the identified projects have varying degrees of scope to address failing coatings and to enhance the corrosion prevention measures through engineered protective coatings. For interior coatings, the work includes complete removal of existing coatings, surface preparation of bare metal, and the application of an NSF 61 approved coating material per Cal Water specifications. The coating area may include the complete interior or partial areas of the tank. For exterior coating of tanks, work either includes complete removal of existing coating, spot repairing, or over coating of existing coating systems with a modified new system. For all coating projects, some level of engineering controls are established to ensure worker safety and protection, reduction of environmental impacts, and that ambient conditions are met for proper surface preparation, application, and curing.

Evaluation Criteria

Cal Water inspects water storage tanks at five year maximum intervals per standard industry practice. The purpose of the inspection is to evaluate the tank's structural integrity, the condition of tank appurtenances, and the effectiveness of the corrosion control systems, i.e. coatings and cathodic protection systems. The inspection focuses on the storage tank substrate and structural integrity, the interior and exterior coating condition, and proper functionality of all appurtenances. The assessment of

the interior and exterior coating aims to identify deficiencies and take timely corrective action based on need. A condition rating of the following failures or conditions associated with coatings on steel tanks is applied: rust, chalking, blistering, calcareous deposits, appearance, and substrate condition. These assessments are used to determine the need and urgency for coating replacement. A summary of Cal Water's standard practice of inspections and evaluations of tank infrastructure is provided below.

Rust Grade – Rust grades are determined on the interior and exterior of the tank in order to evaluate the overall condition of the coating. A standard developed by the Society for Protective Coatings (SSPC), a nationally recognized professional organization dedicated to the protective coatings industry, is used to evaluate the degree of rust on all coated steel surfaces (SSPC-VIS Guide 2). Per this standard, the percentage of visible rust and coating deterioration on the surface is scored on a scale from 0 to 10, with 10 having no rust (Table 2). Rust distribution is separated into three types:

- Spot rusting - Rusting is concentrated in a few localized areas of the surface.
- General rusting – Various size rust spots randomly distributed across the surface.
- Pinpoint rusting – Rust is distributed across the surface as very small individual deep points.

To assign a rust grade, an area is selected ranging from as small as a test panel or as large as the entire water storage tank. The rust condition of the area is then compared to the visual standard (SSPC-VIS 2). The rust distribution (spot, general, or pinpoint) that most closely matches the selected area is determined and a level of corrosion or grade is assigned. Combinations of rust types are identified and a final rust grade provided. For complex structures, each member is evaluated as a whole or different sections can be evaluated separately.

Table 2. Rust Grade

Rust Grade	Percent of Surface Rusted per SSPC VIS Guide 2	Photographic Standard		
		Spot	General	Pinpoint
10	Less than or equal to 0.01%		NONE	
9	Greater than 0.01% to 0.03%	9-S	9-G	9-P
8	Greater than 0.03% to 0.1%	8-S	8-G	8-P
7	Greater than 0.1% to 0.3%	7-S	7-G	7-P
6	Greater than 0.3% to 1%	6-S	6-G	6-P
5	Greater than 1% to 3%	5-S	5-G	5-P
4	Greater than 3% to 10%	4-S	4-G	4-P
3	Greater than 10% to 16%	3-S	3-G	3-P
2	Greater than 16% to 33%	2-S	2-G	2-P
1	Greater than 33% to 50%	1-S	1-G	1-P
0	Greater than 50%		NONE	

Chalking – Chalking is the loss or degradation of a paint's binder. As the binder reacts with the environment (ultraviolet light, oxygen, and other elements) it leaves behind loose pigments (seen as loss of paint when rubbing the surface). Chalking is primarily seen and evaluated on the exterior coatings. It

provides insight on the performance of a coating systems, as well as its life cycle projection. In addition, it helps quantify the paint condition for future coating recommendations. The presence or lack of chalking is noted and a dry-film thickness of the exterior coating may be taken and compared to the original coating thickness to determine amount of coating left on the substrate for recoating considerations.

Blistering – Blistering is one of the most common failure modes for linings in a wet service environment (immersed area). The driving force of blistering are water-soluble materials such as inorganic salts, chlorides or sulfates found on the substrate or retained solvents in the coating products. These affect the adhesion of the coating to the metal substrate and are observed as blisters. The fluid within these blisters can propagate localized corrosion. Even if corrosion does not occur within these blisters, corrosion will occur when the bare substrate is exposed when the blister ruptures.

Calcareous Deposits – Depending on the pH level or hardness of the water in the storage tank, calcareous deposits (i.e. white deposits containing calcium carbonate) will form where exposed steel is present. Higher pH or hardness will typically result in more calcareous deposits in the immersed surfaces of the tank. An increase in pH can be a result of a cathodic current being introduced into the water via the cathodic protection system. Usually these calcareous deposits are not only a result of exposed steel but also a sign of the effectiveness of the cathodic protection system. Quantifying the amount of calcareous deposits in the immersed zone of the tank (floor and lower shell) determines the amount of exposed or uncoated steel. These areas are in need of recoating. The quantity of calcareous deposits in a given area is expressed as a percentage (0-100%) and a density/size (light, medium, or heavy), which translates to the area containing exposed steel and thus the need for recoating. The methodology for evaluation is loosely based on the same method used to quantify rusting; however, engineering judgement is employed to determine the severity of coating failure.

Substrate Condition – Evaluation of the condition of the tank steel substrate is important to quantify the effect corrosion has on it and the need for repair or coating replacement. The three ratings listed below are used to evaluate the condition of the substrate for each area of the tank interior (shell & floor). A small area where exposed substrate is present is selected (e.g. locations of calcareous deposits) and given a condition rating from the list. Although the area tested is small, the rating is a good representation of the condition of the larger area where this test spot is located. Finding a pitted substrate, the most severe rating, supports the need for coating replacement as the existing costing is no longer protective of the substrate.

It should be noted that the substrate is only assessed in areas that has already experienced a coating failure. Destructive testing of effective coating is not done for the purpose of this assessment.

Table 3. Substrate Condition Rating

Rating	Condition Description
Pitted	Steel substrate has been severely affected by corrosion to the point where metal loss has occurred in the form of pits or indentations in the steel.
Etched	Steel substrate has been affected by corrosion but to a lesser extent, steel surface is no longer smooth.
Good	Steel substrate shows no signs of deterioration or corrosion

Appearance – A general assessment of the coating appearance is made. As the most visible representations of the water system for the public, the general appearance of the tank is considered an important consideration. A tank with poor appearance can negatively impact consumer confidence in the water system, company image, property values for surrounding neighborhood, and security. If the tank appearance leads people to believe that the tank is out of service or abandoned, there is a higher likelihood of vandalism/tampering. An overall rating from poor to excellent is assigned (Table 4).

Table 4. Appearance Rating

Rating	Condition Description
Poor	Surfaces/areas have considerably more coating defects and/or corrosion than what is expected for the age of the system.
Fair	Surfaces/areas have a level of coating defects or corrosion that is slightly worse than what should be expected for the age of the system.
Good	Surfaces/areas show minimal coating defects or corrosion. Condition is typical for the age of the system.
Excellent	Surfaces/areas are free of any coating defects or corrosion. Condition is better than expected for the age of the system. Coating was recently applied.

Coating Replacement Recommendations

All of the above grades and ratings are used to determine the timing and extent of the coating replacement, as shown in Table 5, below.

Table 5. Coating Replacement Recommendations

SSPSC-VIS 2 Rust Grade	Coating Recommendation/Action
0-2	ASAP – Non-Specific Project
3-4	1st Year of Rate Case
5	2nd Year of Rate Case
6	3rd Year of Rate Case
7	Touch-up (temporary fix)
8+	No Action

In cases where a rust grade of 7 or higher is given, no repairs are done to the coating aside from minor paint touch-up if needed and the tank is placed on its routine inspection schedule of five years.

Grades/ratings of 6 and below dictate when the coating replacement will take place, based on the existing condition and the urgency of the replacement.

There are certain situations where exterior surfaces receive a rust grade of 7 or higher but the coating is highly chalked as a result of the environmental conditions. Chalking shows that while some corrosion prevention will continue, the integrity of the coating is rapidly deteriorating. In such cases, overcoating of the existing painted surface is typically recommended to prevent further coating deterioration and extend the life of existing coating system. The overcoating is highly dependent on the integrity of the existing coating (i.e., adhesion and thickness).

Even though each tank is evaluated on its own, when multiple tanks in the same station are identified for coating replacement, the projects are combined to minimize mobilization cost and internal labor, both project management and coating inspection. Any additional work needed, such as replacement of structure items or tank appurtenances, is also combined with the coating replacement projects to improve the efficiency of the maintenance being done on a tank.

Detailed Project Scope

The projects listed below vary in specific scope but are typically divided into partial or complete interior or exterior coatings.

Table 6. Tank Coating Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$1,372,254	$2,119,162	$2,847,621	$6,339,038
Bear Gulch	$235,969	$388,347	$469,606	$1,093,922
Bakersfield	$1,314,345	$1,645,817	-	$2,960,162
Dixon	-	-	$196,649	$196,649
Dominguez	$680,578	$370,969	-	$1,051,546
East Los Angeles	$719,552	-	-	$719,552
Hermosa-Redondo	$996,069	$1,350,155	$355,826	$2,702,049
King City	$7,625	$261,339	-	$268,964
Livermore	$37,767	-	$309,628	$347,395
Los Altos	$226,638	$577,708	$348,769	$1,153,115
Marysville	$127,050	-	-	$127,050
Oroville	$145,900	-	-	$145,900
Palos Verdes	$709,138	-	$1,437,103	$2,146,241
Salinas	$136,516	-	$137,384	$273,899
Travis	$650,297	-	-	$650,297
Visalia	$445,247	-	-	$445,247
Total	**$7,804,945**	**$6,713,497**	**$6,102,586**	**$20,621,028**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

High performance industrial coatings are a critical component for maximizing tank asset life. Coatings provide optimum protection against corrosion and particle abrasion and are an approved surface for direct potable water interaction. Protective coatings are unparalleled in providing effective protection from corrosion and resulting material loss. Additionally, structural modifications to address metal loss from corrosion cost significantly higher than application of a high performance protective coating. In many occasions, structural damage is identified during the coating activity and is addressed at the same time. Although it is very difficult to determine the damage on areas such as under the roof, steps have been taken to improve the protection of these areas. Cal Water's coating specifications include the use of zinc rich primers to provide a sacrificial barrier to the structural substrate where cathodic protection is not available. The benefit of this system is that the sacrificial zinc will provide an additional window of time to plan for a coating replacement without metal loss. Finally, our identification methods and methodology seek to maximize corrosion prevention where it is needed the most. For example, instead of replacing the entire surface area of an interior coating, the replacement scope may be reduced to a partial area of the tank to focus on problem areas. The coating replacement projects identified for this rate cycle are all part of a comprehensive asset management program with improved methodologies to endure existing assets are maintained reliably with the low life-cycle costs.

Project Cost Estimate & Attachments

A comprehensive analysis of past Cal Water coating projects was performed to develop a costing model for coating projects. Projects predating 2008 were not used in the analysis since costs have greatly changes since global economic decline of the late 2000's, and Cal Water's systems and processes have also changed since this time.

To develop and create an improved budgeting and costing process, the Tank & Pipeline Engineering department partnered with KTA Tator to develop a cost estimating tool. KTA Tator is a leading industry provider of technical services related to coating projects. The vendor does not provide coating materials or coating application services. They focus on technical aspects such as coating system design, inspection, and project management.

Using data from previous Cal Water coating projects, current standards, and anticipated regulations that will impact project costs, KTA developed an analysis and tool for Cal Water's use in estimating project costs. The tool was evaluated by the Tank & Pipeline Engineering team and was found to be consistent with current project costs.

It should be noted that the estimation of tank coating projects is notoriously difficult due to the highly variable elements that contribute to actual project costs. Labor availability can vary with activities in other industries, for example: a downturn in petroleum production could result in the oil industry taking the opportunity to coat a lot of their infrastructure which could result in higher labor and materials costs. Weather is another example of an unpredictable element that can drive costs up. If there is a period of precipitation, or even just high humidity, it can result in the need for the use of dehumidification

equipment. Leveraging KTA Tator's expertise and experience in coating application outside of the water industry, helps mitigate the uncertainty in cost estimating.

Direct and indirect costs for coating projects were developed and grouped into direct contract material and labor, direct internal labor, and indirect costs.

The direct internal labor cost portion of the model was developed utilizing internal payroll information and normalizing the labor hours based on the square footage and coating scope. The three labor costs are described below:

- Engineering Labor – Tank & Pipeline Engineers provide technical support, coating system design and project management for tank coating projects.
- Coating Inspector – Surface preparation and coating application is overseen by coating inspectors that have been certified through an internal coating inspector training course. The inspector's duties include testing and documentation of the surface preparation, application and curing of the coatings.
- Electrical/Mechanical Technician (EMT) – Some components such as cathodic protection systems, tank level indicators and mixing systems are required to be removed during coating activities. It is preferred that these components are removed and replaced by Cal Water EMT's to ensure they are not damaged during the process.

An indirect cost line was added to the sub total of the direct costs to account for overhead and contingency items. The variable contingency was based on the global Capital Project Contingency method. Although overhead is no longer included in extraordinary maintenance expense projects, there is still some overhead activities associated with these projects that need to be captured in the budget. This includes supervision of activities and travel associated with the management of projects. Contingency items include potential need for dehumidification equipment, consumables, waste management, additional engineered controls for safety and worker protection power cost for bypass, etc... Although Cal Water places significant amount of effort planning for tank coating projects, there is always some level of unpredictability requiring additional processes, equipment or materials to effectively complete the desired scope of work. The indirect cost estimate is considered to be below average for industrial coating activity. Cal Water is continuously improving cost allocation through its asset management initiative and as more information and data is collected and analyzed, costing models will be improved.

Finally, the subtotal of the direct and indirect costs were escalated by 2.5% per year per Cal Water's standard process.

There was some level of cost reduction measures taken when tanks at individual sites and scopes were combined when possible to reduce mobilization costs, improve efficiency and limit out-of-service time of the tank.

g. Cathodic Protection Systems and Components

Project Justification

Given the importance of tank infrastructure, it is vital that each tank is maintained to be reliable in all operating conditions. One of the largest threats to tank reliability is corrosion. Corrosion can lead to leakage or complete infrastructure failure. Cathodic protection (CP) equipment protects tank linings and the tank substrate once the protective lining begins to fail.

Description of Programmatic Replacement

All of the identified projects have varying degrees of scope to restore or improve the effectiveness of the tank CP system. This may require replacement or upgrade of components or complete overhauls of the CP system.

Historically, CP system replacements and improvements were coordinated around replacement of interior coatings. This was primarily performed to coordinate CP upgrades while the tank was out of service. However, this approach has caused many obsolete systems and components to remain in place for longer than the designed service life, resulting in poor performance.

Much like a car, components of CP systems have different life cycles and replacement rates. The anodes of a CP system see a high demand of activity, so they require replacement sooner than the rectifier. This is much like changing the tires on a car. In other cases, the rectifier (engine) wears to a point where it requires replacement. New systems and components increase the overall efficiency of the equipment and the maintenance/monitoring activities.

The need to systematically replace old components and CP systems is governed by reducing the high operation and maintenance cost of older technology, matching life-cycle replacement needs at the asset level and not the tank structure level, alleviating hazardous material exposure, and improving performance and technology for important systems.

National Association of Corrosion Engineers and American Water Works Association have established standards for Auto-Potential Impressed Current of internal submerged surfaces of carbon steel water storage tanks for design, installation and maintenance (NACE SP0388-2007 and AWWA D104-11).

Evaluation Criteria

Age and performance of each CP system was assessed through field inspection or performance records. If a system was found to have poor performance or is beyond the designed life span, it was recommended for replacement. Additionally, components identified to have poor performance, system incompatibilities, or found to be broken are recommended for replacement.

Detailed Project Scope

Each CP project listed above contains work at number of locations with a wide variety of scopes. Work may range from simple component replacement or repair to complete system overhaul.

To reduce overhead and project management costs, all CP work for a given year and district were consolidated into a single project where feasible. However, prior to construction, Cal Water will re-evaluate the list of CP assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any CP system is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative CP as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

The projects proposed for the 2021 GRC are summarized in Table 1, below.

Table 1. Cathodic Protection Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$13,413	$27,497	$14,092	$55,002
Bayshore	-	-	$28,301	$28,301
Bakersfield	$68,209	-	-	$68,209
Dominguez	$13,413	-	-	$13,413
East Los Angeles	$46,291	-	-	$46,291
Hermosa-Redondo	-	$36,215	-	$36,215
Kern River Valley	$26,094	$12,999	-	$39,093
Livermore	$14,119	-	-	$14,119
Los Altos	$26,937	-	-	$26,937
Palos Verdes	$106,690	-	-	$106,690
Redwood Valley	$14,016	-	$14,726	$28,742
Salinas	$48,727	$47,578	$37,456	$133,761
Stockton	-	$14,472	-	$14,472
Travis	$100,976	-	-	$100,976
Westlake	-	-	$14,092	$14,092
Total	**$478,885**	**$138,761**	**$108,667**	**$726,313**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Implementation of CP improvement projects improve the reliability of tank infrastructure, and at a higher level, the entire distribution system. Upholding the structural integrity of tank infrastructure ensures reliable service can be provided to the customers.

h. Control Valve Overhaul and Replacement

Project Justification

Automatic control valves are hydraulically and electronically modulated valves that operate by sensing various system conditions. They are critical for the proper operation of the water systems and are used in a variety of applications, ranging from pressure reduction, pressure relief, surge control, as well as control of the water level in reservoirs. These valves are used in a variety of sizes at Cal Water, ranging from 1 1/2" to 24" depending on the intended flow rate. If a control valve fails, there could be significant damage to customer or company property, or environment.

Evaluation Criteria

Cal Water uses a risk-based asset management approach to assessing the condition of its control valves. Control valves are inspected annually in the field. During the inspection, Cal Water determines the condition of each control valve and determines if overhaul or replacement is necessary. If the body and cover of the valve are in good condition, control valves can be overhauled when the tubing and internal parts of the valves need to be replaced. Additionally, any existing pilotry and control features that were originally installed with brass or cooper are upgraded to the current standard, which is stainless steel fittings and tubing. Over the life cycle of automatic control valves, routine overhauls are performed every five years to replace worn internal parts. During the overhaul, the control valve is isolated and the internal condition and overall functional capabilities can be further assessed.

To support this effort, the Asset Management group has developed a 5 x 5 matrix (Attachment A) to assess valve condition. On one axis, the asset is graded into one of five degrees of severity, with 1 being the least severe and 5 being the most severe. On the other axis, condition is divided into five categories: (1) physical condition, (2) capacity, (3) functionality or level of service (LOS), (4) reliability and (5) financial efficiency. Items with any rating of 5, shown in red, require immediate replacement. The condition assessment and the ratings for each classification are shown in Attachment A and further described below.

Asset Condition

The first category of condition assessment is the asset's physical condition, and is divided into five categories of defects that range from excellent to virtually unserviceable. These defects may be rust, chipping, tuberculation, or blemishes of a similar caliber. All valves that are identified in the field as "virtually unserviceable" are proposed for immediate replacement.

Another method of predicting failure is to use the remaining useful life (RUL) of the asset. Cal Water uses a 40 year life expectancy for its control valves. All valves with a RUL 20% (8 years) or less of the life expectancy are also proposed for replacement. Since this is an important factor, scores in this category are multiplied by 1.5 to add weight to the final assessment.

Finally, the asset's physical condition may be affected by environmental exposure, particularly if the valve begins to deteriorate over time. Corrosive soils, submergence underwater in poorly draining vaults,

disinfection chemical exposure, and temperature extremes can lower the life expectancy of a valve as the exposure increases.

Capacity

Control valves are sized to meet particular system requirements, and as those requirements change, the valve may become obsolete due to inability to function over the required flow or pressure range. Evaluation of changes in requirements for zone capacity in the distribution system and flow requirements within the station are required to monitor for trends towards a valve having performance issues as it deviates away from the design point. Valves that no longer meet the flow design point are proposed for immediate replacement.

Level of Service (Functionality)

a. Code Compliance: Automatic control valves must meet current codes for pressure rating and NSF 61 potable water standards. Cal Water has adopted NSF 61 certification as a standard for all control valves because they are in physical contact with the water they measure. This certification will ensure that the control valves have been put through rigorous testing and ensure it is safe and free from contaminants that would potentially affect our water quality.
b. Performance: Automatic control valves must meet performance standards for the function which they were designed.

Reliability

Control valves have a high consequence of failure to the environment, property and personnel. Therefore, maintaining valves for reliability is an extremely important factor in this asset's management. Cal Water evaluates the frequency of failure by comparing it to life expectancy (LE) divided by incrementally higher numbers. Any valve that fails Scores in this category are multiplied by 2 to add weight to the final assessment. All valves that fail more than four times (LE=40/10) are proposed for immediate replacement.

Financial Efficiency

Lastly, replacement of control valves must be weighed against the financial impact to the customer.

a. Payback Period: A qualitative assessment of the impacts of the failure are made to identify the payback period. For example, if the old valve were to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures.
b. Parts and Equipment: Cal Water standard is to install stainless steel internal parts and pilot control systems for reliability and extended life of the assets. Valves that do not meet this standard will be scheduled for replacement.
c. Technology: Cal Water orders valves with an interior epoxy lining to prevent rust and premature failure of the main valve. There are also numerous accessories available to provide flow, pressure and other valve parameters including low power generating devices for areas where no power is available. Valves without an epoxy coating will plug and fail more quickly and are scheduled for replacement.

Detailed Project Scope

Overhauls

- Overhauls can be performed without removing the valve from the system.
- The projects include replacement of pilot tubing and controls with stainless steel components. The main valve diaphragm, disc retainer, and diaphragm washer are replaced with epoxy coated parts. The spacer washer, cover nuts and bolts, and valve stems are replaced with stainless steel components.
- As part of the overhaul, valves are wire brush cleaned of scale and deposits on the cover, valve body, and other components.

Specific replacement projects are determined by criticality of valves in the distribution system and those that are at risk of failure. However, prior to construction, Cal Water will re-evaluate the list of control valve assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any control valve is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative control valve as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

The district budgets for the 2021 GRC are summarized in Table 1, below.

Table 1. Control Valve Overhaul Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$164,388	$168,498	$172,710	$505,596
Bear Gulch	$110,064	$112,816	$115,636	$338,516
Bakersfield	$55,825	$56,121	$58,101	$170,047
Chico	$22,784	$23,484	$24,931	$71,199
Dominguez	$65,901	$70,043	$73,835	$209,779
East Los Angeles	$23,875	$26,058	$26,508	$76,441
Hermosa-Redondo	$48,996	$52,377	$55,141	$156,514
Kern River Valley	$49,434	$52,789	$55,588	$157,811
Livermore	$16,072	$21,477	$21,588	$59,137
Los Altos	$68,524	$70,238	$71,994	$210,756
Palos Verdes	$464,168	$475,772	$487,666	$1,427,606
Salinas	$74,069	$79,143	$80,416	$233,628
Westlake	$36,303	$37,210	$38,140	$111,653
Total	**$1,200,403**	**$1,246,026**	**$1,282,254**	**$3,728,683**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Replacements

- The project includes replacement of control valves, vaults, associated isolation gate valves, piping, electrical components, drainage sumps, drainage discharge piping, and any other necessary components to ensure reliability and a longer asset life cycle.
- Replacement of control valves frequently includes the replacement of damaged or undersized vaults and vault covers.
- Any required piping, isolation valves, materials such as sump pumps, and installation materials will be also be installed.

Specific replacement projects are determined by criticality of valves in the distribution system and those that are at risk of failure. The district budgets for the 2021 GRC are summarized in Table 2, below.

Table 2. Control Valve Replacement Breakdown

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$1,041,339	$1,075,517	-	$2,116,857
Bear Gulch	$173,858	$98,785	$105,880	$473,574
Bakersfield	$150,666	$176,174	$57,371	$119,659
Dominguez	$219,243	$231,853	$323,356	$716,922
East Los Angeles	$187,141	$180,259	-	$382,137
Hermosa-Redondo	$240,905	$246,110	$261,743	$758,405
King City	$64,859	$65,049	-	$135,100
Kern River Valley	$207,980	$143,378	$180,441	$542,844
Livermore	$162,781	$98,110	$129,689	$390,580
Los Altos	$436,201	$551,637	$571,210	$1,559,048
Oroville	$54,415	$59,861	$60,737	$184,660
Palos Verdes	$116,077	$255,926	-	$887,306
Salinas	-	-	$36,853	$41,268
Total	**$3,128,510**	**$3,270,629**	**$2,250,179**	**$8,649,317**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Performing a regular overhaul and replacing older control valves provides maximum benefit to customers by improving water system operation and reliability. Valves are critical to the reliable function of the water system, from maintaining pressure in the system to preventing storage tank overflows and pressure-related main breaks. These events can lead to property loss, exposure of the water system to potential contaminants, and damage to plumbing in customer homes and businesses. Proper control valve operation in the distribution system helps provide a constant and reliable source of water to customers.

Attachment

Attachment A – Condition Assessment Matrix

Attachment A
Control Valves

Attachments

	1. Condition		1.a. Environmental Degradation Risk	2. Capacity	3. Functionality - LOS			4. Reliability	5. Financial Efficiency		
Rating	**condition**	**age/RUL**	**environment - corrosion, heat, chemical, submergence, etc.**	**growth potential**	**code compliance**	**performance**	**epoxy coated internals**	**breakdown frequency**	**payback period**	**parts, equipment obsolescence**	**technology maturity**
Multiplier	**1**	**1.5**	**1**	**1**	**1**	**1.5**	**1.5**	**2**	**2**	**1.5**	**1.5**
1	excellent	80-100% RUL	protected/minimal exposure	significantly exceeds design capacity	exceeds all codes	exceeds all	yes	none	> 10 years	lead time < 1 month	current version, best available
2	minor defects	60-80% RUL	minor exposure	exceeds design capacity	--	exceeds some		LE/2	< 10 years	lead time > 1 month	--
3	moderate defects	40-60% RUL	moderate conditions	meets design capacity	meets codes	meets all		LE/5	< 5 years	lead time > 3 months	functionally meets requirements
4	significant deterioration	20-40% RUL	significant	fails design capacity	--	fails some		LE/10	< 3 years	special order/ long lead time	--
5	**virtually unserviceable**	**0-20% RUL**	severe exposure	**significantly fails design capacity**	**fails critical codes**	**fails all**	**no**	**LE/20**	**< 1 year**	**not available**	**not supported or obsolete**

i. Water Quality Analyzers

Project Justification

Analyzers are complex pieces of instrumentation that measure concentrations of various physical and chemical constituents in a flow stream. These measurements are used to send alert signals, control production processes, or pace the injection of treatment and disinfection chemicals in order to meet water quality standards. Some analyzers provide useful operational information, some are critical to control processes, and some are mandated by governing agencies as a requirement of operation. There are many types of analyzers including pH, turbidity, streaming current, and nitrate analyzers used in systems that are critical in distribution and treatment systems. The use of analyzers enhance the effective and efficient operations of the water system.

An analyzer life cycle ranges from 5 to 10 years, depending on the type of analyzer and the physical conditions of operation. Monthly, semiannual, and annual maintenance is performed, depending on the manufacturer and regulatory agency requirements. Analyzers can fail prematurely due to environmental conditions, how much they are used, and other factors. Failure to maintain analyzers leaves the company at risk of noncompliance with water quality regulations.

Evaluation Criteria

Cal Water uses a risk-based asset management approach to assessing the condition of its water quality analyzers. To support this effort, a 5 x 5 matrix was developed (Attachment A) to score analyzer condition. On one axis, the asset is graded into one of five degrees of severity, with 1 being the least severe and 5 being the most severe. Items with any rating of 5, shown in red, require immediate replacement.

On the other axis, condition is divided into five categories: (1) physical condition, (2) capacity, (3) level of service, (4) reliability, and (5) financial efficiency.

Asset Condition

The first category of condition assessment is the asset's physical condition, and is divided into five categories of defects that range from like new to virtually unserviceable. These defects may be rust, chipping, tuberculation, or blemishes of a similar caliber. All analyzers that are identified in the field as 'virtually unserviceable' are proposed for immediate replacement.

Finally, Environmental Exposure. The asset's physical condition may be affected by environmental exposure, particularly if the analyzer begins to deteriorate over time.

Capacity

Analyzers are sized to meet particular system requirements, and as those requirements change, the analyzer may become obsolete due to inability to function over the required flow, chemical concentration or pressure range. Evaluation of changes in requirements for zone capacity in the distribution system and flow requirements within the station are required to monitor for trends towards an analyzer having

performance issues as it deviates away from the design point. Analyzers that no longer meet the flow design point are proposed for immediate replacement.

Level of Service (Functionality)

Functionality failure occurs when the instrumentation no longer complies with all relevant design and safety standards , or when the instrument is no longer operational (either intermittent or offline for extended periods of time).

Reliability

Analyzers have a high consequence of failure to the environment, property and personnel. Therefore, maintaining analyzers for reliability is an extremely important factor in this asset's management. Cal Water evaluates the frequency of failure by comparing it to life expectancy (LE) divided by incrementally higher numbers. Any analyzer that fails Scores in this category are multiplied by 2 to add weight to the final assessment. All analyzers that fail more than four times (LE=40/10) are proposed for immediate replacement.

Financial Efficiency

When an instrument or components reaches a point where the cost to operate and maintain the component exceeds reasonable operational costs, the component has failed in financial efficiency (e.g., old components for which the spare parts are no longer available, instruments with old software that are no longer supported).

Detailed Project Scope

The district budgets proposed for the 2021 GRC are summarized in Table 1, below. However, prior to construction, Cal Water will re-evaluate the list of instrumentation assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any instrument or component is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative instrument as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time. Each analyzer replacement project includes:

- Coordinate with Operations and Water Quality so that the analyzer may be taken out of service without negatively impacting operations.
- Remove and replace analyzer.
- Replacement may require new plumbing, sensing tubing, stream tubing, and mounting hardware.
- Start up, test, calibrate, and validate operation.
- Commission to Operations.

Table 1. Analyzer Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$36,248	-	-	$36,248
Bear Gulch	-	-	$88,333	$88,333
Bakersfield	$12,209	$4,915	$6,713	$23,837
Chico	-	$61,343	$22,698	$84,041
Dominguez	$6,791	$27,998	$28,698	$63,488
East Los Angeles	$21,531	$21,037	$15,160	$57,728
Kern River Valley	$21,872	$33,592	$11,477	$66,940
Livermore	$29,923	$72,415	-	$102,339
Los Altos	$24,911	$6,292	$66,020	$97,224
Marysville	$17,249	-	-	$17,249
Oroville	-	-	$7,511	$7,511
Redwood Valley	$26,354	$17,844	$27,689	$71,887
Stockton	$29,923	$30,672	$11,349	$71,944
Willows	$10,812	-	-	$10,812
Total	**$237,824**	**$276,108**	**$285,649**	**$799,580**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Accurate and reliable operation of analyzers play a key role in ensuring high quality and safe drinking water delivery to customers. Regular replacement of analyzers ensures that each analyzer meets all regulations all of the time.

Attachments

Attachment A – Condition Assessment Matrix

Attachment A
Water Quality Analyzers

Attachments

	1. Condition		1.a. Environmental Degradation Risk	2. Capacity	3. Functionality - LOS		4. Reliability	5. Financial Efficiency		
Rating	**condition**	**age/RUL**	**environment - corrosion, heat, chemical, submergence, etc.**	**growth potential**	**code compliance**	**performance**	**breakdown frequency**	**payback period**	**parts, equipment obsolescence**	**technology maturity**
Multiplier	**1**	**1.5**	**1**	**1**	**1**	**1.5**	**2**	**2**	**1.5**	**1.5**
1	excellent	80-100% RUL	protected/minimal exposure	significantly exceeds design capacity	exceeds all codes	exceeds all	none	> 10 years	lead time < 1 month	current version, best available
2	minor defects	60-80% RUL	minor exposure	exceeds design capacity	--	exceeds some	LE/2	< 10 years	lead time > 1 month	--
3	moderate defects	40-60% RUL	moderate conditions	meets design capacity	meets codes	meets all	LE/5	< 5 years	lead time > 3 months	functionally meets requirements
4	significant deterioration	20-40% RUL	significant	fails design capacity	--	fails some	LE/10	< 3 years	special order/ long lead time	--
5	**virtually unserviceable**	**0-20% RUL**	severe exposure	**significantly fails design capacity**	**fails critical codes**	**fails all**	**LE/20**	**< 1 year**	**not available**	**not supported or obsolete**

j. Tank Retrofits

Project Justification

At Cal Water, tanks are defined as a vessel that is atmospherically vented through a roof, has a capacity of 5,000 gallons or greater and contains potable or non-potable water. The function of tanks vary greatly. They may provide storage, function as a forebay, maintain the hydraulic grade line of a pressure zone, or a variety of other functions. In most cases, tanks will provide multiple services rather than just one primary function. This capacity to serve in an assortment of duties makes tanks a vital component of the distribution system.

Some general statistics regarding Cal Water's tank inventory can be found in Table 1, below:

Table 1. Tank Inventory

Number of Tanks in Inventory	447
Oldest Tank	115 Years
Smallest Tank	6,500 gallons
Largest Tank	9,500,000 gallons
Total Volume of Storage	296,000,000 gallons

Given the importance of the tank infrastructure, it is vital that each tank is maintained to be reliable in all operating conditions. To maintain compliance with ever changing safety, environmental and water quality regulations, tanks must be retrofitted with new equipment and appurtenances. The scope of these retrofits can vary greatly. A description and justification for the most common retrofits is contained in the sections below. Any unusual or extraordinary retrofits will have a specific justification and is not discussed below. However, prior to construction, Cal Water will re-evaluate the list of tank retrofit projects recommended as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any tank retrofit project is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative tank retrofit project to be completed as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

Table 2. Tank Retrofit Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$214,313	-	-	$214,313
Bayshore	$101,654	$202,094	$447,048	$750,796
Bear Gulch	$196,195	$210,594	$75,764	$482,553
Bakersfield	$959,447	$98,681	$400,521	$1,458,649
Chico	$25,394	-	-	$25,394
Dixon	$56,564	-	$12,438	$69,002
Dominguez	$182,997	-	-	$182,997

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
East Los Angeles	$5,267	-	$79,541	$84,808
Hermosa-Redondo	$92,677	$131,060	$62,921	$286,658
King City	$13,400	$12,621	-	$26,021
Kern River Valley	$134,356	-	-	$134,356
Livermore	$132,113	$50,473	$95,339	$277,925
Los Altos	$197,191	$192,863	$52,211	$442,265
Marysville	$512,107	-	-	$512,107
Oroville	$9,677	$36,052	-	$45,729
Palos Verdes	$55,189	-	$12,101	$67,290
Redwood Valley	$35,655	$52,618	-	$88,273
Selma	$9,677	-	-	$9,677
Salinas	$136,781	-	-	$136,781
Stockton	$92,939	$182,487	-	$275,426
Travis	$100,976	-	-	$100,976
Visalia	$129,660	-	-	$129,660
Westlake	$9,193	-	-	$9,193
Willows	$58,714	-	-	$58,714
Total	**$3,462,136**	**$1,169,543**	**$1,237,884**	**$5,869,563**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Detailed Project Scope

Safety Appurtenances

The operation and maintenance of a tank is one of the most dangerous activities in a water system. Dangerous heights, extreme environments, and confined spaces are just some of the risks that accompany tanks. Since tanks are static structures, people often miscalculate their hazard exposure when working with them.

Cal Water maintains the safety of employees, customers, and the community as a top priority. To improve the safety of each tank, additional engineering controls need to be added to some tanks to reduce the hazard exposure.

Manways

Adding additional and larger 30-inch manway access on the shell of a tank allows for unimpeded movement in and out of the tank during maintenance activities. Having a minimum of two manways allows for hoses, cables, and equipment to enter the tank through one access without blocking the workers' ability to exit the tank.

Ladders

Tanks require an exterior and interior ladder to allow access to the roof of the tank. The ladders are outfitted with fall protection equipment and the exterior ladders are equipped with anti-climb doors to prevent unauthorized access. Since ladders see the most wear and tear from operations,

they tend to have an accelerated failure rate. To maintain safe operation it is imperative that any ladder or ladder appurtenance is addressed at the first sign of deficiency.

Roof Landing

The roof landing is the portion of the roof in the immediate area of the ladder and hatch. These are the two areas where workers have the most exposure to fall hazards. Improved railing systems and tie-off points reduce this exposure. The addition of spring-loaded safety gates further reduces the exposure by passively maintaining a barrier between fall hazards and access points on the roof.

Hatch

Older tanks have small square hatches that restrict worker movements. The installation of larger hatches allows for more room and safer access, especially while using appropriate Personal Protective Equipment (PPE). PPE, such as fall protection equipment, often requires additional space to properly deploy.

Ladder Safety Restraint Line

Cal Water has historically employed the Saf-T-Climb system on ladders greater than 20 feet to meet OSHA requirements. Over the years, the system has gone through many changes to correct vulnerabilities in the system; however, the system is antiquated and newer, safer technologies exist. The Tank & Pipeline Engineering and Safety teams have researched and tested a newer system that allows for easier, safer use. The new system by MSA is compatible with a wide range of harnesses, whereas the old system required a custom harness that was very difficult and expensive to procure. Additionally, the new system allows for unimpeded climbing, further reducing the probability of an incident.

Seismic Retrofits

California has some of the most stringent seismic design regulations in the nation, and for good reason. With over 2,000 known active faults, including the San Andreas Fault, California is one of the most seismically active states. Given the importance of tanks remaining in operational condition, especially after a large emergency such as an earthquake, it is imperative that tanks are isolated as much as possible from seismic forces.

Installation of flexible pipe connections, anchor bolts or other bracing can allow for a tank to better resist seismic forces. Although these components are standard on any new tank, tanks constructed in the past may lack these features since the understanding of seismic forces on a tank structures was still in development.

These retrofits protect the tank from differential movement. The most dramatic instance of this type of movement is seismic; however, there are other sources of differential movement that could damage the tank. Some examples are movement of connecting pipe as the result of water hammer or thermal expansion of materials. These other sources of movement are very subtle but can still damage the tank.

The installation of seismic resisting components may require other modifications depending on the layout of the station. For example, the longer lay length of flexible pipe connections may require the inlet of a tank and the station piping to be modified to compensate.

Overflow Airgap

Tanks are outfitted with overflow piping to prevent the tank from pressurizing and failing in the event of a controls failure. This pipe allows for excess water to escape the tank while maintaining an acceptable amount of freeboard. In an effort to eliminate potential access to the tank from insects or other critters, these overflow pipes were plumbed directly into storm drains. An unintentional result of this practice is the exposure of the tank to possible backflow scenarios.

The California Department of Drinking Water (DDW) has ordered Cal Water to eliminate these potential cross connections by installing a physical separation between the overflow and the receiving storm drain. These modifications may require the full installation of a drain-box, piping, grating, berms and other appurtenances to effectively direct the flow in a safe and environmentally safe manner.

Flush Cleanout

Sand and other particles that accumulate at the bottom of the tank due to normal operation must be removed from the tank from time to time. A flush cleanout allows for workers to efficiently broom this material out of the tank. Additionally, the flush cleanout is outfitted with a connection as close as possible to the floor of the tank. This allows for pumps to be connected to a point lower than the standard outlet. This feature is used to remove the last bit of water from the tank and place it into the system. The last bit of water in tanks without a flush cleanout must be removed by other means and typically ends up in a storm drain.

Vents

Tanks require a vent to prevent pressure or a vacuum from developing as the result of tank operation. The vents must be sized to accommodate air flow equal to that of the water flowing in and out of the tank. However, Cal Water has found that tanks with larger venting capacity are found to have less corrosion in the roof structure. Having a larger ventilation capacity causes the roof structure on the inside of the tank to remain drier. The corrosion cell in the roof structure is interrupted by eliminating some of the moisture on the structure's surface.

Newer vent designs allow for additional access to roof rafter ends and otherwise inaccessible areas of the tank roof structure. Additionally, they provide far superior sanitary protection from insects and vandals.

Roof Drains

Older roof designs included a small 2- to 6-inch parapet along the circumference of the tank roof. This design allows for water from rainfall or even morning dew to pool along the edges of the roof, resulting in advanced corrosion. In some cases the parapet can be removed without adversely affecting the structural integrity of the tank. In cases where this cannot be done a roof drain is installed. The drain allows for water to flow off of the roof of the tank, thus reducing the risk of corrosion.

Berms and Swales

Berms and swales may be thought of as not part of the tank, however, this is a misconception. A properly constructed berm or swale manages and directs rainfall runoff around and away from the tank. Runoff could undermine the tank foundation if left unmitigated. Over time, the material that berms and swales are constructed of will breakdown and deteriorate. Once deteriorated, they no longer provide adequate drainage and water will begin to pool around the tank.

In addition to managing runoff, these features provide even surfaces for workers to use when working around tanks. This prevents slips, falls, sprains, and other injuries. As these surfaces deteriorate, they introduce a hazardous workspace and need to be addressed.

Support Structure

Roof rafters, columns, and other support structures are vital to keeping the tank standing. When these structures suffer metal loss from corrosion, they threaten the structural soundness of the entire tank. Support structures have a lower tolerance for corrosion since the structural support they provide is directly dependent on the cross-sectional area of the structural member. Metal loss weakens the provided support. These components must be replaced once they have experienced significant metal loss to ensure the continued reliability of the tank structure.

Customer Benefits

Implementation of tank retrofit projects improve the reliability of tank infrastructure, and at a higher level, the entire distribution system. Increased safety reduces the hazard exposure to workers and the community. Maintaining regulatory compliance ensures that the quality of the water and service provided by Cal Water is of high value. Upholding the structural integrity of tank infrastructure ensures reliable service can be provided, even during times of emergency.

k. Customer Meter Vault Lid Replacement Program

Project Justification

The Customer Meter Vault Replacement Program is the routine removal and replacement of vault lids which are deteriorated, substandard, and unsafe to employees, customers, and the public. This replacement program includes customer meter vaults for 3-inch and larger meters.

Vault lids are flagged for further inspection and/or replacement following monthly visual inspections during regular meter reading. In addition, any customer or public complaints about meter lids trigger further evaluation for replacement.

Evaluation Criteria

The condition of meter vault lids are assessed through monthly visual inspection during routine meter reading. If a vault lid was found to have poor performance, does not meet current Cal Water or industry-accepted standards, or is considered unsafe, it was recommended for further inspection and potential replacement. A customer or public complaint would also flag a meter vault lid for further inspection. During this inspection, district staff make a final determination on replacement.

Detailed Project Scope

The district budgets proposed for the 2021 GRC are summarized in Table 1, below. Each vault lid replacement project includes:

- Measurement of existing vault and vault lid by vault lid contractor.
- Design of replacement vault lid by vault lid contractor, if needed.
- Delivery of new vault lid with torsion assist, anti-slip surface, locking mechanism, and reading window by vault lid contractor (Vault Access Solutions).
- Removal of old equipment by Cal Water Master Contractor.
- Installation of new vault lid by Cal Water Master Contractor.

However, prior to construction, Cal Water will re-evaluate the list of customer meter vault assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any customer meter vault is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative customer meter vault as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

Table 1. Customer Meter Vault Lid Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost 2022-2024
	2022	2023	2024	
Bayshore	$60,673	$62,190	$63,745	$186,609
Bear Gulch	$15,168	$15,548	$18,075	$48,791

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bakersfield	$27,448	$28,134	$28,837	$84,419
Chico	$28,892	$29,615	$30,355	$88,862
Dixon	$14,446	$14,807	$15,177	$44,431
Dominguez	$54,895	$56,268	$57,674	$168,837
East Los Angeles	$27,448	$28,134	$28,837	$84,419
Hermosa-Redondo	$27,448	$28,134	$28,837	$84,419
King City	$14,446	$14,807	$15,177	$44,431
Livermore	$14,446	$14,807	$15,177	$44,431
Los Altos	$30,337	$31,095	$31,873	$93,305
Marysville	$14,446	$14,807	$15,177	$44,431
Oroville	$14,446	$14,807	$15,177	$44,431
Palos Verdes	$13,724	$14,067	$14,418	$42,209
Selma	$14,446	$14,807	$15,177	$44,431
Salinas	$28,892	$29,615	$30,355	$88,862
Stockton	$57,784	$59,229	$60,710	$177,723
Visalia	$28,892	$29,615	$30,355	$88,862
Westlake	$27,448	$28,134	$28,837	$84,419
Total	**$515,725**	**$528,619**	**$543,973**	**$1,588,317**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

The customer meter vault lid replacement costs shown in the table above and in district justification books are loaded to include contingency (i.e., an additional contingency line item was not calculated separately).

Customer Benefits

Replacement of customer meter vault lids ensures that meter vaults in the public and private right of way are safe. Secure meter vaults protect the steady flow of accurate metering information from customers.

I. SB 1398 Service Replacement Program

Project Justification

In response to the water crisis in Flint, Michigan that began in 2014, the California legislature passed Senate Bill 1398 (SB 1398). This law makes changes to Section 116885 of the California Health and Safety Code with the purpose of eliminating lead user service lines in all public water systems. Subsection B of the code stipulates that the water purveyor must provide a plan for the replacement of any user service line where the material is not verified by July 1st, 2020.

Cal Water engaged in a comprehensive study from 2016 to 2020 to develop an inventory of all user service lines. The study was guided by input from the Division of Drinking Water (DDW), the Lead Service Line Replacement Collaborative, and industry practice. Despite the enormous effort, a portion of the inventory still remained with an unknown material type by the 2020 deadline. Per the regulation, these user service lines must be replaced.

In the best interest of the customers, the replacement plans are aggressive to eliminate these pipes as soon as possible. The replacement plan timelines were developed with considerations to rate impact as well as input from DDW. The resulting timelines have been approved by DDW and deviation from the plan will require DDW approval.

Detailed Project Scope

The scope of an SB 1398 Service Replacement is similar to any other service renewal. Typically as a service fails in any given failure mode, the service is replaced with the current standard service installation. In the case of an SB 1398 Service Replacement, the service fails due to a regulatory requirement.

The district replacement budgets proposed for the 2021 GRC are shown in Table 1, below. The number and addresses of the specific replacements to take place each year are contained in the Service Replacement Plan documents.

Table 1. SB 1398 Service Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$116,612	$119,528	$122,516	$358,655
Chico	$46,446	-	-	$49,390
King City	$805,127	$466,903	$521,525	$1,454,659
Livermore	$75,919	$89,788	-	$165,707
Marysville	$122,639	$125,705	-	$248,344
Stockton	$262,798	$269,367	-	$565,701
Total	**$1,429,541**	**$1,071,291**	**$644,041**	**$3,144,873**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

A general per unit cost estimate was developed and applied to all projects. The unit cost estimate is made up of the bulleted items below:

- Contractor Cost - $2,335.30
    - Cost is derived from A.28-2 in the Cost Catalog.
- Paving Cost - $1,261
    - Cost is derived from an assumed 50’ x 2’ trench for a service replacement. The area was then multiplied by $12.61 per foot per A.17-1 in the Cost Catalog.
- Labor hours – 12 hours
    - The labor is divided into 4 hours each for Engineering, Water Quality, and Operations labor. The labor is required for planning, notifications, inspection of installation, database updating, reporting, and other administrative activities required.

Customer Benefits

The services that are slated to be replaced under this program have little information known about them (i.e., material and age). This is usually due to the services being very old. By eliminating these services from the distribution system, the customers will benefit from better water quality and improved system reliability.

m. Pressure Vessel

Overview

At Cal Water, pressure vessels are defined as a vessel that maintains a pressure greater than atmosphere, has a capacity of 500 gallons or greater, and contains potable or non-potable water. Pressure vessels function to regulate system pressure. The reliable service of the distribution system is highly dependent on the reliable service of pressure vessels.

Some general statistics regarding Cal Water's pressure vessel inventory can be found in the Table 1, below:

Table 1. Pressure Vessel Inventory

Number of Tank in Inventory	373
Pressure*	249
Surge	17
Treatment/Other	107
Oldest Tank	77 Years

**Some pressure vessels serve as combination pressure and surge.*

Evaluation Criteria

Given the importance of the pressure vessel infrastructure, it is vital that each vessel is maintained to be reliable in all operating conditions. Metal loss over time causes stress on vessels to increase. The increased stress can fatigue the vessel to the point of rupture (Figure 1). Pressure vessel failure can be catastrophic since pressure vessels contain a mixture of gas and liquid. The resulting release in energy can cause injury or death, let alone the depressurization of the distribution system and subsequent adverse effects to customers and infrastructure.

Figure 1 – Failed Pressure Vessel

The following sections detail the inspection and risk evaluation process used to determine the need to improve or replace pressure vessels.

Description of Evaluation Criteria:

Cal Water inspects pressure vessels at five-year maximum intervals. The purpose of the inspections is to evaluate the vessels structural integrity, the condition of the appurtenances and the effectiveness of the coatings and linings. The inspection focuses on the vessels substrate and structural integrity, the interior and exterior coating condition and proper functionality of all appurtenances. The engineer evaluates measurements of the steel thickness and determines a risk level for the vessel. By maintaining pressure vessels below a designated level of risk, Cal Water maintains reliability in the distribution system.

Inspection

The inspection consists of a detailed evaluation of the tank in situ. Operational constraints often impede the ability of visually assessing the interior of the vessel. However, since ultrasonic equipment is used to evaluate the steel thickness, access to the interior of the vessel is not required. Using ultrasonic thickness (UT) testing equipment, the engineer takes multiple steel thickness readings using procedures outlined in the American Petroleum Institute (API) Pressure Vessel Inspection Code 510. Anchorage, foundation and appurtenances are assessed in addition to the vessel structure.

Risk Evaluation

To ensure the reliability of the distribution system and to reduce overall risk, pressure vessels are evaluated against a 5x5 matrix (Figure 2). The matrix is presented below with further explanation following:

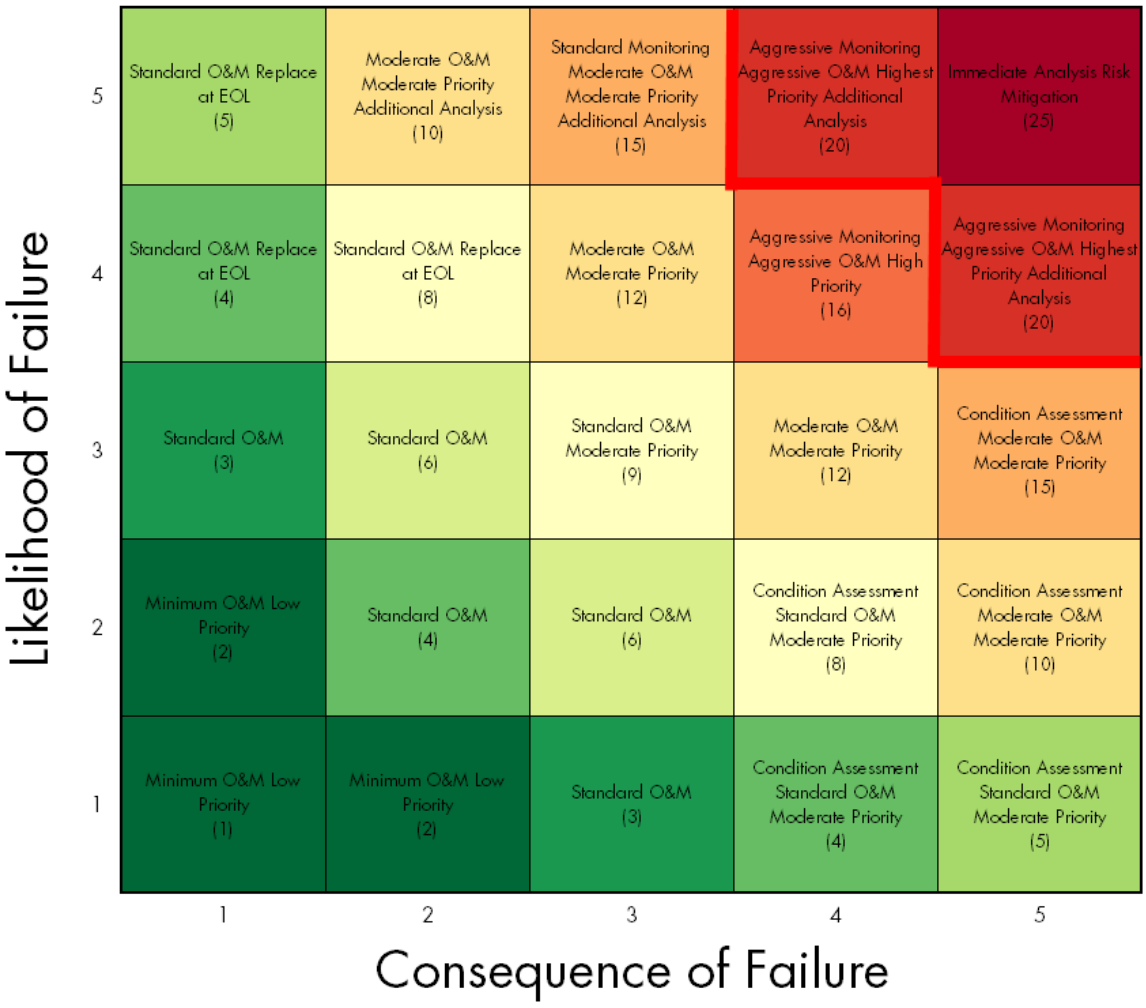


Figure 2 – Risk Evaluation Matrix (Scoring in Brackets)

Likelihood of Failure (LOF)

Using the steel thickness measurements recorded during the inspection and methods outlined by API and ASME, a calculated remaining life is generated for each vessel. The vessel is then assigned an LOF value based on the calculated remaining life, as shown in Table 2.

Table 2. LOF Values

Calculated Remaining Life	LOF
Over 40 years	1
25 – 40 years	2
10 – 25 years	3
5 – 10 years	4
Less than 5 years	5

Consequence of Failure (COF)

The COF for each vessel was determined based on the Station Critical Emergency score provided for each station. The Station Critical Emergency score is based on 0 - 4 scale with a multiplier of two. Table 3 shows how the COF is related to the Station Critical Emergency score:

Table 3. COF Values

Station Critical Emergency Score	COF
0 and 1	1
2 and 3	2
4	3
6	4
8	5

Multiplying the LOF and COF provides the overall risk score for the vessel. At Cal Water, vessels are maintained below a risk level of 20. This provides a high level of confidence that vessel reliability will be maintained.

Detailed Project Scope

To address the aging pressure vessel infrastructure, two primary approaches are taken: replacement or improvement. If the vessel has deteriorated to a point where the thickness of the steel allows for minimal remaining life, the vessel is recommended for replacement. However, if the application of a coating and/or some minor metal work could return the vessel to a reliable state, the recommended approach is to perform the improvements. The recommended project is determined through engineering judgement and the inspection and risk evaluation process described above.

Description of Replacement

Replacement projects replace the entire pressure vessel with a new American Society of Mechanical Engineers (ASME) certified vessel. Per Title 8, Division 1, all pressure vessels that meet Cal Water definition must be constructed in accordance with the ASME Code. The vessels are anchored to a properly designed foundation. High performance engineered coatings and linings protect the vessels from corrosion. New piping and controls are also installed for more efficient operation.

Description of Improvements

There are four general categories of pressure vessel improvements.

Coating – The removal and application of coatings, both interior and exterior, is similar to the process for coating tanks. The tank coating justification should be consulted for further detail; however, the main difference is the interior coating. The interior coating on pressure vessels is typically a more robust coating material since the coating often goes many years without any opportunity for inspection or repair. Additionally, the confined space of the vessel interior creates further logistical issues and requires a greater level of engineering controls for worker safety.

Metal Work – The most common metal work required on a pressure vessel is the patching of pinholes. This requires an ASME certified contractor to weld steel plates onto the vessel to cover the hole. The resulting patch must be pressure tested and in some cases additional testing, such as x-ray scanning, is required. Other types of metal work are very rare since higher levels of intervention would most likely trigger the complete replacement of the vessel.

Appurtenance Replacement – At times, the appurtenances attached to the vessel age faster than the vessel itself. This is often due to the use of dissimilar metals, which is often unavoidable. These components range from gauges and measuring tubes to inlets and outlets for sensors. Some older vessels can be outfitted with new and improved sensing equipment that results in a more reliable asset.

Safety Improvement – As Cal Water continues to improve the safety of its infrastructure, pressure vessels present some unique safety challenges. The two primary issues are confined space and fall protection. When accessing the interior of the vessel, the traditional manway is very small, making egress difficult. If the vessel has enough steel integrity for the upsizing of the manway, it is replaced with a new standard 20-inch manway. On some vessels the appurtenances to operate the vessel are located higher up on the vessel. To access these safely, improvements are sometimes required to ensure worker safety. These could include fixed ladders or scaffolding.

Table 4 and 5 includes the list of programmatic pressure vessel replacements and rehabilitations proposed in the 2021 GRC for all Districts. However, prior to construction, Cal Water will re-evaluate the list of pressure vessel assets recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be replacement at that time. If any pressure vessel is no longer required to be replaced (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will replace an alternative pressure vessel as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

Table 4. Pressure Vessel Replacement Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$294,487	-	-	$294,487
Bakersfield	-	$325,584	-	$325,584
Chico	$292,423	-	-	$292,423
Livermore	-	$306,497	-	$306,497
Los Altos	$323,033		-	$323,033
Salinas	$614,185	$592,168	$629,865	$1,836,218
Visalia	$645,690	-	-	$645,690
Total	**$2,169,818**	**$1,224,249**	**$629,865**	**$4,023,932**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Table 5. Pressure Vessel Rehabilitation Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Chico	-	$82,957	$85,031	$167,988
Salinas	$81,788	$83,833	-	$165,621
Visalia	-	$83,833	-	$83,833
Total	**$81,788**	**$250,623**	**$85,031**	**$417,442**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Implementation of pressure vessel replacement and improvement projects improve the reliability of the water distribution system. Increased safety reduces the hazard exposure to workers and the community. Maintaining regulatory compliance ensures that the quality of the water and service provided by Cal Water is of high value. And upholding the structural integrity of pressure vessel infrastructure ensures reliable service can be provided, even during times of emergency.

n. Water Quality Sample Sites

Project Justification

Cal Water maintains state and federal drinking water compliance through the continued water quality monitoring at dedicated sample sites throughout distribution systems. Under current regulations, the dedicated sites are used for secure and repetitive sampling for bacteriological presence, disinfection residual (chlorine or chloramine), disinfection byproduct formation (total trihalomethanes or total halo acetic acids). In addition, the dedicated sample sites are used in response efforts for system emergencies such as a Boil Water Order or Cross Connection Incident.

The Division of Drinking Water (DDW) requires dedicated sampling sites at a minimum in each pressure zone, and in some cases multiple sites in each zone due to the size and complexity of the area. In 2020, an evaluation identified water systems that did not have a site installed at every pressure zone and plans are in place to implement installation of these sampling sites.

Prior to dedicated sample sites, distribution system samples were collected at unprotected sites. These unprotected sites included customer hose spigots, backflow assemblies, and fire protection post indicator valves. Due to the potential for environmental exposure, vandalism, and chemical and bacteriological contamination, secure and dedicated sample stations are now the standard in most Cal Water distribution systems.

The established dedicated sample site standard has been updated to address longevity of installation, security of sample location, location aesthetics, ergonomics, and reliability of contaminant free sampling. The uniform Cal Water standard is beneficial for maintaining consistent sampling and providing sampler training. In addition, a bi-annual maintenance and inspection program is in place to maintain the integrity of the sample stations.

Evaluation Criteria

The criteria for determining the location a new dedicated sample site include the following:

- If regulatory requirements or system supply modifications occur (e.g. new wells, tanks, pressure zone changes, or consolidation of new systems), the installation of new dedicated sample sites may become necessary.
- Systems that are either antiquated or a new purchase may not have dedicated sample points. If there are no dedicated sample sites, new sites are planned for installation.

Detailed Project Scope

Install new Cal Water standard dedicated sample sites within specific pressure zones per Figure 1.

The district budgets proposed for the 2021 GRC are summarized in Table 1, below.

Table 1. Water Quality Sample Sites Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$240,182	$42,446	-	$282,628
Bear Gulch	$82,821	$76,403	-	$159,224
Bakersfield	$7,493	-	-	$7,493
Chico	$7,888	-	-	$7,888
Hermosa-Redondo	$7,493	-	-	$7,493
King City	$7,888	-	-	$7,888
Kern River Valley	$112,400	-	-	$112,400
Livermore	$9,742	-	-	$9,742
Los Altos	$66,257	$67,914	$69,611	$203,782
Oroville	$7,888	-	-	$7,888
Palos Verdes	$7,493	-	-	$7,493
Salinas	$15,776	-	-	$15,776
Total	**$573,321**	**$186,762**	**$69,611**	**$829,695**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Dedicated sample sites allow for more efficient response efforts in emergencies, such as a Boil Water Order or Cross Connection Incident. The sites provide more accurate and consistent water quality samples that are representative of water quality, which aids Cal Water in identifying possible issues and solutions sooner. Together, these benefits result in higher and more consistent water quality conveyed to customer homes.

Figure 1 – Photo of CWS Standard dedicated sample site/station

o. Wildfire Hardening Program

Background

According to the California Department of Forestry and Fire Protection (Cal Fire), the 2020 wildfire season was the deadliest and most destructive wildfire season on record in California, with more than 10,000 fires burning an area of over 4.2 million acres, the largest area of burned acreage recorded in a fire season.[8] Several of past fires have had a direct impact on Cal Water systems, employees, and customers, including the August Complex Fire, Mendocino Complex Fire, Woolsey Fire, and Camp Fire, which killed at least 85 people. As a result of these events, and the likelihood that wildfires will increase in both frequency and intensity in the near future as a result of climate change, it was necessary for Cal Water to conduct a thorough evaluation of its systems' fire protection. [9]

Detailed Program Scope

In 2019, Cal Water evaluated the capacity and capability all of its current infrastructure and stations in the event of a wildfire and proposed a number of measures necessary to mitigate the potential risks. The results of this analysis were compiled into the *2020 California Water Service Wildfire Risk Assessment* (provided in Section C *Background Reports*). The risks of primary concern from a wildfire include the spread of a wildfire to structures within a water system, damage to Cal Water facilities located within a wildfire risk area, and the loss of water to an area due to high demand or failure of equipment. Additionally, risks associated with the loss of power during a wildfire event or preemptively during high wildfire risk were also included in the risk assessment. This evaluation was also motivated in anticipation of the American Water Infrastructure Act (AWIA), which requires that water utilities evaluate the risks to their systems across a wide range of categories, including wildfire threats.

As further described in the report, a risk score was calculated zone-by-zone in each district based on key weighted risk metrics, including: wildfire threat, population, supply vulnerability, backup power constraint, storage limitation, and grid restriction. Capital project alternatives and recommended solutions were developed where needed for wildfire risk mitigation.

Recommended solutions and a high-level cost estimate were used to start in-depth consultations with individual districts. As individual projects were evaluated and validated, they were placed in several priority categories or removed if the risk would be mitigated by 2018 GRC or other in progress projects. Priority categories and the final disposition of all recommended solutions are summarized in the *2020 California Water Service Wildfire Risk Assessment*.

The projects selected for the 2021 GRC were then further reviewed and a cost estimate was completed.

[8] Retrieved from Cal Fire website on March 31,2021: https://www.fire.ca.gov/incidents/2020/
[9] USGS. *Wildland Fire Science – Supporting Wildland Fire and Land Management*. (2019)

Detailed Project Scope

The district budgets proposed for the 2021 GRC are summarized in Table 1, below.

Table 1. Wildfire Hardening Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$5,755,667	$3,850,081	$3,806,227	$13,411,975
Bear Gulch	$828,383	$1,518,517	$1,912,854	$4,259,754
Bakersfield	-	-	$329,301	$329,301
Chico	$424,135	-	$352,220	$776,355
Livermore	$40,582	-	-	$40,582
Los Altos	$717,182	$1,650,698	$1,737,396	$4,105,276
Palos Verdes	$1,693,308	$854,650	$1,894,225	$4,442,183
Salinas	-	-	$6,231,259	$6,231,259
Westlake	$105,762	-	-	$105,762
Total	**$9,565,019**	**$7,873,946**	**$16,263,482**	**$33,702,447**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Customer Benefits

Wildfire Hardening projects were identified as critical infrastructure needs as part of the *2020 California Water Service Wildfire Risk Assessment*. Completion of these projects will ensure that a reliable source of high quality water is available to customers and adequate fire protection is consistently available throughout Cal Water's service area going forward.

Project Attachments

Background Report – *2020 California Water Service Wildfire Risk Assessment*

p. Well Infrastructure Renewal Program

Introduction

Cal Water supplies safe and reliable drinking water to its customers from groundwater, surface water, purchased water, or a combination of all three. Groundwater is generally the lowest cost source water for customers and therefore, wherever feasible, retaining and maintain a strong portfolio of groundwater is beneficial to customers in the long term. Cal Water owns and leases 747 groundwater production wells, of which 391 are active wells, more than half of all Cal Water's wells were constructed before 1970 and Cal Water established this program to better understand its aging infrastructure and plan appropriately.

Proactive renewal and augmentation of water well inventories in advance of significant signs of distress or degradation, is necessary to maintain reliable water supply. Supply portfolios can change rapidly and this, coupled with the long timeline needed to construct new wells (3 – 10 years[10]), can create challenging situations. As an example, this scenario was observed in Cal Water's Oroville District over the past several years. The Oroville District is supplied by a surface water treatment plant and four groundwater wells. In 2009, the district's facilities were described as "well maintained, although some are old with respect to typical useful life expectancies."[11] Additionally that "adding one new well would significantly improve Cal Water's ability to reliably supply the system…"[12] Since then, the Oroville districts sources of supply have been impacted as follows:

- 2017: The Miocene Canal raw water source was damaged by fire and became inoperable. This left Cal Water reliant on the Thermalito Canal for raw water.
- 2019: The lease for well 901-01 was terminated by the owner and well operations ceased. A parcel of land was purchased to construct a new well, to maintain supply. The operational date of the new well is targeted to be 2025.
- 2020: PFOS was detected in the remaining wells: 2-01, 5-01, and 10-01. Well 10 continues to operate while wells 2 and 5 were temporarily shut down. A project to install wellhead treatment on well 5-01 was initiated.
- 2021: The wellhead treatment at well 5-01 is targeted to be on-line in July.

The potential for unforeseen events, like those described above, and others, such as well collapse or sanding, exist in all districts using groundwater as a source of supply. To address this risk and pursue reliable and safe operations, Cal Water in initiating a Well Infrastructure program described below.

In 2020, Cal Water engaged Kayuga Solution, Inc. (Kayuga) to develop a comprehensive plan of all Cal Water's groundwater assets to enable Cal Water to make more informed decisions on how to effectively and proactively manage its groundwater assets, which became the *Well Infrastructure Renewal Program* report. (Kayuga WIRP Report)[13] This report recommended proactive steps and direction for Cal Water to

[10] See "Well Project Timeline Analysis"
[11] 2009 *Water Supply and Facilities Master Plan – Oroville District*, pg. ES-4
[12] Ibid
[13] A copy of Kayuga's report is available in Section C *Background Reports.*

incorporate into future rate case applications based on industry standards and recommended asset management principles. Without this proactive approach, the average age of wells throughout Cal Water's various Districts would continue to increase at a steady rate, resulting in an overwhelming number of groundwater well failures without alternative sources in the near future.

Approach

Cal Water's planning approach follows the "Asset Management" process endorsed by the EPA and the AWWA. The process, as applied to the water well asset class is described in Figure 1 below.

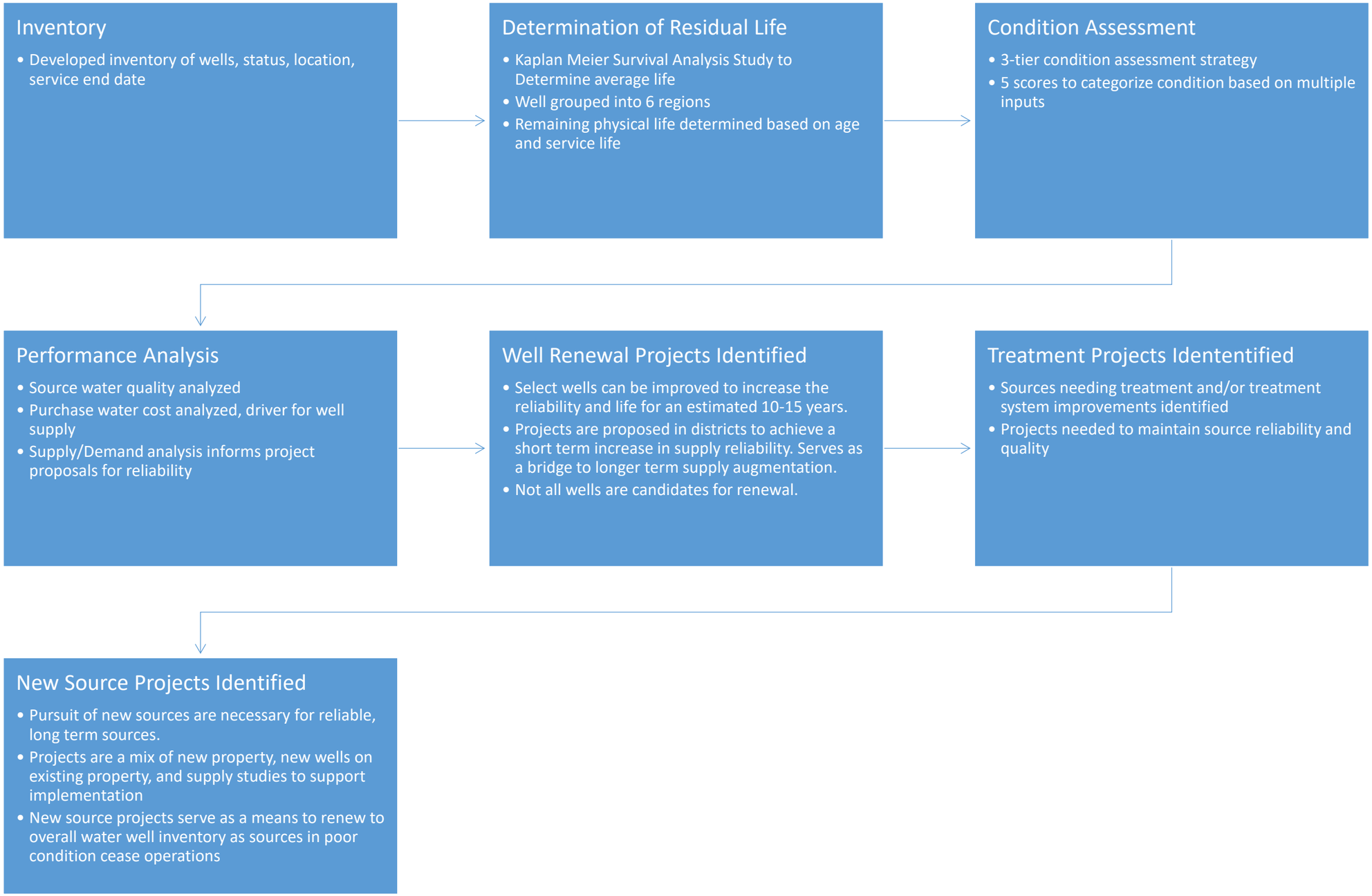


Figure 1 – Cal Water Well Asset Management Approach

Deficiencies

According to the WIRP, the median age of failure due to poor water quality or operational performance across all of Cal Water wells, was determined to be 63 years. However, there is slight variations across the various regions and construction methods, which is further described in the WIRP.

Aging Infrastructure

Much of well infrastructure were installed during 1950s to 1970s and there is an anticipated wave of replacements coming. 65 of the active wells reviewed in the *Kayuga WIRP report* are beyond the median life expectancy.

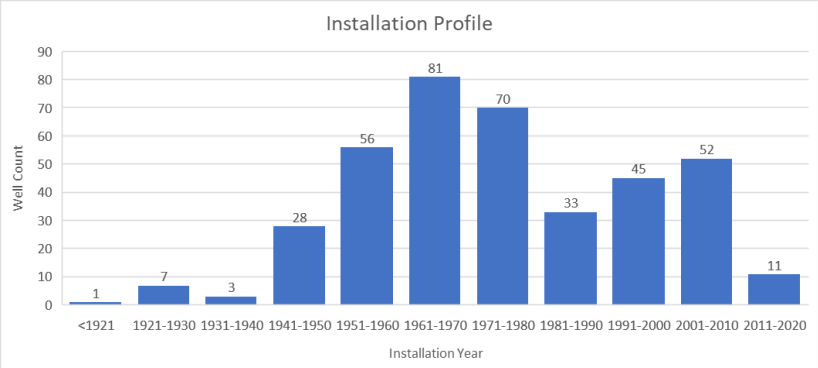


Figure 2 – Groundwater Well Infrastructure Installation Histogram

Degrading Infrastructure

A condition assessment of the exiting is presented in Figure 3 which demonstrates much of the well infrastructure is condition 4 (plan for replacement) and 5 (need to be replaced).

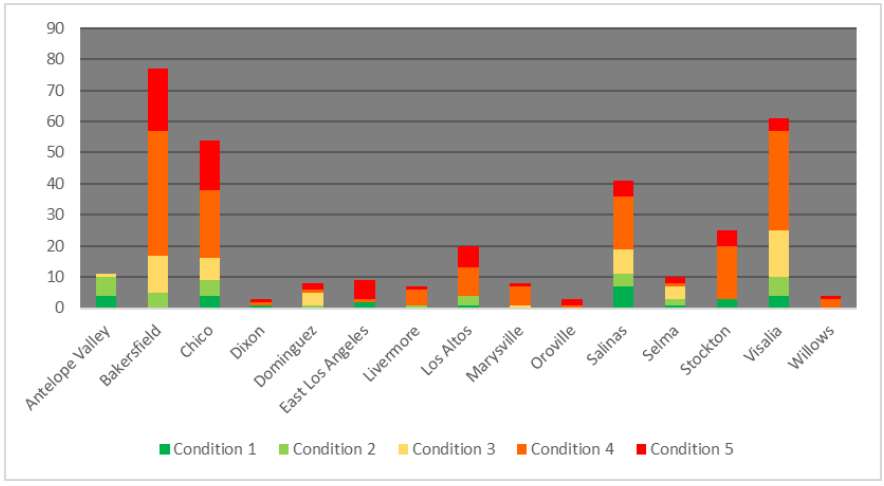
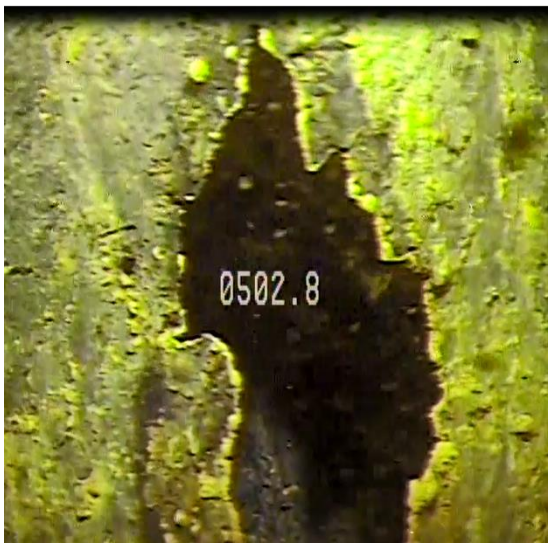


Figure 3 – Condition Assessment of All Existing Wells in Each District

The need for continued advanced condition assessment, infrastructure improvement, and augmentation is necessary. Some examples of the physical degradation that can occur as a well ages are found in Figure 4.

SLN 019-01 Casing Hole



BK 085-2W Casing Holes

ARM 001-01 Casing Hole

ARM 001-01 Casing Hole

Figure 4 – Examples of Well Physical Degradation

Alternative Analysis

In order to address the deficiencies with aging and degrading groundwater infrastructure in the distribution system, the following alternatives were analyzed:

1. Do Nothing

The do nothing alternative consists of a reactive approach to groundwater well failures: attempting to install new wells after the original well has failed. This alternative would have a detrimental impact not only on Cal Water's distribution system operations, but also on the cost of water as more purchase water is required to supplement the water until the new well could be constructed. Since the average age of groundwater wells in the system and number groundwater well failures is anticipated to increase, for those system entirely dependent on groundwater this could also result in impact on the

service quality to customers as more outages may be anticipated or reduction in pressure. In addition, a more pro-active approach is needed due to the long timeline long timeline needed to construct new wells (3 – 10 years[14]), For these reasons, the do nothing alternative was deemed imprudent and thus not considered further.

2. Groundwater Well Liner

Groundwater rehabilitation projects are initially evaluated as to whether any well would be a good candidate for relining or other types of improvement in lieu of replacement. If a project is considered a potential candidate, the project is evaluate in more depth based on the condition of the groundwater well and the benefits that will be experienced by the customers. Although this solution has been implemented in the past, groundwater well relining is not always possible or the best alternative to renew the overall infrastructure and maintain supply capabilities. Installation of a liner will often result in a loss of efficiency as water must pass through another restriction before reaching the pump which make the well cost prohibited. In addition, the well may not be in a condition that installing a new lining is the best alternative (e.g. sanding or poor water quality), or the well may be of such a dimeter that installing another casing a further restricting the diameter is not feasible to install a pump. Extended life of the well varies and is estimated between 10- and 15-years. Finally, only select wells can serve as a candidate for this type of improvement.

While relining a well will continue to be a frequent tool that Cal Water utilizes, where practical, to extend the life of existing productive wells, it cannot be considered at all wells indefinitely and therefore, cannot be the only alternative to addressing aging or failing groundwater well infrastructure.

A well liner is a well casing (mild steel blank section) and screened section (stainless steel wire wrap screen), these sections are smaller diameter than the original well casing. Silica bead media is installed between the well liner and existing well casing to stabilize the annular space. In open bottom wells (i.e., VIS 013-1W), a pre-packed screen is installed – pre-packed is a 2-part pre-assembled screen section with silica bead media between the screens.

To improve age-based assessment and optimize the use of resources, Cal Water implemented a multi-level condition assessment strategy. A Level 1 assessment (desktop analysis) is used to assess wells in the inventory primarily on an age-based. At Level 2 (Intermediate), historical records such as performance trends, repair work, and water quality parameters related to well and well construction are used. At Level 3 (Advanced), field inspection - the pump is removed to allow specialty tools (e.g., Gyro and CITM) to access the well, and to provide a higher confidence level of the wells' physical structure. To date, Cal Water has performed Level 2 or 3 assessment on about 12% of its 387-active wells.

[14] See "Well Project Timeline Analysis"

Pre-Packed Screen, Pre-Assembly - VIS 013-1W

Pre-Packed Screen, Post Assembly – VIS 013-1W

Silica Bead Media

BK 085-2W Stainless Steel Liner Screen

Figure 5 – Photos of Well Renewal Components

3. Groundwater Well Augmentation

This alternative involves a proactive installation, including purchasing new land through installation of a new groundwater well to ensure that districts are able to maintain an adequate supply of reliable groundwater in the distribution system. Currently, this approach is determined on a case by case basis weighing the probability of failing against the consequence and impact of that failure on customers. This alternative was determined necessary if all other practice alternatives were considered and were no longer feasible. This solution provides the water system the longest lasting source of reliable supply.

Recommended Solution

The recommended alternative is a combination of completing ground well renewal projects were practical on a limited basis (Alternative 2) and long term replacement and augmentation program (Alternative 3) including land purchase and installation of new (Alternative 3).

It is recommend that Cal Water continue to install groundwater well liners where practical, on a limited basis (Alternative 2) because liners extend the life of a well for a limited duration, but may result in reduced output and efficiency. The improved, lined wells serve as a means to improve the reliability of the water system, until a more robust well replacement and augmentation program can be implemented. Long term replacement and augmentation of the water well inventory (alternative 3) is currently the most reliable and lasting means of maintaining groundwater supplies. New groundwater wells, including the purchase of land for new wells, are necessary to ensure the distribution system and customers have a dependable source of high quality water available to them. Cal Water is proposing the projects summarized in the table below to meet the needs of the degrading well infrastructure.

2021 GRC Program Cost Estimate Summary

A summary for the well infrastructure renewal program is presented in Table 1. Costs were determined using cost data from past Cal Water well renewal projects. Past projects were sorted based on size and location of the infrastructure to determine a reasonable representative cost for a particular district. Projects costs were obtained using a trendline analysis of historical cost data, looking at variations in a given project scope. Projects costs were also adjusted to account for things such as permitting requirements, location factor, and other challenging site conditions.

However, prior to construction, Cal Water will re-evaluate the list of well renewal projects recommended for replacement as part of the 2021 GRC application to ensure they are still the most prudent and critical assets to be addressed at that time. If any well renewal project is no longer required (e.g. asset had already been replaced as an emergency project or another more critical has just recently been identified), then Cal Water will consider an alternative well renewal project as part of the district's overall program, provided that the alternative still meets the criteria for replacement and it is prudent to be address at that time.

Table 1. Well Infrastructure Renewal Program Breakdown by District

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bakersfield	$302,076	$299,673	$248,584	$850,333
East Los Angeles	$279,621	-	-	$279,621
Livermore	$248,287	-	-	$248,287
Los Altos	$120,937	-	$320,199	$441,136
Marysville	-	$213,990	-	$213,990
Oroville	$218,912	-	-	$218,912
Selma	-	$182,588	-	$182,588
Visalia	$259,695	$291,776	-	$551,471

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Willows	$344,166	-	-	$344,166
Total	**$1,773,694**	**$988,027**	**$568,784**	**$3,330,504**

Note: Direct Cost is the escalated sub-total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate.

Well Project Timeline Analysis

Constructing new water supply wells is a complex process consisting of many phases and requires alignment with multiple external stakeholders and agencies. As such, the design, permitting, and construction of wells and related station equipment can vary. These durations can range from a few years and extend up to ten years. A review of wells recently constructed within Cal Water demonstrates the range of durations, summarized in the table below:

Table 2. Examples of Cal Water Completed Well Projects

Well	Duration	PID
Bakersfield 49-03	39 months	108919
Bakersfield 224-01	58 months	99820
Bakersfield 225-01*	68 months	101257, 99821
Chico 9-03	126 months	20519
South San Francisco 1-24	84 months	61318

***Note: Project included land purchase.**

There are several components of a well construction project, summarized in the figure below as discussed in the Kayuga WIRP report. The requirements of many agencies (e.g. city, county, Division of Drinking Water, Regional Water Quality Control Board) need to by meet to obtain various permits (such as drinking water permits, building permits, use permits). The requirements also vary by locale within the state and within each district, specific to each project. These variations contribute to the needed timeframes to bring a well project from concept to operational status. Additional details on the durations of each project can be found in the table below.

Figure 6 – Well Life Cycle

Table 3. Examples of Timelines for Completion of Cal Water Well Projects

Activity	BK 49-03		BK 224-01		BK 225-01		CH 9-03		SSF 1-24	
	Start	End	Start	End	Start	End	Start	End	Start	End
Well Location / Site Study	NA		NA		Jan-15	Dec-17	Jul-09	_	NA	
Land Acquisition	NA		NA		Jan-15	Dec-17	NA		NA	
Planning & Design	Jun-17	Apr-19	May-16	Oct-18	Jan-18	Apr-19	Jun-11	Apr-13	Jan-13	Sep-18
Permitting	Apr-19	Oct-19	May-16	Mar-19	Jan-18	Oct-19	Apr-13	Jan-19	May-15	Jan-19
Procurement and Construction (Well)	Jul-18	Oct-18	Oct-16	Mar-18	Jul-18	Oct-18	Aug-14	Oct-16	Jan-16	Sep-17

Activity	BK 49-03		BK 224-01		BK 225-01		CH 9-03		SSF 1-24	
	Start	End	Start	End	Start	End	Start	End	Start	End
Procurement and Construction (Station Equipping)	Aug-19	Aug-20	Sep-19	Aug-20	Jul-19	Jun-20	Jun-20	Dec-20	Jan-19	Oct-19
Commissioning / Startup	Aug-20	Aug-20	Aug-20	Mar-21	Jun-20	Aug-20	Dec-20	_	Nov-19	Dec-19

Project Attachments

Background Report – *Cal Water WIRP 2021 Package*

q. Non-Specific Capital Budgets

Background

Cal Water accounts for planned capital work through proposed specific projects grouped into capital budgets based on their expected completion date, referred to as Advance Capital Budgets (ACB). While Cal Water diligently plans for and budgets capital work necessary to ensure our distribution systems are able to deliver high quality potable water to our customers, Cal Water acknowledges it is impossible to anticipate, and therefore budget for, every capital project or work that will be required in future years. Non-Specific capital projects are reactive in nature and develop during any given year to respond to facility or equipment failures, to maintain business operations, or to address work items that come up during the year that were not previously anticipated when the proposed ACBs were developed. These projects have an urgency for completion and cannot wait until the next available capital budget or GRC cycle. Such work can include, but not limited to, the following non-specific projects: facility upgrades or building repairs; replacing lost, damaged or stolen equipment; replacing unexpected electrical mechanical equipment failures.

Cal Water develops non-specific capital budgets based on trending from past annual non-specific capital projects observed in district or department budgets over time. Extrapolating these trends, non-specific capital budgets are developed to anticipate the unexpected projects that will likely be needed throughout the next 3 year GRC period. As part of this effort, Cal Water uses an inflation adjusted average of historical non-specific expenditures using published factors by the Cal Advocates. In addition, Cal Water also removes any outlying capital projects considered by Cal Water to be statistical anomalies. This approach is consistent with what Cal Water has filed, and the CPUC has approved, in past rate case filings.

Analysis of Past Non-Specifics Budgets

Companywide, Non-Specific Budgets have steadily increased at Cal Water over the last 15 years. While Cal Water continues to develop new controls and management strategies to limit and reduce future non-specific spending (discussed further in Section A) many of these costs increases are not easily avoided or controllable by Cal Water. Municipalities and agencies continue to create increasingly stringent permitting requirements and cost of material and labor in California (especially in the Bay Area) continues to escalate. Other key reasons for the increase in non-specific spending over the last several years include the following:

- Increased replacement needs due to aging infrastructure throughout Cal Water districts.
- Impact of catching up on deferred maintenance in the districts, including valve replacement and service line replacement (deferment generally due to other higher priority projects).
- Impact of shifting in the company policy to replace services on first reported leaks as opposed to repairing them. This change occurred to help prevent water loss and future maintenance costs as subsequent leaks frequently occur shortly after the initial repair.
- Immediate need to replace failed pumping equipment that was requested in past GRCs but not approved.

- Increasing agency requirements for paving restoration associated with trenching and pipeline replacement.
- Cal Water's policy is now replacing an entire customer service line instead of replacing only a portion when working on a damaged service lines because experience has shown that repaired lines tend to require future repairs and increases in paving requirements makes rework cost inefficient.
- Recent and emerging issues, such as needing to lower pump bowls due to drought conditions or increased need for GAC changeouts due to new water quality regulations.

While there is a general increasing trend companywide in non-specifics, an analysis of 10 years of companywide non-specific budgets indicated that there are some key project categories that accounted for a significant portion of the Non-Specific budget overall (see Figure 1, where the "Total Expended" line should be viewed in light of the y-axis to the left, and the stacked bar charts to the y-axis on the right). The key project categories included: Mains (including valves and casings), Hydrants, Services, and Meters.

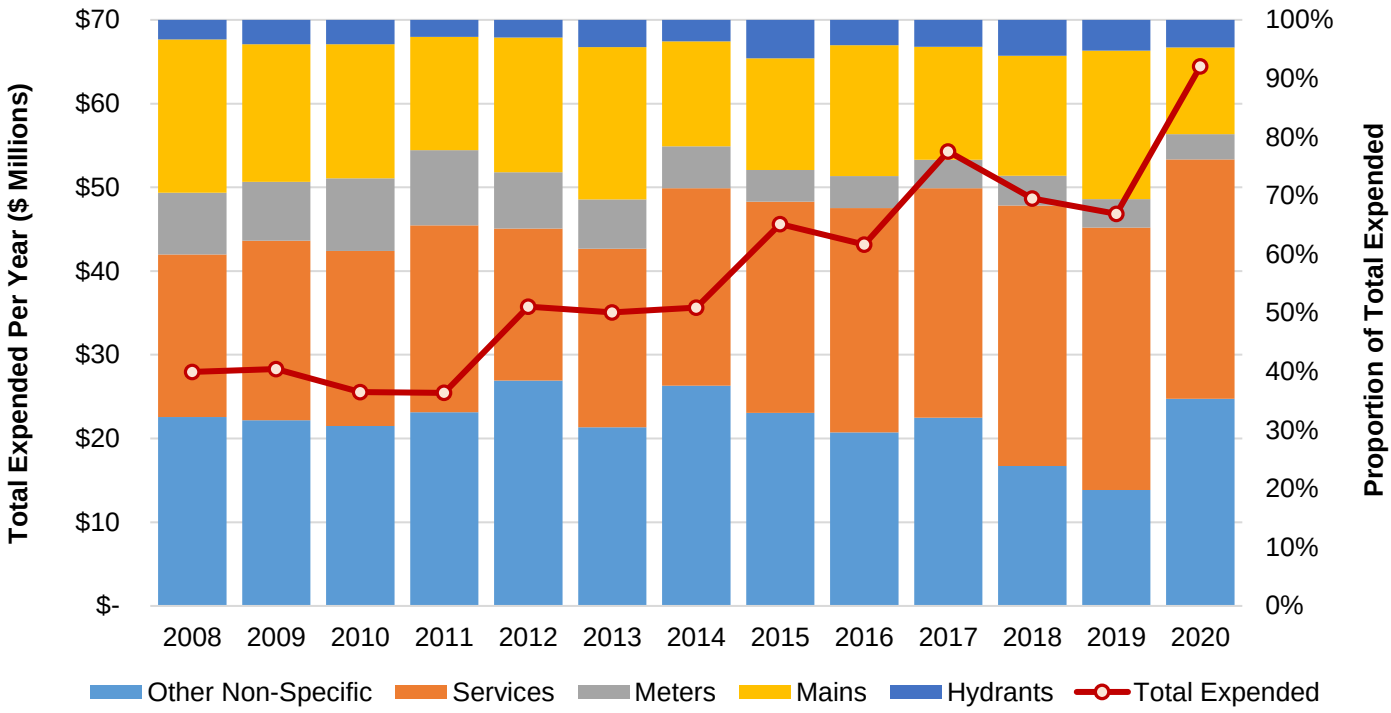


Figure 1. Companywide Non-Specific Budgets between 2008 and 2017
(Total costs in 2020 dollars)

Approach to Non-Specifics for 2021 GRC

In order to provide greater transparency in Cal Water's reporting and usage of non-specific budgets, Cal Water is proposing in the 2021 GRC to separate out the four major and/or reoccurring drivers of non-specifics costs into a new category of projects referred to as Unscheduled (UNSCH) projects. Cal Water will still continue to use non-specific budgets in the 2021 GRC but this will be significantly reduced

compare to prior GRCs and will focus only on unexpected or unplanned projects beyond the reoccurring unscheduled projects.

Non-Specific Budgets

The *Non-Specific Budgets* for the 2021 GRC will continue to be budgeted based on a five year historical average to develop a base year estimate for the filing year and forecasting that cost into the three rate case years assuming a 2.5% escalation rate, similar to Cal Water's past GRC filings. However, this budget will exclude all *Unscheduled Budgets* as discussed in the following section. For the 2021 GRC, the five year average period was 2015-2019 and an annual breakout of the requested budgets are shown in Table 1.

Table 1. Non-Specific Budget Forecast

District	Direct Cost			District Direct Cost 2022-2024
	2022	2023	2024	
Antelope Valley	$35,290	$36,105	$37,083	$108,477
Bakersfield	$2,040,108	$2,091,127	$2,143,450	$6,274,685
Bayshore	$30,318	$31,052	$31,948	$93,318
Bear Gulch	$845,400	$866,508	$888,269	$2,600,176
Chico-Hamilton	$695,929	$713,207	$731,137	$2,140,272
CSS	$1,822,748	$1,868,306	$1,915,087	$5,606,141
Dixon	$153,057	$156,969	$160,881	$470,907
Dominguez	$678,406	$695,195	$712,799	$2,086,400
East Los Angeles	$799,026	$819,075	$839,532	$2,457,633
Hawthorne	$378,242	$387,777	$397,394	$1,163,413
Hermosa-Redondo	$572,864	$587,208	$601,796	$1,761,867
Kern River Valley	$205,136	$210,107	$215,568	$630,810
King City	$46,700	$47,841	$49,226	$143,766
Livermore	$283,457	$290,548	$297,801	$871,806
Los Altos - Suburban	$1,339,779	$1,373,275	$1,407,750	$4,120,803
Marysville	$76,284	$78,485	$80,441	$235,209
Mid-Peninsula	$942,548	$966,101	$990,225	$2,898,874
Oroville	$112,959	$115,812	$118,746	$347,516
Palos Verdes	$394,216	$404,077	$414,102	$1,212,394
Rancho Dominguez	$130,319	$133,497	$136,839	$400,654
Redwood Valley	$176,203	$180,523	$185,005	$541,731
Salinas	$1,016,468	$1,041,978	$1,068,139	$3,126,585
Selma	$145,559	$149,145	$152,813	$447,517
South San Francisco	$127,874	$131,052	$134,312	$393,238
Stockton	$776,695	$776,206	$797,722	$2,350,623
Travis	$303,506	$311,086	$318,828	$933,420
Visalia	$558,601	$572,375	$586,800	$1,717,776
Westlake	$149,797	$153,628	$157,377	$460,801
Willows	$84,923	$87,287	$89,324	$261,534
Total	**$14,922,406**	**$15,275,545**	**$15,660,388**	**$45,858,339**

Unscheduled Budgets

As part of the 2021 GRC filing, each District is presenting an *Unscheduled Budget*, which is an aggregate of the largest portions of past non-specific budgets and which are the expected to be reoccurring annual cost. These categories are:

- Mains (include valve casings)
- Meters
- Services
- Hydrants

Similar to the non-specific budgets, costs for each of these project categories were developed based on a five year historical average to forecast a budget estimate for each of the three rate case years. These projects also assumes a 2.5% escalation rate for the 2021 GRC based on the five year average period between 2015 and 2019. These costs were then combined in to a single *Unscheduled Budget* and are included in each of the District overall budgets for the 2021 GRC. Additional details on the specific project categories and their estimated budgets as part of the *Unscheduled Budget* for each District are presented in the following subsections.

Mains

Mains generally fall into two categories: transmission and distribution mains. Transmission mains have the primary purpose of conveying water from one unit to another in the source of supply, water treatments, or pumping plant, and generally provide no service connections with customers. Distribution mains have the primary purpose of conveying water requiring no further processing, except incidental chlorination or pressure boosting, from a unit in the source of supply water treatment or pumping plant to the customer for distribution. Cal Water's piping infrastructure includes both types of mains and is very diverse being composed of AC, cast iron, steel, ductile iron and plastic pipes that vary from new to almost a century old. Not all of these materials stand up to the heterogeneous soil conditions equally, and on occasion, can fail unexpectedly causing significant damage and supply issues that require rapid correction.

The Mains portion of the *Unscheduled Budget* is for unplanned replacements of distribution mains between 1 and 100 feet long, distribution system valves, and main casings. These projects differ from, and cannot be included in, the planned MRP program because they arise as emergency failures that cannot be predicted in advance and must be addressed immediately. In contrast, mainline replacement projects are identified and planned based on established asset management performance indicators that signal and approach towards the end of the main's useful life. A summary of the companywide Mains portion of the *Unscheduled Budget* is presented in Table 2 by District and year.

Table 2. Companywide Unscheduled Mains Subcategory Budgets

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$1,130,141	$1,158,394	$1,187,354	**$3,475,889**
Bear Gulch	$744,237	$762,843	$781,914	**$2,288,994**
Bakersfield	$1,123,876	$1,151,973	$1,180,772	**$3,456,621**
Chico	$182,181	$186,736	$191,404	**$560,321**
Dixon	$44,217	$45,322	$46,456	**$135,995**
Dominguez	$324,914	$333,037	$341,363	**$999,313**
East Los Angeles	$592,645	$607,462	$622,648	**$1,822,755**
Hermosa-Redondo	$150,820	$154,591	$158,456	**$463,866**
King City	$107,847	$110,544	$113,308	**$331,699**
Kern River Valley	$35,097	$35,974	$36,874	**$107,945**
Livermore	$302,957	$310,530	$318,293	**$931,781**
Los Altos	$233,062	$238,889	$244,861	**$716,812**
Marysville	$74,566	$76,430	$78,340	**$229,336**
Oroville	$116,175	$119,079	$122,056	**$357,310**
Palos Verdes	$412,970	$423,295	$433,877	**$1,270,142**
Redwood Valley	$86,071	$88,223	$90,429	**$264,723**
Selma	$106,345	$109,004	$111,729	**$327,078**
Salinas	$449,459	$460,695	$472,212	**$1,382,366**
Travis	$15,296	$15,678	$16,070	**$47,044**
Visalia	$318,256	$326,212	$334,368	**$978,835**
Westlake	$521,342	$534,375	$547,735	**$1,603,451**
Willows	$46,165	$47,319	$48,502	**$141,986**
Total	**$7,118,639**	**$7,296,605**	**$7,479,020**	**$21,894,264**

Hydrants

Hydrants are critical water distribution system assets primarily used for fire suppression, water main flushing activities, construction activities, and for filling water-hauling trucks. According to the American Water Works Association, hydrant owners are morally obliged to make sure that adequate fire flow can be delivered from a hydrant and if adequate fire flow is not possible, the hydrant is not achieving its primary purpose.[15] The Unscheduled hydrant replacement category is a reactionary budget item intended to address replacement of hydrants hit by vehicles, failed components, or other unexpected emergencies to ensure that Cal Water Districts continue to provide the necessary fire protection to customers as required by local fire protection agency in accordance with CPUC GO 103-A § VI.1.A. A summary of the companywide Hydrants portion of the *Unscheduled Budget* is presented in Table 3 by District and year.

[15] AWWA, *M17 Installation, Field Testing, and Maintenance of Fire Hydrants*. Fourth Edition. 2006. pp. 29.

Table 3. Companywide Unscheduled Hydrants Subcategory Budgets

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$527,378	$540,563	$554,077	**$1,622,018**
Bear Gulch	$202,689	$207,757	$212,951	**$623,396**
Bakersfield	$153,884	$157,731	$161,674	**$473,289**
Chico[(a)]	$22,236	$22,791	$23,361	**$68,388**
Dixon	$44,217	$45,322	$46,456	**$135,995**
Dominguez	$137,266	$140,698	$144,215	**$422,178**
East Los Angeles	$119,518	$122,507	$125,569	**$367,594**
Hermosa-Redondo	$88,250	$90,456	$92,717	**$271,423**
King City[(a)]	$50,537	$51,800	$53,095	**$155,431**
Kern River Valley	$3,259	$3,341	$3,425	**$10,025**
Livermore	$34,405	$35,265	$36,147	**$105,817**
Los Altos	$91,838	$94,134	$96,487	**$282,459**
Marysville	$19,664	$20,156	$20,659	**$60,480**
Oroville	$51,202	$52,482	$53,793	**$157,477**
Palos Verdes	$143,377	$146,962	$150,636	**$440,974**
Redwood Valley	$7,491	$7,678	$7,870	**$23,038**
Selma	$33,503	$34,340	$35,199	**$103,042**
Salinas[(a)]	$197,496	$202,433	$207,493	**$607,422**
Travis	$15,296	$15,678	$16,070	**$47,044**
Visalia	$129,894	$133,142	$136,470	**$399,506**
Westlake	$27,875	$28,573	$29,287	**$85,736**
Willows	$15,273	$15,655	$16,047	**$46,975**
Total	**$2,116,548**	**$2,169,462**	**$2,223,697**	**$6,509,707**

Note:

(a) Chico, King City, and Salinas have proactive hydrant replacement programs in additional to these reactive responses to hydrant failures. See district specific PJ books for additional details.

Services

Service lines serve a critical function in any water distribution system bring finished water from the distribution main to the customer's point of use. However, a recent study published in the American Water Works Association Journal based on 10 years of nationwide service line failure data found that service lines are the weakest points in any water distribution system, with large amounts of real water loss occurring in service lines, fittings, and connections between the curb stop and meter.[16]

As result, Cal Water is including a service line category to its *Unscheduled Budgets,* which includes the cost installed, including pavement, of defective or failed service pipes and accessories leading to the customer's premises. A complete service begins with the connection on the main, and extends to

[16] Lee, J. and Meehan, M. *Survival Analysis of US Water Service Lines Utilizing a Nationwide Failure Data Set*. Journal – American Water Works Association, Volume 109, Issue 9, Pages 13-21. Published September 1, 2017.

the meter connection. Services are to be classified according to size and type. These projects differ from, and cannot be included in, the planned MRP program because they arise as emergency failures or customer complaints that cannot be predicted in advance. A summary of the companywide services portion of the *Unscheduled Budget* is presented in Table 4 by District and year.

Table 4. Companywide Unscheduled Services Subcategory Budgets

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Bayshore	$1,025,929	$1,051,578	$1,077,868	**$3,155,375**
Bear Gulch	$1,436,930	$1,472,853	$1,509,674	**$ 4,419,457**
Bakersfield	$3,779,385	$3,873,869	$3,970,716	**$11,623,970**
Chico	$1,188,440	$1,218,15	$1,248,605	**$3,655,197**
Dixon	$107,102	$109,781	$112,525	**$329,408**
Dominguez	$481,291	$493,323	$505,656	**$1,480,270**
East Los Angeles	$546,610	$560,275	$574,282	**$1,681,167**
Hermosa-Redondo	$1,031,894	$1,057,691	$1,084,133	**$3,173,718**
King City	$129,614	$132,855	$136,176	**$398,645**
Kern River Valley	$10,519	$10,782	$11,051	**$32,352**
Livermore	$562,443	$576,504	$590,917	**$1,729,864**
Los Altos	$1,167,215	$1,196,396	$1,226,305	**$3,589,916**
Marysville	$106,335	$108,992	$111,718	**$327,045**
Oroville	$288,310	$295,517	$302,905	**$886,731**
Palos Verdes	$513,924	$526,772	$539,941	**$1,580,636**
Redwood Valley	$64,809	$66,429	$68,089	**$199,327**
Selma	$369,069	$378,295	$387,753	**$1,135,117**
Salinas	$1,760,585	$1,804,599	$1,849,714	**$5,414,898**
Stockton	$1,047,665	$1,073,857	$1,100,704	**$3,222,226**
Travis	$15,296	$15,678	$16,070	**$47,044**
Visalia	$1,655,155	$1,696,534	$1,738,948	**$5,090,637**
Westlake	$120,107	$123,110	$126,187	**$369,404**
Willows	$83,684	$85,776	$87,921	**$257,381**
Total	**$17,492,310**	**$17,929,617**	**$18,377,857**	**$53,799,784**

Meters

The allocation for meters in the *Unscheduled Budget* is for replacement of defective or failed customer meters, new meter sets, unanticipated customer requests to change their meter size, installation of meter box & cover (both) including labor and paving (concrete or asphalt), and Traveling Meter Mechanic labor, travel and meter parts expenditures to maintain and repair the 3" and larger meters.

This budget differs from the 0900 project budgets in several key ways. First the 0900 budgets are for the specific, planned replacement of customer meters under the Small and Large Meter Replacement Programs. Primarily, these meters in the Small Meter Replacement Program differ in that they are replaced due to meeting age criteria defined in PUC General Order 103. Meters replaced under the Large Meter Replacement Program are due to obsolescence. A summary of the companywide meter portion of the *Unscheduled Budget* is presented in Table 5 by District and year.

Table 5. Companywide Unscheduled Meter Subcategory Budgets

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$ 1,229	$ 1,260	$ 1,292	**$ 3,782**
Bayshore	$ 263,756	$ 270,350	$ 277,108	**$ 811,215**
Bear Gulch	$ 101,282	$ 103,814	$ 106,410	**$ 311,507**
Bakersfield	$ 241,413	$ 247,449	$ 253,635	**$ 742,498**
Chico	$ 261,952	$ 268,501	$ 275,213	**$ 805,667**
Dixon	$ 6,820	$ 6,991	$ 7,166	**$ 20,978**
Dominguez	$ 106,020	$ 108,670	$ 111,387	**$ 326,078**
East Los Angeles	$ 150,839	$ 154,610	$ 158,476	**$ 463,926**
Hermosa-Redondo	$ 85,820	$ 87,966	$ 90,165	**$ 263,952**
King City	$ 7,493	$ 7,680	$ 7,872	**$ 23,046**
Kern River Valley	$ 2,959	$ 3,033	$ 3,108	**$ 9,100**
Livermore	$ 42,701	$ 43,768	$ 44,862	**$ 131,332**
Los Altos	$ 39,087	$ 40,064	$ 41,066	**$ 120,218**
Marysville	$ 6,757	$ 6,926	$ 7,099	**$ 20,783**
Oroville	$ 17,904	$ 18,352	$ 18,811	**$ 55,068**
Palos Verdes	$ 68,183	$ 69,888	$ 71,635	**$ 209,707**
Redwood Valley	$ 7,558	$ 7,746	$ 7,940	**$ 23,245**
Selma	$ 6,873	$ 7,045	$ 7,221	**$ 21,141**
Salinas	$ 135,371	$ 138,756	$ 142,225	**$ 416,352**
Stockton	$ 190,811	$ 195,581	$ 200,471	**$ 586,865**
Travis	$ 15,295	$ 15,678	$ 16,070	**$ 47,044**
Visalia	$ 270,628	$ 277,394	$ 284,329	**$ 832,352**
Westlake	$ 29,035	$ 29,761	$ 30,505	**$ 89,302**
Willows	$ 6,760	$ 6,929	$ 7,103	**$ 20,793**
Total	**$2,066,560**	**$2,118,224**	**$2,171,179**	**$6,355,963**

Summary of Unscheduled Budgets

A summary of the combined *Unscheduled Budgets*, inclusive of mains, services, hydrants, and meters is presented in Table 6 below. These costs are also presented in each of the District Project Justification books budget summaries.

Table 6. Summary of Complete Unscheduled Budgets by District for the 2021 GRC

District	Direct Cost			District Direct Cost
	2022	2023	2024	2022-2024
Antelope Valley	$1,230	$1,261	$1,292	**$3,783**
Bayshore	$2,947,205	$3,020,885	$3,096,407	**$9,064,498**
Bear Gulch	$2,485,139	$2,547,267	$2,610,949	**$7,643,355**
Bakersfield	$5,298,558	$5,431,022	$5,566,798	**$16,296,378**
Chico	$1,654,810	$1,696,180	$1,738,584	**$5,089,574**
CSS	$876,765	$898,684	$921,152	**$2,696,601**
Dixon	$174,052	$178,403	$182,863	**$535,317**
Dominguez	$1,049,490	$1,075,728	$1,102,621	**$3,227,839**
East Los Angeles	$1,409,614	$1,444,854	$1,480,975	**$4,335,443**
Hermosa-Redondo	$1,356,784	$1,390,704	$1,425,471	**$4,172,959**
King City	$295,492	$302,879	$310,451	**$908,821**
Kern River Valley	$51,834	$53,130	$54,458	**$159,423**
Livermore	$942,506	$966,068	$990,220	**$2,898,794**
Los Altos	$1,531,203	$1,569,483	$1,608,720	**$4,709,405**
Marysville	$207,322	$212,505	$217,818	**$637,645**
Oroville	$473,590	$485,430	$497,566	**$1,456,586**
Palos Verdes	$1,138,455	$1,166,916	$1,196,089	**$3,501,461**
Redwood Valley	$165,929	$170,077	$174,329	**$510,334**
Selma	$515,791	$528,685	$541,903	**$1,586,379**
Salinas	$2,542,910	$2,606,483	$2,671,645	**$7,821,038**
Stockton	$2,067,654	$2,119,345	$2,172,329	**$6,359,328**
Travis	$61,183	$62,713	$64,281	**$188,177**
Visalia	$2,373,934	$2,433,282	$2,494,114	**$7,301,329**
Westlake	$698,360	$715,819	$733,715	**$2,147,894**
Willows	$151,883	$155,680	$159,572	**$467,136**
Total	**$30,471,692**	**$31,233,484**	**$32,014,321**	**$93,719,497**

r. Cost Catalog Report

Background

The primary function of the Cal Water Cost Catalog is to standardize unit prices for commonly estimated items and to provide an efficient method of preparing cost estimates for rate case projects. It was first developed in 2013 using historical Cal Water project cost information from the previous four years. To obtain this information, the company's enterprise asset accounting software, PowerPlan, was queried for capital projects completed between 2008 and 2012 to identify actual costs during that period of time. Successful quotes, proposals, and purchase orders from these projects were then compiled from the project folders and PeopleSoft records referenced in PowerPlan. Cost information was grouped according to work and equipment type, and organized in spreadsheets. Unit costs were calculated and normalized by escalating to the base year of 2014, and items with multiple unit costs were averaged. Outliers were excluded from the cost analysis.

The catalog was updated again in 2017 for the 2018 GRC. An outside consultant, Blair, Church & Flynn (BCF), was contracted to assess which costs were no longer accurate, and to organize and evaluate cost data acquired since the initial cost catalog development. This data was incorporated into the 2018 GRC Cost Catalog in the manner described above. Any cost estimates in the original Cost Catalog that were deemed inappropriate were removed and replaced with more accurate estimates. Additionally, BCF added project cost data obtained from projects completed between 2013 and 2016.

The Cost Catalog was updated most recently in 2020 for the 2021 GRC, this time in house. As with the last several updates, old and inaccurate data was discarded as newer data points were added to the dataset. These newly calculated costs were then normalized to the base year of 2020.

Cal Water also has retained previous improvements made to reduce description transcription errors in estimating proposed project budgets. Averaged 2020 unit costs in the revised Cost Catalog were incorporated in PowerPlan as Stock Keeping Unit (SKU) costs. Project estimators selected SKU costs that applied to their project as they prepared the cost estimate in PowerPlan, ensuring the correct estimates were used universally across all proposed projects whenever available. Cost estimate items with SKU costs referenced the Cost Catalog as their Cost Basis. Items without SKU costs were added manually in the cost estimate and their Cost Basis were attached directly to the justification.

Approach

The Cost Catalog contains three major parts (1) Cost Summary Table, (2) Sections A to G, and (3) Reference Materials.

(1) Cost Summary Table:

The Cost Summary Table summarizes information from the Project List Tables, including Cost Catalog number, item description, unit, SKU cost, cost range, number of projects used in the analysis, and cost average. Items with only one unit cost contains symbol "–" under the "Cost Range" and "Cost Average" columns. See example Figure 1 below.

Section D - Electrical Equipment Cost							
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Cost Range, $	Number of Projects	Cost Average, $
D.1-1	Gen Set w/ ATS	350-400 KW [EA]	EA	99,241			
D.1-2	Gen Set w/ ATS	300 KW [EA]	EA	106,300			
D.1-3	Gen Set w/ ATS	250 KW [EA]	EA	88,065			
D.1-4	Gen Set w/ ATS	200 KW [EA]	EA	65,018			
D.1-5	Gen Set w/ ATS	125-150 KW [EA]	EA	58,205			
D.1-6	Gen Set w/ ATS	100 KW [EA]	EA	53,851			
D.1-7	Gen Set w/ ATS	50-80 KW [EA]	EA	46,245			
D.1-8	Gen Set w/ ATS	450 KW [EA]	EA	127,794			
D.1-9	Gen Set w/ ATS	>50 KW [EA]	EA	31,991			
D.2-1	Air Compressor	Air Compressor [EA]	EA	1,724			
D.3-1	Elec Panelboard	200 Amp [EA]	EA	41,931			
D.3-2	Elec Panelboard	400 Amp[EA]	EA	59,146			
D.3-3	Elec Panelboard	600 Amp [EA]	EA	68,506			
D.3-4	Elec Panelboard	800 Amp [EA]	EA	84,477			
D.3-5	Elec Panelboard	1200 Amp [EA]	EA	326,563			
D.3-6	Elec Panelboard	Panelboard Sunshade [EA]	EA	2,783			
D.4-1	Metering Panel	Meter Panel, 100 - 200A [EA]	EA	13,131			
D.4-2	Metering Panel	Meter Panel 400 - 600A [EA]	EA	17,347			
D.4-4	Metering Panel	Meter Panel, 800A with ATS [EA]	EA	38,384			
D.5-1	SCADA	RTU Panel/Radio Panel [EA]	EA	6,766			
D.6-1	SCADA	SCADA Pack [EA]	EA	2,765			
D.6-2	SCADA	Orbit LN Radio [EA]	EA	947.84			
D.6-3	SCADA	SCADA Antenna [EA]	EA	392.35			
D.6-4	SCADA	SCADA Tower for Antenna [EA]	EA	6,717			
D.6-5	SCADA	SCADA RTU UPS [EA]	EA	2,314			
D.7-1	Hydraulic Enclosure	Hydraulic Enclosure [EA]	EA	7,435			
D.8-1	Transducer	Pressure Transducer [EA]	EA	790.6286122			
D.8-2	Transducer	Tank Level Transducer [EA]	EA	2671.637502			
D.8-3	Transducer	Well Level Transducer [EA]	EA	1,226			
D.9-1	VFD	VFD, 75 HP [EA]	EA	7,683			
D.9-2	VFD	VFD, 100 HP [EA]	EA	10,987			

Figure 1. Example Cost Summary Table

The Cost Catalog Number shown in Figure has the designation of “letter.number-number”. The “letter” designation represents general categories as follows: (A) contractor work, (B) electrical contractor work, (C) equipment cost, (D) electrical equipment cost, (E) consultant work, (F) other costs, and (G) vehicle and meter replacement cost. The “letter.number” designation represents type of work or equipment that is in the “letter” category and is described under the “Item” column in the Cost Summary Table. For example in Figure, “D.1” corresponds to “Gen Set w/ ATS”, “D.2” corresponds to “Air Compressor” and “D-3” corresponds to “Electrical Panelboard”. All three items are under the category “D - Electrical Equipment Cost”.

The number after the dash breaks down the work or equipment types to more detailed work scopes or specific equipment sizes. For example “D.1-1” to “D.1-7” corresponds to different generator sizes (KW) and “D.3-1” to “D.3 -4” corresponds to different electrical panelboard sizes (Amp).

(2) Sections A to G:

Project List Tables (Table A), Escalation Tables (Table B), and Average Unit Graphs are located in Sections A to G.

Project List Tables (Table A) typically include project unit costs, 2020 unit costs, 2020 unit cost averages, cost catalog numbers, and references to purchase order, successful bid or quote and other cost basis. See typical example in Figure 2. Additional information such as district, station or project numbers are also included in the table if information are available.

C.3 Control Valves

Table A. Project List

Reference No.	District	Station	Project	PO	Date	Year	Description	Diameter, IN	Amount	Qty	Unit	Unit Cost	2020 Unit Cost *	Location Factor Adjustment	2020 Unit Cost (Avg)	Description	Cost Catalog
52907	Salinas	67-01		52907	1-Dec-09	2009	3" Well Service Air Relief	3	$ 743	1	EA	$ 743	$ 916				
64495	Willows			83557	14-Nov-14	2014	4" Well Service Air Relief	4	$ 2,195	1	EA	$ 2,195	$ 2,409	$ 2,408.65	$ 2,990	3" Well Service Air Relief [EA]	C.3-1
98603	Salinas		98603		########	2018	3" pressure reducing	3	$ 3,475	1	EA	$ 3,475	$ 3,572	$ 3,572.26			
54165	Salinas			54165	1-Feb-10	2010	3" Well Service Air Relief	3	$ 743	1	EA	$ 743	$ 884				
63274	Antelope Valley			63274	20-Jun-11	2011	6" Solenoid Controlled Altitude Valve	6	$ 7,548	1	EA	$ 7,548	$ 8,613				
15999	Mid-Peninsula			100481	31-Jul-17	2017	Controlled Altitude Valve	6	$ 7,288	1	EA	$ 7,288	$ 7,770	$ 7,381			
49417	Salinas	108		49417	20-Apr-09	2009	6"PSV	6	$ 2,693	1	EA	$ 2,693	$ 3,318				
61125	Mid-Peninsula			61125	1-Mar-11	2011	6" PRV	6	$ 3,555	1	EA	$ 3,555	$ 4,056				
20466	East Los Angeles	40		80131	18-Apr-16	2016	6" PRV	6	$ 6,377	1	EA	$ 6,377	$ 7,044	$ 7,396			
97775	Bear Gulch	37	97775		19-Apr-18	2018	6" altitude valve	6	$ 6,448	1	EA	$ 6,448	$ 6,628	$ 6,297			
97838	Bear Gulch	36	97838		19-Apr-18	2018	6" on/off solenoid valve	6	$ 5,753	1	EA	$ 5,753	$ 5,914	$ 5,618	$ 6,017	6" Control Valve [EA]	C.3-2
97617	Bear Gulch	38	97617		29-Mar-17	2017	6" Altitude Valve, 6" Pressure Reducing	6	$ 10,872	2	EA	$ 5,436	$ 5,795	$ 5,505			
15999	Mid-Peninsula	122	15999		3-Feb-17	2017	6" Altitude Valve	6	$ 6,687	1	EA	$ 6,687	$ 7,128	$ 6,772			
97580	Bear Gulch	11	97580		9-Aug-17	2017	6" PRV	6	$ 5,536	1	EA	$ 5,536	$ 5,902	$ 5,607			
76316	Dominguez	232	76316		14-Mar-18	2018	6" Pressure Relief	6	$ 4,300	1	EA	$ 4,300	$ 4,420	$ 4,641			
97852	Bear Gulch	93	97852		5-Apr-18	2018	6" pressure reducing & solenoid shutoff	6	$ 6,209	1	EA	$ 6,209	$ 6,382	$ 6,063			
98524	Bear Gulch		98524		26-Oct-18	2018	6" pressure reducing	6	$ 17,334	3	EA	$ 5,778	$ 5,940	$ 5,643			
98522	Bear Gulch		98522		26-Oct-18	2018	6" pressure reducing	6	$ 5,778	1	EA	$ 5,778	$ 5,940	$ 5,643			
98522	Bear Gulch		98522		21-Sep-18	2018	6" pressure reducing	6	$ 5,778	1	EA	$ 5,778	$ 5,940	$ 5,643			
57362	Mid-Peninsula	118		57362	20-Jul-10	2010	6" PRV/PSV	6	$ 3,633	1	EA	$ 3,633	$ 4,319				

Figure 2. Example Project List Table

Unit costs are calculated based on the total amount shown on the purchase order or successful bid or quote and the quantity of the item. Construction overhead costs are not included in the unit cost calculations. Due to limited data, differences in cost based on location or standard of living factors are not evident, so overall averages are calculated.

Project unit costs are imported to Escalation Tables (Table B) where they are normalized and inflated to the base year of 2020. The yearly inflation rates used in the calculation are based on Cal Advocates Inflation Memorandums. See example in Figure 3. Escalated 2020 unit costs amounts are then returned to Table A where they are averaged.

C.3 Control Valves

Table B. Cost Escalation to Base Year (2020)

			Cost Escalation *													
			2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Reference No.	Year	Unit Cost	4.82%	3.40%	4.84%	-1.76%	3.64%	4.18%	1.46%	0.82%	1.66%	-0.44%	-0.22%	3.62%	3.70%	1.58%	1.20%
52907	2009	743	-	-	-	743	770	803	814	821	835	831	829	859	891	905	916
64495	2014	2,195	-	-	-	-	-	-	-	-	2,195	2,185	2,181	2,259	2,343	2,380	2,409
98603	2018	3,475	-	-	-	-	-	-	-	-	-	-	-	-	3,475	3,530	3,572
54165	2010	743	-	-	-	-	743	774	786	792	805	802	800	829	860	873	884
63274	2011	7,548	-	-	-	-	-	7,548	7,658	7,721	7,849	7,815	7,797	8,080	8,379	8,511	8,613
15999	2017	7,288	-	-	-	-	-	-	-	-	-	-	-	7,288	7,558	7,678	7,770
49417	2009	2,693	-	-	-	2,693	2,791	2,908	2,950	2,974	3,024	3,011	3,004	3,113	3,228	3,279	3,318
61125	2011	3,555	-	-	-	-	-	3,555	3,607	3,636	3,696	3,680	3,672	3,805	3,946	4,008	4,056
20466	2016	6,377	-	-	-	-	-	-	-	-	-	-	6,377	6,607	6,852	6,960	7,044
97775	2018	6,448	-	-	-	-	-	-	-	-	-	-	-	-	6,448	6,550	6,628
97838	2018	5,753	-	-	-	-	-	-	-	-	-	-	-	-	5,753	5,844	5,914
97617	2017	5,436	-	-	-	-	-	-	-	-	-	-	-	5,436	5,637	5,726	5,795
15999	2017	6,687	-	-	-	-	-	-	-	-	-	-	-	6,687	6,934	7,044	7,128
97580	2017	5,536	-	-	-	-	-	-	-	-	-	-	-	5,536	5,741	5,832	5,902
76316	2018	4,300	-	-	-	-	-	-	-	-	-	-	-	-	4,300	4,368	4,420
97852	2018	6,209	-	-	-	-	-	-	-	-	-	-	-	-	6,209	6,307	6,382
98524	2018	5,778	-	-	-	-	-	-	-	-	-	-	-	-	5,778	5,869	5,940
98522	2018	5,778	-	-	-	-	-	-	-	-	-	-	-	-	5,778	5,869	5,940
98522	2018	5,778	-	-	-	-	-	-	-	-	-	-	-	-	5,778	5,869	5,940
57362	2010	3,633	-	-	-	-	3,633	3,785	3,840	3,872	3,936	3,919	3,910	4,052	4,202	4,268	4,319
57000	2010	7,015	-	-	-	-	7,015	7,308	7,414	7,475	7,599	7,566	7,549	7,823	8,112	8,240	8,339
57424	2010	8,266	-	-	-	-	8,266	8,612	8,738	8,809	8,955	8,916	8,896	9,218	9,560	9,711	9,827
61731	2011	6,906	-	-	-	-	-	6,906	7,007	7,065	7,182	7,150	7,135	7,393	7,666	7,788	7,881
54811	2010	7,250	-	-	-	-	7,250	7,553	7,663	7,726	7,854	7,819	7,802	8,085	8,384	8,516	8,618
56105	2010	7,318	-	-	-	-	7,318	7,624	7,735	7,799	7,928	7,893	7,876	8,161	8,463	8,597	8,700
49097	2009	6,932	-	-	-	6,932	7,184	7,484	7,594	7,656	7,783	7,749	7,732	8,012	8,308	8,439	8,541
98048	2016	2,341	-	-	-	-	-	-	-	-	-	-	2,341	2,426	2,515	2,555	2,586
98048	2016	2,336	-	-	-	-	-	-	-	-	-	-	2,336	2,420	2,510	2,549	2,580
98048	2016	3,914	-	-	-	-	-	-	-	-	-	-	3,914	4,056	4,206	4,272	4,324

Figure 3. Example Escalation Table

The 2020 unit costs and averaged 2020 unit cost are plotted on an Average Cost Graph shown in Figure 4. The y-axis represents 2020 unit cost and has unit amount of $/unit. Depending on the type of equipment or work, unit could be each [EA], feet [FT], gallon [GAL], square-foot [SF], or lump sum [LS]. Related equipment or work types are plotted together in the same graph to show price relationships and trends. Averaged unit costs are shown as red lines or red text on the graph.

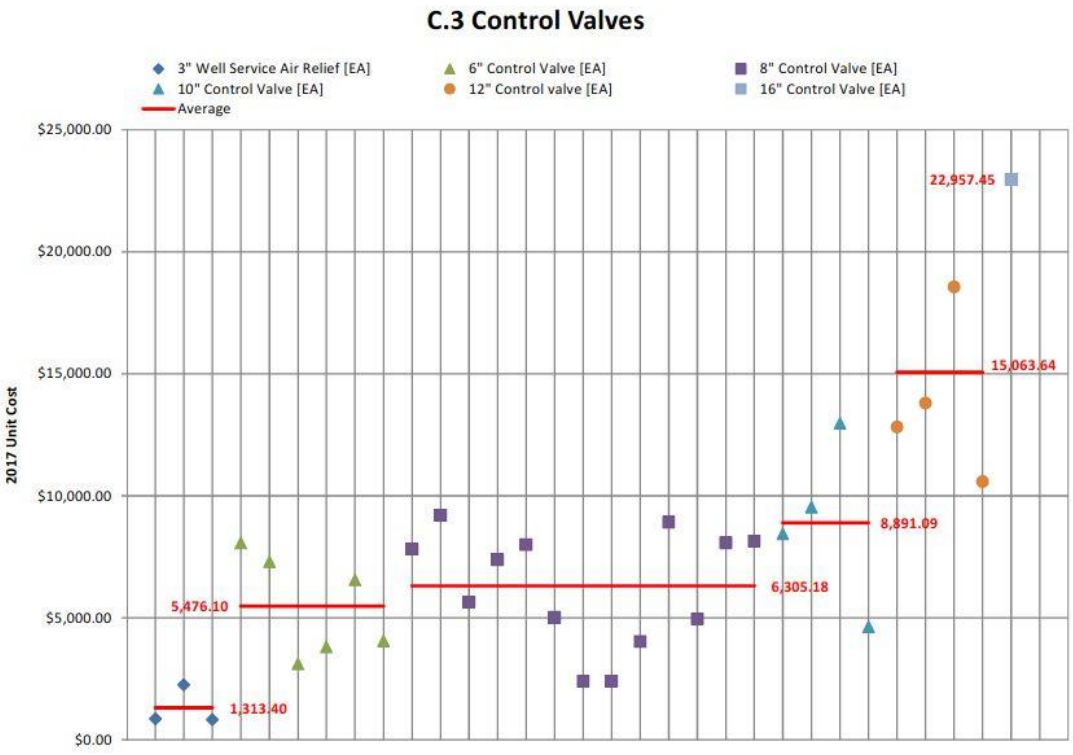


Figure 4. Average Cost Graph

(3) Reference Materials:

The Reference Material section contains copies of purchase orders, quotes, invoices and other cost basis that are referenced in Table A. Reference Materials are grouped according to the same "letter.number" designation as Table A and are organized numerically.

Cost Catalog Use

To look-up cost basis for particular line item on the Capital Project Cost Estimate, go to the column on the right titled "Cost Basis". See Figure 5.

Capital Project Cost Estimate

Project No. :	123884
Description	SLN Wildfire Oak Hills Grid Imprv
District / Department:	Salinas
Project Start Date:	01/01/2023
Project Completion Date:	12/31/2024
Prepared By:	jagraham
Date Initiated:	08/28/2020
Base Year:	2020
Sub-Total:	$2,971,742
Direct Cost:	$3,240,244

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
8" DI MAIN - 5,800 LF	[EA]	5800	$346.62	$2,010,416.00	Engineer's Estimate
CM/SI 10%	[EA]	1	$204,477.68	$204,477.68	Engineer's Estimate
EASMENT	[EA]	1	$33,800.00	$33,800.00	Engineer's Estimate
ENG TECH	CW-Eng Tech LABOR [HR]	367	$89.85	$32,974.95	Labor SKU
FIELD LBR	CW-LABOR-FIELD LABOR [HR]	100	$75.29	$7,529.00	Labor SKU
FIELD MGR	CW-LABOR-FIELD MGR/SUPV [HR]	100	$107.03	$10,703.00	Labor SKU
LABOR	CW-Civil Eng LABOR [HR]	687	$121.41	$83,408.67	Labor SKU
OPER ENG	CW-Oper Eng LABOR [HR]	8	$121.41	$971.28	Labor SKU
PERMITTING	[EA]	1	$91,200.00	$91,200.00	Engineer's Estimate
WQ PROJ MGR	CW-WQ Proj MGR LABOR [HR]	8	$121.41	$971.28	Labor SKU
CONTINGENCY 20%	[EA]	1	$495,290.37	$495,290.37	Engineer's Estimate

Sub-total = $2,971,742.23
Direct Cost = $3,240,244.26

Notes:

1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalate Sub-Total from the base year of 2020 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

Figure 5. Cost Basis

If a Stock Keeping Unit is used, a Cost Catalog number will be shown if the SKU represents a Cost Catalog item, or "Labor SKU" will be shown if the line item represents a labor cost. If a Stock Keeping Unit cost is not used then the "Cost Basis" column will reference "Engineer's Estimate," or an attachment containing cost basis will be referenced. "Engineer's Estimate" designation refers to a cost that was determined by the engineer's prior experience working on similar projects; outside costs will be attached to the project justification as an attachment. In addition "Engineers Estimate" is used for Construction Management/Special Inspection (CM/SI), Contingency, or location factors which are further described in "Additional Cost Factors" section.

Cost Basis

To use the Cost Summary Table, locate the corresponding Cost Catalog Number on the left side of the table. Go across the row to find the item, specific description, unit, SKU unit cost, cost range, number of projects and cost average. See example in Figure 6.

Section D - Electrical Equipment Cost							
Cost Catalog No.	Item	Description [Unit]	Unit	SKU Unit Cost, $	Cost Range, $	Number of Projects	Cost Average, $
D.1-1	Gen Set w/ ATS	400 KW [EA]	EA	95,423	-	1	-
D.1-2	Gen Set w/ ATS	300 KW [EA]	EA	98,807	94,022 - 103,591	2	98,807
D.1-3	Gen Set w/ ATS	250 KW [EA]	EA	91,027	-	1	-
D.1-4	Gen Set w/ ATS	200 KW [EA]	EA	59,674	53,755 - 68,505	4	59,674
D.1-5	Gen Set w/ ATS	125-150 KW [EA]	EA	57,144	49,470 - 62,048	5	57,144
D.1-6	Gen Set w/ ATS	100 KW [EA]	EA	54,183	49,108 - 59,257	2	54,183
D.1-7	Gen Set w/ ATS	50-80 KW [EA]	EA	45,116	41,864 - 49,839	3	45,116
D.2-1	Air Compressor	Air Compressor [EA]	EA	1,479	884 - 2240	4	1,479
D.3-1	Elec Panelboard	200 Amp [EA]	EA	31,230	20,921 - 49,951	3	31,230
D.3-2	Elec Panelboard	400 Amp[EA]	EA	55,232	34,705 - 69,182	5	55,232
D.3-3	Elec Panelboard	600 Amp [EA]	EA	55,015	46,676 - 63,870	4	55,015
D.3-4	Elec Panelboard	800 Amp [EA]	EA	61,425	64,755 - 58,095	2	61,425
D.4-1	Metering Panel	Meter Panel, 100A [EA]	EA	1,898	-	1	-
D.4-2	Metering Panel	Meter Panel 300 - 600A [EA]	EA	6,407	6,028 - 7,014	5	6,407
D.4-3	Metering Panel	Meter Panel with ATS [EA]	EA	15,389	13,535 - 16,936	4	15,389
D.5-1	RTU Panel	RTU Panel/Radio Panel [EA]	EA	4,570	3,824 - 5,675	11	4,570
D.6-1	SCADA Pack	SCADA Pack [EA]	EA	1,760	1,272 - 2,133	15	1,760
D.7-1	Hydraulic Enclosure	Hydraulic Enclosure [EA]	EA	7,633	6,421 - 8,891	6	7,633
D.8-1	Transducer	Pressure Transducer [EA]	EA	793	640 - 1,105	6	793
D.8-2	Transducer	Tank Level Transducer [EA]	EA	635	621 - 648	2	635
D.8-3	Transducer	Well Level Transducer [EA]	EA	1,545	1,195 - 1,894	2	1,545

Figure 6. Cost Summary Table Use Example

For detailed information, use “letter.number” designation on the Cost Catalog number and locate the corresponding Section and Table A. At the right side of Table A, locate the matching “letter.number-number” designation under the “Cost Catalog” column. Go across the row to the left side of the table to the “Reference No.” column. Each project unit cost will have a Reference number. There will be multiple references for one average unit cost. See Figure 7. To locate the references, go to Reference Materials. References are organized numerically and are grouped according to the “letter.number” designation.

C.3 Control Valves

Table A. Project List

Reference No.	District	Station	Project	PO	Date	Year	Description	Diameter, IN	Amount	Qty	Unit	Unit Cost	2020 Unit Cost *	Location Factor Adjustment	2020 Unit Cost (Avg)	Description	Cost Catalog
52907	Salinas	67-01		52907	1-Dec-09	2009	3" Well Service Air Relief	3	$ 743	1	EA	$ 743	$ 916				
64495	Willows			83557	14-Nov-14	2014	4" Well Service Air Relief	4	$ 2,195	1	EA	$ 2,195	$ 2,409	$ 2,408.65	$ 2,990	3" Well Service Air Relief [EA]	C.3-1
98603	Salinas		98603		########	2018	3" pressure reducing	3	$ 3,475	1	EA	$ 3,475	$ 3,572	$ 3,572.26			
54165	Salinas			54165	1-Feb-10	2010	3" Well Service Air Relief	3	$ 743	1	EA	$ 743	$ 884				
63274	Antelope Valley			63274	20-Jun-11	2011	6" Solenoid Controlled Altitude Valve	6	$ 7,548	1	EA	$ 7,548	$ 8,613				
15999	Mid-Peninsula			100481	31-Jul-17	2017	Controlled Altitude Valve	6	$ 7,288	1	EA	$ 7,288	$ 7,770	$ 7,381			
49417	Salinas	108		49417	20-Apr-09	2009	6"PSV	6	$ 2,693	1	EA	$ 2,693	$ 3,318				
61125	Mid-Peninsula			61125	1-Mar-11	2011	6" PRV	6	$ 3,555	1	EA	$ 3,555	$ 4,056				
20466	East Los Angeles	40		80131	18-Apr-16	2016	6" PRV	6	$ 6,377	1	EA	$ 6,377	$ 7,044	$ 7,396			
97775	Bear Gulch	37	97775		19-Apr-18	2018	6" altitude valve	6	$ 6,448	1	EA	$ 6,448	$ 6,628	$ 6,297			
97838	Bear Gulch	36	97838		19-Apr-18	2018	6" on/off solenoid valve	6	$ 5,753	1	EA	$ 5,753	$ 5,914	$ 5,618	$ 6,017	6" Control Valve [EA]	C.3-2
97617	Bear Gulch	38	97617		29-Mar-17	2017	6" Altitude Valve, 6" Pressure Reducing	6	$ 10,872	2	EA	$ 5,436	$ 5,795	$ 5,505			
15999	Mid-Peninsula	122	15999		3-Feb-17	2017	6" Altitude Valve	6	$ 6,687	1	EA	$ 6,687	$ 7,128	$ 6,772			
97580	Bear Gulch	11	97580		9-Aug-17	2017	6" PRV	6	$ 5,536	1	EA	$ 5,536	$ 5,902	$ 5,607			
76316	Dominguez	232	76316		14-Mar-18	2018	6" Pressure Relief	6	$ 4,300	1	EA	$ 4,300	$ 4,420	$ 4,641			
97852	Bear Gulch	93	97852		5-Apr-18	2018	6" pressure reducing & solenoid shutoff	6	$ 6,209	1	EA	$ 6,209	$ 6,382	$ 6,063			
98524	Bear Gulch		98524		26-Oct-18	2018	6" pressure reducing	6	$ 17,334	3	EA	$ 5,778	$ 5,940	$ 5,643			
98522	Bear Gulch		98522		26-Oct-18	2018	6" pressure reducing	6	$ 5,778	1	EA	$ 5,778	$ 5,940	$ 5,643			
98522	Bear Gulch		98522		21-Sep-18	2018	6" pressure reducing	6	$ 5,778	1	EA	$ 5,778	$ 5,940	$ 5,643			
57362	Mid-Peninsula	118		57362	20-Jul-10	2010	6" PRV/PSV	6	$ 3,633	1	EA	$ 3,633	$ 4,319				

Figure 7. Example of Table A

s. Additional Cost Factors

Overview & Background

In an effort to provide accurate and complete cost estimates for capital projects proposed in 2021 GRC, Cal Water has progressively increased its tailoring of base estimates to more accurately reflect expected final costs. In this application, Cal Water applies three types of adjustments: contingency, location factors, and construction management and special inspections.

A. Contingencies

Contingency factors are applied to cost estimates to account for known unknowns. Contingency factors are directly correlated to the completeness of project design at the time of cost estimation, because the less a project scope is defined, the more uncertainty there is about the final project cost. Therefore more contingency is required to cover possible outcomes.

In the prior GRC, Cal Water adopted a methodology for implementing contingency, based on the recommendations from a third party consultant, Blair, Church & Flynn Consulting Engineers (BCF).

BCF Consultant Findings & Recommendations

BCF's report (see Attachment A) outlines several recommendations to improve cost estimates. In concordance with good engineering judgment for all cost estimates, BCF recommends applying appropriate contingency and location factors according to widely accepted industry standards. Their methodology for applying these factors is described below.

Contingency Factors

BCF recommends using the AACE International contingency factors outlined in Table 1 below (also included in Attachment A). AACE International contingency factors are preferred as they provide contingency factors for a variety of industries, are widely referenced, and are used around the world. BCF recommends that the project manager classify a project's completeness and apply the appropriate contingency factor based on that assumption. For routine projects, such as pump replacements, use of smaller percentage within the contingency range would be appropriate. However, for unique projects, use of larger percentage within the contingency range is recommended.

Table 1. Recommended Contingency with Respect to Design Completeness

Estimate Class	Suggested Deliverable Level	Percent of Completeness	AACEI Building & Gen Constr.
5	N/A	0-2%	20-30%
4	Concept	1-15%	10-20%
3	30%	10-40%	5-15%
2	60%	30-75%	5-10%
1	100%	65-100%	3-5%

Cal Water Implementation of BCF Recommendations

In the 2018 GRC, Cal Water developed a contingency spreadsheet and protocol for classifying cost estimates and identifying location factors. Contingency factors were based on estimate classes determined by project engineers based on company-wide guidelines provided to them. Routine replacements and equipment purchase projects were considered Class 4 estimates while all other projects were deemed Class 5 unless significant design had already been completed. Class 4 estimates were assigned a 15% contingency based on the AACE International figures; Class 5 estimates were assigned a 25% contingency based on those same figures. In Settlement, Public Advocates and Cal Water agreed to adjust these values down to a contingency of 10% for Class 4 projects, 20% for Class 5 projects and to omit the risk factor entirely. This scheme appears in this rate case filing for contingency calculations on projects submitted in this application.

Location Factors

BCF recommended using the RSMeans location factors outlined in Table 2 below (also included in Attachment A). RSMeans offers more location factors per city throughout California and is the leader in providing construction cost data. In Cal Water service territories where RSMeans data was not readily available, location factors from the nearest major city were used. All Cal Water district location factors were utilized in creating a Cal Water average location factor assuming all districts were weighted equally. Cal Water then developed regional factors that could be apply generally across multiple districts using +5%, 0% or -5% markups to the project cost estimate. This will help create consistency between the estimates, and these regional factors are also conservative when compared with the recommended factors. These regional factors are conservative when compared with the recommended factors. Given the total number of projects (>1200) and the number of users (project managers, engineers, and district staff) across a wide spectrum of geographical locations, simplifying the process while improving estimates was imperative.

BCF recommended applying the location factor after contingency had already been applied to the cost estimate. Contingency is included to account for unforeseen costs, and these costs would then be subject to varying location factors when they are realized.

Table 2. Recommended Location Factors by District

District Abbrev.	Cal Water Districts and Systems		Recommended Location Factors	Cal Water Regional Location Factor
	District	Nearest Major City		
AV	Antelope Valley	Mojave[a]	108.1[b]	-5%
BAY	Mid-Pen & South San Francisco	San Mateo	121.9	5%
BG	Bear Gulch	Palo Alto	121.0	5%
BK	Bakersfield	-	109.6	-5%
CH	Chico	Marysville	114.5	0%
DIX	Dixon	Sacramento	113.4	0%
DOM	Dominguez	Long Beach	111.5	-5%
ELA	East Los Angeles	Pasadena	110.4	-5%

District Abbrev.	Cal Water Districts and Systems		Recommended Location Factors	Cal Water Regional Location Factor
	District	Nearest Major City		
HR	Hermosa Redondo	Inglewood	110.3	-5%
KRV	Kern River Valley	Bakersfield	109.6	-5%
KC	King City	Salinas	114.8	0%
LAS	Los Altos Suburban	Palo Alto	121.0	5%
LIV	Livermore	Stockton	113.4	0%
MRL	Marysville	-	114.5	0%
ORO	Oroville	Marysville	114.5	0%
PV	Palos Verdes	Long Beach	111.5	-5%
RDV	Redwood Valley	Santa Rosa	122.1	5%
SEL	Selma	Fresno	111.3	-5%
SLN	Salinas	Salinas	114.8	0%
STK	Stockton	Stockton	113.4	0%
TAB	Travis	Fairfield	113.4	0%
VIS	Visalia	Fresno	111.3	-5%
WLK	Westlake	Inglewood	110.3	-5%
WIL	Willows	Marysville	114.5	0%
	Cal Water Average Location Factor		**114.52[(c)]**	

Notes:

(a) nearest city except for Lake Hughes Water System nearest city is Bakersfield

(b) except for Lake Hughes 109.6

(c) Does not include Rancho Dominguez or Bayshore umbrella districts

Location factors are based on the Cal Water service district of a project. Using the location factors recommended by BCF, each district was classified into one of three categories. Districts with significantly higher location factors than the Cal Water average location factor were assigned a 5% regional factor. Districts with similar location factors to the Cal Water location factor were assigned a 0% regional factor. Districts with significantly lower location factors than the Cal Water average were assigned a -5% regional factor.

In the 2018 GRC, Cal Water and Public Advocates agreed to the application of regional factors (+5%, 0%, or -5%) as a price adjustment line items to reflect higher, neutral, or lower costs for project installation at different locations throughout the state.[17] In an effort to increase transparency, Cal Water has presented the factor as a unique line item applied to the base cost estimate in this filing. While the general approach is consistent with the 2018 filing, Cal Water has updated these values to reflect lessons learned from 2019 and 2020.

B. Construction Management and Special Inspections

[17] A.18-07-001 2018 General Rate Case, *Settlement Agreement of California Water Service Company and the Public Advocates Office*, Exhibit A, p.106

As Cal Water's capital program continues to grow and mature, its project management practices also continue to adapt. Historically, Cal Water individual project managers were tasked with managing all aspects of a project from the business case development to final closeout. While this practice has created a lot of broad experience and interdepartmental cross training, it has not always been the most efficient way to manage the company's portfolio of work. These challenges and inefficiencies are most prominent in the construction phase of projects, where engineers are required to perform construction services that are not always suited to their qualifications and experience and the department often applies inconsistent expectations to contractors across different projects and districts. Overall, this has resulted in variable construction quality.

Cal Water hired a Construction Program Quality Manager to develop a comprehensive approach to address this issue. The first step of the company's phased approach is to engage a third party contractor, Jacobs Engineering, to perform construction management and special inspection services on certain categories of construction projects.

Jacobs Engineering Recommendations

Jacobs conducted a review of industry trends and standards for construction management and special inspections at Cal Water's request (see Attachment B). They found that five key elements were necessary for a successful program to support Cal Water's capital improvement program:

- **A programmatic approach to Construction Management and Special Inspections**. Construction management of multiple projects (program management) exerts more control on construction outcomes. Programmatic approach to delivery will allow deployment of tools and resources to facilitate improved scheduling, tracking and monitoring of progress and performance, as well as tools needed for Cal Water to successfully manage outsourcing of construction management (CM) services to achieve value at lowest cost. Programmatic scheduling of construction work would increase efficiency of CM delivery and increase the value gained per dollar spent as well as facilitate regular full-time employment of qualified CM staff allowing for increased familiarity and implementation of standard practices rather than relying on part-time assistance. Experienced CM will enforce contract requirements for schedule and track ownership of delays. Once construction has begun, dedicated construction management is crucial to preserving budget, schedule, and quality of construction projects.
- **Bundling of projects through strategic partnering throughout the state.** Due to large spread in Cal Water service areas throughout California, bundling of projects based on common geography and strategically partnering with local CM resources would allow reduction of administrative/overhead costs for CM contracts, consolidation of services, and overall improved efficiency of CM delivery. This approach would allow for leveraging full-time dedicated CM resources resulting in quality and value at lower cost.
- **Utilization of third party construction management services.** Third party CM augments existing owner staff allowing better utilization of resources. Third party CM allows owner staff to focus their labor resources more efficiently. Additional benefits to hiring a CM firm include the flexibility

to source experienced staff on a short-term basis as well as leverage a deeper bench of experienced CM professionals.

- **Other value added construction management services**. A consultant CM reviewing plans and specifications before a construction contractor is contracted provides Cal Water an opportunity to mitigate changes in work before a contractor has mobilized. Constructability review gives an independent review, allowing a greater opportunity to identify otherwise costly mistakes (grade busts, drafting errors, sequencing problems, design shortfalls, etc.).
- **Adequate budgeting**. Adequate budgeting is an important element of a successful CM program. For projects in the $100K to $5M range, which is a typical size based on Cal Water CIP, CM services that include special inspections may range from 5% to 15%, with an average of 10%. Recognizing that most Cal Water projects are smaller in nature, 10% of total construction cost (inclusive of equipment) would be a reasonable value used for budgeting purposes at early planning phases. However, it is important to note that every project is unique, and cost will vary. CM costs should be confirmed for each project-based level of service at the design completion phase.

Cal Water Implementation of Jacobs Recommendations

A fully mature construction management program can tailor project estimates based on informed historical data. However, Cal Water's CM program is in its infancy. Therefore, it is necessary to select and average approach and apply it to many projects before adjustments can be made to the methodology. To limit the variability, the approach in this rate case is a company-wide program partnered with one third party inspector, with the following estimates applied to each project type.

Some of the final costs calculated using this approach will be above and below the percentages presented in Table 3, but Cal Water expects that, on average, the cost of the program will be as allocated as these estimates are consistency with other values in similar industries at similar scales.

Table 3. Cal Water Construction Management (CM) & Special Inspection (SI) Implementation

Project Type	Approach
New/Upgrade Station	• CM and SI estimated at 10% of total construction costs
Chloramination Treatment	• For projects greater than $500k, CM & SI estimated at 10% of total construction costs • All other, SI estimated at 5% of total construction costs
Control Valve Install	• SI estimated at 5% of total construction costs
Transmission Main	• CM and SI estimated at 10% of total construction costs
Distribution Main	• CM and SI included in unit costs ($/LF)

Project Type	Approach
GAC Treatment	• CM and SI estimated at 5% of total construction costs
Ion Exchange Treatment	• CM and SI estimated at 5% of total construction costs
Backup Generator	• For projects over $75K ($100K in the Bay Area), CM and SI estimated at 5% of total construction costs • All other projects SI estimates at 2.5% of total construction costs
Hydropneumatic Tank	• SI estimated at 2.5% of total construction costs
Panelboard Project	• For projects over $75K ($100K in the Bay Area), CM and SI estimated at 5% of total construction costs • All other projects SI estimates at 2.5% of total construction costs
Storage Tank	• CM and SI estimated at 10% of total construction costs
Well Drill	• SI estimated at 5% of total construction costs
Well Equip	• CM and SI estimated at 10% of total construction costs

Conclusion

Cal Water continues its efforts to provide more accurate cost estimates by retaining and modifying best practices from the past rate case, as well as adding new ones. Cal Water has retained settled contingency values based on the recommendations of BCF and AACE, and modified its treatment of location factors to reflect a more mutual alignment of ideas between itself and the Public Advocates. Lastly, Cal Water has introduced the initial framework for a global construction management program that will add increased value to the customer. All of these factors combined will provide a more robust total project costs that are presented to the Commission, tailored to the specific location the project is to be constructed at, and with a higher confidence in the quality of the finished assets.

Project Attachments

Attachment A – BCF Report: *Recommendations for Contingency and Location Factors* (March 7, 2018)

Attachment B – Jacobs Technical Memorandum: *Support for CM/SI Services Justification* (April 1, 2021)

Attachment A

March 7, 2018

CALIFORNIA WATER SERVICE

Recommendations for Contingency and Location Factors

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COMMON PLANT PJ - 127

Attachment A

CALIFORNIA WATER SERVICE

Recommendations for Contingency and Location Factors

March 7, 2018

Prepared for:

California Water Service

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3/7/18

COMMON PLANT PJ - 128

Attachment A

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
Report Objectives 1
Industry Standard 1
Analysis and Interpretation of Cal Water Data 2
Recommendations for Contingency and Location Factors 2

CHAPTER 1 INTRODUCTION 3
1.1 Prologue 3
1.1.1 Cal Water Background 3
1.2 Purpose 3
1.3 Scope of Work 4

CHAPTER 2 INDUSTRY STANDARD 6
2.1 Literature Research 6
2.1.1 Contingency Factors 6
2.1.2 Location Factors 7

CHAPTER 3 ANALYSIS AND INTERPRETATION OF CAL WATER DATA 9
3.1 Data 9
3.2 Methods 9
3.2.1 Average Actual Cost and Average Estimated Cost 9
3.2.2 Sum of Actual Cost versus Sum of Estimated Cost 10
3.2.3 Linear Trend Line 10
3.2.4 Sort by Location 10
3.3 Results 10
3.3.1 Average Actual Cost and Average Estimated Cost 10
3.3.2 Sum of Actual Cost versus Sum of Estimated Cost 10
3.3.3 Linear Trend Line 11
3.3.4 Sorted by Location 13

CHAPTER 4 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 15
4.1 Findings 15
4.1.1 Cal Water's Method for Preparing Project Cost Estimates 15
4.1.2 Industry Standard for Determining Contingency Factors 15
4.2 Conclusion 16
4.3 Recommendations 16
4.3.1 Guidelines 16
4.4 Final Conclusion 19

REFERENCES 22

COMMON PLANT PJ - 129

LIST OF TABLES

Table 2.1 Contingency Factors by the AACE and EPRI 6
Table 2.2 Location Factors by ENR and RSMeans 8
Table 3.1 Actual Cost versus Estimated Cost.....11
Table 3.2 Percentage Difference between the Actual Costs and Estimated Costs 14
Table 4.1 Recommended Contingency with Respect to Design Completeness.....18
Table 4.2 Recommended Location Factors.....20

LIST OF FIGURES

Figure 1.1 Cal Water District and Department Locations.....5
Figure 3.1 Overall Cost Overrun Chart.....12

LIST OF APPENDICES

Appendix 1 Work Order List Included in the Data
Appendix 2 Overall Cost Overrun Chart with Data Points

EXECUTIVE SUMMARY

This executive summary presents a brief background of California Water Service's (Cal Water) current practice for preparing project cost estimates for proposed capital projects compared to the industry standards for determining contingency factors.

The comparison was used to evaluate Cal Water's practice for preparing project cost estimates and provide recommendations for contingency factors and factors for geographical location.

Report Objectives

Cal Water recognizes the significance of the difference between the estimated project costs and the actual project costs and seeks for recommendations for contingency factors and factors for geographical location.

Cal Water requested Blair, Church and Flynn, Inc. to prepare a report and develop recommendations for contingency factors and factors for geographical location. The report is intended to serve as a guideline for preparing project cost estimates to assist with closing the gap between the estimated cost and the actual cost.

The recommendations provided were developed based on the cost data that was reviewed and the latest version of the industry standards and construction cost books. Should the conditions of preparing project cost estimates change, and depending on their magnitude, adjustments to the recommendations might be necessary.

This report includes the following tasks:

- Obtain industry standards and government agencies' best practices when determining an appropriate contingency and location factors;
- Review all work orders provided for projects from 2013 through 2016;
- Analyze Cal Water's current practice for preparing project cost estimates;
- Provide recommendations for contingency and location factors; and
- Develop and submit a Recommendations for Contingency and Location Factors Report.

Industry Standard

Contingency and locator factors are critical to developing accurate estimates. Identifying possible risks and determining their potential impact can allow a project manager and estimator to consider factors that are not well-defined, but may ultimately influence project costs. It is important to recognize industry standards and government agencies' best practices when determining an appropriate contingency and location factor.

Analysis and Interpretation of Cal Water Data

The data reviewed includes completed work orders for capital projects completed in the period of January 1, 2013 to December 31, 2016. The data was provided by Cal Water and a minimum of 3,420 work orders were gathered for this review, but work orders that did not include an actual cost, were related to litigation charges, software upgrades, tools, vehicles and any other office related work or equipment were excluded. After the removal of these work orders, 2,298 work orders were analyzed for this report.

Cal Water is responsible for preparing project cost estimates for proposed capital projects, which are prepared three to five years in advance of when they will be executed. Currently, most project cost estimates are: prepared and based on templates derived from previous projects, do not involve detailed design, and include a 10 percent contingency.

Due to many variables that can affect a project cost estimate and the cost of construction, it was appropriate to analyze the data from various angles in search of an evident issue or issues, if any.

For comparison purposes to the industry standard, the following methods were used:

- Average Actual Cost and Average Estimated Cost;
- Sum of Actual Cost versus Sum of Estimated Cost;
- Linear Trend Line; and
- Sort by Department.

Recommendations for Contingency and Location Factors

Cal Water prepares cost estimates and manages many types of projects via a number of districts and systems throughout the state of California. While the results per project vary, there is no single value or factor that can perfect each estimated cost with the project's actual cost. The findings and conclusions identified throughout this report support the recommendations provided in section 4.3, *Recommendations*, in this report.

CHAPTER 1 INTRODUCTION

This chapter provides a brief background of Cal Water as a company, their capital planning efforts, the purpose of the report and a scope of work.

1.1 Prologue

1.1.1 Cal Water Background

California Water Service (Cal Water) was formed in 1926, and now serves over 480,000 customer connections through 28 Customer and Operations Centers throughout California. Today, this San Jose-based company is the largest investor-owned American water utility west of the Mississippi River and the third largest in the country. See Figure 1.1 "Cal Water District and Department Locations," for the map of areas served.

Cal Water is currently engaged in capital planning efforts for its upcoming general rate case (GRC) proceeding. In June 2017, Cal Water will begin preparing cost estimates for over 1,000 projects proposed for the years 2019 through 2021. A company-wide cost catalog and the adoption of a certain level of contingency to cover unknown capital costs and changes in prices due to geographical location are crucial to successfully compile and standardize accurate estimates.

1.2 Purpose

Cal Water is responsible for preparing project cost estimates for proposed capital projects, which are prepared, three to five years in advance of when they will be executed. Currently, most project cost estimates are: prepared and based on templates derived from previous projects, do not involve detailed design, and include a 10 percent contingency.

From the time the project cost estimates are prepared, to when the project manager is ready to proceed with the work, project deliverables and unit costs can vary significantly. Because of this, escalation is built into the project cost estimate. Cal Water seeks recommendations for contingency factors to mitigate potential risks, unforeseen scope and price changes. Additionally, the company seeks to standardize costs accounting for location factors that can affect prices based on regional variations by district.

The purpose of this report is to provide Cal Water with recommendations for application of contingency factors to project cost estimates which reflect the potential for scope and cost changes, and to provide recommendations to account for geographical location among the various Cal Water districts. This report provides industry standard recommendations for contingency factors and compares the prescribed factors with historical estimated and actual project cost data for capital projects completed by Cal Water from January 2013 to December 2016. While this report provides the minimum guidance necessary to develop reasonably accurate contingency and location factors for the development of project cost estimates, it does not replace experience and practical engineering judgment.

Contingencies are an essential part to cost estimating for most projects in order to compensate for unexpected expenses resulting from incomplete design, unforeseen and unpredictable conditions, or uncertainties in the project scope. Contingencies are usually expressed as a percentage of estimated cost and improve cost estimates by accounting for the above-mentioned factors. Typically, contingencies are large at the beginning of a project design due to more uncertainties, but as the project develops, the contingency values reduce as the deliverables are defined with plans and the specifications are finalized. Contingency factors will reflect the degree of uncertainty caused by lack of project definition.

In addition to contingency factors, location factors are vital to any cost estimates in order to take into account the varying costs for material and labor between cities and regions. Location factors are typically in the form of an index number that represents a percentage ratio of a specific city's cost to the state or national average cost for the same item or work.

1.3 Scope of Work

Cal Water recognizes the significance of the difference between the estimated project costs and the actual project costs and seeks recommendations for identification and of industry standard contingency factors and factors for geographical location.

Cal Water contracted with Blair, Church and Flynn, Inc. to prepare a report and develop recommendations for contingency factors and factors for geographical location. This report is intended to serve as a guideline for preparing project cost estimates, and to assist with closing the gap between the estimated cost and the actual cost.

The recommendations provided were developed based on the cost data that was reviewed, and the latest version of the industry standards and construction cost books. Should the conditions of preparing project cost estimates change, and depending on their magnitude, adjustments to the recommendations might be necessary.

Cal Water requested the report include the following items:

- Details of the industry standards and government agencies' best practices when determining an appropriate contingency and location factors;
- Results for reviewing Cal Water's work orders for projects from 2013 through 2016 along with details of analyzing Cal Water's current practice for preparing project cost estimates;
- Recommendations for contingency and location factors; and
- Development and submittal of Recommendations for Contingency and Location Factors Report.

Attachment A

Figure 1.1 Cal Water District and Department Locations

COMMON PLANT PJ - 135

CHAPTER 2 INDUSTRY STANDARD

This chapter presents the literature research for contingency and location factors necessary for this report. And following this chapter will include the data reviewed, the methods used for analyzing and interpreting the data and the results of such analysis.

2.1 Literature Research

Contingency and location factors are critical to developing accurate estimates. Identifying possible risks and determining their potential impact can allow a project manager and estimator to consider factors that are not well-defined, but may ultimately influence project costs. It is important to recognize industry standards and government agencies' best practices when determining an appropriate contingency and location factor.

2.1.1 Contingency Factors

This report compares construction costs and economic data from relevant industry and government sources. Table 2.1 lists the different deliverable levels that correlate with the percent of engineering and design that are complete, along with the suggested contingency with respect to the completeness of the design. The table compares suggested contingencies recommended by the Association for the Advancement of Cost Engineering (AACE) International and contingencies recommended by the Electric Power Research Institute (EPRI). These sources were chosen because their recommended practices are frequently used in the engineering field.

AACE and EPRI provide comprehensive and well-documented sources of cost data that can be applied to different project fields. They are both widely published authorities on project and cost management. Please see Table 2.1 for the recommended AACE and EPRI contingency factors with respect to the completeness of the engineering and design work. These contingency factors can be compared to Cal Water's methodology by referencing section 4.1.1, Cal Water's Method for Preparing Project Cost Estimates.

Table 2.1 Contingency Factors by the AACE and EPRI

Estimate Class	Suggested Deliverable Level	Percent of Completeness	*Contingency Factors with respect to Project Design Milestones*			
			AACE International Building & Gen Constr.	AACE International Process Industries	Electric Power Research Institute EPRI	AACE International Recommendation for DOE
5	N/A	0-2%	20-30%	20-50%	N/A	40%+
4	Concept	1-15%	10-20%	15-30%	30-50%	30-70%
3	30%	10-40%	5-15%	10-20%	15-30%	20-35%
2	60%	30-75%	5-10%	5-15%	10-20%	5-20%
1	100%	65-100%	3-5%	3-10%	5-10%	0-10%

2.1.2 Location Factors

In addition to evaluating industry-standard contingency factors to account for project uncertainties, location factors must be evaluated to account for the differences in costs based on region or location. Location factors are produced by several construction cost books and two sources were reviewed for this report. The two construction cost books reviewed were: Engineering News Record (ENR) *Public Works Contracting Costbook* and *Building Construction Costs with RSMeans Data* (RSMeans). These sources were selected because they are frequently referenced by professional engineers and contractors when preparing project cost estimates. The major weighting for establishing location factors are determined by the material and labor costs for the respective areas compared with the national average costs. These factors are weighted based on the national average index number of 100. Table 2.2 lists the major cities in California and the recommended location factors provided from each source. The location factors provided can be compared to Cal Water's methodology by referring to section 4.1.1, *Cal Water's Method for Preparing Project Cost Estimates*.

Below is the standard formula for applying a location factor to a project cost estimate.

Formula for applying a Location Factor

(City Location Factor (LF) / National Average LF (100)) x Project Cost Estimate

= New Project Cost Estimate

Attachment A

Table 2.2 Location Factors by ENR and RSMeans

City	*Location Factors*	
	ENR	RSMeans
Alhambra	-	111.8
Anaheim	-	111.4
Bakersfield	116	109.6
Berkeley	-	123
Chico	118	-
Eureka	-	115.5
Fairfield	120	-
Fresno	118	111.3
Inglewood	-	110.3
Lodi	117	-
Long Beach	119	111.5
Los Angeles	119	113.4
Marysville	-	114.5
Merced	118	-
Modesto	114	112.6
Mojave	-	108.1
Napa	120	-
Oakland	124	123.1
Ontario	-	-
Orange County	118	-
Oxnard	-	110.4
Palm Springs	-	110.1
Palo Alto	-	121.0
Paradise	114	-
Pasadena	-	110.4
Porterville	116	-

City	*Location Factors*	
	ENR	RSMeans
Redding	114	118.4
Richmond	-	120.8
Riverside	116	111.2
Sacramento	118	113.4
Salinas	120	114.8
San Bernardino	116	108.5
San Diego	117	109.1
San Francisco	129	128.6
San Jose	126	123.5
San Luis Obispo	113	110.5
San Mateo	-	121.9
San Rafael	-	124.0
Santa Ana	-	109.5
Santa Barbara	116	110.1
Santa Cruz	120	118.0
Santa Rosa	121	122.1
Stockton	117	113.4
Susanville	-	117.8
Tulare	118	-
Vallejo	120	117.9
Van Nuys	-	112.2
Ventura	116	-
Visalia	118	-
Watsonville	118	-
Yolo	118	-
Yuba City	118	-

COMMON PLANT PJ - 138

CHAPTER 3 ANALYSIS AND INTERPRETATION OF CAL WATER DATA

This chapter discusses the data reviewed, the methods used for the analysis and interpretation of the data, and the results of such analysis. Subsequent to this chapter will consist of presenting the findings, conclusions and recommendations for improving Cal Water's methodology of preparing project cost estimates.

3.1 Data

The data reviewed is all work orders from each Cal Water District & System for capital projects completed in the period of January 1, 2013 to December 31, 2016. The data was provided by Cal Water and the on-site examination took place during the period of April 26, 2017 to May 30, 2017. A minimum of 3,420 work orders were gathered for this review, but work orders that did not include an actual cost, were related to litigation charges, software upgrades, tools, vehicles and any other office related work or equipment were excluded. After the removal of these work orders, 2,298 work orders were analyzed for this report. See Appendix 1, "Work Order List Included in the Data."

The larger projects contained in the data include: pipeline projects, well head treatments, tanks, pumps, and installation of motors. The estimates for these projects included a 10 percent contingency.

3.2 Methods

Due to many variables that can affect a project cost estimate and the cost of construction, it was appropriate to analyze the data from various angles in search of an evident issue or issues, if any.

For comparison purposes to the industry standard, the following methods were used:

- Average Actual Cost and Average Estimated Cost;
- Sum of Actual Cost versus Sum of Estimated Cost;
- Linear Trend Line; and
- Sort by Location.

Further explanation of each method is explained below.

3.2.1 Average Actual Cost and Average Estimated Cost

The principle in calculating the average actual cost and average estimated cost is to have an understanding of Cal Water's average project size. This is produced by summing the actual costs and dividing that sum by the number of work orders. This same calculation is also done for estimated costs.

3.2.2 Sum of Actual Cost versus Sum of Estimated Cost

The purpose of this method is to summarize the large amount of data into a single value to produce an overall average overrun/underrun. This is a good indicator of the average overrun/underrun cost given the many types and large number of projects that Cal Water constructed between the years 2013 and 2016. Below is the formula used throughout the report for calculating the cost overrun/underrun in percentage form:

Formula for Cost Overrun/Underrun

(Actual Cost – Estimated Cost) / Estimated Cost x 100% = Cost Overrun/Underrun (%)

3.2.3 Linear Trend Line

A linear trend line identifies what the tendencies are with the data. This method provides a best-fit straight line that will chart what the general course is for the overrun/underrun cost as the size of the project increases.

3.2.4 Sort by Location

Since Cal Water has 24 operating districts and 12 departments, it seemed plausible to sort the data by location to analyze how each district or department performed in the last three years. This could also assist with establishing a location factor for each area. Please reference section 3.2.2, *Sum of Actual Cost versus Sum of Estimated Cost*, for the formula utilized to calculate the cost overrun/underrun.

3.3 Results

3.3.1 Average Actual Cost and Average Estimated Cost

The actual costs for all work orders were summed and divided by the number of work orders included in the data. As mentioned earlier, there are 2,298 work orders included in the data and the sum of all actual costs equals $366,659,862. The average actual cost equates to $159,556. The sum of all estimated costs, including a 10 percent contingency, equals $322,923,637. The average estimated cost calculates to $140,524.

3.3.2 Sum of Actual Cost versus Sum of Estimated Cost

The actual cost for all work orders were summed and divided by the sum of all estimated costs. The sum of all actual costs totaled $366,659,862. The sum of all estimated costs, including a 10 percent contingency, totaled $322,923,637. The difference between the two costs equates to a 13.5 percent overage. Please see Table 3.1 Actual Cost versus Estimated Cost for the sum of each cost and for the project cost overrun.

Attachment A

Table 3.1 Actual Cost versus Estimated Cost

Sum of Actual Cost	Sum of Estimated Cost[1]	Project Cost Overrun
$ 366,659,862.32	$ 322,923,637.30	13.5%

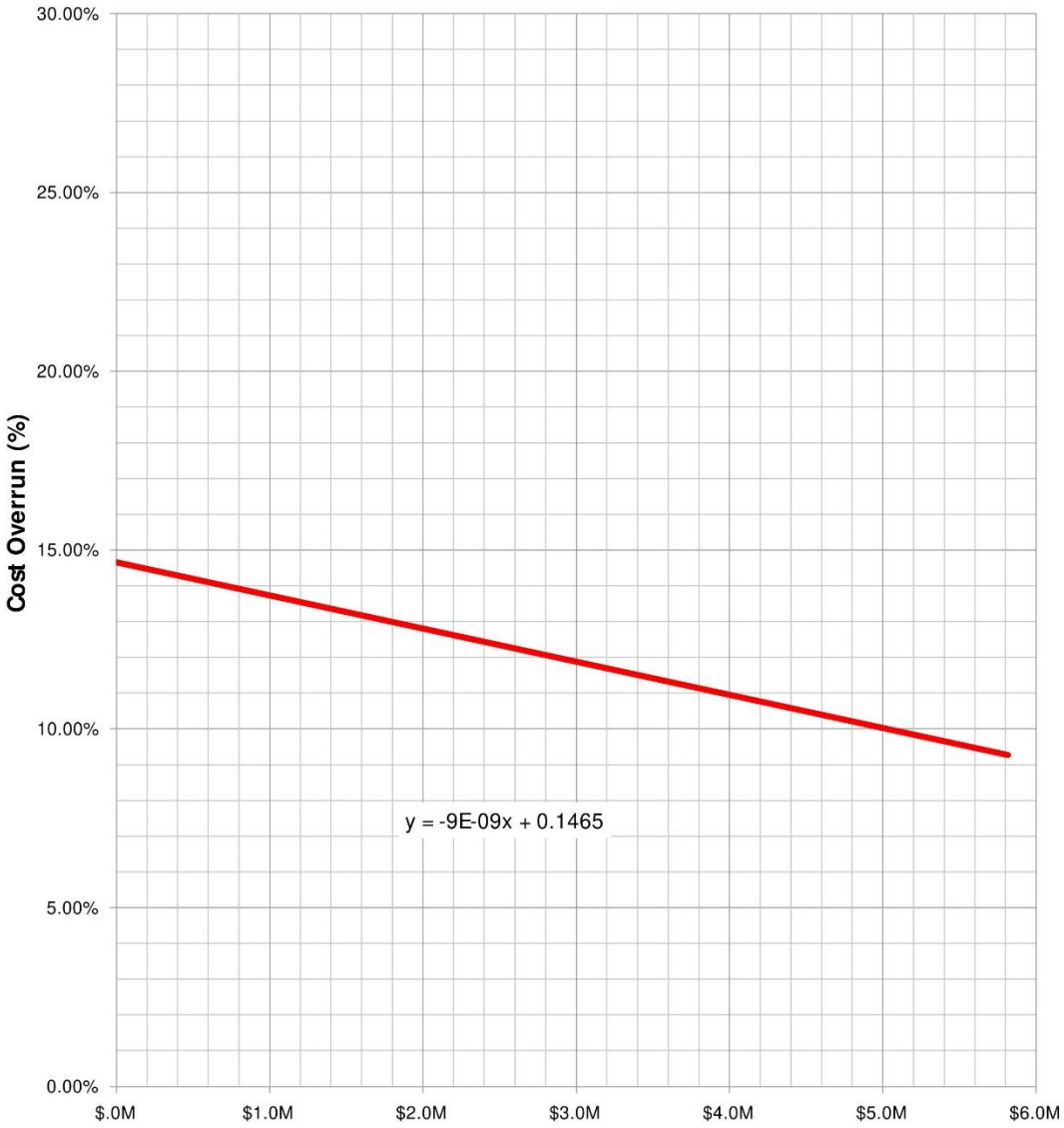
[1]Estimates include a 10% Contingency

3.3.3 Linear Trend Line

Each work order's cost overrun or underrun was plotted. A trend line was inserted to determine the overall tendency. Figure 3.1 (Overall Cost Overrun Chart) includes the linear trend line. This trend line depicts, on average, that smaller projects are approximately 15 percent over budget, with cost overruns decreasing as the project's estimated cost increases. The overrun decreases to 10 percent or less, on average, for projects estimated $5,000,000 or more. Please see Appendix 2, "Overall Cost Overrun Chart with Data Points," to view the chart that includes all data points with the calculated trend line.

Attachment A

Figure 3.1 Overall Cost Overrun Chart



COMMON PLANT PJ - 142

3.3.4 Sorted by Location

Due to the large number of locations, the data was compiled and sorted by location. With this analysis, each department was looked at individually. A 30 percent overrun threshold was set and districts or departments over the threshold were further investigated.

In analyzing the estimated cost against the actual cost per location, seven locations had cost overruns of at least 30 percent, on average. Six out of the seven locations had a pool sample of 20 or more work orders. The seventh location, Leona, only had a sample of two work orders. Table 3.2 provides the list of locations that meet the mentioned criteria.

- King City – Out of 30 work orders completed, four were related to water line projects and another four were related to providing service to individual sites. With both project types combined, this makes up 26 percent of the work orders in King City. On average, these 8 work orders experienced a 71 percent cost overrun.
- Stockton – Out of the 141 work orders that Stockton completed, 42 were related to water line projects. This makes up over 29 percent of the work orders and, on average, these project types were over budget by 43 percent.
- Coast Springs – This location completed 23 work orders, of which six were related to tank work and two were water line jobs. On average, these two project types were over budget by 45 percent.

For the four remaining locations, Rancho Dominguez, Leona, South San Francisco and Selma, work orders reviewed varied in project types and size. No particular project type was consistently noted for cost overruns.

Attachment A

Table 3.2 Percentage Difference between the Actual Costs and Estimated Costs

Location	# of Work Orders	Total Actual	Total Estimate1	Cost Diff	% Cost Compar
109-KING CITY	30	$ 3,651,163.84	$ 2,632,824.81	$ 1,018,339.03	38.7%
119-STOCKTON	141	$ 34,210,568.78	$ 25,110,446.79	$ 9,100,121.99	36.2%
151-RANCHO DOMINGUEZ	11	$ 148,334.29	$ 110,302.36	$ 38,031.93	34.5%
117-SELMA	25	$ 2,060,735.82	$ 1,544,287.66	$ 516,448.16	33.4%
149-COAST SPRINGS	23	$ 540,716.44	$ 407,289.45	$ 133,426.99	32.8%
118-SO. SAN FRANCISCO	42	$ 5,279,617.37	$ 3,978,720.89	$ 1,300,896.48	32.7%
132-LEONA	2	$ 191,319.35	$ 144,830.40	$ 46,488.95	32.1%
106-EAST LOS ANGELES	139	$ 40,753,080.42	$ 31,661,259.07	$ 9,091,821.35	28.7%
112-MARYSVILLE	22	$ 1,329,578.57	$ 1,055,575.92	$ 274,002.65	26.0%
110-LIVERMORE	91	$ 9,911,223.32	$ 7,901,373.09	$ 2,009,850.23	25.4%
111-LOS ALTOS SUBURBAN	167	$ 14,975,955.45	$ 11,943,409.69	$ 3,032,545.76	25.4%
123-WESTLAKE	24	$ 2,539,292.26	$ 2,053,923.22	$ 485,369.04	23.6%
113-OROVILLE	37	$ 3,544,361.42	$ 2,904,143.28	$ 640,218.14	22.0%
102-BEAR GULCH	99	$ 24,141,755.40	$ 20,042,385.46	$ 4,099,369.94	20.5%
147-LUCERNE	29	$ 927,951.68	$ 797,217.74	$ 130,733.94	16.4%
128-DOMINGUEZ WATER CO.	211	$ 34,626,527.96	$ 30,337,571.10	$ 4,288,956.86	14.1%
130-LANCASTER	11	$ 2,203,422.65	$ 1,974,819.05	$ 228,603.60	11.6%
129-ANTELOPE VALLEY	18	$ 1,869,827.14	$ 1,685,682.07	$ 184,145.07	10.9%
116-MID PENINSULA	91	$ 24,331,297.20	$ 21,984,128.99	$ 2,347,168.21	10.7%
134-KERN RIVER VALLEY	94	$ 4,591,509.29	$ 4,222,905.72	$ 368,603.57	8.7%
101-BAKERSFIELD	324	$ 56,791,412.09	$ 52,469,067.36	$ 4,322,344.73	8.2%
114-SALINAS	134	$ 24,076,949.07	$ 22,311,421.76	$ 1,765,527.31	7.9%
104-CHICO	140	$ 15,472,659.53	$ 14,684,337.24	$ 788,322.29	5.4%
127-HAWTHORNE	23	$ 5,926,524.77	$ 5,640,861.66	$ 285,663.11	5.1%
120-VISALIA	91	$ 14,464,294.71	$ 14,062,438.98	$ 401,855.73	2.9%
150-HAWKINS	2	$ 27,568.65	$ 27,084.00	$ 484.65	1.8%
148-ARMSTRONG VALLEY	25	$ 207,505.06	$ 206,656.53	$ 848.53	0.4%
146-REDWOOD VALLEY	0	$ -	$ -	$ -	0.0%
105-DIXON	27	$ 9,067,626.99	$ 9,377,501.26	$ (309,874.27)	-3.3%
108-HERMOSA REDONDO	87	$ 9,079,287.45	$ 9,747,102.58	$ (667,815.13)	-6.9%
131-FREMONT	5	$ 120,525.01	$ 129,759.27	$ (9,234.26)	-7.1%
152-BAYSHORE	5	$ 20,159.00	$ 22,079.55	$ (1,920.55)	-8.7%
121-WILLOWS	19	$ 2,136,023.03	$ 2,360,217.48	$ (224,194.45)	-9.5%
122-PALOS VERDES	102	$ 17,015,696.51	$ 18,857,025.84	$ (1,841,329.33)	-9.8%
107-HAMILTON CITY	5	$ 412,276.60	$ 499,568.40	$ (87,291.80)	-17.5%
153-GRAND OAKS	2	$ 13,115.20	$ 35,418.63	$ (22,303.43)	-63.0%
SUM	2298	$ 366,659,862.32	$ 322,923,637.30	$ 43,736,225.02	13.5%

[1] Estimates include a 10% Contingency

CHAPTER 4 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the findings, conclusions and recommendations for improving Cal Water's methodology of preparing project cost estimates.

4.1 Findings

The report was designed to review Cal Water's current practice for preparing project cost estimates and their work orders and to compare that with what is typically practiced in the engineering field. The following information will show what was collected and how the practices vary.

4.1.1 Cal Water's Method for Preparing Project Cost Estimates

The following list summarizes the important points of Cal Water's current practice for preparing project cost estimates:

- Project cost estimates are prepared three to five years in advance of when the project will be designed and constructed;
- The Cost Catalog is used for established unit prices for typical bid items;
- Completeness of the project design is typically 5% or less for new installations and 15% or less for routine in kind replacements;
- Templates are used from previous projects; and
- Ten percent contingency is used.

As mentioned in section 3.3.2 *Sum of Actual Cost versus Sum of Estimated Cost*, the nature of estimating project costs three to five years in advance has resulted in an overall cost overrun of 13.5 percent for the sample list of projects. From a linear trend line stand point, the overrun cost ranges between 10 and 15 percent.

4.1.2 Industry Standard for Determining Contingency Factors

In reviewing the work descriptions listed in the Cost Catalog, it was determined that Cal Water projects are predominately of building and general construction activities. Building and general construction activities consist of new construction, as well as renovation construction projects. Also included in these activities are projects for building (residential and commercial) construction and civil projects that may consist of utility infrastructure, water pipelines, and water resources projects.

Considering Cal Water's cost estimates are prepared with completeness of project design at typically 15% or less for routine in kind replacements and 5% or less for new installations, the

standard practice recommended by AACE International for Building General Construction is to use an estimate class 4 or class 5 contingency factor which ranges between 10 and 30 percent.

4.2 Conclusion

Cal Water recognizes the significance of the difference between the estimated project costs and the actual project costs and seeks for recommendations for contingency factors and factors for geographical location. It is important to note that engineers who prepare project cost estimates are working with limited details on the project. In addition, the preparation of project cost estimates occurs three to five years in advance of when construction takes place. Both of these are major factors to the noticeable differences between actual and estimated costs.

On the basis of the findings, it is concluded that continued use of a 10 percent contingency factor for all project types and sizes regardless of location will not assist with closing the gap between the estimated cost and the actual cost. The findings from the analysis of the actual costs and the estimated costs of Cal Water projects, excluding the exception projects, indicate an overall 13.5% cost overrun on all the projects completed between 2013 and 2016. Also, the overruns were higher for certain districts, indicating the need for incorporating regional and location factors in the cost estimates.

4.3 Recommendations

Cal Water prepares cost estimates and manages many types of projects via a number of districts and systems throughout the state of California. While the results per project vary, there is no single value or factor that can perfect each estimated cost with the project's actual cost. The findings and conclusion in this report support the recommendations provided in this section.

The following recommendations are made:

- Prepare project cost estimate;
- Apply the appropriate contingency per industry standard;
- Apply the location factor for the district or department;
- When budgets are strict, consider using additive bid items; and
- Apply good engineering judgment.

4.3.1 Guidelines

As Cal Water continues to prepare project cost estimates several years in advance of construction, a set of recommendations are further explained to minimize the project cost overruns that Cal Water has experienced in the past. These recommendations are intended for use in preparing project cost estimates for Cal Water projects only.

1) Prepare project cost estimate

Project cost estimates are typically developed in the early project planning, and updated periodically throughout project development. Contingency factors are applied from the start of project design to compensate for the use of limited information. The contingency factor typically decreases as the project becomes more defined and there are fewer unknowns.

Cal Water is responsible for preparing project cost estimates for proposed capital projects, which are typically prepared three to five years in advance of when they will be executed. Whenever possible, project cost estimates should be updated during the design process to increase the accuracy of the cost estimate. Project cost estimates should be reviewed and updated periodically to reflect any important changes to the project design and to stay current with any adjustments to labor and material costs.

2) Apply the appropriate contingency per industry standard

After a project cost estimate is produced, a contingency factor should be applied. Between AACE International and EPRI, we found AACE International to be the preferable guideline as they provide contingency factors for a variety of industries, are widely referenced, are used around the world and are the preferred source for contingency factors. Based on the type of project and the percent of completeness of the project design, Cal Water's cost estimates are prepared with completeness of project design at typically 15% or less for routine in kind replacements and 5% or less for new installations, Cal Water project managers should reference estimate class 4 and 5 of the AACE International contingency for Building and General Construction for selecting the appropriate contingency factor. The project manager would identify the appropriate class and from the suggested contingency range, determine a fitting contingency factor. Should it be a routine type of project, such as pump replacements, and the project manager has extensive experience with the project type, using the lower percentage within the contingency range would be appropriate. However, in cases where the project is unique, infrequent, holds many uncertainties, or the project is exposed to exceptional risks, then it is recommended to use the higher percentage in the contingency range. See Table 4.1 "Recommended Contingency with Respect to Design Completeness."

As project designs are prepared and more complete, when the opportunities are available, it is recommended to update the project cost estimate to reflect the latest plans and specifications. In these cases, reference the estimate class in Table 4.1 that pertains to the percent of completeness of the project design and select the appropriate contingency factor.

Table 4.1 Recommended Contingency with Respect to Design Completeness

Suggested Contingency with respect to Project Design Milestones			
Estimate Class	Suggested Deliverable Level	Percent of Completeness	AACEI Building & Gen Constr.
5	N/A	0-2%	20-30%
4	Concept	1-15%	10-20%
3	30%	10-40%	5-15%
2	60%	30-75%	5-10%
1	100%	65-100%	3-5%

3) Apply the location factor for the district or department

After a project cost estimate is produced and a contingency factor is applied, a location factor should be applied. From the two leading construction costs books that were reviewed, we have found RSMeans to be the preferred source for location factors. RSMeans offers more location factors per city throughout California, is very reputable, and is the leader in providing construction cost data.

Table 4.2 (Recommended Location Factors) lists the recommended location factors per Cal Water district or department. In cases where Cal Water service areas did not have a location factor equivalent provided from RSMeans, location factors from the nearest major city were used. In utilizing these factors, a District average was calculated, assuming each district or department is weighted equally.

The method for using the location factor is to divide a district's or department's location factor by the Cal Water District average and multiply it by the estimated project cost. Below is the formula for using the location factor.

Formula for using the Recommended Location Factor

(District or Department Location Factor (LF) / Cal Water Average LF) x Project Cost Estimate

= New Project Cost Estimate

While RSMeans, together with Cal Water's work orders were researched and analyzed, a common trend was not discovered between projects constructed in rural areas when compared to projects constructed in urbanized areas.

4) When budgets are strict, continue to use additive bid items

When working with a strict budget, continued use of additive bid items should be taken into consideration. With this, the "additive bid items" can be added to the baseline project should bids come in below budget. Cal Water can then decide if they have enough funds to include the additive bid items.

5) Apply good engineering judgment

Even with a consistent and comprehensive guideline for preparing a project cost estimate, careful attention is needed to ensure a quality cost estimate. It is a matter of diligently using all of the data available, modifying the data accordingly, and estimating with good engineering judgment.

4.4 Final Conclusion

Finally, after obtaining and observing the industry standards, comparing them to Cal Water's methodology of using a 10 percent contingency factor for all project types and sizes, and reviewing the data and results from 2013 and 2016, it's apparent that modification is necessary to Cal Water's approach to preparing project cost estimates. With the adoption and implementation of the mentioned recommendations and practices, Cal Water should begin to see actual costs closer to estimated costs.

Attachment A

Table 4.2 Recommended Location Factors

Code	District Abbrev.	Cal Water Districts and Systems		Recommended Location Factors
		City	Nearest Major City[1]	
129	AV	**Antelope Valley District**		
153		Grand Oaks	Mojave	108.1
131		Fremont Valley	Mojave	108.1
133		Lake Hughes	Bakersfield	109.6
130		Lancaster	Mojave	108.1
132		Leona Valley	Mojave	108.1
102	BG	**Bear Gulch**	Palo Alto	121.0
101	BK	**Bakersfield**	-	109.6
250	CBK	**City of Bakersfield**	-	109.6
104	CH	**Chico**	Marysville	114.5
107		Hamilton City	Marysville	114.5
251	COM	**City of Commerce**	Pasadena	110.4
127	HAW	**City of Hawthorne**	Inglewood	110.3
105	DIX	**Dixon**	Sacramento	113.4
128	DOM	**Dominguez**	Long Beach	111.5
106	ELA	**East Los Angeles**	Pasadena	110.4
108	HR	**Hermosa Redondo**	Inglewood	110.3
134	KRV	**Kern River Valley**	Bakersfield	109.6
135		Arden	Bakersfield	109.6
		Countywood		
		Ponderosa Pine		
136		Bodfish	Bakersfield	109.6
		Juniper Hills		
137		Kernville	Bakersfield	109.6
138		Lakeland	Bakersfield	109.6
282		Mountain Mesa	Bakersfield	109.6
139		Mountain Shadow	Bakersfield	109.6
140		Onyx	Bakersfield	109.6
143		South Lake	Bakersfield	109.6
141		Split Mountain	Bakersfield	109.6
142		Squirrel Mountain	Bakersfield	109.6
109	KC	**King City**	Salinas	114.8
111	LAS	**Los Altos Suburban**	Palo Alto	121.0
110	LIV	**Livermore**	Stockton	113.4
258		Crane Ridge	Stockton	113.4
112	MRL	**Marysville**	-	114.5

[1] Location Factor for nearest major city was used for districts or departments (cities) not listed on RSMeans

COMMON PLANT PJ - 150

Attachment A

Table 4.2 Recommended Location Factors (continued)

Code	District Abbrev.	Cal Water Districts and Systems		Recommended Location Factors
		City	Nearest Major City[1]	
113	ORO	**Oroville**	Marysville	114.5
122	PV	**Palos Verdes**	Long Beach	111.5
146	RDV	**Redwood Valley**		
148		Armstrong Valley	Santa Rosa	122.1
		Noel Heights	Santa Rosa	122.1
		Rancho Del Paradiso	Santa Rosa	122.1
149		Coast Springs	Santa Rosa	122.1
150		Hawkins	Santa Rosa	122.1
147		Lucerne	Santa Rosa	122.1
117	SEL	**Selma**	Fresno	111.3
114	SLN	**Salinas**	-	114.8
		Country Meadows	Salinas	114.8
		Salinas Hills	Salinas	114.8
126		Bolsa Knolls	Salinas	114.8
296		Foothill Estates	Salinas	114.8
124		Las Lomas	Salinas	114.8
125		Oak Hills	Salinas	114.8
116	MPS	**Mid-Pen (San Carlos)**	San Mateo	121.9
116	MPS	**Mid-Pen (San Mateo)**	San Mateo	121.9
118	SSF	**South San Francisco**	San Mateo	121.9
119	STK	**Stockton**	-	113.4
249	TCWD	**Tejon-Castac Water District**	Bakersfield	109.6
120	VIS	**Visalia**	Fresno	111.3
123	WLK	**Westlake**	Inglewood	110.3
121	WIL	**Willows**	Marysville	114.5
			Cal Water Average =	113.54

[1] Location Factor for nearest major city was used for districts or departments (cities) not listed on RSMeans

COMMON PLANT PJ - 151

Attachment A

REFERENCES

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Attachment B

Jacobs

Memorandum

1737 North First Street
Suite 300
San Jose, CA 95112

www.jacobs.com

Subject	**Support for CM/SI Services Justification**	**Project Name**	Cal Water As-Needed Engineering Services
Attention	Gavin Devries, Carmelo Sorce	**Project No.**	SWRA2019
From	Geoff Collins, Kathy Rosinski, Dennis Jackson		
Date	April 29, 2021		

Introduction

California Water Service Company (Cal Water) is bolstering its efforts to more effectively and efficiently manage projects in construction and yield high quality, long lasting facilities. The purpose of this memorandum is to provide the industry perspective on the value of an effective construction management (CM) and special inspection (SI) program, the expected level of effort and costs and provide guidance and recommendations to optimize this approach for Cal Waters program.

Background / Cal Water Nature of CM work

Cal Water manages the implementation of a large CIP program throughout the State of California with a total value of annual construction budget in the order of $150M for approximately 350 construction projects (2021 CIP). The vast majority of construction projects are small, with average construction value of $350K and median of $75K, with approximately 10% of projects in the greater than $1M range. Typically, the projects are geographically dispersed, and located in residential or rural settings. The scope of construction for these projects may include: emergency generator installation (owner pre-purchased), pump installation/relocation, new water storage tanks, electrical / process mechanical (piping, valves, flow meters), building mechanical equipment installation or replacement, and underground utility installation. Cal Water is moving to third party CM services and implementing special inspections consistent with California Building Code requirements.

Prior to engaging third-party CM, Cal Water project managers (PMs) were historically tasked with managing projects from “cradle-to-grave” including through the construction phase. However, utilizing design project managers to manage construction has presented some challenges, including staff performing construction services not always suited to their qualifications and experience, and inconsistent expectations required of the contractor(s). These challenges resulted in an inconsistent quality of constructed projects and increased demands on project managers with increasingly limited availability, particularly as capital improvement program

budget and scope have grown over the years. More recently, Cal Water has engaged third-party CM and SI to supplement its internal staff resources. This approach has significant benefits for Cal Water. It allows PMs to focus on their core competency and results in improved efficiency through the design phase of a project and places construction management and inspections in the hands of specialized staff who can effectively and efficiently monitor the construction phase of projects and yield highest quality.

Overview of Construction Management Benefits: Safety, Quality and Efficiency

An effective construction management program provides numerous benefits. It brings rigor and consistency to construction delivery, ensuring uniform implementation of contract requirements, providing document management, oversight of schedule and cost control, as well as ensuring construction quality. A construction manager can add safety and environmental protection inspections to the contractor's daily operations. Furthermore, added value is often provided by early engagement of the CM team in constructability reviews and value engineering, activities that result in cost savings and improved delivery.

A key objective of a well-executed CM effort is to effectively manage risk. The goal is to manage, mitigate, and if possible avoid, schedule delays, scope changes and rework that could result in change orders, claims and ultimately higher project cost, and for a utility could impact water production, water quality and level of customer service. Over 75% of Construction Management Association of America (CMAA) survey respondents agreed that the most significant benefits of working with a professional CM were minimized schedule and budget problems, and leadership for the whole project team (CMAA, 2014).

Another key objective is ensuring quality that is gained via regular observations and special inspections to ensure work meets requirements. Poor quality can contribute to increasing the cost of the project due to rework or addressing failure after project completion. Furthermore poor quality products often results in reduced asset life or long-term operability impacts. Estimates of rework cost vary based on industry and project type. One example, in the commercial building industry, average direct costs of rework alone is estimated at 5% of project cost (CII, 2005). Another example, in industrial construction, rework is reported to be on the order of 12% of project costs (Burati and Farrington, 1987). So, while adding CM services adds cost, in the end it results in higher quality outcomes and longer lasting assets with an overall lower life cycle cost.

Jacobs

Memorandum

Support for CM/SI Services Justification

Industry Norms and Guidance for CM / Special Inspections

"CM costs are typically driven by the level and types of services requested/required. They are largely labor and therefore, are directly proportional to the number of hours and level of experience spent on the project. Like many other items involved in a construction project, CM costs can be benchmarked as a percentage of construction. However, these costs vary widely on a percentage of construction basis by project type, size and level of service." (CMAA, 2014)

While a CM/SI fee as a percent of construction cost form of compensation can be challenging to determine, this metric is widely used by private and public utilities for budgeting at planning and early design phases to fully capture project implementation costs.

The 2014 CMAA industry survey reports that CM/PM (Program Management) fees nationwide average 5.6% of project construction cost. Fees reported for individual projects, however, ranged from a low of 0. 6% to more than 18%. The significant variability reflects the unique services and contract types among the surveyed projects.[1]

A "California Multi-Agency CIP Benchmarking Study - 2020 Update", reports project delivery cost as a percentage of total construction cost based on data compiled from seven of the largest cities in California for projects with construction value greater than $100K. The study reports an average CM (inclusive of SI) as percent of construction cost of 20% for pipe system projects with median construction value of $1.33M; and 22% for water/wastewater projects with median construction value of $2.8M. The same study also noted that smaller projects, those in the lower 80th percentile, in the same data subset had relatively higher CM costs as a percent of construction, a common theme in the reviewed literature. Smaller projects may result in relatively higher %CM costs as the efficiencies associated with large construction projects are more challenging to realize.

CalTrans recommends that local agencies use 15% as a guide for estimating CM costs (CalTrans, 2020). It should be noted however, that CalTrans projects are often federally or state funded and have standardized testing and reporting requirements, as well as require prevailing wage, which ultimately will have bearing on the CM effort and cost.

Based on Jacobs' experience, which is consistent with industry norms, CM fees reflect a combination of level of service, project type and size. To illustrate this, some examples of recent CM costs on Jacobs projects in California are provided below:

[1] Note percentages from CMAA survey do not include Special Inspection costs

- 5% on $12M for staff augmentation, schedule support and inspection for a new bridge project.
- 16% on $7M for complete CM services for a road intersection project
- 6.5% on $26M project for full suite of services for including construction manager, office support staff, field inspection for a pipeline project (Bay Area). This excludes special inspections that are completed by the client, would add 1.5%.
- 7.2% on $18M for full suite of CM services excluding special inspections and testing for a wastewater treatment facility upgrade project (Bay Area).

Using these examples, Jacobs' CM costs range from 5% to 16% of construction costs, although, it should be noted this range is for higher construction value projects when compared to average Cal Water project size.

Recommendations for Cal Water Construction Management / Special Inspection Program

Key elements of a successful CM program to support Cal Water CIP will include the following elements:

Programmatic Approach to CM Delivery

Construction management of multiple projects (program management) exerts more control on construction outcomes. Programmatic approach to delivery will allow deployment of tools and resources to facilitate improved scheduling, tracking and monitoring of progress and performance, as well as tools needed for Cal Water to successfully manage outsourcing of CM services to achieve value at lowest cost. Programmatic scheduling of construction work would increase efficiency of CM delivery and increase the value gained per dollar spent as well as facilitate regular full-time employment of qualified CM staff allowing for increased familiarity and implementation of standard practices rather than relying on part-time assistance. Experienced CM will enforce contract requirements for schedule and track ownership of delays. Once construction has begun, dedicated construction management is crucial to preserving budget, schedule, and quality of construction projects as well as enforcement of regulatory safety and environmental protection laws.

Bundling of Projects / Strategic Partnering Throughout the State

Due to large spread in Cal Water service areas throughout California, bundling of projects based on common geography and strategically partnering with local CM resources would allow reduction of administrative/overhead costs for CM contracts, consolidation of services, and

overall improved efficiency of CM delivery. This approach would allow for leveraging full-time dedicated CM resources resulting in quality and value at lower cost.

Third Party CM Services

Engagement of third party construction management (CM) augments existing owner staff allowing better utilization of resources. For Cal Water, third party CM would free PM and engineering staff to focus on their core competencies and more efficiently deliver projects. Additional benefits to hiring a CM firm include the flexibility to source experienced staff on a short-term basis as well as leverage a deeper bench of experienced CM professionals.

Value Added CM Services

A consultant CM reviewing plans and specifications before a construction contractor is contracted provides Cal Water an opportunity to mitigate changes in work before a contractor has mobilized. Constructability review gives an independent for a completeness of design, allowing a greater opportunity to identify otherwise costly mistakes (grade mistakes, drafting errors, sequencing issues, design gaps, incorporation of governmental health/safety regulations and environmental protection regulations, scheduling and shutdown constraints, etc.).

Adequate Budgeting

Adequate budgeting is an important element of a successful CM program. For projects in the $100K to $5M range, which is a typical size based on Cal Water CIP, CM services that include SI may range from 5% to 15%, with an average of 10% on a programmatic basis. Recognizing that most Cal Water projects are smaller in nature, 12% to 15% of total construction cost (inclusive of equipment) would be a reasonable value used for budgeting purposes at early planning phases for small projects, while for larger projects a lower % CM may be more appropriate. However, it is important to note that every project is unique, and cost will vary. CM/SI costs should be confirmed for each project based on required level of service at the design completion phase and after project completion.

CM/SI Cost Validation

A simple starting point for developing a detailed CM cost is often correlation of the effort and daily cost of a CM/RE (construction manager/resident engineer) with the working days prescribed in the project contract. Also, on the project special provisions and bid schedule, special inspections can and should be identified at that time. This will enable the CM to create/confirm budget for SI prior to the start of construction.

Validating the SI effort often involves detailed review of bid documents, as the level of effort for special inspections might not be the same for similar items on different type, size or location of the projects. For example, for a trench backfill there is likely more compaction testing for the backfill and the hot mix asphalt required if the trench is located in a public right of way vs on a private property, which would result in higher level of effort and cost. Similarly, concrete testing for a sidewalk or v-ditch might not need to be as frequent compared to requirements for a structural foundation, without impact on the longevity of the final product. Special inspection frequency can also be influenced by local government requirements and additional inspection costs by the city inspectors.

Cal Water may consider optimizing the CM/SI effort based on the project type and size. For example, "CalTrans uses two types of specifications [for product acceptance]: method and quality assurance. Method specifications list the explicit materials, equipment (size) and construction requirements; whereas, quality assurance specifications contain statements of required [testing] results that focus on the desired quality of the level of the finished product." For example, for a trench backfill, an owner can specify aggregate base compacted at 8" lifts with a particular size compactor or use a soil testing process to perform field density testing. Method specification might make more sense for small projects and allows the contractor to proceed quickly and not wait for the testing results, as well as price their effort accordingly.

Over time, there is opportunity for Cal Water to develop a database of knowledge based on data from actual projects that would provide basis to refine the %CM and %SI targets that Cal Water uses for budgeting purposes.

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t. Design & Permitting Only Projects

Project Justification

The accuracy and confidence of any project cost estimate is heavily dependent on the maturity level of the project's basis of design reports, schematics, drawings, and/or scope defining documents.[18] Making decisions based on budgets developed at the earliest levels of conceptual screening and feasibility can lead to significant budget shortfalls as a result of unforeseen conditions, permitting challenges, and project redesign. This presents a unique challenge on very complex projects or projects with significant unknowns for investor owned utilities (IOU) estimating budgets in advance for a General Rate Case Application (GRC). In order to develop a cost estimate with a high level of confidence, the IOU needs to prepare the necessary design drawings and documents to a sufficient level maturity, which may require a significant level of investment made prior to gaining the California Public Utilities Commission (Commission) approval. Without Commission approval, the IOU risks allocating resources and investment in a project that may ultimately be rejected and unable to be recovered in rates. As a result, IOUs tend to provide best estimates for complex projects with only conceptual level design, presenting a serious risk that these projects are going to exceed the budget initially approved as a result of unforeseen condition, permitting challenges, and/or scope changes.

To address this challenge, Cal Water is proposing that complex projects be presented to the Commission as two separate projects over two GRC applications. With this approach Cal Water is requesting authorization from the Commission for complex projects to complete a full design and obtain all necessary permits in one GRC application and then submit the costs for construction in a subsequent GRC application based on the completed final design. Cal Water is proposing this only for projects where there are significant unknowns, design challenges, and/or permitting concerns such that Cal Water cannot present a single total project budget at this time with any meaningful level of confidence. Depending on the complexity of the project, design and permitting cost average around 10 - 24% of a given project total budget costs.[19,20] Therefore, for a fraction of the total project costs, Cal Water can finalize the design and permitting of a project, and thereby enable an accurate estimate of the full construction costs and remaining scope of work to be presented in the subsequent GRC. Customers will also benefit from this approach by the increased level of accuracy and efficiency in cost estimating and resulting reduction in cost overruns and carryover projects.

Approach

Cal Water is proposing to complete only the design and permitting for the projects presented in Table 1 as part of the 2021 GRC application. These projects would then be assigned to Plant Held for Future Use (PHFU) as part of ratebase until the project is ultimately constructed and brought in service during the 2024 GRC period. Conditions for closing PHFU are as follows:

- Prepare 100% design drawings and project documents

[18] AACE 56R-08: *Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Building and General Construction Industries* (2020)
[19] ASCE, Manual No. 45-A *Guide for the Engagement of Engineering Services* (1981)
[20] California Multi-Agency CIP Benchmarking Study. *Annual Report – Update 2020* (December 2020)

- Obtain all necessary permits, including all discretional permits, such as California Environmental Quality Act (CEQA) permits and Conditional Use Permit (CUP), as well as any ministerial permits (permits issues by the governing regulatory planning body) that can be obtained prior to construction.

Once these conditions have been met the project will be closed and will be assigned as PHFU until the construction portion of the project is completed in the following rate case (2024 GRC).

Applicable Projects

The following is table is a summary of all the projects for all districts within Cal Water that are being presented as part of the 2021 GRC application as design and permit only projects. Any project over the threshold with the assign district are presented with additional justification and cost estimating within the respective district specific project justification book.

Table 1. Summary of All Design/Permitting Only Projects in 2021 GRC Filing

PID	District	Description	Year Start	Year Finish	2021 GRC Direct Cost[(a)]	2024 GRC Total Estimated Construction Cost[(b)]
124424	BAY	SC-117 Station Rebuild	2023	2023	$234,960	$650K - $850K
124427	BAY	SM-17 Station Rebuild	2023	2023	$99,043	$1M - $1.45M
124399	BG	BG Wildfire New PmpSta Kings Mt Rd	2023	2024	$368,350	$2.3M - $3.5M
123185	BK	BK 87 Station Rebuild	2023	2024	$216,157	$700K - $1.1M
123979	CH	CH 50 Partial Station Rebuild	2023	2023	$171,699	$500K - $900K
124797	CH	CH 64 Wildfire PumpStorage Facility	2023	2024	$352,220	$2.3M - $3.5M
123411	DOM	DOM 279 Station Rebuild	2023	2023	$280,128	$1.2M - $1.8M
123415	DOM	DOM Sta 298 Station Rebuild	2023	2023	$280,128	$1.2M - $1.8M
124079	ELA	ELA Main Replacement I-5 Crossings	2022	2024	$348,865	$1.6M - $2.4M
124092	HR	HR 5 Station Rebuild	2023	2024	$244,276	$750K - $1M
124339	HR	HR 26 Station Rebuild	2023	2024	$189,038	$700K - $900K
124429	HR	HR 27 Station Rebuild	2023	2024	$218,219	$1M - $1.5M
124433	KRV	Arden 009 Station Rebuild	2023	2023	$120,199	$150K - $250K
124508	KRV	Split Mountain 005 Station Rebuild	2023	2023	$170,710	$300K - $500K
123896	LAS	LAS 34 Storage Tank	2023	2024	$209,641	$1.2M - $1.8M
123913	LAS	LAS. STA117. Rebuild	2023	2024	$230,462	$1.4M - $2M
124342	LAS	LAS STA 042 Wildfire Booster Pumps	2023	2024	$313,836	$1.3M - $1.9M
123506	LIV	Sta 8 New Booster Station	2023	2024	$277,381	$1M - $1.4M
124359	ORO	ORO 17 - New Well Design & Permit	2023	2023	$474,496	$2.0M - $2.5M
123934	PV	PV Sta 37 - New Water Storage Tank	2022	2024	$1,338,054	$10.5M - $12M
124232	PV	PV Sta 014 Rebuild	2022	2024	$411,026	$1.5M - $2M
124233	PV	PV Sta 015 Rebuild	2022	2024	$890,490	$2.5M - $3M
124243	PV	PV Sta 023 Rebuild	2022	2024	$493,968	$1.5M - $2M
123623	RDV	HKN. STA001. Station Rebuild	2022	2023	$138,198	$300K - $400K
123811	SLN	SLN Las Lomas Intertie	2024	2024	$88,195	$500K - $750K
123839	SLN	SLN 071 Station Rebuild	2022	2024	$449,708	$2.2M - $3.3M
123881	SLN	Wildfire SLN 039: Arsenic Treatment	2023	2024	$596,659	$1.75M - $2.5M

PID	District	Description	Year Start	Year Finish	2021 GRC Direct Cost[(a)]	2024 GRC Total Estimated Construction Cost[(b)]
125060	SLN	SLN 78: New Well	2022	2024	$1,164,284	$2.6M - $3.9M
124896	STK	STK STA 85 - Arsenic Treatment	2022	2023	$570,465	$1.4M - $2.2M
125459	WLK	WLK 7 Driveway & Wall	2022	2022	$95,130	$400K - $600K
				TOTAL	**$11,035,985**	

Notes:

(a) Design and Permitting costs included within the 2021 GRC application

(b) Estimated project construction costs range based on existing available information. Construction costs will be further refined during the 2021 GRC and presented in the 2024 GRC application.

u. Multi-GRC Projects for Special Treatment in Special Request #5

Project Justification

The complexity and permitting requirements of today's water infrastructure projects have resulted in an increasing number of projects that exceed the typical 3 year GRC cycle from design to completion. Generally these projects are also critical for water supply or storage to meet customer demands, fire protection, or system reliability. For example, Cal Water's *Well Infrastructure Renewal Program* (see Section p.) noted that, on average, groundwater well infrastructure projects can take between 3 - 10 years to complete from concept to construction completion. Proactive and advance planning are critical for these type of long duration projects to maintain water supply reliability and meeting customer demands due to these extended timeframe requirements.

In addition, because these project are critical water supply or storage projects, Cal Water believes that these projects need to continue directly from design and permitting into construction to keep the total duration of the project as short as possible. The design & permitting projects presented previously in Section t., assume that there will be pause between the completion of the design in the 2021 GRC period and seeking approval to begin construction as part of the 2024 GRC application. For these critical multi-GRC projects, Cal Water is seeking authorization to continue with construction immediately following design and not waiting to resubmit the project. Projects identify for this multi-GRC approach provide significant benefits to customers, which can include a reduction in purchase water costs, increased system reliability to drought or wholesale water shortages, water supply diversification, and/or additional water supply to meet fire protection requirements and customer demands.

Approach

In an effort to complete these critical infrastructure projects with long design and construction durations, Cal Water is presenting a special request seeking authorization to start these project during the 2021 GRC period and continue until complete, with the understanding that they will not close until and be presented in the 2024 GRC application. This approach is being presented as part of **Special Request # 5** and applies only to the project listed below in Table 1. However, because these projects will not be completed until the 2024 rate case cycle, their costs are not included in the proposed revenue increase in this 2021 GRC proceeding. Details and justifications for all of these project are included in their respective district project justification book.

For details of the proposed ratemaking treatment, see the chapter on Special Request #5 in the Additional Testimony Book.

Table 1. Summary of the Multi-GRC Capital Projects Presented in the 2021 GRC PJ Books for SR #5

PID	District	Description	Direct Costs to be Presented in the 2024 GRC
126224, 126230, & 126241	BG / BAY	Brackish Aquifer Conductivity Test	$2,144,604[(a),(b)]
123434	BK	BK 2024 Well Replacement Program	$2,920,402
124507	KRV	Kernville New Storage Tank	$1,770,395
124239	LAS	LAS New Well For Zone 375	$3,826,614
123501	LIV	LIV New Well	$3,632,816
123887	SLN	SLN 76 - New Well	$3,397,745
		Total	**$17,785,684**

Note:

(a) Costs to be distribution between Bayshore – Mid-Peninsula (50%), Bayshore – South San Francisco (25%), and Bear Gulch (25%)

(b) Cost estimate does not include the land acquisition (easement or purchase)

Section C.

Background Reports

Background Reports:

1. 2020 *California Water Service Wildfire Risk Assessment*

2. *Cal Water WIRP 2021 Package*

3. *Technical Memorandum 2018 General Rate Case Main Replacement Program Review*

Wildfire Hardening Program

2020 *California Water Service Wildfire Risk Assessment*:

CALIFORNIA WATER SERVICE

California Water Service
Wildfire Risk Assessment

5-5-2020

updated November 30, 2020

Table of Contents

Executive Summary **5**
Purpose 5
Risk scoring method 5
Public Safety Shutoff Program 6
Results 8
Recommendations 9
Subsequent Validation of Recommendations 10
Risk Scoring Methodology: **11**
California Department of Forestry and Fire Protection (Cal Fire) Fire Threat and Hazard Data: 11
CPUC Fire-Threat Map 11
Public Safety Power Shutoff Program (PSPS): 15
Risk Analysis Model: 15
Interpretation of the Model 18
Project Development Methodology: **19**
Identify Solutions 19
Develop Initial Project Scopes and Costs 20
Refine Recommendations with District Input 20
Wildfire Hardening Criteria and Phasing 20
Risk Scoring Results: **22**
Antelope Valley 24
Bakersfield 26
Bear Gulch 28
Chico 32
Hermosa/Redondo 34
King City 36
Kern River Valley 36
Livermore 39
Los Altos 41

Oroville 43
Palos Verdes 45
Redwood Valley 50
Salinas 52
San Carlos 55
San Mateo 57
South San Francisco 59
Westlake 61
Capital Recommendations: 62
The Valley Districts 62
Bakersfield 62
Bear Gulch 63
Chico 69
Hermosa/Redondo 70
Livermore 71
Los Altos 72
Oroville 75
Palos Verdes 75
Salinas 88
San Carlos 92
San Mateo 93
South San Francisco 95
Westlake 95
Estimated Capital Project Costs: 97
Bakersfield 97
Bear Gulch 99
Chico 117
Hermosa/Redondo 121
Livermore 124

Los Altos 126
Oroville 138
Palos Verdes 139
Salinas 149
San Carlos 154
San Mateo 159
South San Francisco 161
Westlake 165
Summary 170
Appendix A –Proposed Disposition of Recommended Capital Projects, Nov. 30, 2020 171

Executive Summary

Purpose

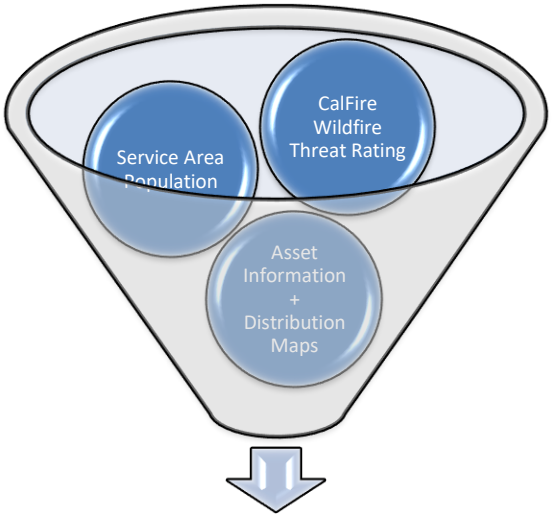
The purpose of this document is to outline recommended improvements necessary to prepare the California Water Service Company's (Cal Water) California water systems for wildfire events. This document aims to identify potential issues and recommend measures to prepare critical system facilities for wildfire events. Following the 2018 fire season where several fires directly impacted Cal Water's systems or Cal Water employees; including the Camp Fire, Mendocino Complex Fire, and the Woolsey Fire, Cal Water needed to thoroughly evaluate its systems and their resiliency in the event of a widespread wildfire and to propose measures necessary to mitigate the potential risks of a widespread wildfire. The risks of concern from a wildfire include the spread of a wildfire to structure fires within a water system, the risk of damage to facilities located within a wildfire risk area, and the risk of the loss of water to an area due to high demand or failure of equipment. This evaluation was also motivated in anticipation of the American Water Infrastructure Act which requires water utilities evaluate the risks to their systems across a wide range of categories, including wildfire threats. These measures were identified as especially critical and time sensitive for wildfire hardening.

Risk scoring method

To evaluate the risk and consequence of a wildfire and to identify potential system vulnerabilities, individual systems were analyzed zone-by-zone and scored based on key risk metrics. The risk metrics used were:

- **Wildfire Threat**
- **Population**
- **Potential System Risks, including:**
  - Vulnerable supply
  - Missing backup power
  - Limited storage
  - Restricted pipeline grid

A graphical representation of the inputs to the risk assessment process is presented here:



The score for each metric was determined according to the following table:

Component	Score	Explanation
CalFire Wildfire Threat	1	Zone is within 500 ft. of "Very High" threat area[1]
	2	Zone is within 500 ft. of "Extreme" threat area[1]
Supply	0	Robust (in zone or 1 intermediary step)
	1	Restricted (multiple intermediaries and/or limited pumping)
Backup Power	0	Available (not dependent on pumping or backup available to supply)
	1	Not Available (dependent on pumps but no backup available to supply)
Storage	0	Buffer storage present (automatically available sources ≥ 250,000 gal[2])
	1	Buffer storage missing (automatically available sources < 250,000 gal[2])
Grid	0	Well-looped (flow would not be significantly restricted by single asset)
	1	Limited Looping (flow could be significantly restricted to certain areas)

[1] – All other threat levels = 0;
[2] – Assumed ~2,000 gpm for 2 hours via storage while additional supply options are mobilized

An overall risk score was then calculated based on the below formula:

$$\boldsymbol{Risk\ Score = CalFire\ Threat\ Score * Population\ Factor} \\ * [\boldsymbol{Supply\ Score + Backup\ Power\ Score + Storage\ Score + Grid\ Score}]$$

Please note that this analysis is a representation of relative risk across individual systems. The analysis does not include hydraulic calculations and the individual risk scores are not the result of complex risk models. The analysis relied on the most updated data available (ex: schematics, metered data), augmented by more current system data when known. The analysis also relied on CalFire data and inherent error is introduced when overlaying this data over general Cal Water pressure zone boundaries and when considering the unpredictability of fire behavior.

Public Safety Shutoff Program

The Power Safety Public Shutoff (PSPS) program will increase the need for backup power generation within Cal Water's distribution systems and subsequently increase the need for generator fuel commensurate with the duration of power shutoffs. There will also be a necessary increase in generator and electrical equipment maintenance activities to ensure reliability of the auxiliary power sources for a PSPS event.

SCE and PG&E identified facilities that may be impacted by a PSPS event and provided this data to Cal Water in April 2019; however, the PSPS events of 2019 demonstrated that the list of systems potentially impacted by PSPS events is larger than what the utilities anticipated. The anticipated list of systems potentially impacted by a PSPS event at the time of creating this report include:

District	System
Antelope Valley	Grand Oaks
	Lake Hughes
	Leona Valley
Bakersfield	Bakersfield
Bayshore	San Carlos
	San Mateo
	South San Francisco
Bear Gulch	Bear Gulch
Chico	Chico
	Hamilton City
Kern River Valley	Kernville
	Lakeland
	Lower Bodfish
	Onyx
	South Lake
	Split Mountain
	Squirrel Mountain
	Upper Bodfish
Livermore	Livermore
Los Altos	Los Altos
Hermosa Redondo	Hermosa/Redondo
Marysville	Marysville
Oroville	Oroville
Palos Verdes	Palos Verdes
Redwood Valley	Armstrong Woods
	Lucerne
	Noel Heights
	Rancho del Paradiso
	Coast Springs
Salinas	Salinas Hills
	Las Lomas
	Oak Hills
Visalia	Mullen
Westlake	Westlake

Results

The following table presents the systems identified by CalFire threat level:

District	System	Highest Threat Level	% of Zones near Extreme Threat	% of Zones near Very High Threat
Antelope Valley	Leona Valley	Extreme	100%	
	Lake Hughes	Extreme	100%	
	Grand Oaks	Very High		100%
Westlake	Westlake	Extreme	75%	25%
Chico	Chico	Extreme	50%	38%
Redwood Valley	Lucerne	Very High		100%
	Armstrong Valley	Very High		100%
	Coast Springs	Very High		100%
Kern River Valley	Kernville	Very High		100%
	Lakeland	Very High		100%
	Lower Bodfish	Very High		100%
	Onyx	Very High		100%
	South Lake/	Very High		100%
	Split Mountain	Very High		100%
	Upper Bodfish	Very High		100%
Palos Verdes	Palos Verdes	Very High		100%
Livermore	Livermore	Very High		100%
Bear Gulch	Bear Gulch	Very High		100%
Oroville	Oroville	Very High		100%
Salinas	Country Meadows	Very High		100%
	Las Lomas	Very High		100%
	Oak Hills	Very High		100%
	Salinas Hills	Very High		100%
	Salinas	Very High		33%
Los Altos	Los Altos	Very High		88%
Bayshore	South San Francisco	Very High		82%
	San Mateo	Very High		76%
	San Carlos	Very High		64%
Bakersfield	Bakersfield	Very High		63%
Hermosa/Redondo	Hermosa/Redondo	Very High		43%
King City	King City	Very High		33%

Recommendations

Later sections of the report include specific capital projects recommended for wildfire risk mitigation. Initial cost estimates include internal labor, construction and material costs, and overhead and standard contingency rates for projects similar to the recommendations made within the report. It should be emphasized that the cost estimates should be considered "ballpark" and that individual projects may require additional effort to further refine scope and detailed requirements prior to developing a final budget. Where known, recommendations were compared to projects included in Cal Water's 2018 General Rate Case (GRC) filing; however, that should not be considered a final estimate for some projects even if consistent with existing projects. All projects warrant further evaluation for prioritization and verifying the scope of the project is consistent with any new information available. Additionally, priority should be given to facilities that may be affected by the PSPS program. Distribution system growth is adding vulnerabilities (instances with long, dead-end stretches and fire marshals giving variances from fire flow requirements). As the water system continues to grow outside of these recommended projects, further evaluation of vulnerabilities should be considered.

A summary of the costs of recommended capital projects by district is included below:

System	Cost of Recommended Capital Projects (in million $)
Bakersfield	4.44 – 7.71
Bear Gulch	17.7
Chico	3.9
Hermosa/Redondo	1.4 – 9.3
Livermore	2.8
Los Altos	5.3
Oroville	1.3
Palos Verdes	6.2
Salinas	8.9
San Carlos	8.1
San Mateo	2.5
South San Francisco	3.3 – 8.3
Westlake	4.6
Total	**70.6 – 86.6**

Antelope, Kern River, and Redwood Valleys, collectively referred to as "The Valley Districts," present unique challenges due to their predominantly rural service areas, comparative remoteness, varied topography, resource availability, and the discontinuous relationship of their component systems. Risks were evaluated in each of these districts, using currently available information. Due to these unique challenges, it was determined that specific recommendations for the Valley Districts will require a separate and detailed effort.

Subsequent Validation of Recommendations

Following the drafting of the risk assessment, the assessment's project recommendations were validated. Projects were initially evaluated using existing data which often times lags behind the installation of new facilities. For example, when there are new subdivisions installed in an area, the new facilities may not be mapped before the facilities are placed into service. This is due to Cal Water's internal processes which includes creating as-built maps of new facilities in GIS, rather than planned projects and then updating with as-built changes. This time lag means that there may be new information available from each operating district that changes the priority of each proposed project. In order to capture these changes, Cal Water developed a validation process for each project in which meetings were held with each operating district to discuss the specifics on each project and determine if there had been significant changes within the system that would make the project no longer needed or if there were modifications required to the project. Additionally there may be challenges that are not apparent based solely on the data readily available where district operations may have better local knowledge.

The proposed project list was thus refined following completion of the initial risk assessment and with District feedback project categories began to emerge. Following discussion with the Districts, projects could be classified based on status as:

- To be removed following discussion with District
- Currently In Progress
- Included as part of 2018 GRC Capital Projects
- Planned as part of a PSPS-related Memorandum Account
- Include in Wildfire Hardening Recommendations due to urgent need
- Recommended Project; however, revisit in future GRC due to various reasons
- Additional Analysis Needed Project - Revisit in Future GRC

Projects categorized as Wildfire Hardening projects were approved to go ahead of the 2021 GRC as non-specific spending and met at least one of the following criterion:

- Primarily intended to solve wildfire-related risk issues, rather than general operational issues
- Introduces sufficient additional resiliency near urban-wildland interface
- Improves efficacy of and leverages existing infrastructure as much as possible
- Automates emergency response solutions
- Presents stationary and mobile operation options
- Prioritizes hardening in "Extreme" wildfire risk areas as identified by CalFire
- Presents immediate, efficient, or viable solution to known issues even if the long-term plan is an alternative solution or further study leads to a reworked solution

Appendix A includes a table detailing the proposed disposition of the projects recommended as part of the Wildfire Risk Assessment.

Risk Scoring Methodology:

California Department of Forestry and Fire Protection (Cal Fire) Fire Threat and Hazard Data:

Cal Water downloaded Cal Fire-published GIS shapefiles, including a raster file representing wildland fire threat levels across the state and polygons representing fire hazard in individual state and local responsibility areas by county. The fire threat raster data and State Responsibility Area (SRA) fire hazard files were analyzed for pressure zones throughout Cal Water. The Local Responsibility Areas (LRAs) fire hazard data were not included in this state-wide analysis as it was not readily apparent that GIS data was provided in all counties. The LRA data was included in a county-specific analysis however. In a quick review of the separate data sources it does appear that the raster data threat levels are consistent with the State Responsibility hazards; however, the raster does not appear to take into account the urban fuel model included in the LRA hazard threat determination and estimates a subsequently lower threat in spot-checked locations such as the City of Paradise.

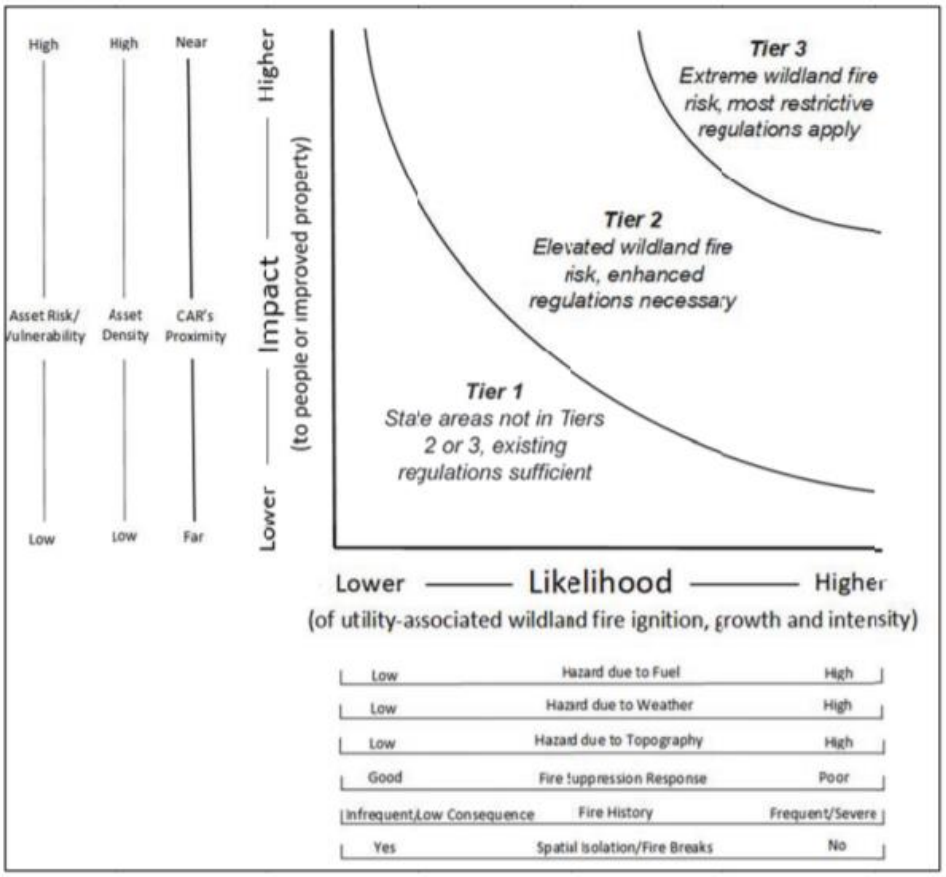
The analysis performed initially converted the fire threat raster data into polygons representing the fire threat so that a more detailed analysis could be done to determine the areas that intersect the “Very High” and the “Extreme” fire threat areas. This process simplified the borders of the “Very High” and “Extreme” threat areas. Cal Water then analyzed the pressure zones that were within 500 feet of these “Extreme” or “VeryHigh” wildfire threat designation polygons in order to focus the analysis effort and ensure the highest threat areas were addressed first. Zones and systems (such as Stockton, Visalia, and Willows) that did not fall within 500 feet of such areas are subsequently not included in this report.

CPUC Fire-Threat Map

Beginning in 2009, the California Public Utilities Commission (CPUC) adopted new fire-safety regulations. Several of the adopted fire-safety regulations apply only to "high fire-threat areas," where there is an elevated risk for power line fires igniting and spreading rapidly. These high fire-threat areas are designated by a single statewide fire-threat map, adopted on January 18, 2018, which designates areas where (1) there is an elevated risk for destructive power line fires, and (2) where stricter fire-safety regulations should apply. Cal Fire agreed to take the lead role in development of the Fire-Threat Map by organizing and leading a team of utility mapping experts to create an initial map depicting areas of California where there is an elevated hazard for the ignition and rapid spread of powerline fires due to strong winds, abundant dry vegetation, and other environmental conditions. This map was then refined with oversight from a Cal Fire-led Independent Review Team (IRT) of independent experts. This refinement included an interactive, engagement process whereby map alteration requests from many stakeholders, including investor-owned and publicly owned electric utilities, communications infrastructure providers, and local public safety agencies, could be submitted to the IRT via a ticketing system.

The IRT consulted a wide range of data sources, including Cal Fire-developed Fire Threat (2005) and California Fire Perimeters (1878-2015) data and an Integrated Utility Threat Index model developed by a member of the

IRT, to determine whether to approve or deny requests and delineate appropriate “Tiers” of fire threat. The Tiers and general guide for Tier designation utilized by the IRT is shown in the following figure (CPUC, 2017, p. 6) and the published CPUC Fire-Threat Map is included on the following page.

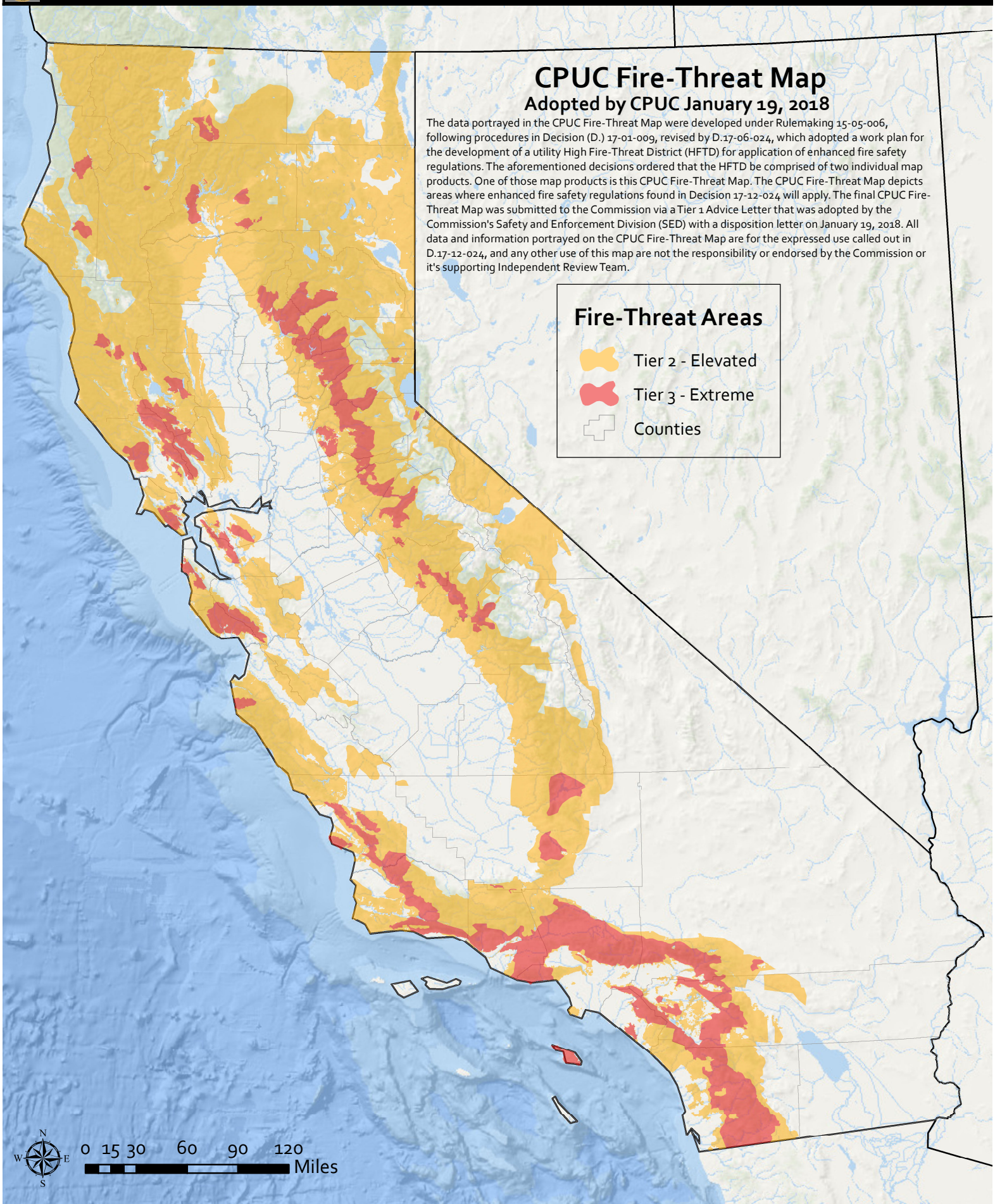


State of California - Public Utilities Commission

CPUC Fire-Threat Map

Adopted by CPUC January 19, 2018

The data portrayed in the CPUC Fire-Threat Map were developed under Rulemaking 15-05-006, following procedures in Decision (D.) 17-01-009, revised by D.17-06-024, which adopted a work plan for the development of a utility High Fire-Threat District (HFTD) for application of enhanced fire safety regulations. The aforementioned decisions ordered that the HFTD be comprised of two individual map products. One of those map products is this CPUC Fire-Threat Map. The CPUC Fire-Threat Map depicts areas where enhanced fire safety regulations found in Decision 17-12-024 will apply. The final CPUC Fire-Threat Map was submitted to the Commission via a Tier 1 Advice Letter that was adopted by the Commission's Safety and Enforcement Division (SED) with a disposition letter on January 19, 2018. All data and information portrayed on the CPUC Fire-Threat Map are for the expressed use called out in D.17-12-024, and any other use of this map are not the responsibility or endorsed by the Commission or it's supporting Independent Review Team.



For more information about the data and map depicted,
or other matters related to Utility wildfire safety,
please contact Terrie Prosper at Terrie.Prosper@cpuc.ca.gov
Basemap sourced from ESRI (World Oceans).

While much of the data used to develop and refine the CPUC Fire-Threat Map and Tiers are relevant to Cal Water's current wildfire preparation effort, overall the map was developed specifically with powerline utilities risks and associated increased regulatory needs in mind. The CPUC Map excludes areas of key interest for Cal Water, for example "non-burnable landscapes" such as densely populated areas with substantial impervious cover, because the sole focus was identifying areas which would benefit from additional regulation aimed at reducing powerline fire ignition. It was therefore determined that the CPUC Fire-Threat Map would be utilized for the in-depth generator study but that the more widely applicable Cal Fire Fire Threat data would be used for the Wildfire Risk Analysis Model. The following table summarizes number of zones effectively in each category for CalFire vs. CPUC Fire Threat for CWS.

WQRA	CalFire w/in 500ft			CPUC w/in 500ft	
	VH [per LRA]	VH	E	Tier 2	Tier 3
BG	0	60	0	10	31
BK	0	12	0	0	0
BKNG	0	1	0	0	0
CH	0	3	4	4	0
CMM	0	3	0	0	0
HR	0	3	0	2	0
KC	0	1	0	0	0
KERV	0	14	0	0	14
LAS	0	23	0	4	0
LBOD	0	4	0	0	4
LEO	0	0	2	0	2
LIV	0	8	0	4	0
LL	0	3	0	0	0
LUC	0	2	0	2	0
OH	0	1	0	0	0
ONYX	0	2	0	0	2
ORO	0	4	0	2	0
PV	45	63	0	108	0
SC	0	14	0	14	0
SLN	0	2	0	0	0
SLNH	0	18	0	17	0
SM	0	13	0	6	0
SMTN	0	3	0	0	3
SOLA	0	4	0	0	4
SSF	0	14	0	0	0
UBOD	0	3	0	0	3
WLK	0	2	6	0	8

WQRA's entirely outside of CPUC Fire-Threat rankings
WQRA's rated less threatened by CPUC than CalWater

Public Safety Power Shutoff Program (PSPS):

Based on the Tier 2 and Tier 3 fire risk areas identified in the CPUC Fire-Threat Map, power utilities have implemented a power shutoff protocol that will affect zones in 23 systems across 10 Cal Water operating districts. The power shutoffs are a precautionary action taken by power utilities to reduce the likelihood of igniting a fire. Various factors will be taken into account by the power utilities including the map, weather forecasts and site conditions when initiating a PSPS event. The areas and specific service sites affected by the PSPS depend on the power utilities' transmission lines and substations in relation to the fire threat areas which have been identified by the power utilities and listed below. Power utilities' protocol consists of providing 48 and 24-hour advance notices but weather and environmental conditions may quickly elevate conditions to extreme fire threat and coordination/notification efforts may be immediate. The duration of PSPS events will be based on a case by case assessment of the factors considered. Cal Water must be ready and equipped to maintain water service during PSPS events that may be initiated with short notice and for unknown durations.

Some of Cal Water's systems and many zones in the larger systems are deemed reliable as they may have resources or alternative means of water supply due to onsite auxiliary power, available portable units, hydraulic controls or the interconnectedness of the water distribution system. The remaining systems are not entirely equipped to supply emergency auxiliary power and hence water supply and/or pressure in case of a PSPS event. For those systems Cal Water has identified backup generator projects that are both required for wildfire risk mitigation and necessary due to the PSPS program. Those generator projects are considered critical.

Risk Analysis Model:

For the risk analysis a model was developed based on several factors including:

- **Fire threat rating** - maximum within 500 feet based on Cal Fire wildland fire threat raster data. A zone within 500 ft. of an "Extreme" area would get a score of 2. If a zone is not within 500 ft. of an "Extreme" area but within 500 ft. of a "Very High" area, the zone would get a score of 1. All other zones get a score of 0 in terms of wildfire threat and are not included in the risk analysis results presented herein.
- **Population factor** – a normalized factor based on the number of service connections within a zone compared to the total number of service connections within the water system/service area to which the zone belongs. This intent of the factor is to have population serve as a multiplicative "consequence of fire" component of the risk model while avoiding underrating low/no population or overrating high population zones and service areas. There are zones in Palos Verdes that have zero premises located within the zone and are really just transmission lines from one zone to another with pressure reducing valves in between. There may still be a risk of wildfire in the area that can be contained using water from that zone and so zones with zero services should not be ignored. The factor is currently calculated thus:

$$Population\ Factor = e^{\frac{service\ connection\ in\ zone}{total\ system\ service\ connections}}$$

The rationale for using the exponential function of the percentage of population served is that it evaluates as 1 when the population served is a very small (or zero) percentage of the system served thereby not eliminating the importance of that zone, it is mostly linear over the region we are evaluating, can be easily setup in a spreadsheet to the different zones we serve, and can be universally applied across all of Cal Water's systems so that the scoring system can have a consistent definition for developing consistent maps.

- **Supply score** - zones that are dependent on supply moving through multiple zones or zones that have limited pumping capacity into the zone will receive a score of 1. Zones that contain supply directly within the zone, such as wells, or where transport to the zone is only through a single source then the supply score is 0. The rationale for evaluating supply reliability as part of the risk scoring method is that if a zone is being called upon to supply fire protection in excess of the initial design standard for the system, that can affect dependent zones significantly and increase the likelihood that a dependent zone may not be able to provide fire protection in excess of the initial design standard.
- **Backup Power score** - based on whether or not supply to the zone is dependent on pumping. Zones that are dependent on pumping but there is no backup power available at the supply sources to the zone or for zones that are supplied through gravity from other zones but where those zones are also dependent on pumping but do not have backup power, will receive a score of 1. Zones that are supplied directly off of supply points from wholesale agencies, zones that are supplied through sources that have backup power, and zones that are supplied by gravity flow through zones whose supply sources have backup power, will receive a score of 0. The purpose of evaluating backup power is simply that a power outage is the most likely failure to occur during a widespread wildfire event and the new Public Safety Power Shutoff program will only increase the likelihood of loss of power to facilities necessary for fire protection.
- **Storage Score** - based on the storage automatically available to the zone. Zones that contain adequate storage supplied through gravity within the zone, storage from zones that can automatically supply water to the zone through gravity or from sources with backup power, or zones that are supplied through wholesale connections where there is storage within the wholesale supply agency, will receive a score of 0. Zones that do not have storage automatically available to the zone or zones with inadequate storage for the zone will receive a score of 1. Adequate storage is based on having 2 hours of storage for 2,000 gallons per minute (gpm) flow rate or approximately 250,000 gallons of storage. Zones where there may be nearly 250,000 gallons available but where that storage may be through multiple zones would also receive a score of 1 as we believe that storage may not be adequate to supply multiple zones in the event of a wildfire. While there is an expectation that storage will never be completely full, the adequate storage value is a score that assumes a relatively high flow rate to account for how full tanks may be during a wildfire event.
- **Grid Score -** based on the ability to move water through multiple paths within a zone. Zones that are primarily single mains with branches off of the zone will receive a score of 1. Zones that have sections of single mains that separate large areas of one side of the zone from another will also receive a score of 1. Zones that are single mains but limited to short runs such as along a small cul de sac, will receive a score

of 0 based on the assumption that supply for fighting a wildfire could be moved to the end of the street if necessary. Zones that are well looped within the zone will also receive a score of 0 under the assumption that water supply will not be significantly restricted to areas of the zone should a single valve or short section be isolated. Zones that depend on a single supply source through a single main, no matter how well the zone is looped, may get a score of 1 depending on the size of the zone past the supply source. The rationale for identifying limitations within the water system, particularly for wildfire risk, is that mains can be taken out of service for repair work and that repair work may last several days if there is a need for additional materials or to prevent the potential for contamination from other utilities. While the work is being performed, water may be available to customers but not at the rates that would be anticipated during a wildfire event. Even when in service, a small-diameter grid limitation could act as a bottle neck for the flows demanded during a wildfire event. Additionally single mains could be taken out for repair for periods limiting flow available for fire protection. Where possible this type of situation should be identified and mitigation measures put in place to ensure adequate fire protection even during main repairs.

The risk score for each zone is based on the following model and formula:

$$\boldsymbol{Risk\ Score} = \boldsymbol{CalFire\ Threat\ Score} * \boldsymbol{Population\ Factor} * [\boldsymbol{Supply\ Score} + \boldsymbol{Backup\ Power\ Score} + \boldsymbol{Storage\ Score} + \boldsymbol{Grid\ Score}]$$

Component	Score	Explanation
CalFire Wildfire Threat	1	Zone is within 500 ft. of "Very High" threat area[1]
	2	Zone is within 500 ft. of "Extreme" threat area[1]
Supply	0	Robust (in zone or 1 intermediary step)
	1	Restricted (multiple intermediaries and/or limited pumping)
Backup Power	0	Available (not dependent on pumping or backup available to supply)
	1	Not Available (dependent on pumps but no backup available to supply)
Storage	0	Buffer storage present (automatically available sources ≥ 250,000 gal[2])
	1	Buffer storage missing (automatically available sources < 250,000 gal[2])
Grid	0	Well-looped (flow would not be significantly restricted by single asset)
	1	Limited Looping (flow could be significantly restricted to certain areas)

[1] – All other threat levels = 0;

[2] – Assumed ~2,000 gpm for 2 hours via storage while additional supply options are mobilized

The development of the above model was based on a likelihood times consequence risk model. Cal Fire wildfire threat times the sum of the adjustment factors of supply score, backup power score, storage score, and grid score serves as the likelihood component of the risk model. Population factor serves as the consequence component of the risk model. To develop the likelihood component Cal Water evaluated the high level components of a water system that would most likely contribute to the risks stated previously including risk of

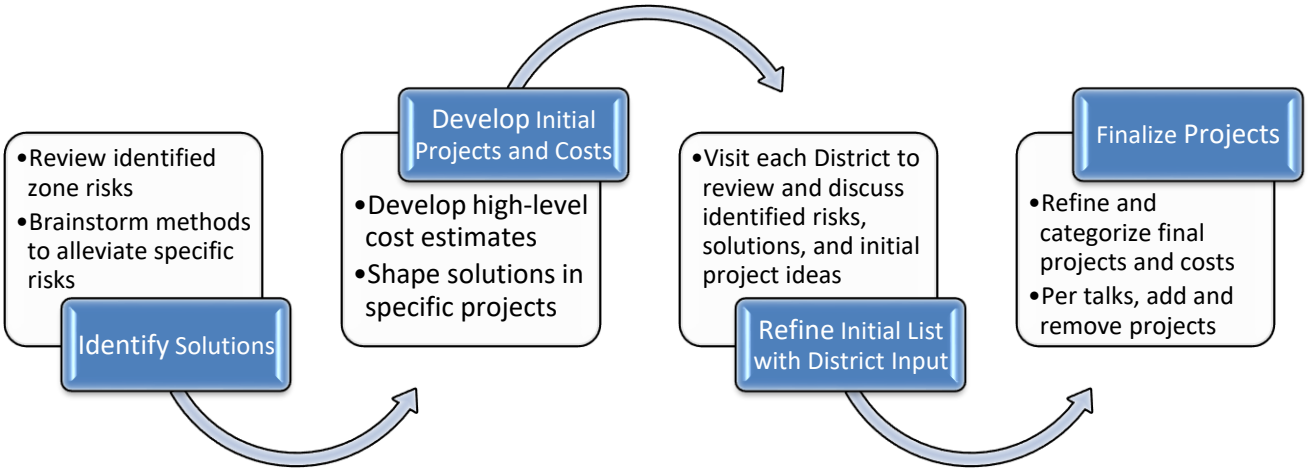
wildfire expanding to structure fires, damage to facilities due to wildfire, and loss of water supply to an area. Having storage locally available within a zone reduces the likelihood that there is an immediate outage of water to a zone in the event of high demand. Zones that have backup power available for supply sources into the zone reduce the likelihood that there will be an immediate outage of supply into an area. Having a well-connected distribution network reduces the likelihood that any single failure will lead to an outage to an area within the zone or to a dependent zone. Supply sources (wells and purchased water connections) directly within that zone reduce the likelihood that there will be an immediate loss of supply to the zone. Where zones are dependent on supplies through several other zones, the likelihood that there may be a loss of supply is increased. Cal Water then used a simple addition of these four factors to adjust the likelihood of a failure or loss of supply to an area. While there is no such thing as zero risk, a zone that scores zero for all four of these adjustment factors would not be evaluated at this time for improvements required to mitigate against wildfire risk.

Interpretation of the Model

For this model, all elements within the scoring system are weighted equally. Further refinements to the model may include revising the weighting of the scoring system to more heavily weigh specific items; however, at a high level the model may at least identify areas of concern within the water system and highlight what projects to consider based on the scores within the model. Additionally the population factor is used to determine the potential consequence of a widespread fire assuming that a fire could spread to multiple structures. The model could be further refined based on physical area of the zone, but due to the way in which the GIS data is developed and stored, the zones may not be accurate in terms of size and area covered. Further refinement may be necessary in order to use zone size in the model. Another limitation of the model is how it weighs dependent zones. The model assumes that any dependency on another zone is as equal to another; however, because the water systems allow for movement of water through different means, determining how dependent one zone is on another is not a direct process. This means that a zone that is dependent on water through 10 different zones is as dependent as one that is supplied through 2 zones or if a zone can be supplied one way through 2 zones but another through 10, then this is still as dependent as if it were supplied through 10 zones.

Project Development Methodology:

The below graphic presents the methodology for developing projects:



Identify Solutions

The individual risk scores allow for comparison across systems and may be used in the future to prioritize projects. For the purposes of this report, they were used for quantifying relative risk, map graphics, and specifying which zones had specific risks . Once specific risks were identified in system zones, solutions to alleviate each risk were proposed. Example solutions include:

- Investigation of new sources or automating supplying valves for zones with supply vulnerabilities
- Generator, transfer switch, and portable booster connections for areas lacking backup power
- Additional tank capacity or alternative supply for zones with limited storage
- Parallel mains, pipe looping, or upsizing in areas with identified grid limitations

Examples of projects that were not considered are new well supply. New well supplies were not considered as part of this evaluation as generally there may be sufficient supply within a system to support wildfire fighting efforts. New wells are also longer term projects, require land acquisition, and have risks in terms of success and may not be able to be completed in a short time period. For these reasons projects like this were not considered part of the types of projects that would be proposed as solutions to mitigating wildfire risks.

The Valley Districts Exception: Antelope, Kern River, and Redwood Valleys, collectively referred to as "The Valley Districts," present unique challenges due to their predominantly rural service areas, comparative remoteness, varied topography, resource and supply availability, and the discontinuous relationship of their component systems. Additionally, the large amount of projects in these regions, compared to the resultant rate impact to customers, make it very hard to complete these projects in a reasonable time. Due to these

unique challenges, it was determined that specific wildfire prevention and preparedness recommendations for the Valley Districts would require a separate and more detailed effort.

Develop Initial Project Scopes and Costs

Identified solutions were then developed into initial project recommendations with an associated scope and cost estimate assigned. Cost estimates include internal labor, construction and material costs, and overhead and contingency rates for projects similar to the recommendations made within the report. It should be emphasized that the cost estimates should be considered "ballpark" and that individual projects may require additional effort to further refine scope and detailed requirements prior to developing a final budget. Where known, recommendations were compared to projects included in Cal Water's 2018 GRC filing; however, that should not be considered a final estimate for some projects even if consistent with existing projects. Further evaluation of all projects is warranted for prioritization and verifying the scope of the project is consistent with any new information available.

Refine Recommendations with District Input

Subsequent to the initial drafting of this report, meetings were held with key District staff in each of the affected systems to confirm identified risks, discuss initial project proposals, and collect additional information and ideas. Utilizing this valuable feedback and insight, the initial project recommendations were refined and new projects developed to address agreed upon risks. The Districts were also able to provide information on which projects were already under construction and which had upcoming Main Replacement Program (MRP) projects that could potentially be synergistic. Additionally, there were discussions that certain projects were ready immediately, whereas other projects would need additional development, or should be removed because they were no longer the best solution. For example, hydrant projects can move forward very quickly with little permitting, and construction time. On the contrary, obtaining additional supply, may require significant time to develop, or may not be possible given available property constraints.

Wildfire Hardening Criteria and Phasing

The proposed project list was thus refined with District feedback and project categories began to emerge. Following discussion with the Districts, projects could be classified based on status as:

- To be removed following discussion with District
- Currently In Progress
- Covered by the 2018 GRC
- Planned as part of a PSPS-related Memorandum Account
- Recommended Project; however, revisit in future GRC due to various reasons
- Additional Analysis Needed Project - Revisit in Future GRC
- Include in Wildfire Hardening Recommendations

Projects categorized as Wildfire Hardening projects met at least one of the following criterion:

- Primarily intended to solve wildfire-related risk issues, rather than general operational issues

- Introduces sufficient additional resiliency near urban-wildland interface
- Improves efficacy of and leverages existing infrastructure as much as possible
- Automates emergency response solutions
- Presents stationary and mobile operation options
- Prioritizes hardening in “Extreme” wildfire risk areas as identified by CalFire
- Presents immediate, efficient, or viable solution to known issues even if the long-term plan is an alternative solution or further study leads to a reworked solution

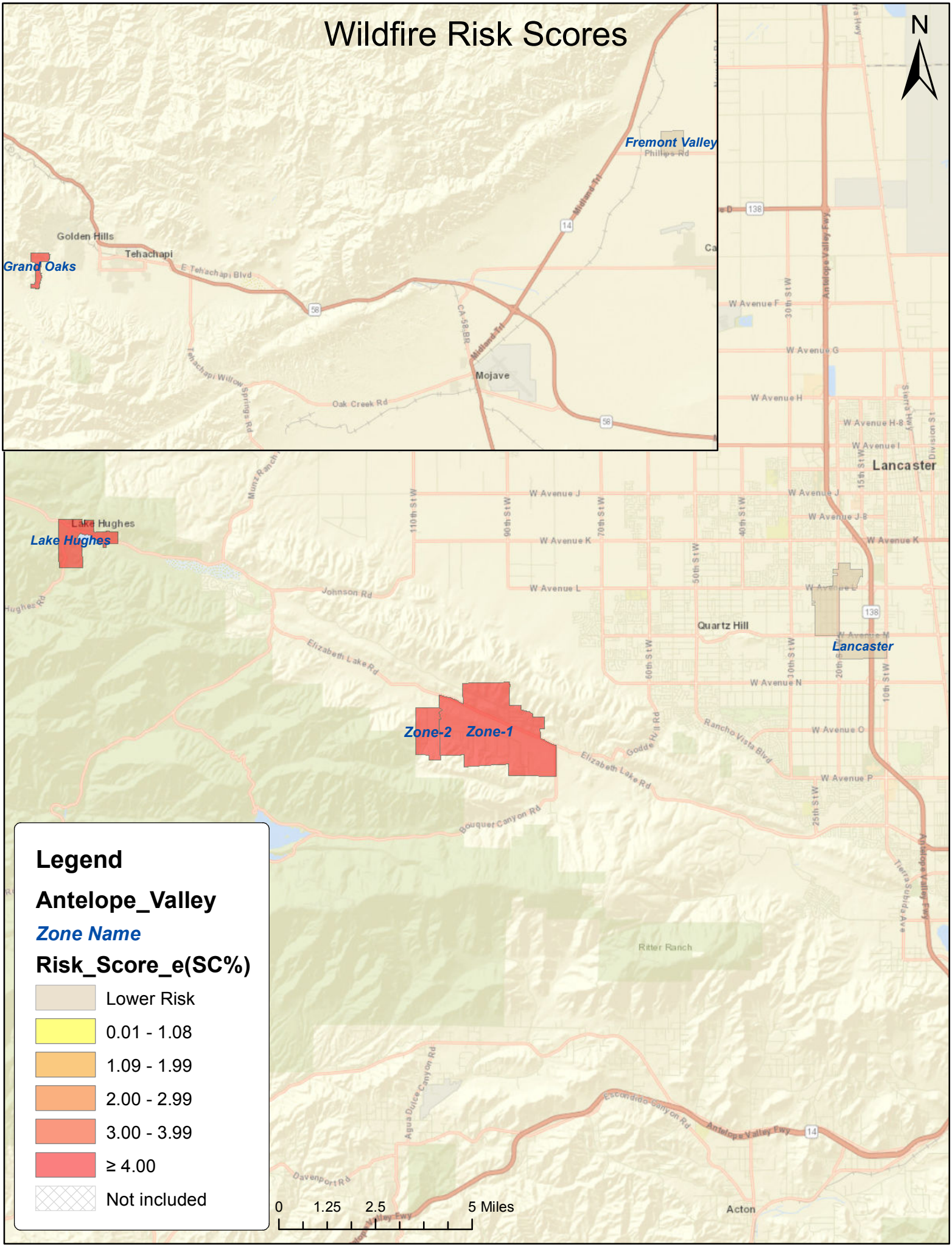
The initial cost estimates for projects categorized as Wildfire Hardening were then further refined. To do this, high-level cost estimates were developed per general project type based on recent CWS project costing. See the Wildfire Hardening Report (2020) for further details. Only projects included in the Wildfire Hardening category were proposed to move forward outside of a memorandum account or GRC.

Appendix A includes a table detailing the proposed disposition of the projects recommended as part of the Wildfire Risk Assessment.

Risk Scoring Results:

The first step of the Project Development Methodology is to evaluate specific risks within each system based on wildfire threat, storage limitations, grid limitations, supply limitations, and backup power limitations and then applying the aforementioned risk scoring method to each zone. In this way, Cal Water developed the following list of identified risks within its water systems.

The following maps and associated tables present the results of the risk scoring analysis spatially and in tabular format respectively.



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Antelope Valley

The Antelope Valley district consists of several smaller independent water systems. These water systems include the Fremont Valley, Grand Oaks, Lancaster, Leona Valley, and Lake Hughes systems. Generally these systems depend heavily on locally supplied groundwater; however, the Leona Valley and Lancaster systems have purchased water connections with Antelope Valley-East Kern Water Agency. The systems of primary concern due to the proximity to wildfire risk areas are the Grand Oaks system, Leona Valley system, and the Lake Hughes system.

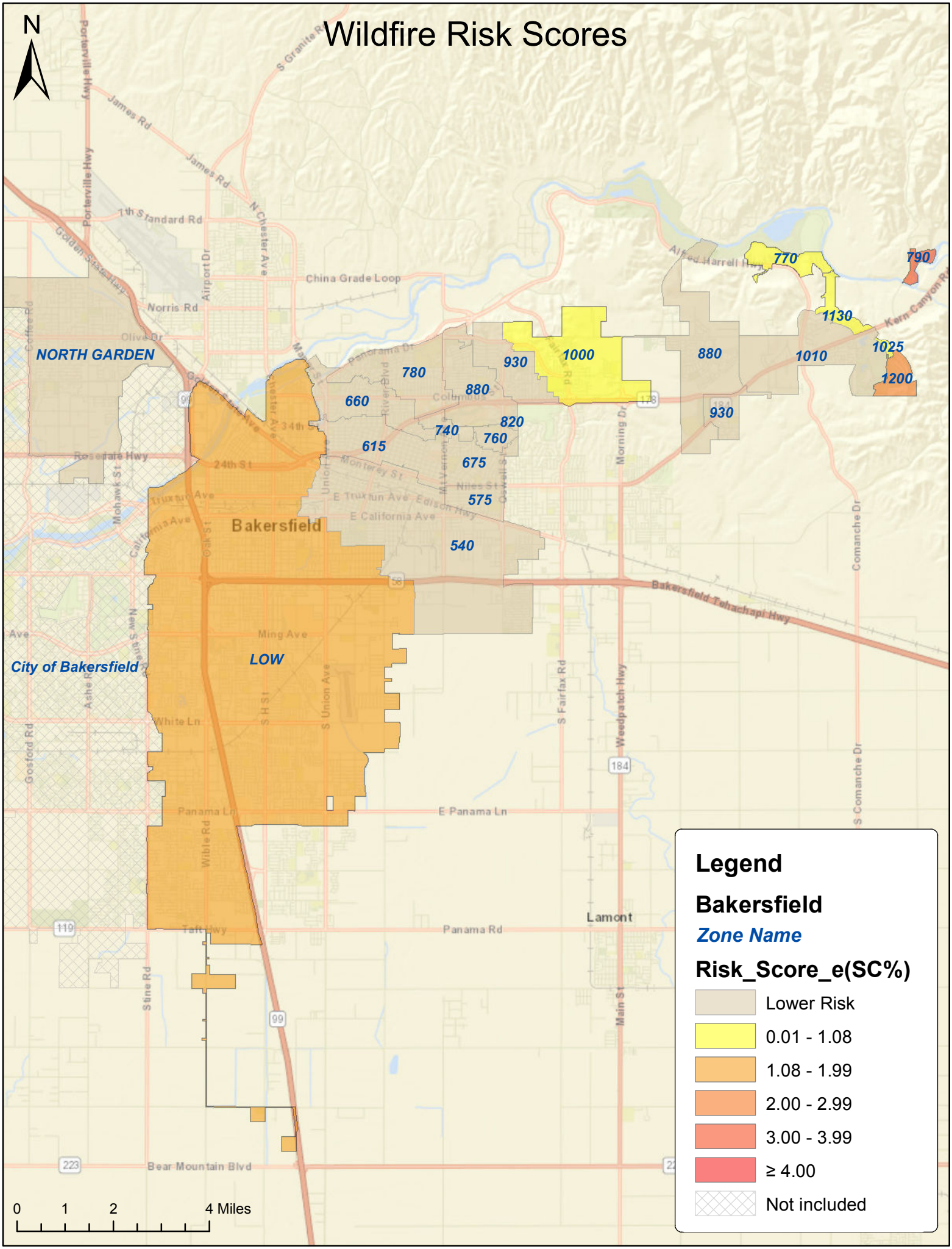
Due to concerns regarding the inability of most supply sources in Antelope Valley to provide wildfire protection flows many times their normal demand, it was assumed that these existing supply sources were a vulnerability. Further study would be needed to confirm this assumption and to determine whether alternative supplies could be made available in the event of a wildfire.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
LEO[1]_Zone-1	Extreme	406	2.57	2	0	1*	0	1	10.28
LEO[1]_Zone-2	Extreme	25	1.06	2	1	1*	1	1	8.48
Lake Hughes	Extreme	211	2.72[2]	2	1	1*	1	1	21.76
Grand Oaks	VeryHigh	37	2.72[2]	1	1	1*	1	1	10.88

* – Denotes zone impacted by Public Safety Power Shutoff Program

[1] – Denotes Leona Valley

[2] – Considered separate service areas, each containing 100% of service connections, and thus the normalized population factor will be maximized.



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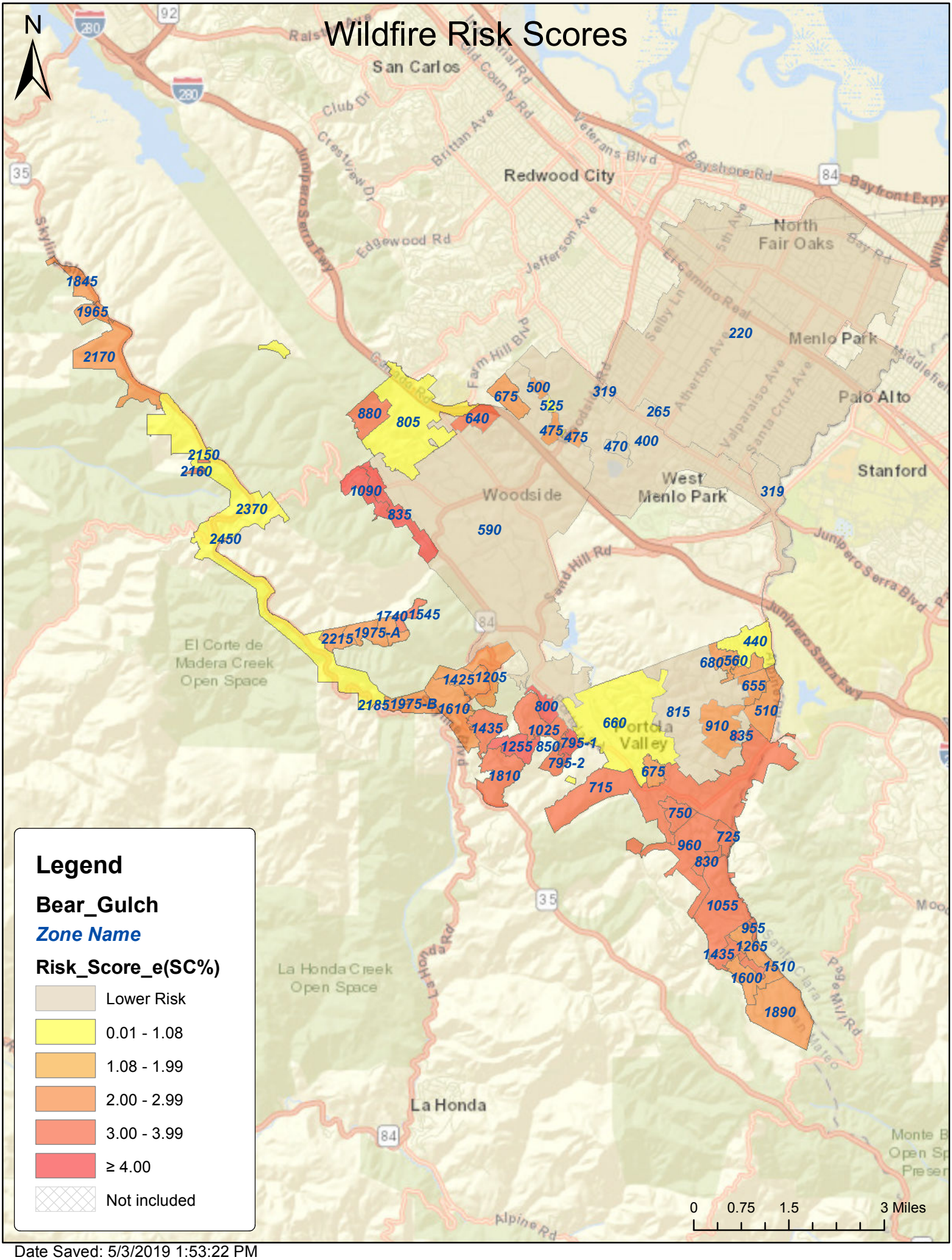
Bakersfield

The Bakersfield system is separated into two generally independent systems, the Bakersfield system and the North Garden system. Each system has a diverse supply of sources available including locally produced groundwater, locally produced surface water, and purchased surface water from the wholesale provider, Kern County Water Agency (KCWA). The North Garden system is a single pressure zone with a number of ground level storage tanks that can be used to provide water into the zone through on-site booster pumps. The main Bakersfield system consists of multiple pressure zones where water is generally pumped from lower elevations into the upper elevated pressure zones. The wholesale water provider, KCWA, has a treatment plant located near Highway 99 and Olive Dr. where water is then pumped east to an elevated storage tank located at the Oswell Tank site near Oswell St. and Auburn St. From there water is pumped to the Corner Tank site located near Fairfax Rd. and Auburn St. Cal Water can purchase water through five separate connections off of this system and then either pump the water into higher elevated zones or via gravity supply it to lower elevated zones. There is an additional pipeline to the west that supplies water to the main Bakersfield system through one connection and then to the North Garden system through multiple connections.

Of particular interest, in terms of wildfire threat, is the northeast area of the Bakersfield system. These zones are located near "Very High" wildfire threat areas as defined by the raster data obtained from Cal Fire and generally depend on pumping from lower elevations.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
North Garden	VeryHigh	8,067	2.72[1]	1	0	0	0	0	0
LOW	VeryHigh	37,096	1.84	1	0	1	0	0	1.84
660	VeryHigh	1,917	1.03	1	0	0	0	0	0
770	VeryHigh	83	1.00	1	0	0	0	1	1.00
780	VeryHigh	2,083	1.03	1	0	0	0	0	0
790	VeryHigh	13	1.00	1	1	0	1	1	3.00
880	VeryHigh	2,502	1.04	1	0	0	0	0	0
930	VeryHigh	2,315	1.04	1	0	0	0	0	0
1000	VeryHigh	1,495	1.02	1	0	0	0	1	1.02
1010	VeryHigh	1,210	1.02	1	0	0	0	0	0
1025	VeryHigh	29	1.00	1	1	0	0	0	1.00
1130	VeryHigh	157	1.00	1	1	0	0	0	1.00
1200	VeryHigh	135	1.00	1	1	1	0	0	2.00

[1] – Considered separate service area, containing 100% of its service connections, and thus the normalized population factor is maximized.



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Bear Gulch

The Bear Gulch system is the result of the integration of several smaller water systems for several communities within San Mateo County. The communities include the towns of Atherton, Woodside, and Portola Valley as well as unincorporated areas of San Mateo County along Skyline Blvd. and around Atherton portions of the city of Menlo Park. The Bear Gulch system is primarily supplied through several connections with the San Francisco Public Utilities Commission. These service connections are generally at a hydraulic grade of 320 ft. or less so zones higher than 320 ft. (the zone name represents the hydraulic grade of the zone) rely on pumping in order to maintain supply in the zone. There are also some zones below 320 ft. that depend on pumping just due to the geography of the surrounding area.

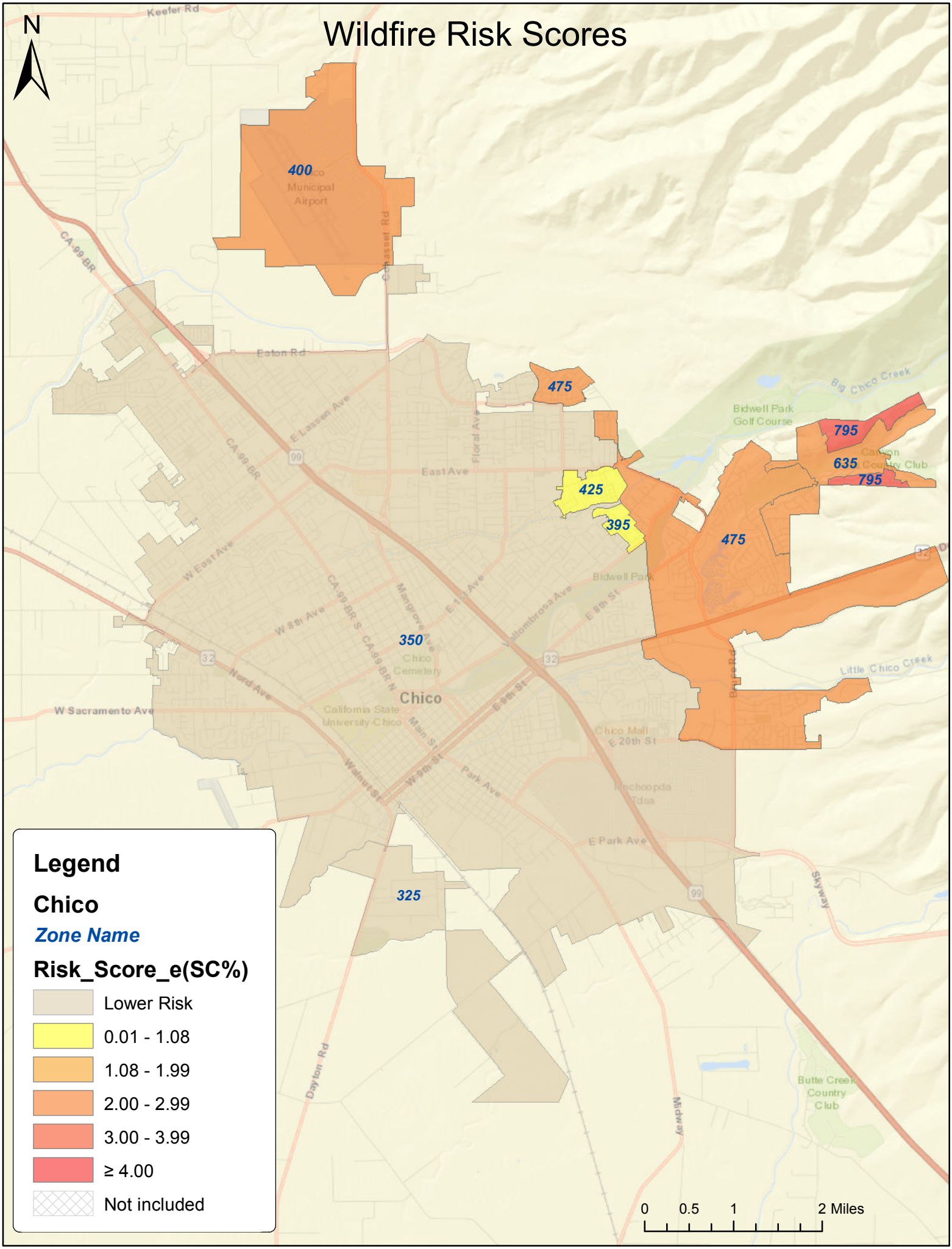
The Bear Gulch system includes a large area west of the 280 Freeway that is adjacent to a wilderness/urban interface. This area has fewer residences per acre than the portion of the system east of the freeway and as such has less demand per area. However, the needs for fire protection related to wildfire are higher in this area. This creates a large problem in being able to balance the needs for fire protection along with water quality such that increasing storage is generally not going to be recommended as a means of mitigating against wildfire risk. Additional pumping capacity, backup generators in multiple locations within a zone, increased distribution system reliability, and additional hydrants are the primary recommendations where appropriate. In some cases storage may still be required due to meet a minimum target within a zone or area or as the only suitable alternative to increasing resiliency in the system.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
220	VeryHigh	12,197	1.91	1	0	0	0	0	0.00
265	VeryHigh	7	1.00	1	0	0	0	0	0.00
319	VeryHigh	533	1.03	1	0	0	0	0	0.00
395	VeryHigh	2	1.00	1	1	0	0	0	1.00
400	VeryHigh	1,584	1.09	1	0	0	0	0	0.00
440	VeryHigh	318	1.02	1	1	0	0	0	1.02
470	VeryHigh	34	1.00	1	0	0	0	0	0.00
475	VeryHigh	40	1.00	1	1	0	0	1	2.00
500	VeryHigh	12	1.00	1	1	0	0	1	2.00
510	VeryHigh	14	1.00	1	1	0	0	1	2.00
525	VeryHigh	9	1.00	1	1	0	0	0	1.00
560	VeryHigh	138	1.01	1	1	0	0	1	2.02
590	VeryHigh	1,076	1.06	1	0	0*	0	0	0.00
640	VeryHigh	32	1.00	1	1	1	0	1	3.00

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
655	VeryHigh	19	1.00	1	1	0	0	1	2.00
660	VeryHigh	298	1.02	1	0	0*	0	1	1.02
675	VeryHigh	101	1.01	1	1	1	0	0	2.02
680	VeryHigh	59	1.00	1	1	0	0	1	2.00
715	VeryHigh	324	1.02	1	1	0*	1	1	3.06
725	VeryHigh	21	1.00	1	1	1	0	1	3.00
750	VeryHigh	122	1.01	1	1	1	0	1	3.03
795-2	VeryHigh	4	1.00	1	1	1*	1	1	4.00
795-1	VeryHigh	52	1.00	1	1	1*	1	1	4.00
800	VeryHigh	13	1.00	1	1	1	1	1	4.00
805	VeryHigh	107	1.01	1	0	1	0	0	1.01
815	VeryHigh	366	1.02	1	0	0*	0	0	0.00
830	VeryHigh	37	1.00	1	1	1	0	1	3.00
835	VeryHigh	65	1.00	1	1	1*	1	1	4.00
850	VeryHigh	28	1.00	1	1	1	0	1	3.00
880	VeryHigh	18	1.00	1	1	1*	0	1	3.00
910	VeryHigh	100	1.01	1	1	0	0	1	2.02
955	VeryHigh	21	1.00	1	1	0	1	1	3.00
960	VeryHigh	163	1.01	1	1	1	0	1	3.03
1025	VeryHigh	55	1.00	1	1	1*	0	1	3.00
1055	VeryHigh	38	1.00	1	1	0*	1	1	3.00
1060	VeryHigh	9	1.00	1	1	0	1	1	3.00
1090	VeryHigh	45	1.00	1	1	1*	1	1	4.00
1205	VeryHigh	8	1.00	1	1	0	0	1	2.00
1255	VeryHigh	14	1.00	1	1	1	1	1	4.00
1265	VeryHigh	104	1.01	1	1	0*	1	0	2.02
1425	VeryHigh	24	1.00	1	1	0	0	1	2.00
1435	VeryHigh	82	1.00	1	1	1*	0	1	3.00
1510	VeryHigh	16	1.00	1	1	0	1	1	3.00
1545	VeryHigh	6	1.00	1	1	1	0	1	3.00
1600	VeryHigh	40	1.00	1	1	0*	0	1	2.00
1610	VeryHigh	82	1.00	1	1	0*	0	1	2.00

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
1740	VeryHigh	4	1.00	1	1	0	0	1	2.00
1810	VeryHigh	34	1.00	1	1	0*	1	1	3.00
1845	VeryHigh	22	1.00	1	1	0	0	1	2.00
1890	VeryHigh	19	1.00	1	1	0*	0	1	2.00
1965	VeryHigh	5	1.00	1	1	0	0	1	2.00
1975-A	VeryHigh	10	1.00	1	1	0	0	1	2.00
1975-B	VeryHigh	22	1.00	1	1	0	0	1	2.00
2150	VeryHigh	10	1.00	1	1	1	0	1	3.00
2160	VeryHigh	7	1.00	1	1	1	0	1	3.00
2170	VeryHigh	57	1.00	1	1	0*	0	1	2.00
2185	VeryHigh	5	1.00	1	1	0	0	1	2.00
2215	VeryHigh	10	1.00	1	1	0	0	1	2.00
2370	VeryHigh	188	1.01	1	0	0*	0	1	1.01
2450	VeryHigh	-	1.00	1	1	0	0	1	2.00

* – Denotes zone impacted by Public Safety Power Shutoff Program



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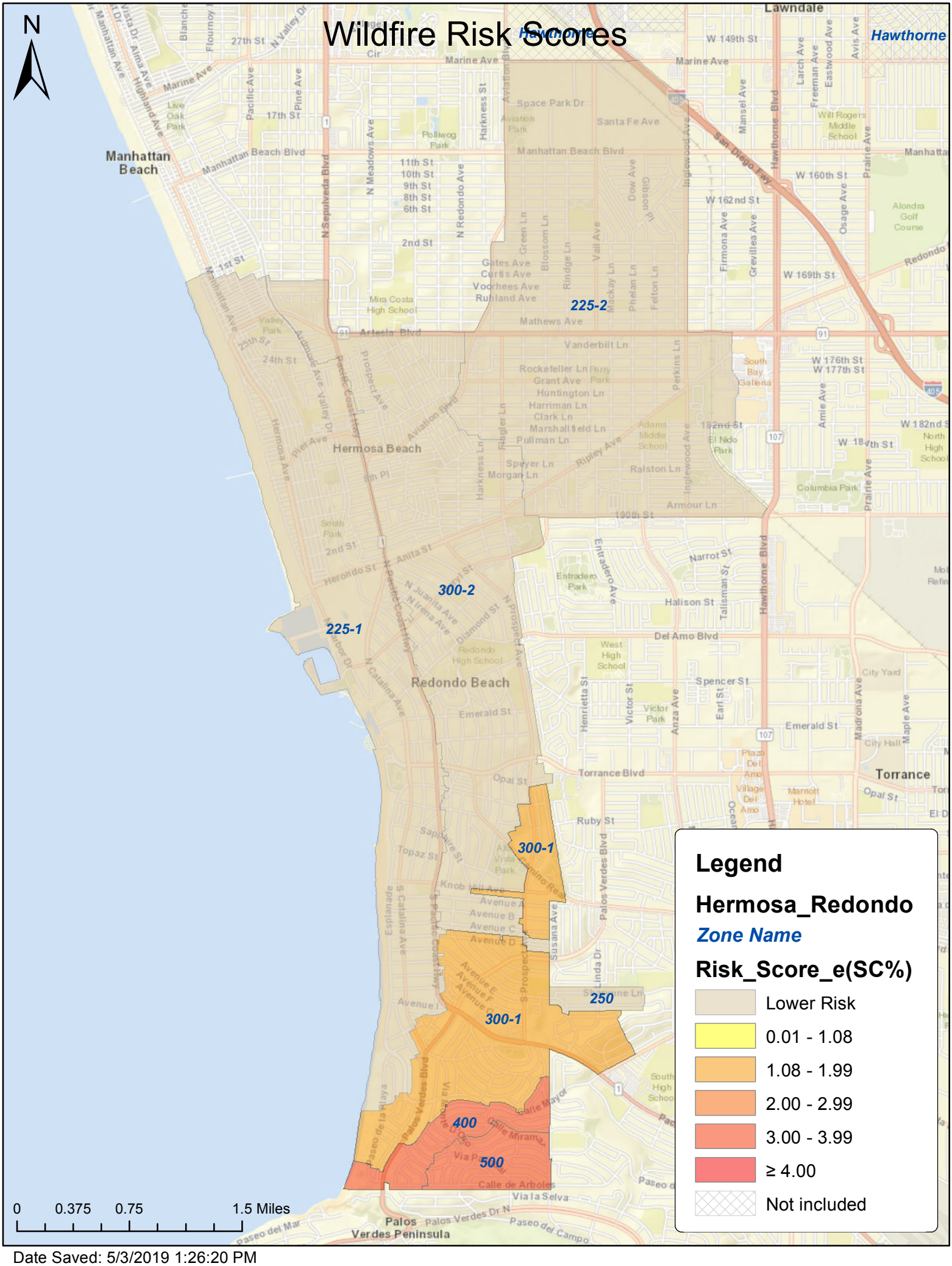
Chico

The Chico system is supplied solely by California Water Service (CWS) through multiple groundwater wells. There are multiple storage tanks throughout the system but there are several zones that do not have elevated storage tanks. The Chico system is also located near extreme wildfire threat areas especially in the eastern portion of the system near Bidwell Park and along State Highway 32. The outskirts of the City of Chico are near the boundaries of the City of Paradise.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
350	VeryHigh	24,802	2.37	1	0	0	0	0	0.00
395	VeryHigh	153	1.01	1	0	0	0	1	1.01
400	Extreme	168	1.01	2	0	0	1	0	2.02
425	VeryHigh	212	1.01	1	0	0	1	0	1.01
475	Extreme	2,765	1.10	2	0	0	0	1	2.20
635	Extreme	288	1.01	2	0	0	0	1	2.02
795	Extreme	106	1.00	2	1	0	0	1	4.00



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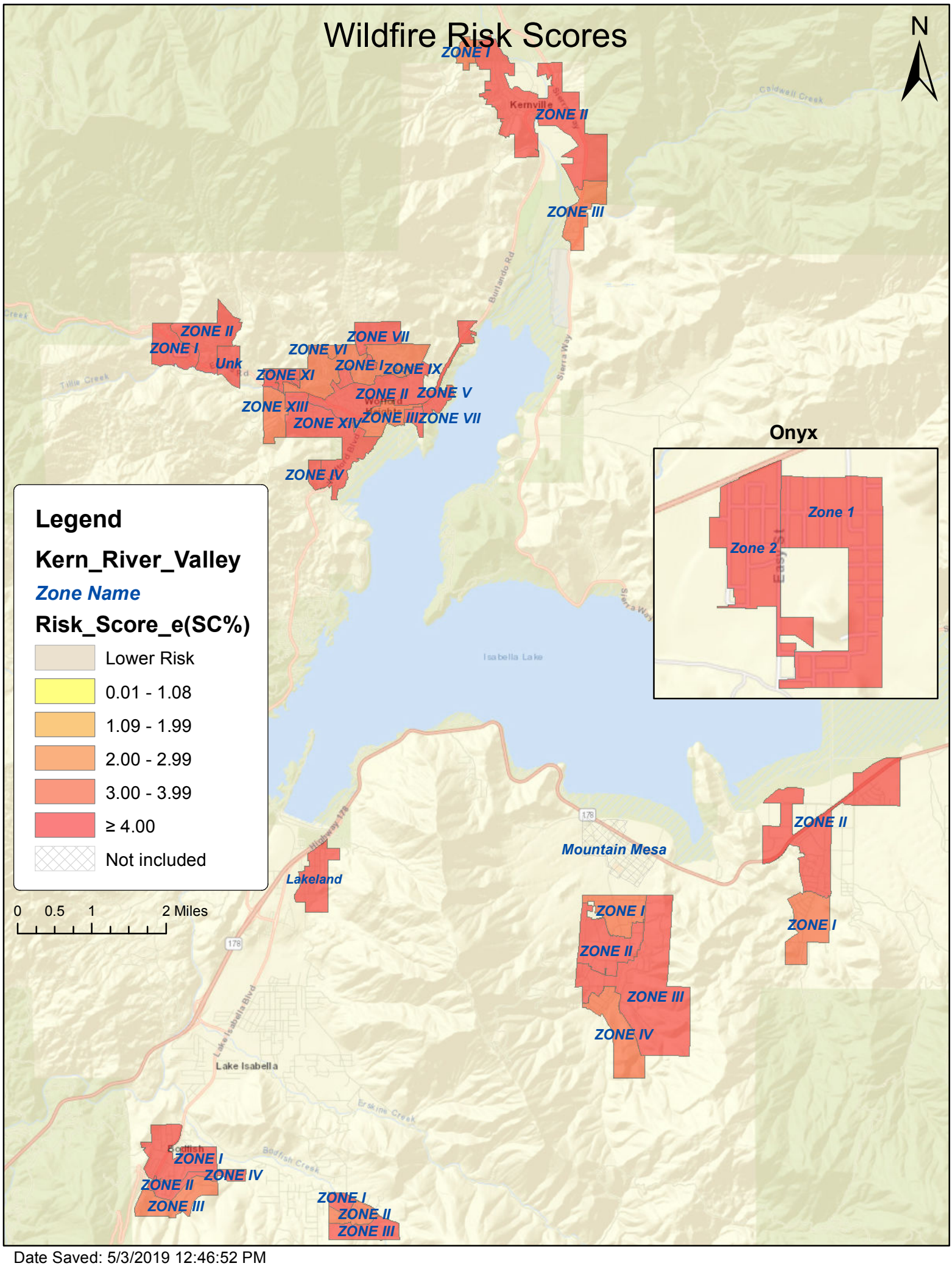
Hermosa/Redondo

The Hermosa/Redondo system serves customers within the cities of Hermosa Beach, Redondo Beach, and portions of the city of Torrance. The system is primarily supplied through purchased water connections from West Basin through the Metropolitan Water distribution system. There are three groundwater wells that can operate and supply some water to the system as well; however, there are treatment and blending requirements for those wells to operate. The water from these sources is then pumped to multiple different pressure zones throughout the system.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
300-1	Very High	2,416	1.09	1	0	0	0	1	1.09
400	Very High	552	1.02	1	1	1*	0	1	3.06
500	Very High	617	1.02	1	1	1*	1	0	3.06

* – Denotes zone impacted by Public Safety Power Shutoff Program



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King City

The King City district is located in southern Monterey County approximately 45 miles southeast of the City of Salinas. Water served by the District comes from local groundwater.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
460	Very High	2,611	2.65	1	0	0	0	0	0.00

Kern River Valley

The Kern River Valley district consists of several smaller independent water systems. These water systems serve the communities of Arden, Bodfish, Kernville, Lakeland, Mountain Shadows, Onyx, Split Mountain, Squirrel Valley, South Lake, and Wofford Heights. Water served by the district comes from local groundwater and surface water from the North Fork of the Kern River. Surface water is only available to the Kernville system. The other systems rely on groundwater from fractured rock aquifers. These aquifers are susceptible to reduced yield when rainfall is below normal. Groundwater in the area also requires advanced treatment due to naturally occurring contaminants and advance treatment systems have been installed on system wells to remove these contaminants prior to the well water entering the distribution systems. All CWS-owned systems in the district are of concern due to the proximity to "VeryHigh" wildfire risk areas.

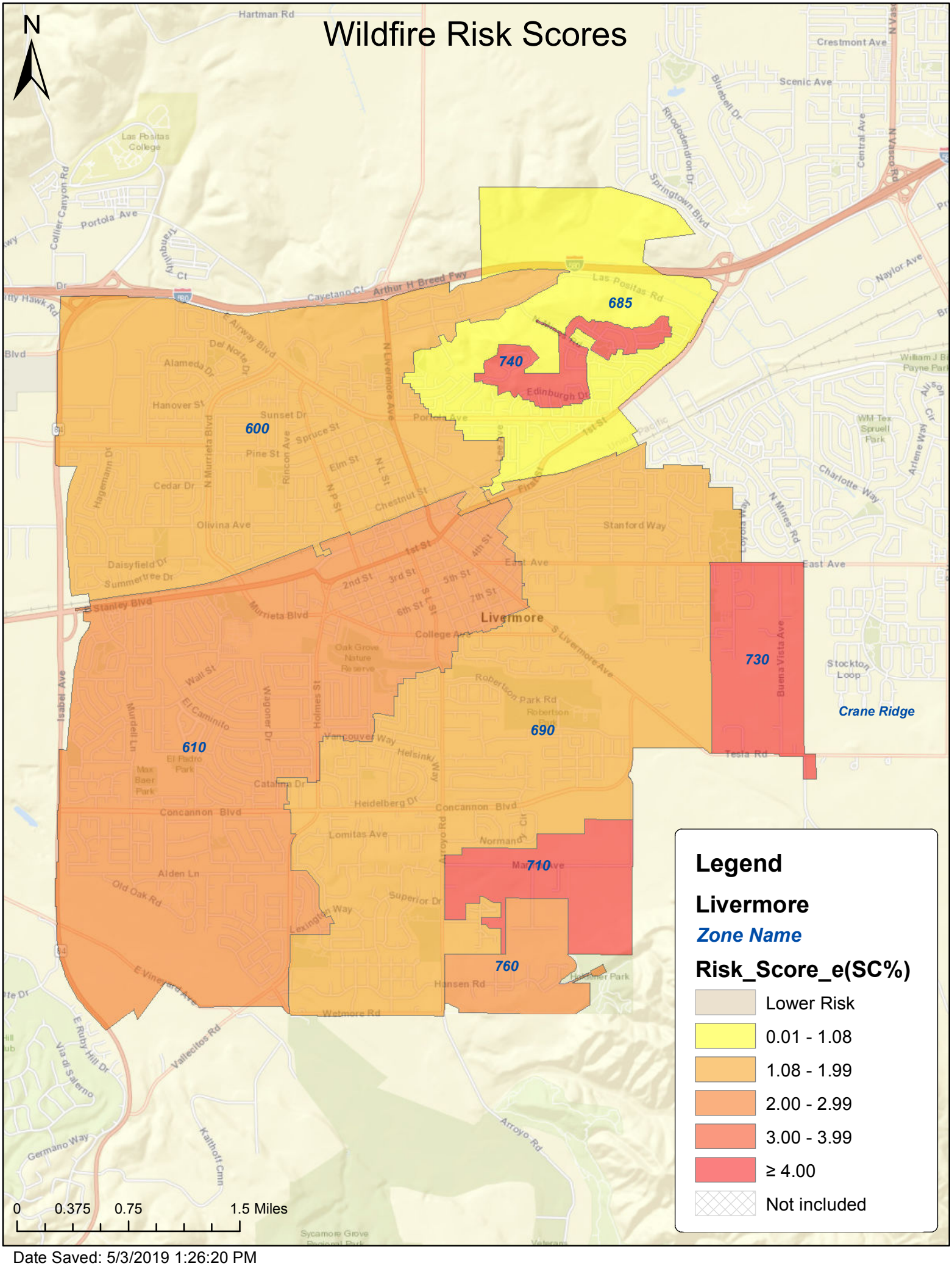
Schematic data depicting system operations is incomplete or very limited for much of the Kern River district. Further refinement of those systems is necessary in order to make a complete and final analysis of the systems. For example, the available schematics and maps do not note any backup power or storage volume for tanks within the systems. Based on anecdotal data and in an effort to be conservative, these components (supply, backup power, and storage) were assumed to be vulnerabilities unless verified data to the contrary was available.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
Arden/Kernville/Quail Valley									
KERV_ZONE I	VeryHigh	374	1.22	1	1	1*	1	0	3.66
KERV_ZONE II	VeryHigh	957	1.65	1	1	1*	1	1	6.60
KERV_ZONE III	VeryHigh	167	1.09	1	1	1	1	0	3.27
KERV_ZONE IV	VeryHigh	22	1.01	1	1	1*	1	1	4.04
KERV_ZONE IX	VeryHigh	3	1.00	1	1	1	1	0	3.00
KERV_ZONE V	VeryHigh	51	1.03	1	1	1*	1	1	4.12
KERV_ZONE VI	VeryHigh	3	1.00	1	1	1*	1	0	3.00
KERV_ZONE VII	VeryHigh	76	1.04	1	1	1*	1	1	4.16
KERV_ZONE VIII	VeryHigh	40	1.02	1	1	1	1	1	4.08

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
KERV_ZONE X	VeryHigh	10	1.01	1	1	1	1	1	4.04
KERV_ZONE XI	VeryHigh	46	1.02	1	1	1*	1	1	4.08
KERV_ZONE XII	VeryHigh	24	1.01	1	1	1*	1	1	4.04
KERV_ZONE XIII	VeryHigh	47	1.02	1	1	1*	1	0	3.06
KERV_ZONE XIV	VeryHigh	89	1.05	1	1	1*	1	1	4.20
Lower Bodfish									
LBOD_ZONE I	VeryHigh	425	2.07	1	1	1*	1	1	8.28
LBOD_ZONE II	VeryHigh	87	1.16	1	1	1	1	1	4.64
LBOD_ZONE III	VeryHigh	30	1.05	1	1	1	1	0	3.15
LBOD_ZONE IV	VeryHigh	44	1.08	1	1	1*	1	1	4.32
Onyx									
ONYX_Zone 1	VeryHigh	155	1.99	1	1	1*	1	0	5.97
ONYX_Zone 2	VeryHigh	71	1.37	1	1	1*	1	0	4.11
Split Mountain									
SMTN_Unk	VeryHigh	71	1.34	1	1	1*	1	1	5.36
SMTN_ZONE I	VeryHigh	89	1.45	1	1	1	1	0	4.35
SMTN_ZONE II	VeryHigh	81	1.40	1	1	1*	1	1	5.60
South Lake/Squirrel Mountain									
SOLA_ZONE I	VeryHigh	281	1.33	1	1	1	1	0	3.99
SOLA_ZONE II	VeryHigh	527	1.70	1	1	1	1	1	6.80
SOLA_ZONE III	VeryHigh	118	1.13	1	1	1	1	1	4.52
SOLA_ZONE IV	VeryHigh	67	1.07	1	1	1	1	0	3.21
Upper Bodfish									
UBOD_ZONE I	VeryHigh	33	1.34	1	1	1	1	1	5.36
UBOD_ZONE II	VeryHigh	46	1.50	1	0	1	1	0	3.00
UBOD_ZONE III	VeryHigh	34	1.35	1	1	1	1	1	5.40
Lakeland									
Lakeland	VeryHigh	230	2.72[1]	1	1	1	1	1	8.16

* – Denotes zone impacted by Public Safety Power Shutoff Program

[1] – Considered separate service area, containing 100% of its service connections, and thus the normalized population factor is maximized.



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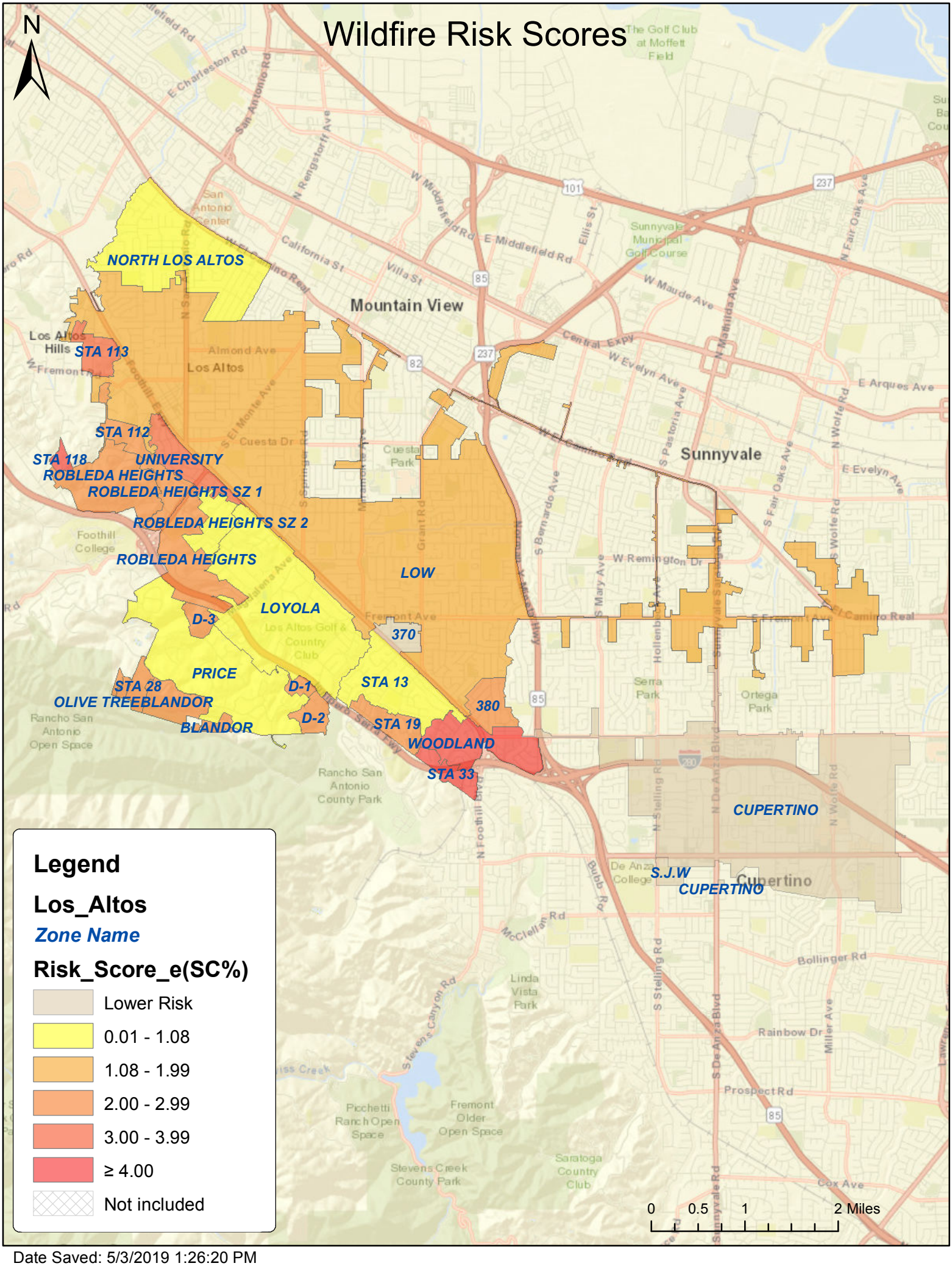
Livermore

The Livermore District service area encompasses almost half the area of the City of Livermore and over half of its population. The City of Livermore provides retail water service to the remainder of the city. Water served by the District comes from local groundwater and imported water purchased from the Zone 7 Water District. Water purchased from Zone 7 can be supplied by two different treatment plants, the Del Valle Water Treatment Plant and the Patterson Pass Water Treatment Plant. The purchased water connections are spread throughout the Livermore service territory but are primarily off of or heavily dependent on a single pipeline, the Del Valle Livermore Pipeline.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
600	VeryHigh	5,475	1.35	1	0	1	0	0	1.35
610	VeryHigh	6,384	1.41	1	0	1	1	0	2.82
685	VeryHigh	928	1.05	1	0	0	0	1	1.05
690	VeryHigh	5,033	1.31	1	0	0	0	1	1.31
710	VeryHigh	28	1.00	1	1	1	1	1	4.00
730	VeryHigh	194	1.01	1	1	1	1	1	4.04
740	VeryHigh	315	1.02	1	1	1	1	1	4.08
760	VeryHigh	93	1.01	1	1	0*	0	1	2.02

* – Denotes zone impacted by Public Safety Power Shutoff Program



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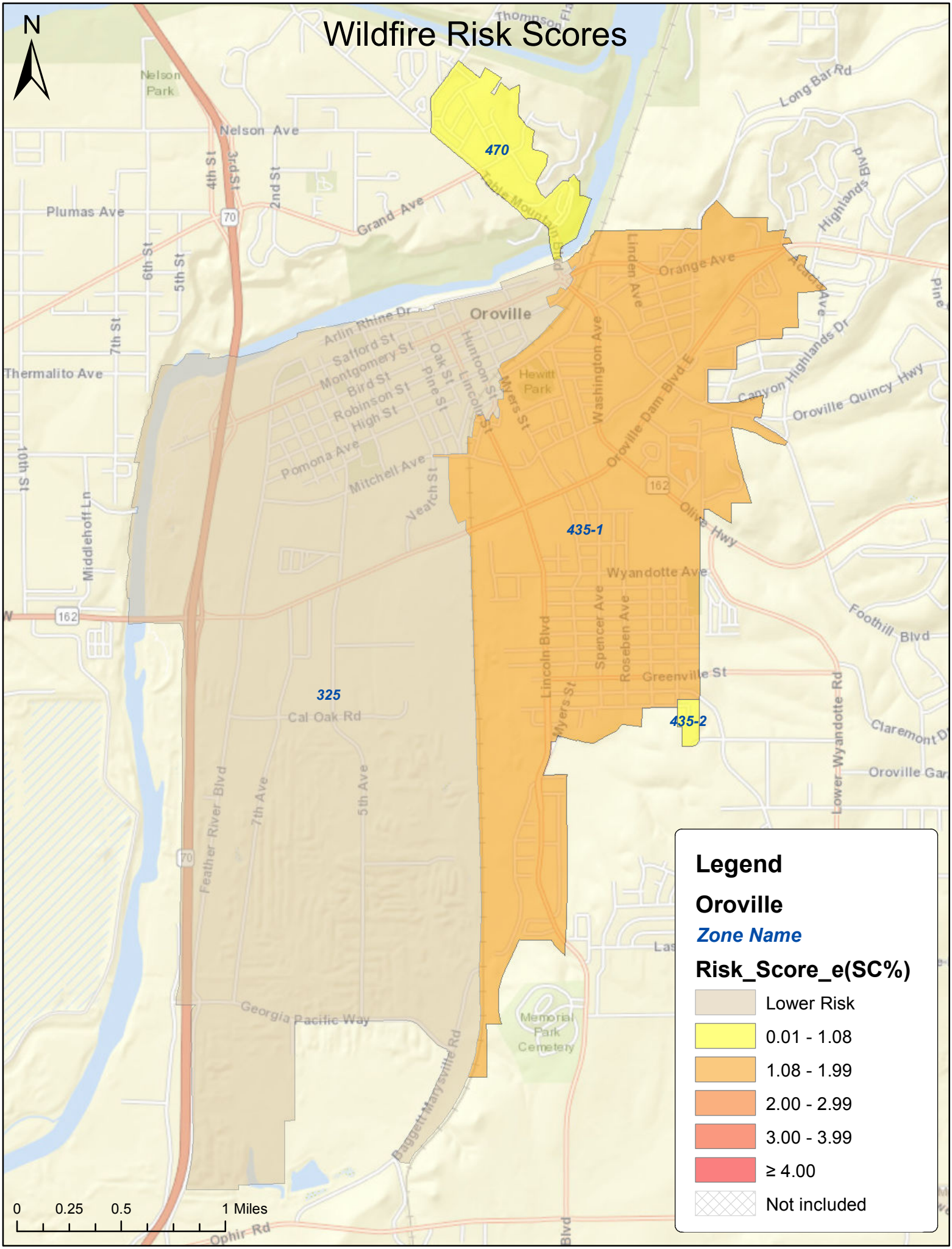
Los Altos

The Los Altos Suburban District serves the entire city of Los Altos, as well as fringe sections of the cities of Cupertino, Los Altos Hills, Mountain View, Sunnyvale, and adjacent unincorporated areas of Santa Clara County. Water served by the District comes from local groundwater and imported water purchased from the Santa Clara Valley Water District (SCVWD) and a small amount of water is purchased from San Jose Water Company for a small section of the system.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
380	VeryHigh	267	1.01	1	1	0	0	1	2.02
BLANDOR	VeryHigh	58	1.00	1	1	0	0	1	2.00
D-1	VeryHigh	15	1.00	1	1	0	0	1	2.00
D-2	VeryHigh	39	1.00	1	1	0	0	1	2.00
D-3	VeryHigh	26	1.00	1	1	0	0	1	2.00
LOW	VeryHigh	8,974	1.62	1	0	1	0	0	1.62
LOYOLA	VeryHigh	1,075	1.06	1	0	0	1	0	1.06
NORTH LOS ALTOS	VeryHigh	1,459	1.08	1	0	1	0	0	1.08
OLIVE TREE	VeryHigh	6	1.00	1	1	0	0	1	2.00
PRICE	VeryHigh	361	1.02	1	1	0	0	0	1.02
ROBLEDA HEIGHTS	VeryHigh	267	1.01	1	1	0	0	1	2.02
ROBLEDA HEIGHTS SZ 1	VeryHigh	82	1.00	1	1	0	0	1	2.00
ROBLEDA HEIGHTS SZ 2	VeryHigh	132	1.01	1	1	0	0	0	1.01
STA 112	VeryHigh	54	1.00	1	1	0	0	1	2.00
STA 113	VeryHigh	56	1.00	1	1	1	0	1	3.00
STA 118	VeryHigh	8	1.00	1	1	1	1	1	4.00
STA 13	VeryHigh	634	1.03	1	0	1	0	0	1.03
STA 19	VeryHigh	200	1.01	1	1	0	0	1	2.02
STA 28	VeryHigh	24	1.00	1	1	0	0	1	2.00
STA 33	VeryHigh	63	1.00	1	1	1	1	1	4.00
UNIVERSITY	VeryHigh	329	1.02	1	1	1	0	1	3.06
WOODLAND	VeryHigh	443	1.02	1	1	1	1	1	4.08



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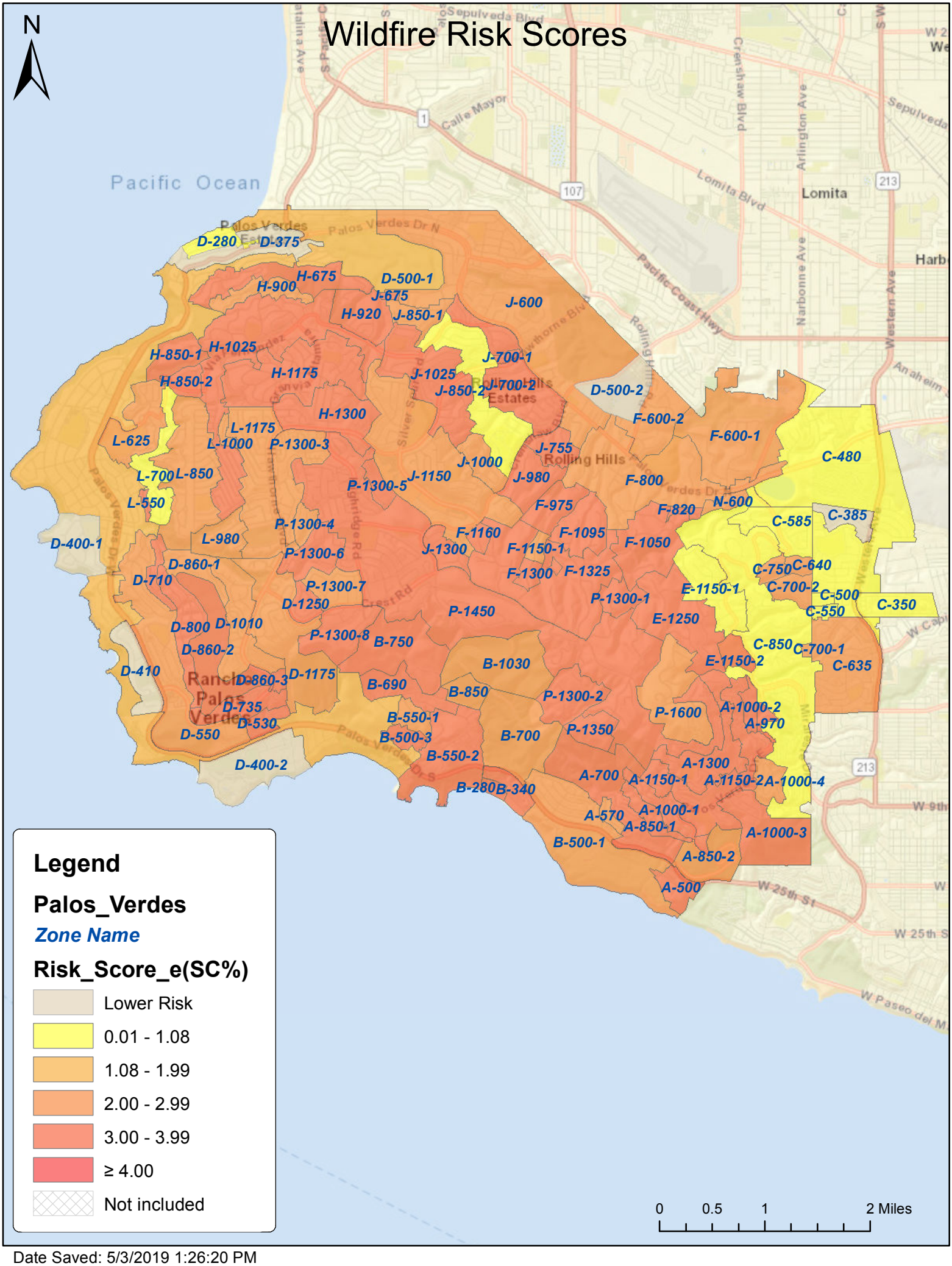
Oroville

The Oroville District serves a major portion of the City of Oroville and unincorporated areas within Butte County. Water served by the District is a combination of local groundwater and surface water from the Feather River. The District operates the surface water treatment plant and also has an intertie with the Thermalito Irrigation District, which can supplement supply in cases of emergency or treatment plant maintenance.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
325	VeryHigh	1,233	1.39	1	0	0	0	0	0.00
435-1	VeryHigh	2,312	1.86	1	0	1	0	0	1.86
435-2	VeryHigh	14	1.00	1	0	1	0	0	1.00
470	VeryHigh	163	1.04	1	0	0	0	1	1.04



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Palos Verdes

The Palos Verdes District has more than 100 pressure zones that are supplied from 4 turnouts from the Metropolitan Water District (MWD or MET). The system has three emergency/standby connections to the Hermosa-Redondo system. Most of the pressure zones are interconnected via control valves, check valves and normally closed valves (NCVs). This District is divided into two subsystems that are called the "Ridge" system and the "D-500" system. The Ridge system includes stations 22 and 30 that supply water directly from the MWD turnouts. These stations boost water to Reservoir 19 and Station 23 and Station 23 boosts from there to Reservoir 20 which is located at the highest point in the system. This subsystem supplies just under 90 percent of the service area, with water being transferred via PRV's to the lower zones. The D-500 system is supplied from Station 15 which boosts water from the MWD turnouts and runs along the west side of the service area. The PV system has no groundwater wells or domestic surface water sources.

Note – the entire Palos Verdes District was rated as "Very High" fire risk in CalFire's LRA data which reflected a more detailed urban fuel fire model. Where a fire threat rating was less than "Very High" the LRA data was substituted.

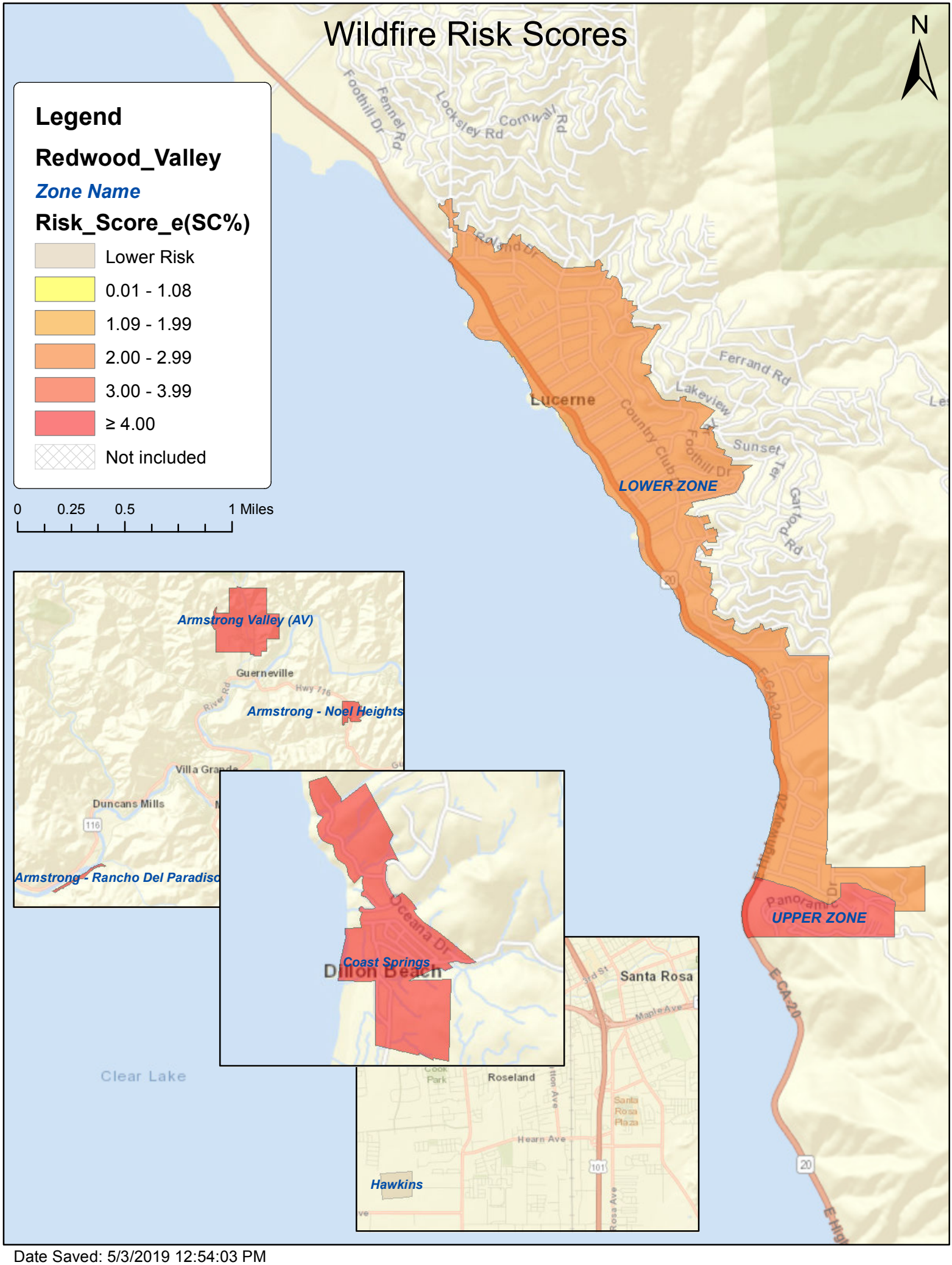
Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
A-1000-1	VeryHigh	139	1.01	1	1	1	0	1	3.03
A-1000-2	Very High [LRA]	49	1.00	1	1	1	0	1	3.00
A-1000-3	Very High [LRA]	123	1.01	1	1	1	0	1	3.03
A-1000-4	Very High [LRA]	67	1.00	1	1	1	0	0	2.00
A-1150-1	VeryHigh	74	1.00	1	1	1	0	1	3.00
A-1150-2	VeryHigh	257	1.01	1	1	1	0	1	3.03
A-1300	VeryHigh	250	1.01	1	1	1	0	1	3.03
A-500	VeryHigh	30	1.00	1	1	1	0	1	3.00
A-570	VeryHigh	43	1.00	1	1	1	0	0	2.00
A-700	VeryHigh	147	1.01	1	1	1	0	1	3.03
A-850-1	VeryHigh	122	1.01	1	1	1	0	1	3.03
A-850-2	VeryHigh	1	1.00	1	1	1	0	0	2.00
A-970	Very High [LRA]	19	1.00	1	1	1	0	1	3.00
B-1030	VeryHigh	-	1.00	1	1	1	0	0	2.00
B-280	VeryHigh	11	1.00	1	1	1	0	1	3.00
B-340	VeryHigh	43	1.00	1	1	1	0	1	3.00
B-500-1	VeryHigh	333	1.01	1	0	1	0	1	2.02
B-500-3	Very High [LRA]	24	1.00	1	1	0	0	1	3.00

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
B-550-1	Very High [LRA]	33	1.00	1	1	1	0	0	2.00
B-550-2	VeryHigh	44	1.00	1	1	1	0	1	3.00
B-690	VeryHigh	51	1.00	1	1	1	0	1	3.00
B-700	VeryHigh	-	1.00	1	1	1	0	0	2.00
B-750	VeryHigh	10	1.00	1	1	1	0	1	3.00
B-850	VeryHigh	-	1.00	1	1	1	0	0	2.00
C-350	Very High [LRA]	448	1.02	1	0	0	0	1	1.02
C-385	Very High [LRA]	182	1.01	1	0	0	0	0	0.00
C-480	VeryHigh	1,019	1.04	1	0	0*	0	1	1.04
C-500	Very High [LRA]	52	1.00	1	1	0	0	0	1.00
C-550	Very High [LRA]	66	1.00	1	1	0	0	0	1.00
C-585	VeryHigh	204	1.01	1	1	0	0	0	1.01
C-635	Very High [LRA]	832	1.04	1	1	0	0	1	2.08
C-640	Very High [LRA]	27	1.00	1	1	0	0	1	2.00
C-700-1	Very High [LRA]	16	1.00	1	1	0	0	1	2.00
C-700-2	Very High [LRA]	82	1.00	1	1	0	0	1	2.00
C-750	Very High [LRA]	27	1.00	1	1	0	0	1	2.00
C-850	VeryHigh	919	1.04	1	0	0*	0	1	1.04
D-1010	Very High [LRA]	299	1.01	1	1	1	0	0	2.02
D-1175	Very High [LRA]	298	1.01	1	1	1	0	0	2.02
D-1250	Very High [LRA]	68	1.00	1	1	1	0	1	3.00
D-280	VeryHigh	86	1.00	1	1	0	0	0	1.00
D-375	VeryHigh	220	1.01	1	0	0	0	0	0.00
D-400-1	Very High [LRA]	114	1.00	1	0	0	0	0	0.00
D-400-2	Very High [LRA]	221	1.01	1	0	0	0	0	0.00
D-410	Very High [LRA]	71	1.00	1	0	0	0	0	0.00
D-500-1	VeryHigh	1,988	1.09	1	0	0*	0	1	1.09
D-500-2	VeryHigh	8	1.00	1	0	0	0	0	0.00
D-530	Very High [LRA]	45	1.00	1	1	1	0	1	3.00
D-550	Very High [LRA]	604	1.03	1	1	1	0	0	2.06
D-710	Very High [LRA]	76	1.00	1	1	1	0	1	3.00
D-735	Very High [LRA]	134	1.01	1	1	1	0	1	3.03

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
D-800	Very High [LRA]	201	1.01	1	1	1	0	1	3.03
D-860-1	Very High [LRA]	111	1.00	1	1	1	0	0	2.00
D-860-2	Very High [LRA]	1	1.00	1	1	1	0	1	3.00
D-860-3	Very High [LRA]	21	1.00	1	1	1	0	1	3.00
E-1150-1	VeryHigh	188	1.01	1	0	1	0	0	1.01
E-1150-2	VeryHigh	3	1.00	1	1	1	0	1	3.00
E-1250	VeryHigh	125	1.01	1	1	1*	0	1	3.03
F-1050	VeryHigh	38	1.00	1	1	1	0	1	3.00
F-1095	VeryHigh	23	1.00	1	1	1	0	1	3.00
F-1150-1	VeryHigh	9	1.00	1	1	1	0	0	2.00
F-1150-2	VeryHigh	1	1.00	1	1	1	0	1	3.00
F-1160	Very High [LRA]	8	1.00	1	1	1	0	1	3.00
F-1300	VeryHigh	11	1.00	1	1	1	0	1	3.00
F-1325	VeryHigh	92	1.00	1	1	1	0	1	3.00
F-600-1	VeryHigh	229	1.01	1	1	1	0	0	2.02
F-600-2	VeryHigh	173	1.01	1	1	1	0	0	2.02
F-800	VeryHigh	189	1.01	1	1	1*	0	0	2.02
F-820	VeryHigh	6	1.00	1	1	1	0	1	3.00
F-975	VeryHigh	11	1.00	1	1	1	0	1	3.00
H-1025	VeryHigh	744	1.03	1	1	1	0	1	3.09
H-1175	VeryHigh	518	1.02	1	1	1	0	1	3.06
H-1300	Very High [LRA]	465	1.02	1	1	1	0	1	3.06
H-675	VeryHigh	203	1.01	1	1	1*	0	1	3.03
H-850-1	VeryHigh	30	1.00	1	1	1	0	1	3.00
H-850-2	VeryHigh	42	1.00	1	1	1	0	1	3.00
H-900	VeryHigh	83	1.00	1	1	1	0	0	2.00
H-920	VeryHigh	148	1.01	1	1	1	0	1	3.03
J-1000	Very High [LRA]	151	1.01	1	1	1	0	0	2.02
J-1025	VeryHigh	689	1.03	1	1	1	0	1	3.09
J-1150	VeryHigh	1,098	1.05	1	0	1	0	1	2.10
J-1300	Very High [LRA]	75	1.00	1	1	1	0	1	3.00
J-600	VeryHigh	1,362	1.06	1	1	1*	0	0	2.12

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
J-675	VeryHigh	7	1.00	1	1	1	0	1	3.00
J-700-1	Very High [LRA]	21	1.00	1	1	1	0	1	3.00
J-700-2	VeryHigh	412	1.02	1	1	1	0	1	3.06
J-755	VeryHigh	89	1.00	1	1	1	0	1	3.00
J-850-1	VeryHigh	117	1.00	1	0	1	0	1	2.04
J-850-2	Very High [LRA]	384	1.02	1	0	1	0	1	1.02
J-980	VeryHigh	118	1.00	1	1	1*	0	1	3.00
L-1000	Very High [LRA]	43	1.00	1	1	1	0	0	2.00
L-1175	Very High [LRA]	677	1.03	1	1	1	0	0	2.06
L-550	Very High [LRA]	25	1.00	1	1	1	0	1	3.00
L-625	VeryHigh	236	1.01	1	1	1	0	0	2.02
L-700	VeryHigh	221	1.01	1	0	1	0	0	1.01
L-850	VeryHigh	617	1.03	1	0	1	0	1	2.06
L-980	Very High [LRA]	137	1.01	1	1	1	0	0	2.02
N-600	VeryHigh	39	1.00	1	1	1	0	0	2.00
P-1300-1	VeryHigh	26	1.00	1	1	1	0	1	3.00
P-1300-2	VeryHigh	29	1.00	1	1	1	0	1	3.00
P-1300-3	Very High [LRA]	839	1.04	1	1	1	0	0	2.08
P-1300-4	Very High [LRA]	102	1.00	1	1	1	0	0	2.00
P-1300-5	Very High [LRA]	141	1.01	1	1	1	0	1	3.03
P-1300-6	Very High [LRA]	175	1.01	1	1	1	0	1	3.03
P-1300-7	Very High [LRA]	140	1.01	1	1	1	0	0	2.02
P-1300-8	Very High [LRA]	124	1.01	1	1	1	0	1	3.03
P-1350	VeryHigh	21	1.00	1	1	1	0	1	3.00
P-1450	VeryHigh	1,931	1.08	1	1	1*	0	1	3.24
P-1600	VeryHigh	142	1.01	1	1	1*	0	0	2.02

* – Denotes zone impacted by Public Safety Power Shutoff Program



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Redwood Valley

The Redwood Valley district is made up of six smaller water systems spread throughout Marin, Sonoma, and Lake Counties, including the Armstrong Valley, Coast Springs, Hawkins, Lucerne, Noel Heights, and Rancho del Paradiso systems. Water served in the Coast Springs, Armstrong Valley, Noel Heights, and Hawkins systems comes from local groundwater produced from wells in each system. Rancho del Paradiso customers receive surface water purchased from the Sweetwater Springs Water District and Lucerne customers receive water from a local surface water treatment plant. The systems of primary concern due to the proximity to wildfire risk areas are the Armstrong Valley, Coast Springs, Lucerne, Noel Heights, and Rancho del Paradiso systems.

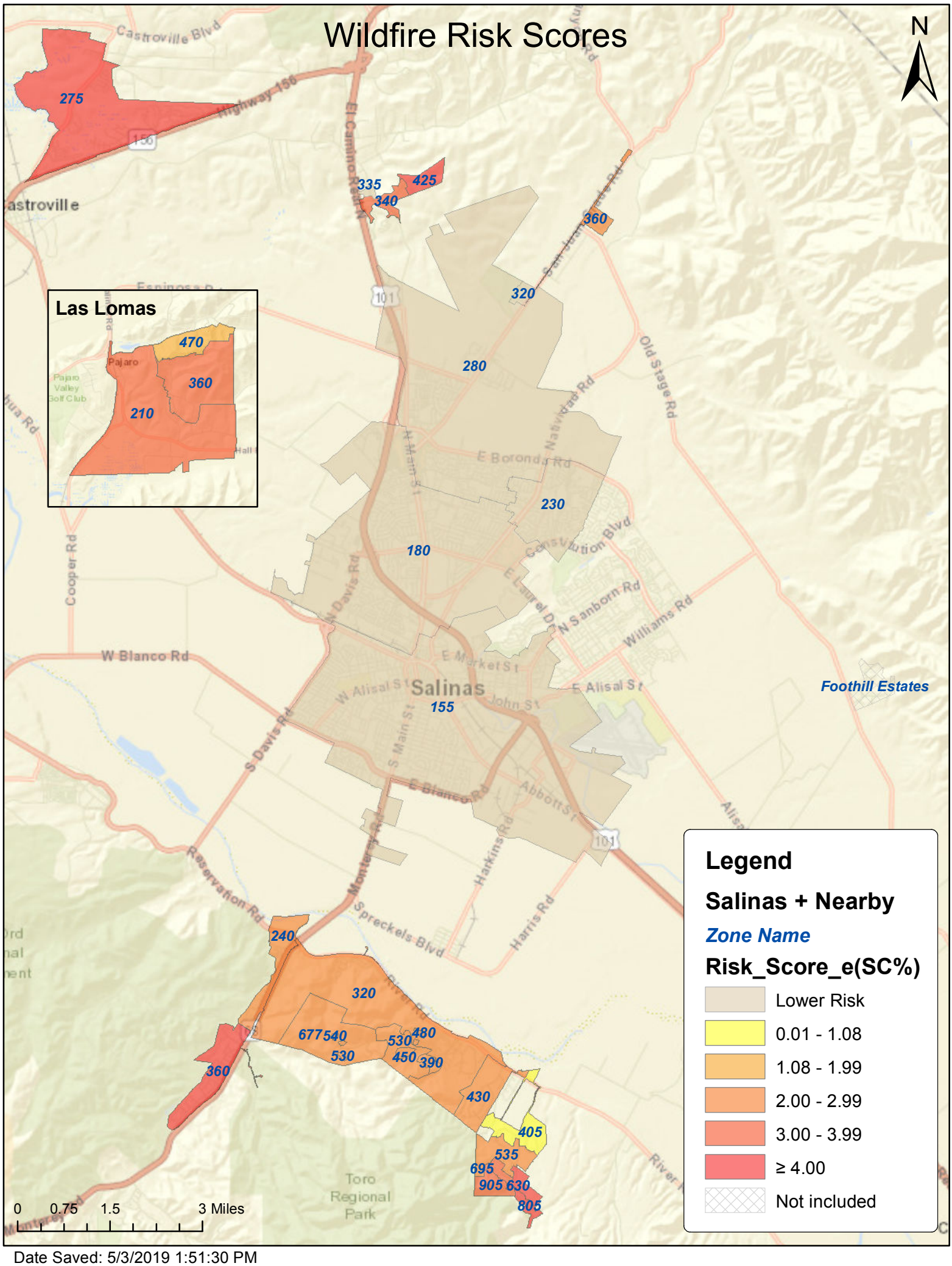
Due to concerns regarding the inability of most supply sources in Redwood Valley to provide wildfire protection flows many times their normal demand, it was assumed that these existing supply sources were a vulnerability. Further study would be needed to confirm this assumption and to determine whether alternative supplies could be made available in the event of a wildfire.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
Lucerne Lower Zone	VeryHigh	1,249	2.67	1	0	0*	0	1	2.67
Lucerne Upper Zone	VeryHigh	25	1.02	1	1	1*	1	1	4.08
Armstrong Valley	VeryHigh	275	2.06	1	1	1*	1	0	6.18
Noel Heights[1]	VeryHigh	45	1.13	1	1	1*	1	1	4.52
Rancho del Paradiso[1]	VeryHigh	60	1.17	1	1	1*	1	1	4.68
Coast Springs	VeryHigh	249	2.72[2]	1	1	1	0	1	8.16

* – Denotes zone impacted by Public Safety Power Shutoff Program

[1] – Considered part of the Armstrong Valley service area.

[2] – Considered separate service areas, each containing 100% of service connections, and thus the normalized population factor will be maximized.



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Salinas

The Salinas District serves approximately 70 percent of the residents of the City of Salinas as well as residents of the unincorporated communities of Country Meadows, Bolsa Knolls, Las Lomas, Oak Hills, and Salinas Hills. The Salinas and Bolsa Knolls systems are linked hydraulically while all of the other systems are small, isolated systems. Note that Cal Water has plans to consolidate the Country Meadows system with the main Salinas system in the near future. Water served by the District comes from local groundwater.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
Country Meadows									
CMM_335	VeryHigh	2	1.02	1	0	0	0	0	0.00
CMM_340	VeryHigh	50	1.60	1	0	1	0	1	3.20
CMM_425	VeryHigh	55	1.67	1	1	1	1	1	6.68
Las Lomas									
LL_210	VeryHigh	325	1.69	1	0	1	1	1	5.07
LL_360	VeryHigh	281	1.57	1	1	0	1	1	4.71
LL_470	VeryHigh	13	1.02	1	1	1	1	0	3.06
Oak Hills									
OH_275	VeryHigh	896	2.72	1	0	1	0	1	5.44
Salinas (+ Bolsa Knolls)									
SLN_280	VeryHigh	4,562	1.20	1	0	0	0	0	0.00
SLN_360	VeryHigh	44	1.00	1	0	0	1	1	2.00
Salinas Hills									
SLNH_240	VeryHigh	252	1.11	1	1	0*	0	1	2.22
SLNH_320	VeryHigh	754	1.38	1	0	1*	0	1	2.76
SLNH_350	VeryHigh	16	1.01	1	0	1	0	1	2.02
SLNH_360	VeryHigh	578	1.28	1	1	1*	1	1	5.12
SLNH_390	VeryHigh	25	1.01	1	0	1	0	1	2.02
SLNH_405	VeryHigh	50	1.02	1	0	1	0	0	1.02
SLNH_430	VeryHigh	180	1.08	1	0	1*	1	0	2.16
SLNH_450	VeryHigh	29	1.01	1	0	1	0	1	2.02
SLNH_480	VeryHigh	8	1.00	1	0	1*	1	0	2.00
SLNH_525	VeryHigh	7	1.00	1	0	1	0	1	2.00
SLNH_530	VeryHigh	108	1.05	1	0	1	0	1	2.10

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
SLNH_535	VeryHigh	75	1.03	1	1	1*	0	0	2.06
SLNH_540	VeryHigh	8	1.00	1	0	1	0	1	2.00
SLNH_630	VeryHigh	17	1.01	1	1	1*	1	1	4.04
SLNH_677	VeryHigh	174	1.08	1	0	1	0	1	2.16
SLNH_695	VeryHigh	16	1.01	1	1	1	1	0	3.03
SLNH_805	VeryHigh	17	1.01	1	1	1	1	1	4.04
SLNH_905	VeryHigh	3	1.00	1	1	0*	1	1	3.00

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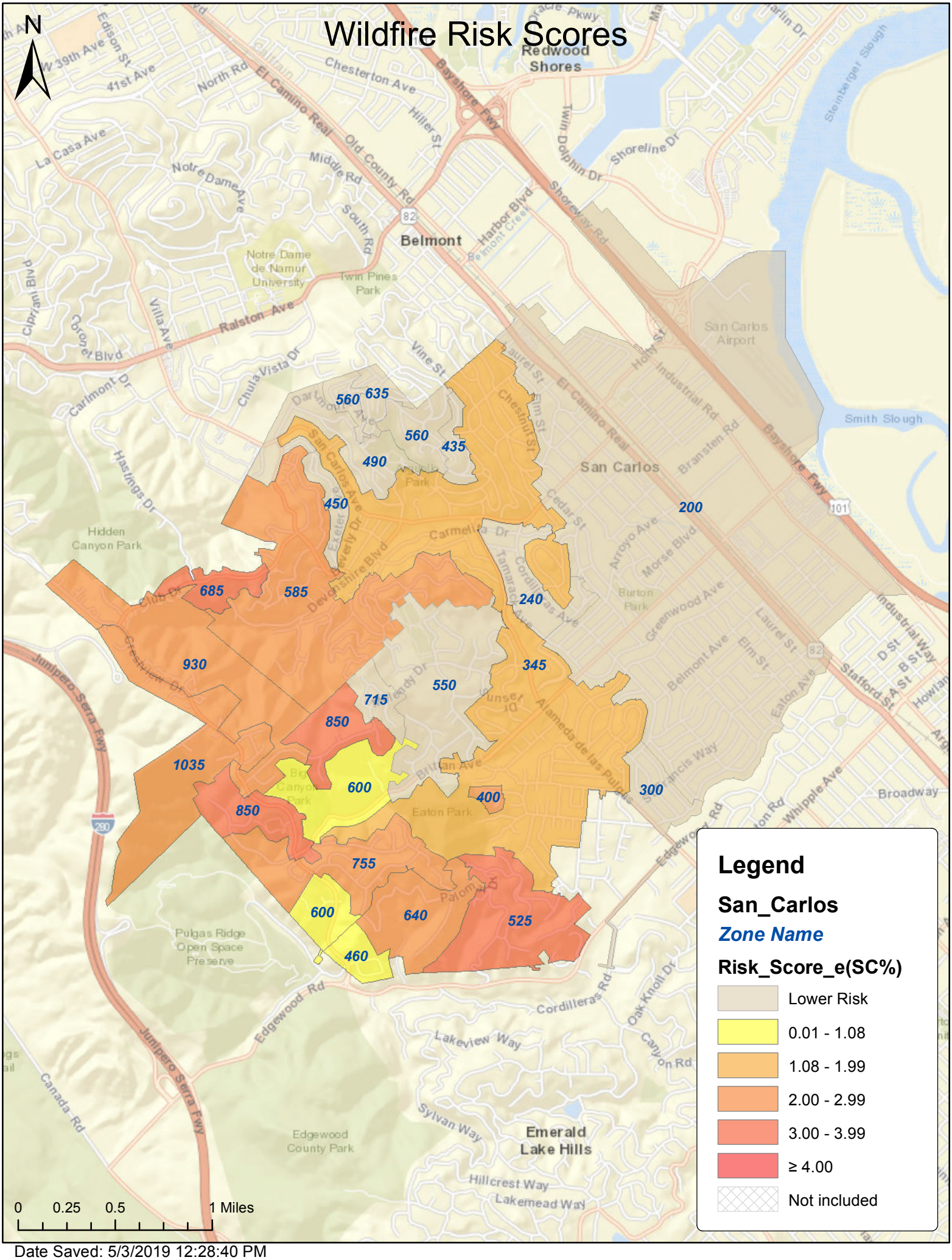
Wildfire Risk Scores
N
560
635
560
435
490
450
200
685
585
240
930
345
550
715
850
1035
600
400
850
300
755
600
640
525
460
Legend
San_Carlos
Zone Name
Risk_Score_e(SC%)
Lower Risk
0.01 - 1.08
1.08 - 1.99
2.00 - 2.99
3.00 - 3.99
≥ 4.00
Not included
0
0.25
0.5
1 Miles
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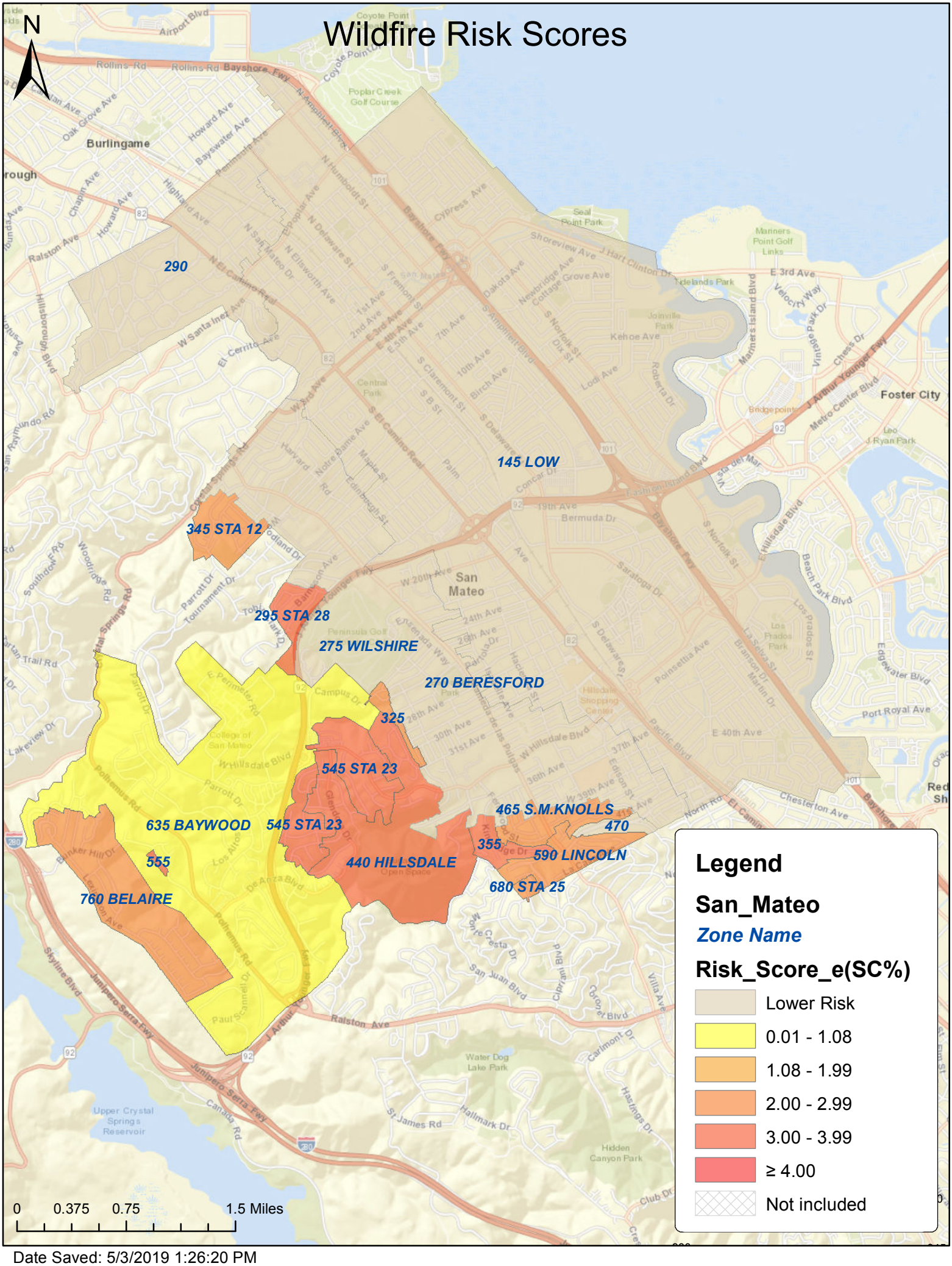
San Carlos

The San Carlos system serves the communities of San Carlos, portions of Redwood City, and unincorporated areas of San Mateo County including Palomar Park. The system is supplied primarily through two different connections with the San Francisco Public Utilities Commission wholesale water system. One connection supplies the booster pumps at Station 117 where it is pumped into the distribution system along Crestview Dr. in San Carlos. There are several lift stations that boost that supply up to the very top of the hill at Station 120 at Crestview and Los Vientos Way. The other connection, or group of connections, is located on Cordilleras Rd. south of Edgewood Dr. These connections supply water directly to the 300 zone through a direct feed and to the 200 zone through several PRVs located along a transmission line that continues down Edgewood Rd. and eventually to El Camino Real and Cherry St. Water can be supplied to some of the upper zones through several booster stations located throughout San Carlos; however, there are no permanent facilities that can pump water from this area of the system to the zones along Crestview Dr. While many of these zones have higher risk scores due to specific issues, having an alternate method to supply water to the zones along Crestview Rd. may provide the greatest improvement to the overall wildfire risk. There is a connection to the booster pump at station 121 for the old Palomar Park system that requires upgrades in order to work reliably.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
300	VeryHigh	213	1.02	1	0	0	0	0	0.00
345	VeryHigh	2,545	1.27	1	0	0	0	1	1.27
400	VeryHigh	23	1.00	1	0	0*	1	1	2.00
460	VeryHigh	51	1.00	1	0	0	0	1	1.00
525	VeryHigh	152	1.01	1	1	1*	0	1	3.03
550	VeryHigh	395	1.04	1	0	0*	0	0	0.00
585	VeryHigh	703	1.07	1	0	1*	0	1	2.14
600	VeryHigh	143	1.01	1	0	0*	0	1	1.01
640	VeryHigh	69	1.01	1	1	1*	0	0	2.02
685	VeryHigh	28	1.00	1	1	1	0	1	3.00
755	VeryHigh	284	1.03	1	1	1	0	0	2.06
850	VeryHigh	178	1.02	1	1	1*	0	1	3.06
930	VeryHigh	350	1.03	1	0	1*	0	1	2.06
1035	VeryHigh	205	1.02	1	0	1*	1	0	2.04

* – Denotes zone impacted by Public Safety Power Shutoff Program



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San Mateo

The San Mateo system serves the communities of San Mateo and The Highlands (unincorporated San Mateo Country) through multiple connections with the San Francisco Public Utilities Commission. While there are multiple connections, the majority of water supplied to the system is through the connection at El Cerrito and Crystal Springs Rd. Water is delivered through a large transmission loop that runs through a large area of the city of San Mateo. Water from that transmission line can then be pumped into the majority of the San Mateo system through multiple lift stations.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
275	VeryHigh	3,767	1.16	1	0	0*	0	0	0.00
295	VeryHigh	143	1.01	1	1	1	0	1	3.03
325	VeryHigh	71	1.00	1	1	1	0	0	2.00
345	VeryHigh	226	1.01	1	0	1	0	1	2.02
355	VeryHigh	71	1.00	1	1	0	1	1	3.00
440	VeryHigh	528	1.02	1	1	1*	0	1	3.06
465	VeryHigh	272	1.01	1	1	0	0	1	2.02
545	VeryHigh	495	1.02	1	1	1	0	1	3.06
555	VeryHigh	11	1.00	1	1	1*	0	1	3.00
590	VeryHigh	261	1.01	1	1	0	0	1	2.02
635	VeryHigh	1,698	1.07	1	0	1*	0	0	1.07
680	VeryHigh	33	1.00	1	1	1	0	0	2.00
760	VeryHigh	594	1.02	1	1	1*	0	0	2.04

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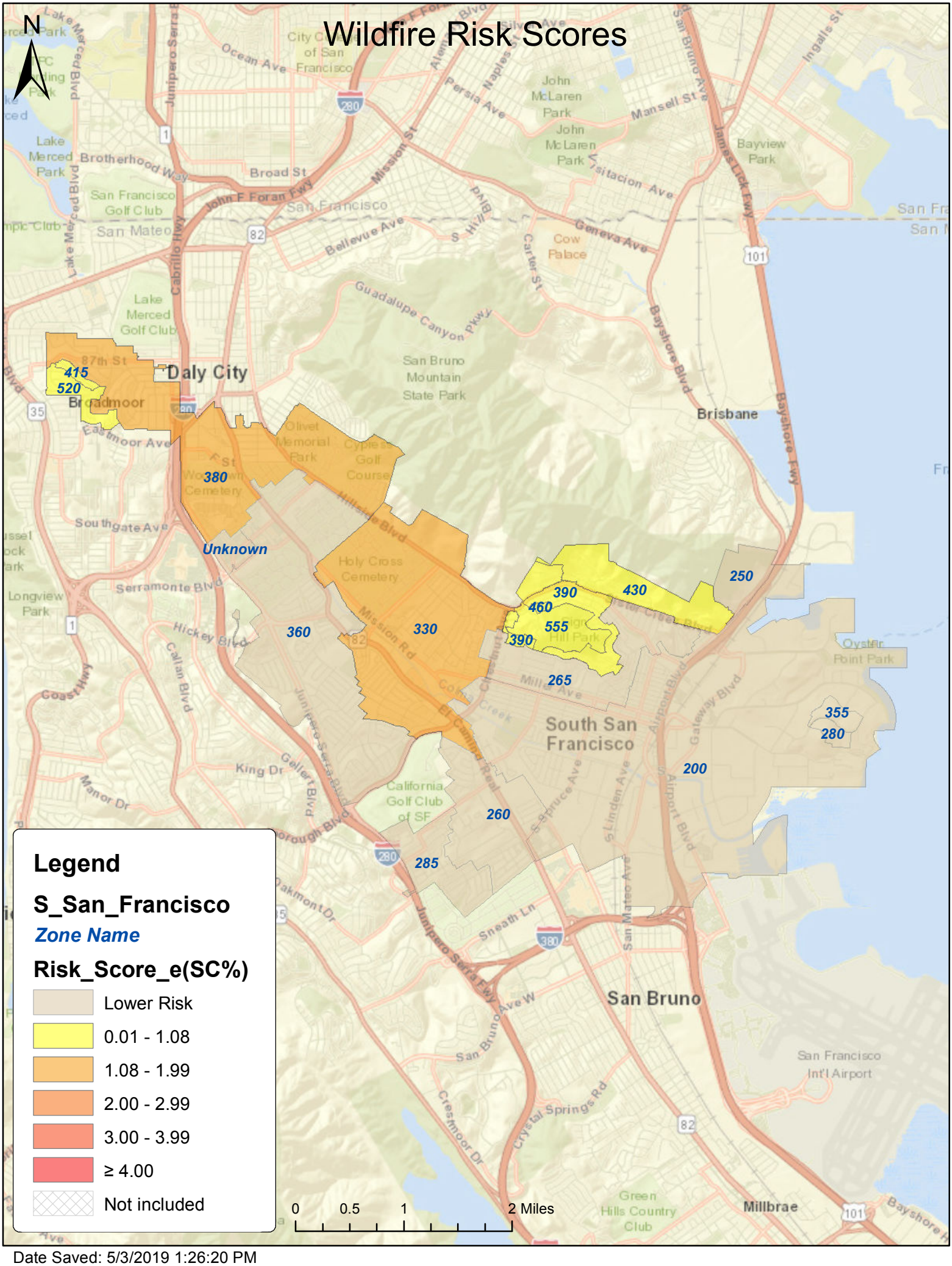

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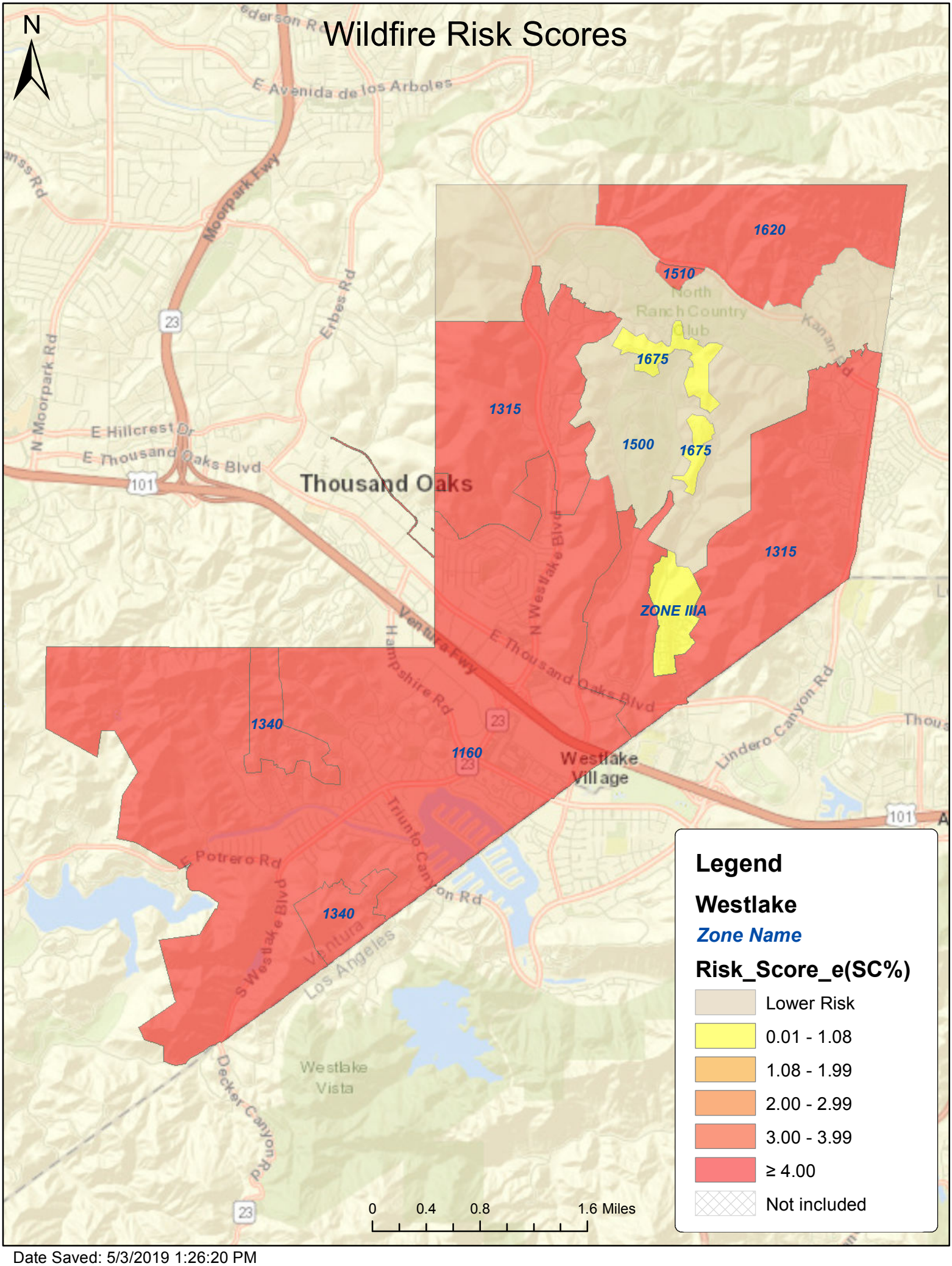
South San Francisco

The South San Francisco District serves the communities of South San Francisco, Colma, a small portion of Daly City, and an unincorporated area of San Mateo County known as Broadmoor, which lies between Colma and Daly City. The water system is served by purchased water from the San Francisco Public Utilities Commission through 14 different connections as well as six groundwater wells owned by CWS and a well owned by San Francisco Public Utilities Commission but operated by CWS.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
200	VeryHigh	4,289	1.29	1	0	0	0	0	0.00
250	VeryHigh	1	1.00	1	0	0	0	0	0.00
260	VeryHigh	1,243	1.08	1	0	0	0	0	0.00
265	VeryHigh	1,928	1.12	1	0	0	0	0	0.00
285	VeryHigh	972	1.06	1	0	0*	0	0	0.00
330	VeryHigh	2,384	1.15	1	0	0	0	1	1.15
360	VeryHigh	2,748	1.18	1	0	0	0	0	0.00
380	VeryHigh	1,524	1.09	1	0	0	0	1	1.09
390	VeryHigh	661	1.04	1	0	0	0	1	1.04
415	VeryHigh	66	1.00	1	0	1	0	0	1.00
430	VeryHigh	373	1.02	1	0	0	0	1	1.02
460	VeryHigh	23	1.00	1	0	0	0	1	1.00
520	VeryHigh	263	1.02	1	0	1	0	0	1.02
555	VeryHigh	351	1.02	1	0	0	0	1	1.02

* – Denotes zone impacted by Public Safety Power Shutoff Program



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Westlake

The Westlake system is located in the eastern section of Ventura County within the City of Thousand Oaks, approximately 40 miles northwest of Los Angeles via Highway 101. Elevation in the area varies from approximately 900 feet to approximately 1,675 feet above sea level. Water served by the system comes from imported surface water from the Metropolitan Water District of Southern California through Calleguas Municipal Water District.

Zone Name	Fire Threat	Service Count (SC)	Pop Factor (eSC%)	Wildfire Score	Supply Score	Backup Power Score	Storage Score	Grid Score	Risk Score
1160	Extreme	4,010	1.79	2	0	1*	0	1	7.16
1315 (II-A)	Extreme	486	1.07	2	0	1*	0	1	4.28
1315 (II-B)	Extreme	559	1.08	2	0	1*	0	1	4.32
1330	VeryHigh	464	1.07	1	0	0	0	1	1.07
1340	Extreme	186	1.03	2	0	1*	0	1	4.12
1500	Extreme	951	1.15	2	0	0*	0	0	0
1510	Extreme	74	1.01	2	1	1	0	1	6.06
1620	Extreme	109	1.02	2	1	1	0	1	6.12
1675	VeryHigh	47	1.01	1	0	0*	0	1	1.01

* – Denotes zone impacted by Public Safety Power Shutoff Program

Capital Recommendations:

The Valley Districts

Antelope, Kern River, and Redwood Valleys, collectively referred to as "The Valley Districts," present unique challenges due to their predominantly rural service areas, comparative remoteness, varied topography, resource availability, and the discontinuous relationship of their component systems. Due to these unique challenges, it was determined that specific wildfire prevention and preparedness recommendations for the Valley Districts would need to be developed in a separate effort.

Bakersfield

Zone Name	Risk Score	Issues	Recommendations
LOW	1.84	• Limited Backup Power	• Install backup power at multiple stations to provide a minimum level of 50% of max day demand (approximately 40 MGD) from wells on backup power. A generator siting study should be conducted that accounts for water quality, distribution system reliability, power distribution resiliency, and mechanical equipment reliability for determining most suitable locations for backup generators.
770	1.00	• Grid limitation	• Investigate ways to improve grid reliability within zone
790	3.00	• Dependent on multiple zones • Auto available storage insufficient • Grid limitation	• Install additional 60,000 gallon tank at Station 213
1000	1.02	• Grid limitation	• Install new pipe in Auburn St. from dead end in Morning Dr. to dead end in Auburn St. to increase grid reliability
1025	1.00	• Dependent on multiple zones	• Investigate options to bolster supply and reduce potential vulnerability
1130	1.00	• Dependent on multiple zones	• Investigate options to bolster supply and reduce potential vulnerability
1200	2.00	• Dependent on multiple zones • Storage is not auto available	• Install backup power at Sta. 212 to ensure storage is available • Investigate options to bolster supply and reduce potential vulnerability

Bear Gulch

Zone Name	Risk Score	Issues	Recommendations
395	1.00	• Single main	• Because this zone is on a short cul de sac, there are no recommendations for changes
440	1.02	• Supply dependent on multiple zones	• Upgrades to PRVs from the supplying zones including adding a larger PRV at Alpine and La Mesa
475	2.00	• Supply dependent on multiple zones • Single main	• Two separate zones with same hydraulic gradient. No recommendations as hydrants in area are off of different gradient or have check valve from lower zone to provide higher fire flow.
500	2.00	• Supply dependent on multiple zones • Grid limitations	• Install check valve in place of normally closed valve at Wildwood and Woodside Dr. to supply water to zone automatically from the 400 zone in the event the supply to the zone is isolated
510	2.00	• Supply dependent on multiple zones • Grid limitations	• Install additional PRV on Westridge Dr. near Alpine Rd. to supply zone in the event the supply source is isolated
525	1.00	• Supplied through multiple zones	• Install hydrant near Woodside Dr. and Sheridan within the 590 zone
560	2.02	• Supplied through multiple zones • Grid limitations	• Install check valve at Dedalera Dr. and La Mesa Dr. in place of existing normally closed valve to supply isolated sections with water from the adjacent 440 zone.
640	3.00	• Supplied through multiple zones • No backup power • Grid limitations	• Install check valve in place of normally closed valve on Jane Dr. to supply zone from adjacent 590 zone in event portion of the zone along Jane Dr. is isolated • Install backup generator at Station 23 to maintain supply to Cañada (805) Zone. Supply to 640 zone can then be provided through PRVs located at Olive Hill and Cañada Rd.
655	2.00	• Supplied through multiple zones • Grid limitations	• Install PRV at Westridge Dr. and Alamos Rd. to provide additional reliability to the 655 zone.

660	1.02	• Grid limitations	• Install automated control valve at Station 14 to supply the 660 zone from the 815 zone in the event that a portion of the system is isolated. • Install automated control valve at station 21 to supply water from the 815 zone to the 660 zone in the event that a portion of the 660 zone is isolated.
675 (Portola Rd)	2.02	• Supplied through multiple zones • Grid limitations	• Install PRV in place of normally closed valve on Grove Dr. near Georgia Ln
675 (Station 19)		• Supplied through multiple zones • No backup power	• Install backup generator at Station 19
680	2.00	• Supplied through multiple zones • Grid limitations	• Install new main in Ladera neighborhood to provide additional reliability to the 815 zone along with dependent zones within the Ladera neighborhood. Note that multiple zones are supplied from this zone as well and that there is currently only a single main supplying the zone.
715	3.06	• Supplied through multiple zones • Limited storage • Grid limitations	• Install PRV in place of existing check valve at Golden Oak Dr. and Sausal Dr. Note that the supply to the 1055 zone is from the 715 zone through a single main. Grid improvements within the 715 zone are also necessary to provide reliability to the 1055 zone.
725	3.00	• Supplied through multiple zones • No backup power • Grid limitations	• Install new main from Los Trancos Rd. to Valley Oak St to provide backup supply to 725 zone from 715 zone. Note that this will require access through open space or existing properties. • Install new pump station located near Alpine Rd. and Willowbrook Dr. to provide additional reliability to 960 zone. Note that Limited options exist for improving reliability to the zone outside of installing parallel mains and enhancing Station 26. The zone is entirely dependent on mains running within Valley Oak St. through multiple PRVs and supply from Station 26.

750	3.03	• Supplied through multiple zones • No backup power • Grid limitations	• Because this zone can be supplied through several check valves from the 715 zone, no projects related to wildfire risk are recommended for this zone.
795-1	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Install parallel main along Tynan Way to provide increased reliability to the distribution system within the zone. • Install backup generator at Station 6.*
795-2	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Install backup generator at Station 7 • Install PRV and new main along Wayside Rd. to provide supply reliability to the 795-2 zone.
800	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Install backup generator at Station 7. Note that limited options exist for improving the distribution system reliability. Consolidation of the Skyline Water system with the Woodside Mutual Water system may provide improved reliability; however, the zone will still be supplied through a single main along Old La Honda Rd.
805	1.01	• No backup power	• Install backup generator at Station 23
830	3.00	• Supplied through multiple zones • No backup power • Grid limitations	• Install backup generator at Station 26. • Install backup pump station located near Willowbrook Dr. and Alpine Rd. to provide improved reliability to the 960 zone. Note that Limited options exist for improving reliability to the zone outside of installing parallel mains and enhancing Station 26. The zone is entirely dependent on mains running within Valley Oak St. through multiple PRVs and supply from Station 26.

835	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Install backup generator at Station 24.* • Install backup pump station near Kings Mountain Rd. and Entrance Way to provide additional reliability to the 835 zone from the 590 zone.
850	3.00	• Supplied through multiple zones • No backup power • Limited storage	• Install backup generator at Station 7.
880	3.00	• Supplied through multiple zones • No backup power • Limited storage	• Install check valve in place of existing normally closed valve along Raymundo Dr. to supply water to the 880 zone from the 805 zone in the event of an emergency. Note that the 880 zone is supplied through small booster pumps located at Station 22 and has limited fire flow available through the booster pumps.
910	2.02	• Supplied through multiple zones • Grid limitations	• Install backup generator at Station 17 • Install additional pump at Station 27
955	3.00	• Supplied through multiple zones • Limited Storage • Grid limitations	• Small zone within a cul de sac supplied by single main. Single hydrant within the zone but there are alternative hydrants located nearby so no projects are recommended for this zone due to wildfire threat.
960	3.03	• Supplied through multiple zones • No backup power • Grid limitations	• Install backup generator at Station 26 • Install additional pump station near Alpine Rd. and Willowbrook Dr. to provide additional reliability to the zone.
1025	3.00	• Supplied through multiple zones	• Install backup generator at Station 7.* AND • Install backup generator at Station 6. Note that there are limited ways in which the distribution system reliability can be improved.

		• No backup power • Grid limitations	Consolidation of the Skyline system with the Woodside Mutual water system and with an appropriately designed control system could allow for an alternate path into the zone through Station 45
1055	3.00	• Supplied through multiple zones • Limited storage • Grid limitations	• Install new main from 725 zone to 715 zone to improve the supply reliability to Station 33 • Install new main in Buck Meadows Dr. to improve distribution system reliability within the 1055 zone
1060	3.00	• Supplied through multiple zones • Limited storage • Grid limitations	• This zone is a small area within the Los Trancos system that serves approximately 10 homes with no hydrants so there are no projects recommended due to wildfire threat
1090	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Install backup generator at Station 25.* AND • Install backup generator at Station 24 Note that the zone has limited opportunities for improving the distribution system reliability. Further investigation is warranted to identify precise zone boundary valves along Patrol Rd.
1205	2.00	• Supplied through multiple zones • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1255	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Limited options exist for mitigating the wildfire risks for this portion of the Woodside Mutual system without consolidating with the Sky Londa water system.
1265	2.02	• Supplied through multiple zones • Limited Storage	• Install additional storage at Station 36

1425	2.00	• Supplied through multiple zones • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1435	3.00	• Supplied through multiple zones • Backup power limited • Grid limitations	• Note that this is actually two different zones. For the portion in the Skyline system, limited options exist for ways to mitigate against wildfire risk and is beyond the scope of this initial study. For the portion within the Los Trancos system, investigate available flows through existing PRVs and consider installing booster pump specifically for 1435 zone at Station 36.
1510	3.00	• Supplied through multiple zones • Limited storage • Grid limitations	• Install additional PRV located at Station 36 to supply 1510 zone.
1545	3.00	• Supplied through multiple zones • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1600	2.00	• Supplied through multiple zones • Grid limitations	• Investigate methods for supplying water for emergency purposes through combined storage of Station 38 and Station 39 as well as pumps from Station 36
1610	2.00	• Supplied through multiple zones • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1740	2.00	• Supplied through multiple zones • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1810	3.00	• Supplied through multiple zones	• Limited options exist for mitigating wildfire risks without consolidation with the Skylonda water system. Further study is needed for this area.

		• No backup power • Grid limitations	
1845	2.00	• Supplied through multiple zones • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1890	2.00	• Supplied through multiple zones • Limited storage	• Limited options exist for this portion of the Los Trancos system. Further investigation into potential improvements should be done.
1965	1.01 – 3.00	• Supplied through multiple zones • Limited backup power • Grid limitations	• This is a portion of the Skyline system. Limited options exist for mitigating wildfire risk without significant investment in infrastructure which is beyond the initial intention of this study. Further study of the Skyline system is needed.
1975-A			
1975-B			
2150			
2160			
2170			
2185			
2215			
2370			
2450			

* – Denotes project also necessary in case of Public Safety Power Shutoff event.

Chico

Zone Name	Risk Score	Issues	Recommendations
395	1.01	• Grid limitation	• Grid strengthening possibilities are limited due to the small size of the zone. Recommend investigating options with local staff.
400	2.02	• No storage	• Install ground level storage and booster pump within 400 zone to meet demand plus 2000 GPM fire flow for 2 hours assuming largest well within the zone is out of service OR: • Improve grid reliability and pressure from main system to supplement and meet same fire flow requirement
425	1.01	• Grid limitation	• Improve grid reliability within zone

Zone Name	Risk Score	Issues	Recommendations
475	2.20	• Grid limitations along Bruce Rd.	• Install parallel main from north side of Little Chico Creek to south side AND/OR: • Install booster pump at station 79 to provide supplement demand plus 2000 GPM fire flow with largest well in 475 zone south of Little Chico Creek out of service.
635	2.02	• Grid limitations	• Install additional main in Whispering Winds to loop north side of canyon to south side (Note there is a PRV on the south side of the canyon to supply the zone from the 795 zone but that relies on the pumps at station 66 and does not utilize water in storage to support a wildfire)
795	4.00	• Grid limitations • Dependent on multiple zones	• Install additional interconnections to allow for portable booster pump to be connected between 635 and 795 zones

Hermosa/Redondo

Zone Name	Risk Score	Issues	Recommendations
300-1	1.09	• Grid limited	• Grid limited by single large pipe coming from Met connection, introduce alternative supply routes. • Provide backup power at supply sources for 300-1 zone for times when supply is not available directly from WB 16 connection.
400	3.06	• Dependent on multiple zones • No backup power • Grid limited	• Install backup power at Station 23 AND: • Investigate viability of Emergency Conn. w/CWS PV at Palos Verdes Blvd & Via Rosa. NOTE – CWS PV is also designated as “Very High” risk for wildfire and therefore the utility of this connection will depend on fire extent. • Ensure the south section, west of Palos Verdes Blvd has a secondary flow path, perhaps portable booster connections on Paseo de la Playa or Camino de Encanto.
500	3.06	• Dependent on multiple zones • No backup power • No storage	• Install backup power at Station 24 (and 23)*, this will provide power resilience and ensure storage availability to the zone AND: • Investigate viability of Emergency Conn. w/CWS PV at Via Colusa and Calle de Arboles. NOTE – CWS PV is also designated as “Very High” risk for wildfire and therefore the utility of this connection will depend on fire extent.

* – Denotes project also necessary in case of Public Safety Power Shutoff event.

Livermore

Zone Name	Risk Score	Issues	Recommendations
600	1.35	• Backup power insufficient	• Backup power present at Wells 24 and 31 and not necessary on connections with Zone 7. Consider installing backup power at Station 10 for further redundancy/resiliency if necessary.
610	2.82	• Backup power insufficient • Auto available storage insufficient	• Backup power not necessary on connections with Zone 7. Consider installing backup power at Sta. 20 for protection during power and/or Zone 7 outage. • Zone 7 storage can be considered backup storage in this case.
685	1.05	• Grid limitation	• Install portable booster connection to 600 zone along Las Colinas Rd. near Las Positas.
690	1.31	• Grid limitation	• Zone split by single 12” pipeline across Arroyo Mocho at Robertson Park – consider ways to strengthen grid by introducing additional connection or capacity.
710	4.00	• Dependent on multiple zones • No backup power • Auto available storage insufficient • Grid limitation	• Install backup power at Station 26 to ensure supply to single pipe zone reliant on 690 zone for supply and storage.
730	4.04	• Dependent on multiple zones • No backup power • Auto available storage insufficient • Grid limitation	• Install backup power at Station 13 to ensure supply to small zone reliant on 690 zone for supply and storage. • Investigate viability of Standby connection to City of Livermore, determine whether it could be made available during an emergency.
740	4.08	• Dependent on multiple zones	• Install backup power at Stations 27 and Sta. 28.

		• No backup power • Auto available storage insufficient • Grid limitation	• Grid a bit limited due to topography but many NCVs to 685 zone. Could consider an emergency portable booster connection at an existing NCV.
760	2.02	• Dependent on multiple zones • Auto available storage insufficient • Grid limitation	• Reliant on intermediary supply zone (690 Zone) and long, single transmission line. Install portable booster connection at either Hansen Rd. and Saratoga Court and/or Pendolino Ln.

Los Altos

Zone Name	Risk Score	Issues	Recommendations
380	3.03	• Supplied by single PRV • Grid limitations	• Install PRV at normally closed valve to provide supply from lower zone to portion of zone with limited grid connection
BLANDOR	2.00	• Supplied through multiple zones • Grid limitations	• Investigate installing check valve between PRICE zone and BLANDOR zone near Loyola Dr. and Ravensbury to provide water to portions of zone that may be isolated due to main repairs, even at lower pressure.
D-1	2.00	• Supplied through multiple zones • Grid limitations	• Install new main in Eastbrook Ave to connect to 445 zone at Eastbrook Ave. and Loyola Dr. Install check valve to supply water to D-1 zone in the event that the zone is isolate due to main repair or similar work
D-2	2.00	• Supplied through multiple zones • Grid limitations	• Install new main in Eastbrook Ave to connect to 445 zone at Eastbrook Ave. and Loyola Dr. Install check valve to supply water to D-1 zone in the event that the zone is isolate due to main repair or similar work
D-3	2.00	• Supplied through multiple zones • Grid limitations	• Install PRV and new main to connect from discharge of station 38 to portion of the zone located along Maria Ln.
LOW	1.62	• No backup power	• Investigate backup power needs given ability to supply the zone directly from SCVWD and the reliability of the west pipeline.

Zone Name	Risk Score	Issues	Recommendations
LOYOLA	1.06	• Limited Storage	• Install backup connection between Sta. 13 (410) zone and Loyola (445) zone to provide additional storage in event of an emergency
NORTH LOS ALTOS	1.08	• No backup power	• Investigate backup power needs given ability to supply the zone directly from the low zone (which also lacks backup power) and directly off of SCVWD
OLIVE TREE	2.00	• Supplied through multiple zones • Grid limitations	• Limited options to provide alternate path or to loop the zone. Develop backup plan to provide fire protection from Station 28 during wildfire event including potentially including portable hoses
PRICE	1.02	• Supplied through multiple zones	• Install backup generator at Station 8 to provide additional supply reliability to the zone in the event that there is an extended power outage or wildfire event
ROBLEDA HEIGHTS	2.02	• Supplied through multiple zones • Grid limitations	• Install check valve on Dawnridge and Magdalena to supply isolated portions of Robleda Heights zone from Loyola (445) zone.
ROBLEDA HEIGHTS SZ 1	2.00	• Supplied through multiple zones • Grid limitations	• Install check valve at Manresa Way and University Ave to supply isolated portions of the zone from adjacent University (380) zone.
ROBLEDA HEIGHTS SZ 2	1.01	• Supplied through multiple zones	• No projects recommended as zone already has multiple PRV locations with multiple PRVs as well as check valves from adjacent lower zone that can supply areas in the event of an emergency.
STA 112	2.00	• Supplied through multiple zones • Grid limitations	• Install check valve at Burke Rd. and Fremont Rd. to supply portion of the zone along Deerfield Dr. in the event that portion of the system is isolated. Remaining portions of zone have automatic backup supply already available.

Zone Name	Risk Score	Issues	Recommendations
STA 113	3.00	• Supplied through multiple zones • No backup power • Grid limitations	• Install generator at station 113. • Install hydrant for portable booster connection at check valve located near Seven Acres Ln and Fremont Rd.
STA 118	4.00	• Supplied through multiple zones • No backup power • No storage • Grid limitations	• Although this zone has several areas of concern, there are no hydrants located in this zone as all fire protection is from the lower Robleda Heights zone. Recommend further study on available fire flow near the area as a result of other improvements recommended in this report.
STA 13	1.03	• No backup power	• Install backup generator at Station 14
STA 19	2.02	• Supplied through multiple zones • Grid limitations	• Install check valve to replace normally closed valve along Highlands Cir • Install booster pump at Station 14 to supply STA 19 zone from alternative source
STA 28	2.00	• Supplied through multiple zones • Grid limitations	• Limited options to provide alternate path or to loop the zone. Develop backup plan to provide fire protection from Station 28 during wildfire event including potentially including portable hoses
STA 33	4.00	• Supplied through multiple zones • No backup power • Limited storage • Grid limitations	• Install backup pump station at Station 42.
UNIVERSITY	3.06	• Supplied through multiple zones • Grid limitations	• Install check valve in place of normally closed valve at University and Anita. • Install check valve in place of normally closed valve at Foothill Blvd near Tyndall St. • Install check valve in place of normally closed valve at University Ave. and Main St.

Zone Name	Risk Score	Issues	Recommendations
WOODLAND	4.08	• Supplied through multiple zones • Limited storage • No backup power • Grid limitations	• Install backup generator at Station 9 • Install check valve in place of normally closed valve at Fallen Leaf and Louise Ln. to supply Woodland zone from the 380 zone. • Install check valve in place of normally closed valve at Homestead Rd. and El Sereno Ave.

Oroville

Zone Name	Risk Score	Issues	Recommendations
435-1	1.86	• No backup power	• [2 zones function as 1, Sta. 7 is inactive] Install backup power at stations supplying zone
435-2	1.00	• No backup power	• [2 zones function as 1, Sta. 7 is inactive] Install backup power at stations supplying zone
470	1.04	• Grid limitation	• Install portable booster connection between 470 and 325 zones on Riverview Terrace Dr.

Palos Verdes

Note: The challenging topography presented by the rugged Palos Verdes peninsula, with its numerous bluffs, canyons, and peaks, makes developing practicable solutions to identified system vulnerabilities difficult in certain areas. Where possible, recommendations have been made in the following table to address identified vulnerabilities.

Zone Name	Risk Score	Issues	Recommendations
A-1000-1	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
A-1000-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
A-1000-3	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
A-1000-4	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
A-1150-1	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
A-1150-2	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
A-1300	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23.
A-500	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
A-570	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
A-700	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23.
A-850-1	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
A-850-2	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
A-970	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23. • Install pipe and PRV between Zone 1150 and 970 along Palos Verdes Dr. East
B-1030	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23.
B-280	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23. • Install pipe between dead 4 inch pipe and dead end 340 pipe along Yacht harbor Dr/Seawall Dr.
B-340	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23. • Install additional inter-zonal pipe and PRV's via open space between 340 and 500 zones.
B-500-1	2.02	• No Backup Power • Grid Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
B-500-3	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23. • Install pipe along Narcissa Dr. between dead ends.
B-550-1	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
B-550-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23.
B-690	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
B-700	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
B-750	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
B-850	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
C-350	1.02	• No Backup Power • Grid Limitation	

Zone Name	Risk Score	Issues	Recommendations
C-480	1.04	• Grid Limitation	• Install pipe along S. Western Dr. from dead in end in Western Dr. to dead end in Peninsula Verde Dr.
C-500	1.00	• Supply Limitation	
C-550	1.00	• Supply Limitation	
C-585	1.01	• Supply Limitation	
C-635	2.08	• Grid Limitation • Supply Limitation	• Install pipe along S. Western Drive from dead in end in Western Dr. to bend in Trudie Dr.
C-640	2.00	• Grid Limitation • Supply Limitation	• Upsize existing 6 inch pipe along Sunnyside Ridge Dr.
C-700-1	2.00	• Grid Limitation • Supply Limitation	
C-700-2	2.00	• Grid Limitation • Supply Limitation	
C-750	2.00	• Grid Limitation • Supply Limitation	
C-850	1.04	• Grid Limitation	
D-1010	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
D-1175	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
D-1250	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
D-280	1.00	• Supply Limitation	
D-500-1	1.09	• Grid Limitation	
D-530	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
D-550	2.06	• No Backup Power • Supply Limitation	• Install backup power at Station 23
D-710	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
D-735	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
D-800	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
D-860-1	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
D-860-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
D-860-3	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
E-1150-1	1.01	• No Backup Power •	• Install backup power at Station 23
E-1150-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
E-1250	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
F-1050	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
F-1095	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
F-1150-1	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
F-1150-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
F-1160	3.00	• No Backup Power Grid Limitation • Supply Limitation	• Install backup power at Station 23
F-1300	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
F-1325	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23. • Install water line along Appaloosa lane between dead ends in zone.
F-600-1	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
F-600-2	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
F-800	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
F-820	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
F-975	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
H-1025	3.09	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
H-1175	3.06	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
H-1300	3.06	• No Backup Power • Grid Limitations • Supply Limitation	• Install backup power at Station 23. • Install pipe and PRV between H-1300 zone and 1450 zone (18 inch line) in Ravenspur Dr.
H-675	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
H-850-1	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
H-850-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
H-900	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
H-920	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
J-1000	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
J-1025	3.09	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23.
J-1150	2.10	• No Backup Power • Grid Limitation	• Install backup power at Station 23
J-1300	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
J-600	2.12	• No Backup Power • Supply Limitation	• Install backup power at Station 23.*

Zone Name	Risk Score	Issues	Recommendations
J-675	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
J-700-1	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
J-700-2	3.06	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
J-755	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
J-850-1	2.00	• No Backup Power • Grid Limitation	• Install backup power at Station 23
J-850-2	1.02	• No Backup Power	• Install backup power at Station 23
J-980	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
L-1000	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
L-1175	2.06	• No Backup Power • Supply Limitation	• Install backup power at Station 23
L-550	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23. • Install pipe and check valves between 550 and 500 zone at dead end at Via Zumaya.
L-625	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
L-700	1.01	• No Backup Power	• Install backup power at Station 23
L-850	2.06	• No Backup Power • Grid Limitation	• Install backup power at Station 23
L-980	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
N-600	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
P-1300-1	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
P-1300-2	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
P-1300-3	2.08	• No Backup Power • Supply Limitation	• Install backup power at Station 23
P-1300-4	2.00	• No Backup Power • Supply Limitation	• Install backup power at Station 23
P-1300-5	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
P-1300-6	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
P-1300-7	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23
P-1300-8	3.03	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23
P-1350	3.00	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23

Zone Name	Risk Score	Issues	Recommendations
P-1450	3.24	• No Backup Power • Grid Limitation • Supply Limitation	• Install backup power at Station 23.*
P-1600	2.02	• No Backup Power • Supply Limitation	• Install backup power at Station 23

* – Denotes project also necessary in case of Public Safety Power Shutoff event.

Salinas

Zone Name	Risk Score	Issues	Recommendations
Country Meadows			
CMM_340	3.20	• No backup power • Grid limitation (single 6”-8”) trunk	• Install backup power at wells (Sta. 60 & 61) and/or determine additional emergency supply • Connect Country Meadows system to main Salinas system, thus introducing new supply and flow paths
CMM_425	6.68	• Dependent on multiple zones • No backup power • No auto available storage • Grid limitation	• Install backup power at Station 57 and 58 • Install portable booster connection between 340 and 425 zones on Meadow Ridge Rd.
Las Lomas			
LL_210	5.07	• No backup power • Insufficient auto available storage • Grid limitation	• Consider increasing storage at Sta. 302 • Consider backup generators at standby and offline supplies (Sta. 301 & Sta. 302) • Small zone, difficult to overcome branching
LL_360	4.71	• Dependent on single well and intermediate zone • Insufficient auto available storage • Grid limitation	• Dependent on Sta. 303 well via 210 zone & Sta. 302 – introduce additional supplies (backup power at Sta. 301 & Sta. 305 perhaps) and consider portable booster connection at Miller PRV or Thomas Rd. check valve

Zone Name	Risk Score	Issues	Recommendations
LL_470	3.06	• Dependent on multiple zones • No backup power • No auto available storage	• Introduce additional supplies (backup power at Sta. 301 & Sta. 305 perhaps) and consider portable booster connection at Las Lomas Dr. • Install backup power at Sta. 304
Oak Hills			
OH_275	5.44	• No backup power on supply • Grid limitation, single 12” on Castroville Blvd.	• Install backup power at Sta. 201, 203, and 205. • Investigate possibility of looping outside service area (via Mossy Oak Pl., Hillcrest + Valley + Meridian Rds. and back to Castroville Blvd.) • Investigate feasibility of emergency connections
Salinas (+ Bolsa Knolls)			
SLN_360	2.00	• No auto available storage • Grid limitation	• Investigate storage at Sta. 46 and/or Sta. 45 • Main Sta. 66 supply from 280 zone dependent on single 12" DI, install emergency connections on San Juan Grade Rd. to increase options
Salinas Hills			
SLNH_240	2.22	• Dependent on zones dependent on pumping but lacking backup power • Grid limitation	• **Install backup power at Station 62 and supply points for 320 zone**; if already present, ensure sufficient for anticipated wildfire demands • Ensure inactive wells (Sta. 36 & 59) in zone could be activated in emergency – consider backup power/generator hookups • Consider emergency connection between pipelines on Portola Rd. in event one fails
SLNH_320	2.76	• No backup power • Grid limitation	• **Install backup power at well stations 32, 33, 40, and/or 63 in order of priority to supply**; if already present, ensure sufficient for anticipated wildfire demands***** • Consider parallel pipe on River Rd.
SLNH_350	2.02	• No backup power • Grid limitation	• [one street zone off of 530 zone, see 530 zone recommendations]

Zone Name	Risk Score	Issues	Recommendations
SLNH_360	5.12	• Dependent on pumped zone and pumping for supply • No backup power • Auto available storage insufficient • Grid limitation	• **Install backup power at Station 62 and supply points for 320 zone**; if already present, ensure sufficient for anticipated wildfire demands • Ensure inactive wells (Sta. 35 & 39) in zone could be activated in emergency – consider backup power/generator hookups • Consider parallel pipelines for portions of single main on Portola Rd.
SLNH_390	2.02	• No backup power • Grid limitation	• [very small zone off of 530 zone, see 530 zone recommendations]
SLNH_405	1.02	• No backup power	• Confirm Sta. 70 storage is in fact auto available • **Install backup power at Stations 71** for supply reliability; if already present, ensure sufficient for anticipated wildfire demands
SLNH_430	2.16	• No backup power • Auto available storage insufficient	• **Install backup power at well 49 and 50**; if already present, ensure sufficient for anticipated wildfire demands • Install portable booster power at Station 50; if already present, ensure sufficient for anticipated wildfire demands
SLNH_450	2.02	• No backup power • Grid limitation	• [one street zone off of 530 zone, see 530 zone recommendations]
SLNH_480	2.00	• No backup power • Auto available storage insufficient	• **Install backup power at Station 48**; if already present, ensure sufficient for anticipated wildfire demands • [Single pipe zone supplied by Station 48]
SLNH_525	2.00	• No backup power • Grid limitation	• [one street zone off of 677 zone, see 677 zone recommendations]
SLNH_530	2.10	• No backup power • Grid limitation	• **Install backup power at Station 48**; if already present, ensure sufficient for anticipated wildfire demands • Parallel pipeline on Las Palmas Pkwy to reduce dependency on existing solo 12” • Consider emergency portable booster connection between 320 and 530 zone at Forest Song Dr. and Las Palmas Pkwy

Zone Name	Risk Score	Issues	Recommendations
SLNH_535	2.06	• Dependent on pumped zone • No backup power	• **Install backup power at Stations 70, 71, 72, and 73** for supply reliability; if already present, ensure sufficient for anticipated wildfire demands
SLNH_540	2.00	• No backup power • Grid limitation	• [one street zone off of 677 zone, see 677 zone recommendations]
SLNH_630	4.04	• Dependent on multiple zones • No backup power • Auto available storage insufficient • Grid limitation	• **Install backup power at Stations 70, 71, 72, and 73** for supply reliability; if already present, ensure sufficient for anticipated wildfire demands • Install emergency booster connection with 535, 805, or 905 zone at 805 zone PRVs at Pine Canyon Rd. for looping
SLNH_677	2.16	• No backup power • Grid limitation • Many zones rely on this zone	• **Install backup power at Station 48**; if already present, ensure sufficient for anticipated wildfire demands • Consider secondary pipeline from Station 48 (or 530 zone) along Las Palmas Pkwy (looks like may be difficult corridor construction-wise)
SLNH_695	3.03	• Dependent on multiple zones • No backup power • No auto available storage	• **Install backup power at Stations 70, 71, 72, and 73** for supply reliability and storage; if already present, ensure sufficient for anticipated wildfire demands
SLNH_805	4.04	• Dependent on multiple zones • No backup power • No auto available storage • Grid limitation	• **Install backup power at Stations 70, 71, 72, and 73** for supply reliability and storage; if already present, ensure sufficient for anticipated wildfire demands • Single, hilly street with no obvious solutions to grid limitation
SLNH_905	3.00	• Dependent on multiple zones • No auto available storage • Grid limitation	• **Install backup power at Stations 70, 71, 72, and 73** for supply reliability and storage; if already present, ensure sufficient for anticipated wildfire demands • Single, hilly street with no obvious solutions to grid limitation

* – Denotes project also necessary in case of Public Safety Power Shutoff event.

San Carlos

Zone Name	Risk Score	Issues	Recommendations
345	1.27	• Grid limitations (single main along Alameda de las Pulgas)	• Parallel main to support section of single main along Alameda de las Pulgas AND/OR • Additional pumping capacity and backup power at Station 123
400	2.00	• No backup power • No storage within zone	• Zone can be maintained at a lower pressure through check valves. No projects recommended.
460	1.00	• Grid limitation	• Install parallel main along Crestview Dr. as backup to zone.
525	3.03	• No backup power • Dependent on multiple zones • Sections with grid limitations	• Replace main from station 121 • Install backup power at station 121 • Make necessary improvements to SFPUC connection to connect to parallel pipes from SFPUC
585	2.14	• No backup power • Section of single main	• Install backup generator at station 107 • Install parallel main between Club Tank side and Wingate Tank side near Hyde Park Ave.
600	1.01	• Section of single main along Brittan and Crestview	• Install parallel main along Crestview Dr. and Brittan • Install backup pump station at station 109
640	2.02	• Dependent on multiple zones • No backup power	• Install backup power at station 118
685	3.00	• Dependent on multiple zones • No backup power	• Install backup power at stations 118 and 119 • Install backup pump station at station 109
755	2.06	• Dependent on multiple zones • No backup power • Sections of single main	• Install backup power at station 118. • (Note that zone is supplied through multiple PRVs to help reduce grid limitations even though the zone is not well looped)
850	3.06	• Dependent on multiple zones • No backup power	• Install backup pump station at station 109 • Install parallel mains along Crestview Dr.

Zone Name	Risk Score	Issues	Recommendations
		• Long sections of single main	
930	2.06	• Dependent on multiple zones • No backup power • Single main along Crestview Dr.	• Install backup pump station at station 109 • Improve interties between 930 and 1035 zone to allow for main in 1035 zone to be used to supply water from one side of the zone to the other
1035	2.04	• Dependent on multiple zones • No backup power • Single main along Crestview Dr.	• Install backup pump station at station 109. • Install backup generator at station 120.

* – Denotes project also necessary in case of Public Safety Power Shutoff event.

San Mateo

Zone Name	Risk Score	Issues	Recommendations
295	3.03	• Dependent on multiple zones • No backup power • Dependent on single main	• Install backup power at station 28.
325	2.00	• Dependent on multiple zones • No backup power	• Install backup power at station 27
345	2.02	• No backup power	• Install backup generator at station 12
355	3.00	• Dependent on multiple zones • Limited storage for zone • Dependent on single main	• No wildfire preparedness projects are recommended for this small, one street zone. A check valve exists to lower zone and would serve in an emergency.

Zone Name	Risk Score	Issues	Recommendations
440	3.06	• Single pump as supply for zone • No backup power • Areas near open space of branched main	• Add pumping capacity to station 27. • Install backup power at station 27.* • Install main along west Hillsdale Blvd. to provide alternate path to portion of zone along Hillsdale near Laurel Creek.
465	2.02	• Dependent on multiple zones • Dependent on single main for supply	• Install backup supply point at alternate location to eliminate dependence on single main • Reconfigure piping at Station 17 and install control valve to regulate water to Knolls zone (465 zone) when main to Station 25 is isolated
545	3.06	• No backup power • Dependent on supply through multiple zones • Single main for much of the zone	• Install backup power at station 23 • Install emergency backup PRVs to supply isolated section of zone from 635 zone
555	3.00	• Single PRV for supply • No backup power • Single main	• Install backup power at station 27 • Consider relocating hydrants to 635 zone instead of 555 zone (total of 2)
590	2.02	• Dependent on multiple zones • Single main from supply source	• Install parallel main (approximately 1600 ft.) to provide supply to station 25 through multiple paths
635	1.07	• No Backup Power for sources (Note backup power is available at pump storage site)	• Install backup power at either Station 26 or Station 27.*
680	2.00	• Dependent on multiple zones • Single pump for supply • No backup power	• There are no hydrants off of the 680 zone so no projects are recommended for wildfire mitigation.

Zone Name	Risk Score	Issues	Recommendations
760	2.04	• No backup power • Supplied through multiple zones	• Install backup power at station 24.*

* – Denotes project also necessary in case of Public Safety Power Shutoff event.

South San Francisco

Zone Name	Risk Score	Issues	Recommendations
330	1.15	• Grid limitation	• Install PRV along Hillsdale Blvd from 555 zone to 330 zone to provide alternative to railroad track crossings • Install booster pump for 330 zone at Station 1
380	1.09	• Grid limitations	• Install additional supply source on west side of 280 for 380 zone
390	1.04	• Grid limitations	• Install pipeline between discharge piping of booster 5-B and the 390 zone
415	1.00	• Insufficient backup power	• Install backup power at Station 101
430	1.02	• Grid limitations	• Install a permanent relief value able to regulate pressure in isolated portion of 430 zone along South San Francisco Dr.
460	1.00	• Grid limitations	• Limited by the grid in the 390 zone, refer to Zone 390 recommendations
520	1.02	• Insufficient backup power	• Install backup power at Station 101
555	1.02	• Grid limitations	• Install parallel main along Hillsdale Blvd.

Westlake

Zone Name	Risk Score	Issues	Recommendations
1160	7.16	• No backup power • Grid limited	• Install backup power at Station 10; if auxiliary power is present, ensure it is adequate for anticipated wildfire demand (Note, Station 2 has a bypass and at least 2,000 gpm has been metered via regulators) • One 20” pipeline and one 12” across 101 are only two connections between west and east, if additional

Zone Name	Risk Score	Issues	Recommendations
			connections are infeasible – exercise emergency/standby connections on the west side of 101
1315 (Zone II-A)	4.28	• No backup power • Grid limited	• Install backup power at Station 2 in case low pressure at CMWD connection disallows bypassing (two bypass valves at Station 2, Zone II-A can gravity feed off Harper Res) • Establish emergency connections between Zone 1500/Zone III at NCVs to alleviate reliance on 16" along Westlake Blvd.
1315 (Zone II-B)	4.32	• No backup power • Grid limited	• Install backup power at Station 5 in case low pressure at CMWD connection disallows bypassing (no existing bypass valve at Station 5, Zone II-B can gravity feed off Galanis) • Install bypass valve(s) at Station 5 • Establish emergency connections to Zone 1500/Zone III
1330	1.07	• Grid limited	• Install portable booster connection to Zone 1315/Zone II-B at current NCV, 330 Via Colinas (12") • Establish secondary PRV connection between Zone 1500/Zone III at Meadow Grove Lane (8").
1340	4.12	• No backup power • Grid limited	• Install backup power at Zone 1160 supply points • Zone II-C, has backup power from Sta. 1 and is small • Zone II-D, has emergency booster connection (at Glastonbury & Channelford Rd.) + a check valve there • Both zones very small and it is difficult to add looping – unless via additional booster connections
1510	6.06	• Dependent on multiple zones • No backup power • Grid limited	• Install backup power for Zone IV-B/1620 supply points • Install check valve to Zone III (only 10 feet HGL difference)
1620	6.12	• Dependent on multiple zones • No backup power • Grid limited	• Install backup power at Sta. 6 • Install portable booster connection at Grey Feather Ct. & Royal Ridge Ct. • Construct booster station at Sta. 11 ($1M) supplied by 1500 Zone.
1675	1.01	• Grid limited	• Establish an additional supply point/emergency booster connection on the opposite side of the zone

Estimated Capital Project Costs:

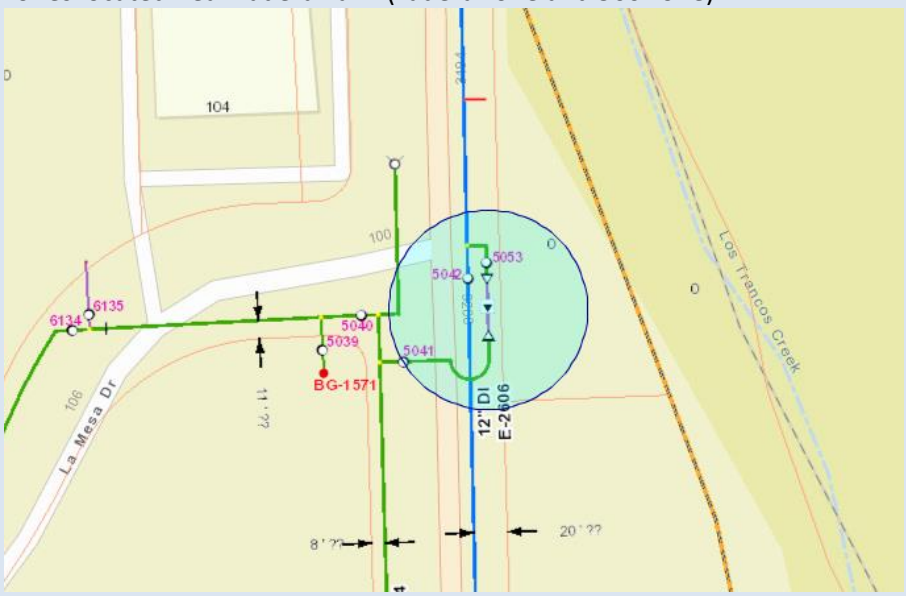
Initial cost estimates include internal labor, construction and material costs, and overhead and standard contingency rates for projects similar to the recommendations made within the report. It should be emphasized that the cost estimates should be considered "ballpark" and that individual projects may require additional effort to further refine scope and detailed requirements prior to developing a final budget. Where known, recommendations were compared to projects included in Cal Water's 2018 General Rate Case (GRC) filing; however, that should not be considered a final estimate for some projects even if consistent with existing projects.

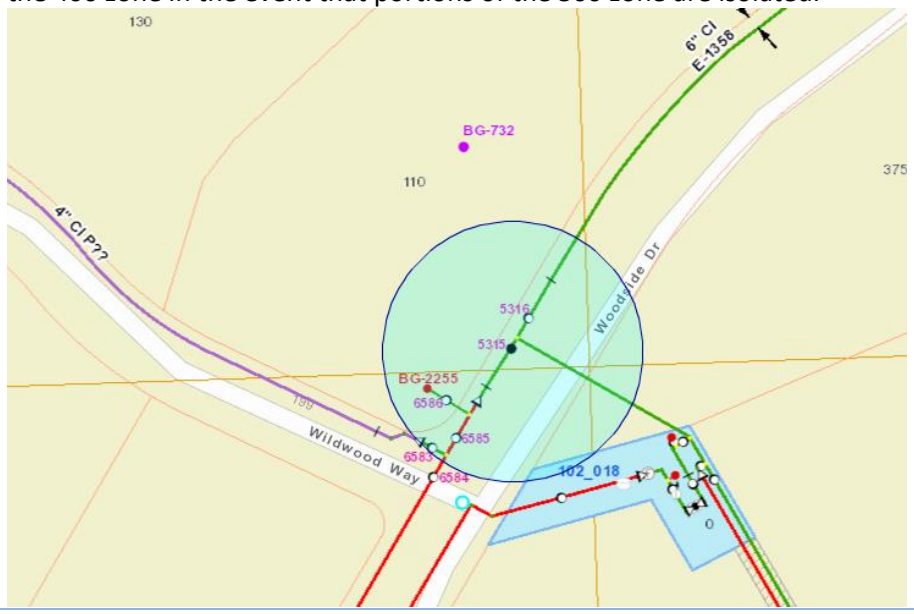
Bakersfield

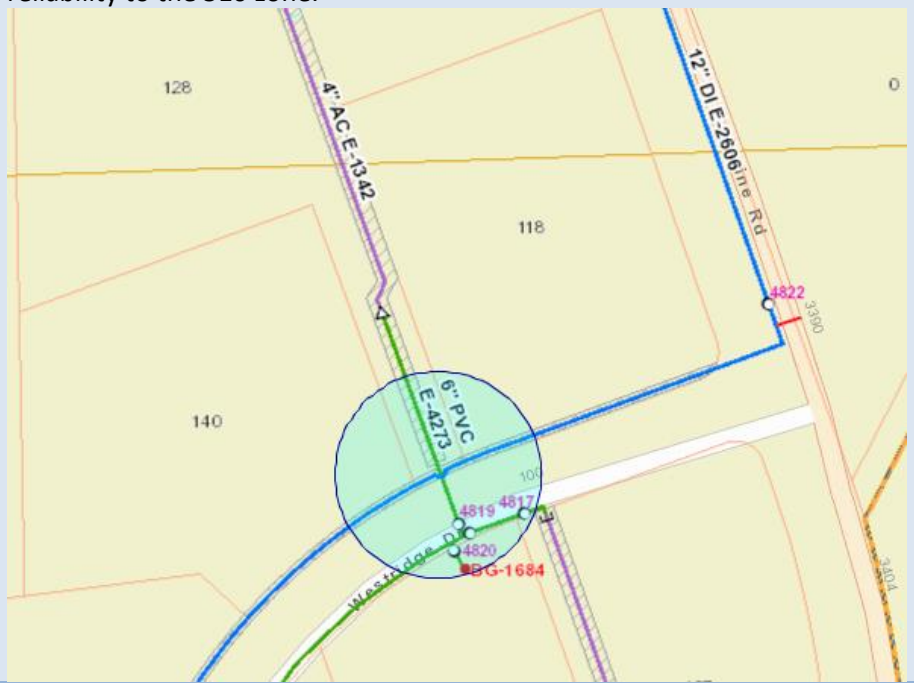
Project	Scope	Estimated Cost
Install backup generators in the low zone	Install backup generators at approximately 20 well sites to provide approximately 50% of max day demand from wells with backup generators. Additional study should be conducted on best sites for backup power that includes analysis of water quality, distribution system reliability, existing generators, electrical system resiliency, and reliability of existing mechanical equipment.	$3M-$6M
Install backup generator at Station 146	Install a backup generator and upgrade necessary electrical equipment at station 146 in Bakersfield. Backup generator will ensure that supply can be maintained for the south portion of Low zone.	$300,000
Install backup generator at Station 133	Install a backup generator and upgrade necessary electrical equipment at station 133 in Bakersfield. Backup generator will ensure that supply can be maintained for the north portion of the Low zone.	$300,000
Install backup generator at Station 212	Install a backup generator and upgrade necessary electrical equipment at station 212 in Bakersfield. Backup generator will ensure that supply can be maintained for the 1200 zone and 1025 zone.	$300,000

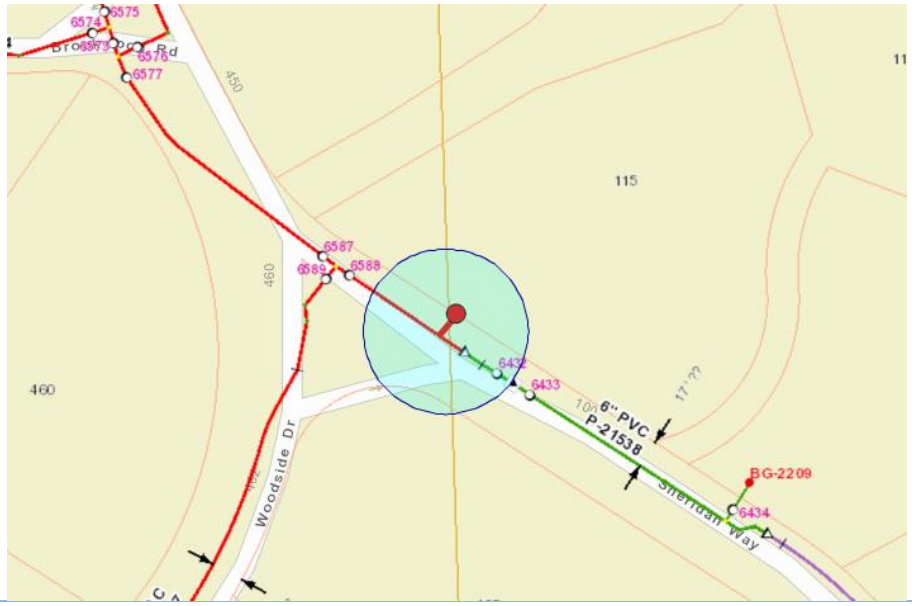
Project	Scope	Estimated Cost
Consider additional storage at Station 213 or backup options for single main along Rancheria Rd.	Investigate options to mitigate insufficient automatically available storage for 790 zone: • Install additional 60,000 gallon storage tank and appurtenances in order to increase total onsite storage from 197,000 gallons to 250,000 gallons. • Portable hoses to bypass a break along Rancheria Road and ensure Station 213 can maintain gravity feed • Portable generators to boost from lower pressure area if needed	$150,000 to 425,000
Install new main in 1000 zone to improve grid resiliency	Install approximately 1100 ft. of new 12-inch main in Auburn St. from dead end in Morning Drive to dead end in Auburn Street. See map below: 	$385,000
Total Cost		**$4.435 – 7.71M**

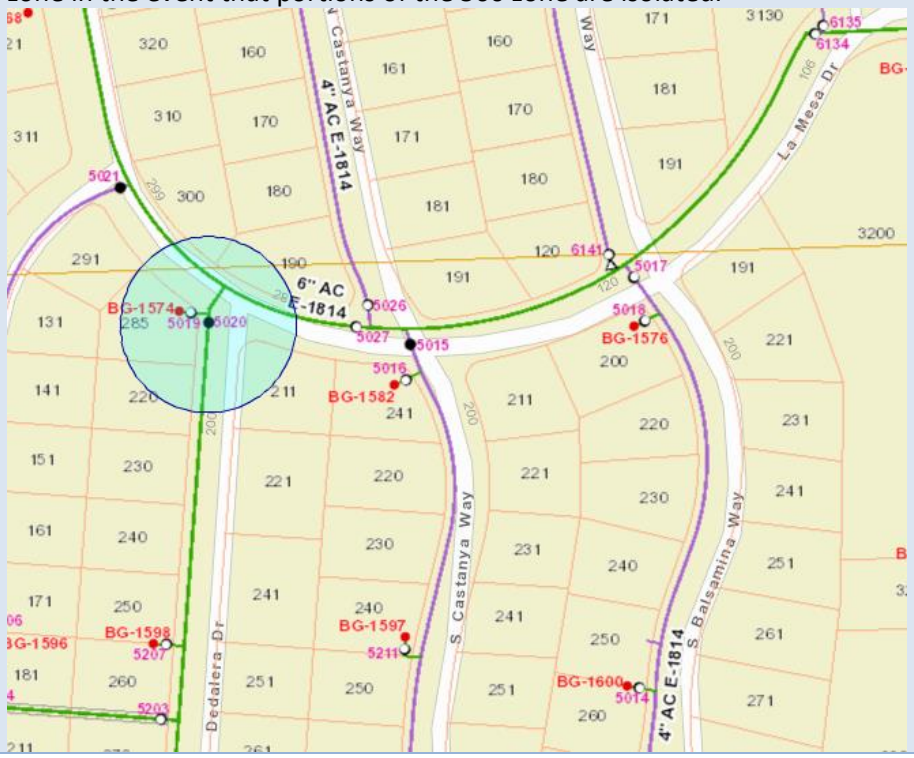
Bear Gulch

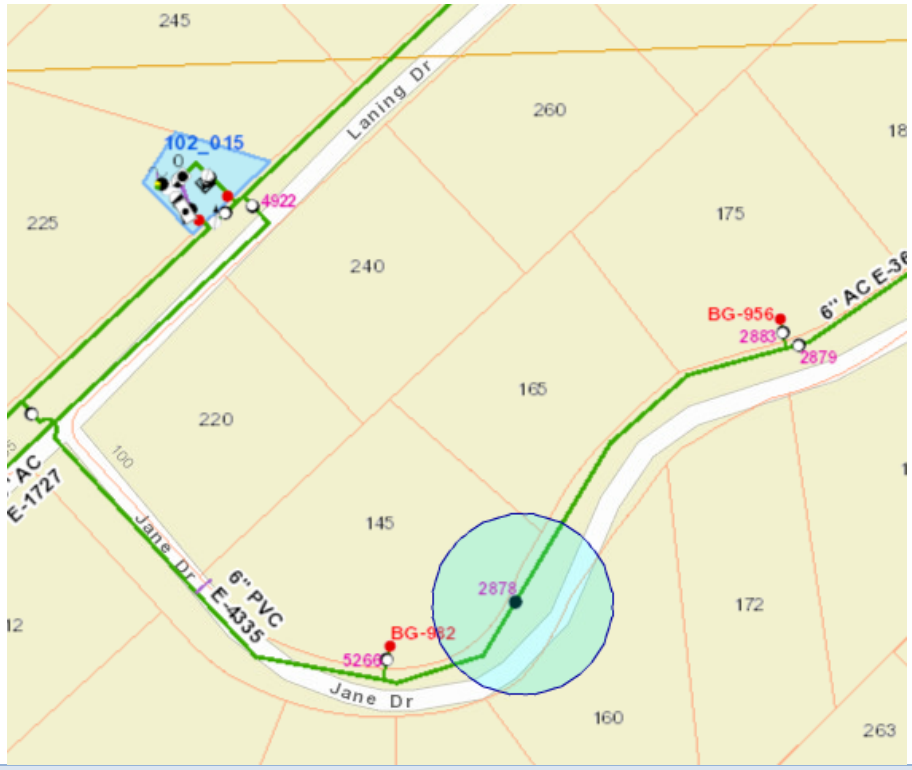
Project	Scope	Estimated Cost
Install PRV at Alpine and La Mesa	Install additional PRV at Alpine and La Mesa Dr. to increase fire protection in the 440 zone in the event that supply is limited from the dependent zones located near Ladera Tank (Ladera zone and 560 zone) 	$100,000

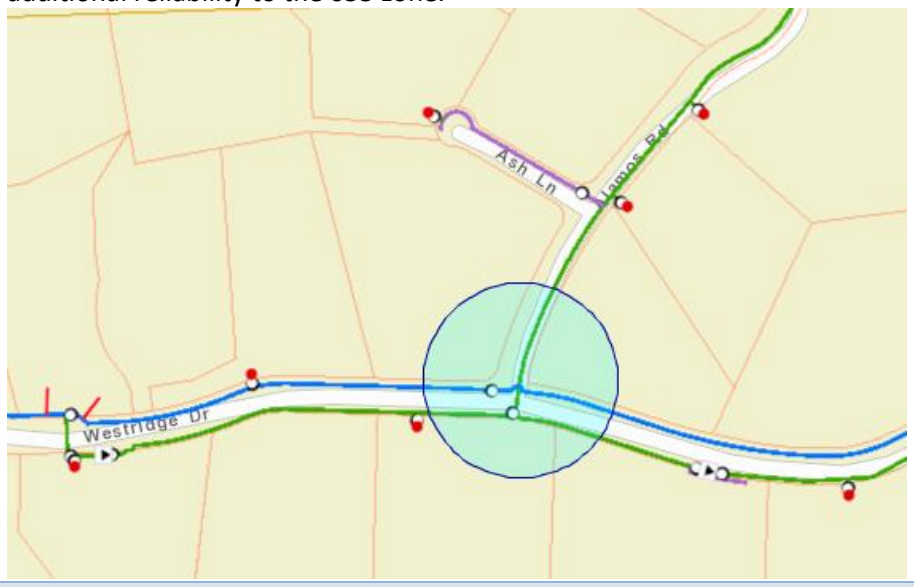
Project	Scope	Estimated Cost
Install check valve at Wildwood and Woodside Dr.	Install check valve in place of existing normally closed valve located near Woodside Dr. and Wildwood Way to supply water to the 500 zone from the 400 zone in the event that portions of the 500 zone are isolated. 	$75,000

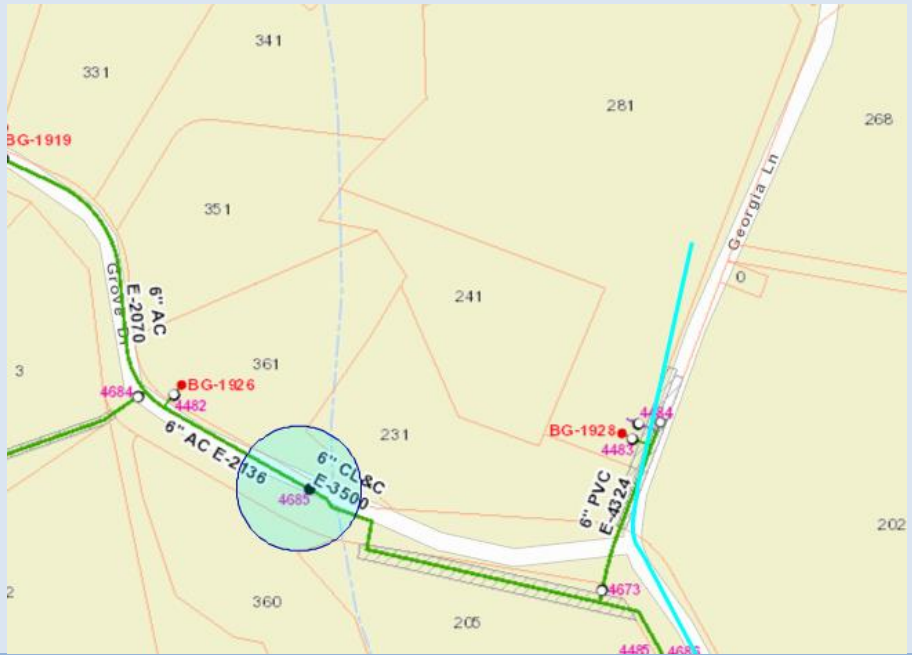
Project	Scope	Estimated Cost
Install PRV on Westridge near Alpine Rd.	Install additional PRV located on Westridge Dr. near Alpine Rd. to supply water to the 510 zone directly from the 815 zone to provide additional reliability to the 510 zone. 	$100,000

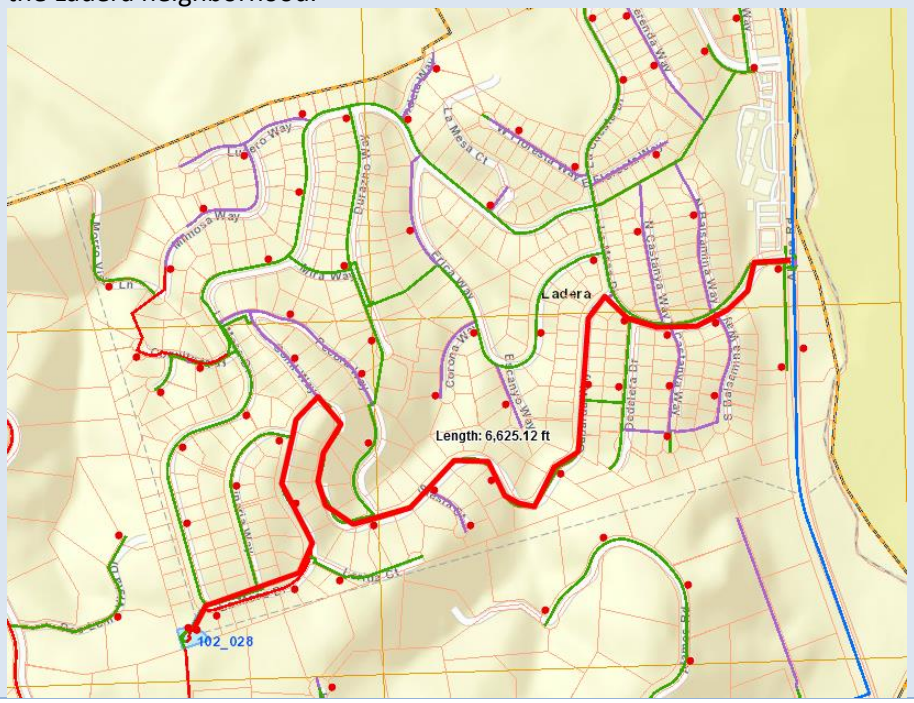
Project	Scope	Estimated Cost
Install hydrant in 590 zone near Woodside Dr and Sheridan Way	Install a new hydrant located within the 590 zone near Woodside Dr. and Sheridan way to provide alternate source of fire protection for the 525 zone. Note that the hydrant can also serve as a means of connecting a portable regulator valve (PRV) to supply the 525 zone during valve maintenance activities. 	$15,000

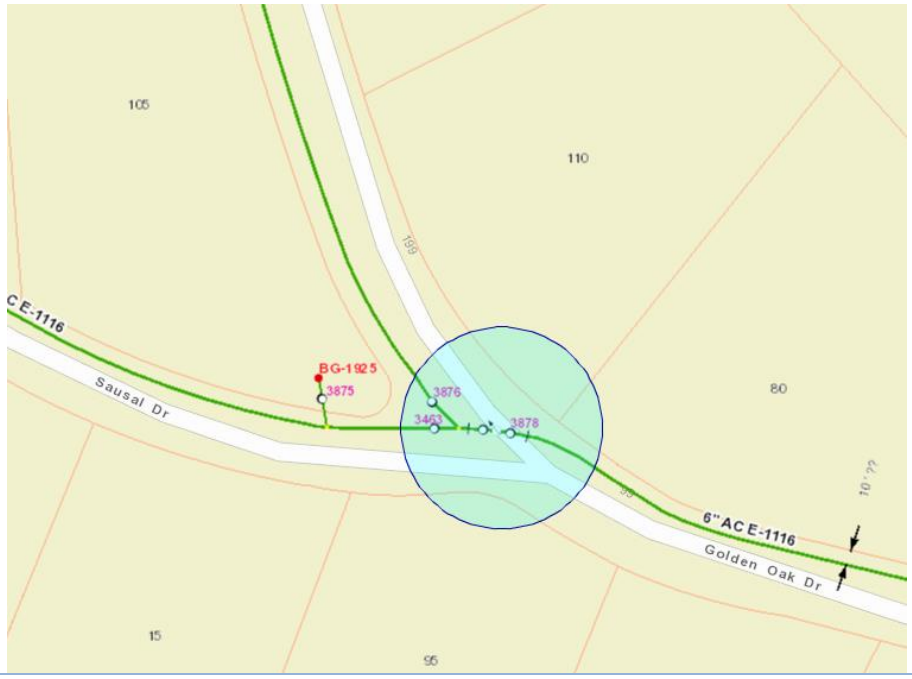
Project	Scope	Estimated Cost
Install check valve at Deladera and La Mesa	Install check valve in place of existing normally closed valve located at Deladera Dr. and La Mesa Dr. to supply water to the 560 zone from the 440 zone in the event that portions of the 560 zone are isolated. 	$75,000

Project	Scope	Estimated Cost
Install check valve on Jane Dr.	Install check valve on Jane Dr. in place of existing normally closed valve to supply water from the 590 zone to the 640 zone in the event that portions of the 640 zone are isolated. 	$75,000
Install backup generator at Station 23	Install a backup generator at Station 23 to supply water to the 805 zone in the event of a power outage. Note that this will improve the reliability of the 640 zone as it can also be supplied by the 840 zone.	$300,000

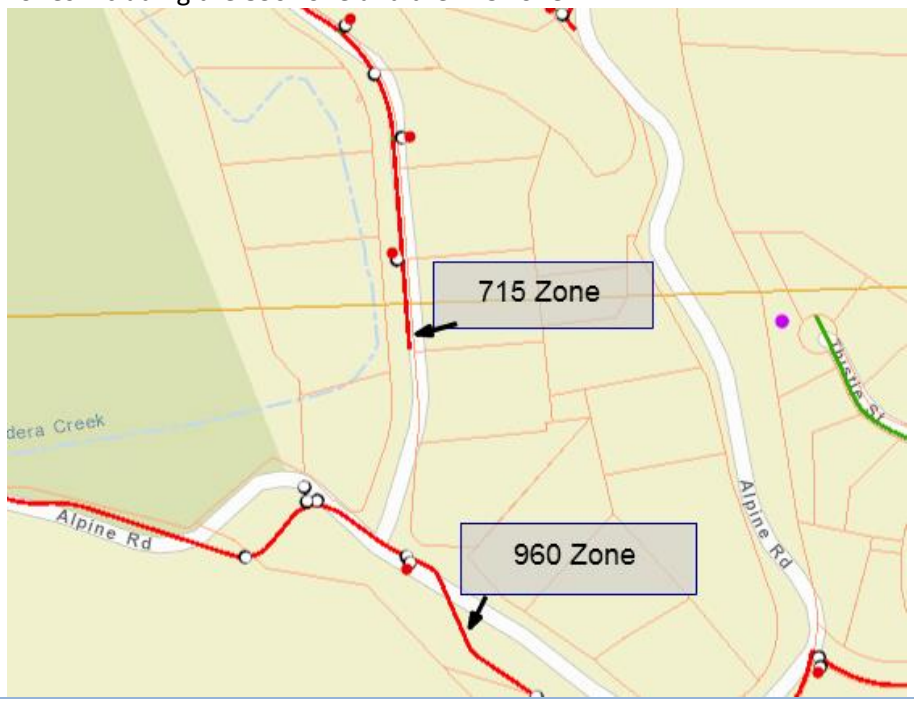
Project	Scope	Estimated Cost
Install PRV at Westridge and Alamos Rd.	Install an additional PRV located at Westridge and Alamos Rd. to provide additional reliability to the 655 zone. 	$100,000
Install control valve at Station 14	Install an automated control valve (pressure reducing and pressure sustaining) at Station 14 to supply water from the 815 zone to the 660 zone in the event that portions of the 660 zone are isolated or if supply to Station 13 is limited.	$100,000
Install control valve at Station 21	Install an automated control valve (pressure reducing and pressure sustaining) to supply water to the tanks at Station 21 from the 815 zone to supply water to the 660 zone in the event that portions of the 660 zone are isolated or if supply to Station 13 is limited.	$100,000

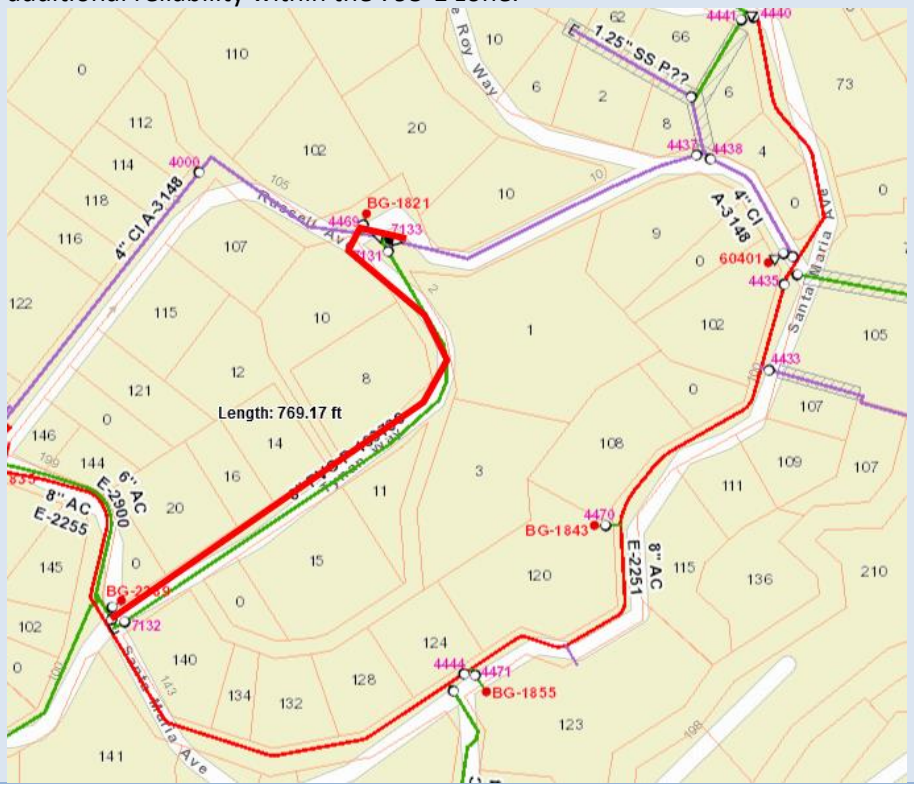
Project	Scope	Estimated Cost
Install PRV in place of normally closed valve on Grove Dr.	Install PRV on Grove Dr. near Georgia Ln to provide additional reliability to the 675 zone. 	$100,000
Install backup generator at Station 19	Install a backup generator at Station 19 to supply water the 675 zone (discharge of booster pumps at Station 19)	$300,000

Project	Scope	Estimated Cost
Install new main Ladera	Install approximately 6700 ft of new main from Alpine Rd. to Station 28 to provide additional reliability to the 815, 680, 580, and 500 zones located in the Ladera neighborhood. 	$3M

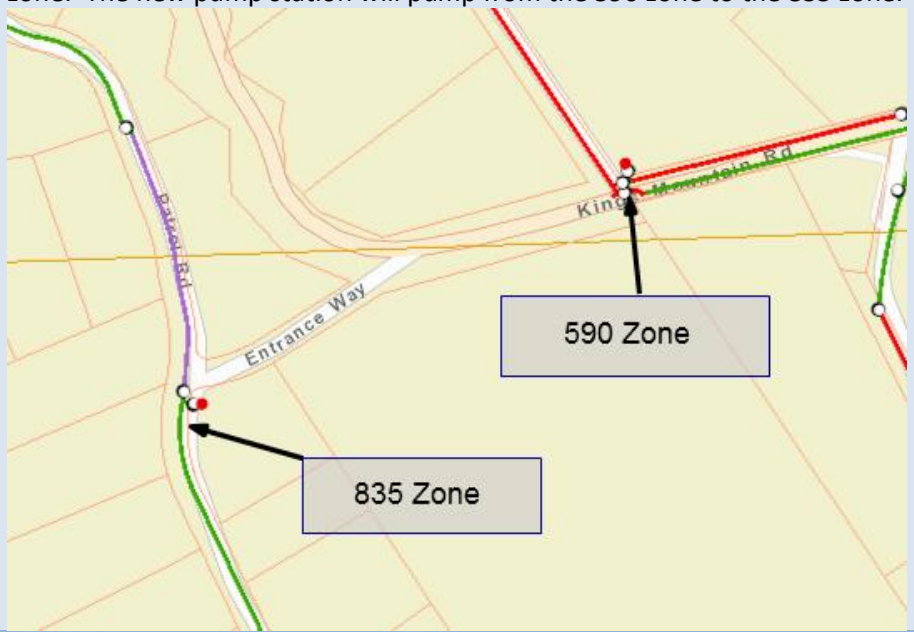
Project	Scope	Estimated Cost
Install PRV at Oak and Sausal	Install PRV at Golden Oak Dr. and Sausal Dr. in place of existing check valve to provide supply to the 715 zone in the event that portions of the zone are isolated. 	$100,000

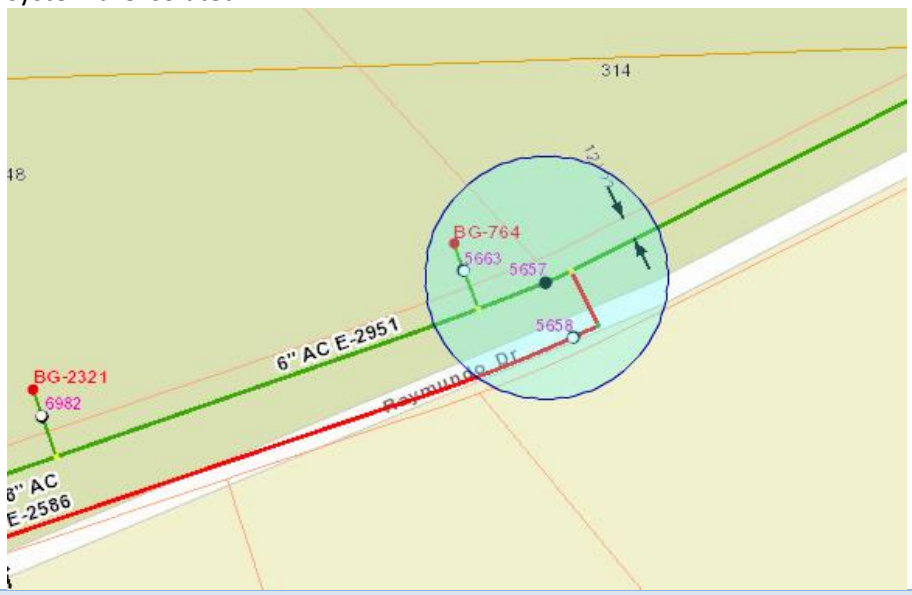
Project	Scope	Estimated Cost
Install new main from Valley Oak St. to Los Trancos Rd	Install approximately 325 ft. of new main from 725 zone located on Valley Oak St. to existing 715 zone along Los Trancos Rd. along with appropriate control valve to provide alternative supply to the 725 zone along with a backup for supplying portions of the 715 zone that supply the Los Trancos system.	$225,000

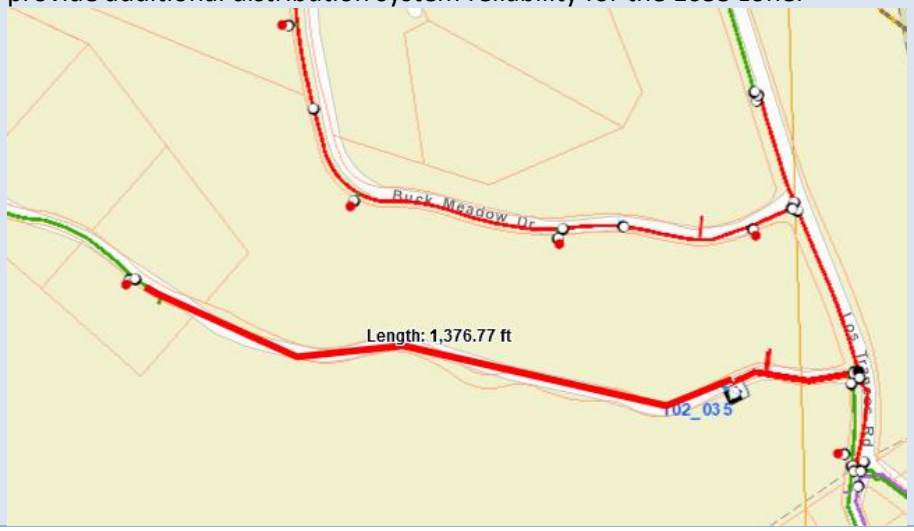
Project	Scope	Estimated Cost
Install new pump station near Alpine Rd. and Willowbrook Dr.	Install new pump station located near Alpine Rd. and Willowbrook Dr. to pump water from the 715 zone to the 960 zone and provide additional reliability to the 960 zone. This pump station will provide an alternative to Station 26 in providing water to the 960 zone as well as the dependent zones including the 830 zone and the 715 zone. 	$4M

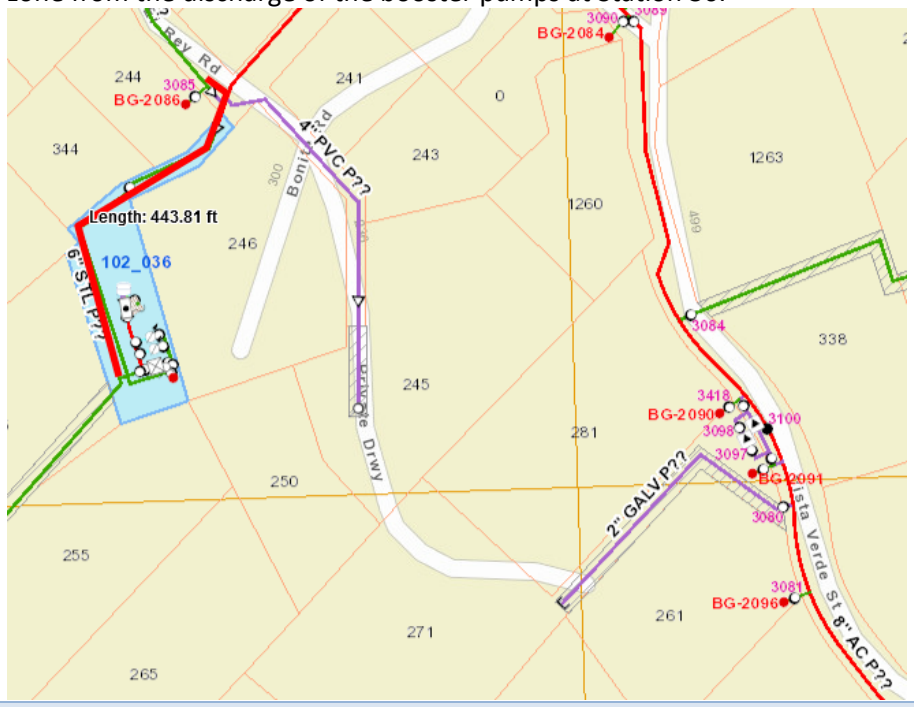
Project	Scope	Estimated Cost
Install new main Tynan Way	Install approximately 800 ft. of new main along Tynan Way to provide additional reliability within the 795-1 zone. 	$360,000
Install backup generator Station 6	Install a backup generator at Station 6 to provide additional reliability to the 795-1 zone in the event of a power outage.	$300,000
Install backup generator Station 7	Install a backup generator at Station 7 to provide additional reliability to the 1025 zone as well as the dependent zones, 795-2 and 850.	$300,000

Project	Scope	Estimated Cost
Install PRV on Wayside	Install approximately 220 ft. of new main and PRV along Wayside Rd. to provide additional reliability to the 795-2 zone.	$200,000
Install backup generator Station 26	Install a backup generator at Station 26 to provide supply reliability to the 960 zone as well as the dependent zones, 830 and 725.	$300,000
Install backup generator Station 24	Install a backup generator at Station 24 to provide reliable supply to the 835 zone in the event of a power outage.	$300,000

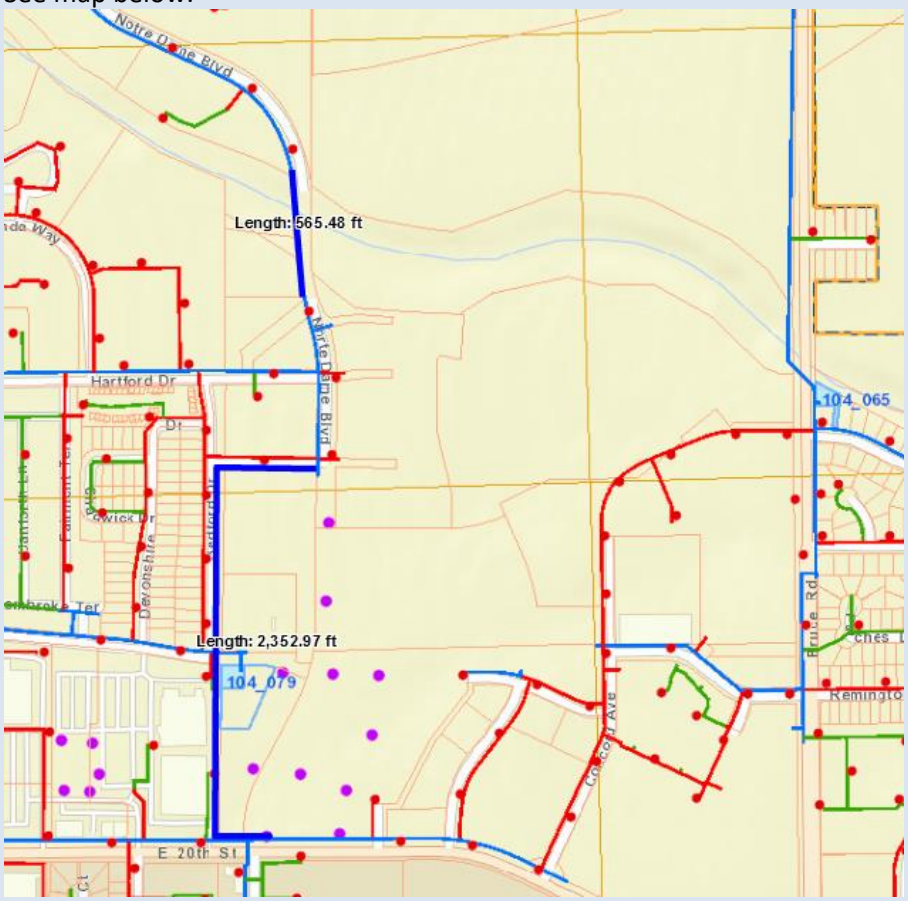
Project	Scope	Estimated Cost
Install pump station at Kings Mountain Rd. and Entrance Way	Install new pump station and new main located near Entrance Way and Kings Mountain road to provide additional reliability for supply to the 835 zone. The new pump station will pump from the 590 zone to the 835 zone. 	$4M

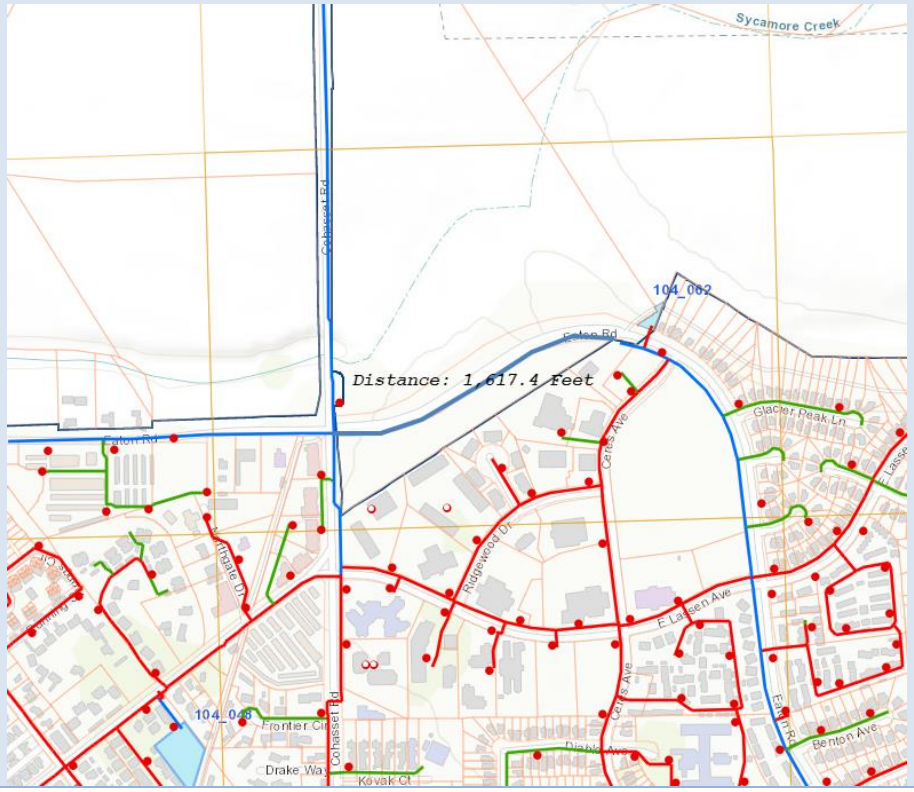
Project	Scope	Estimated Cost
Install check valve at Raymundo Dr.	Install check valve in place of existing normally closed valve located on Raymundo Dr. near Marva Oaks Dr. to provide supply to the 880 zone from the 805 zone in the event of an outage at Station 22 or portions of the system are isolated. 	$75,000
Install backup generator Station 17	Install a backup generator at Station 17 to provide additional reliability to the 910 zone. Additionally the backup generator can provide additionally reliability to the 815 zone through one of the booster pumps at Station 17. Note that there is a backup generator at Station 27 but only a single pump that provides approximately 500 GPM to the 910 zone.	$300,000
Install additional booster pump at Station 27	Install additional booster pump and necessary electrical improvements at Station 27 to provide additional reliability to the 910 zone along with the dependent 835 zone.	$400,000

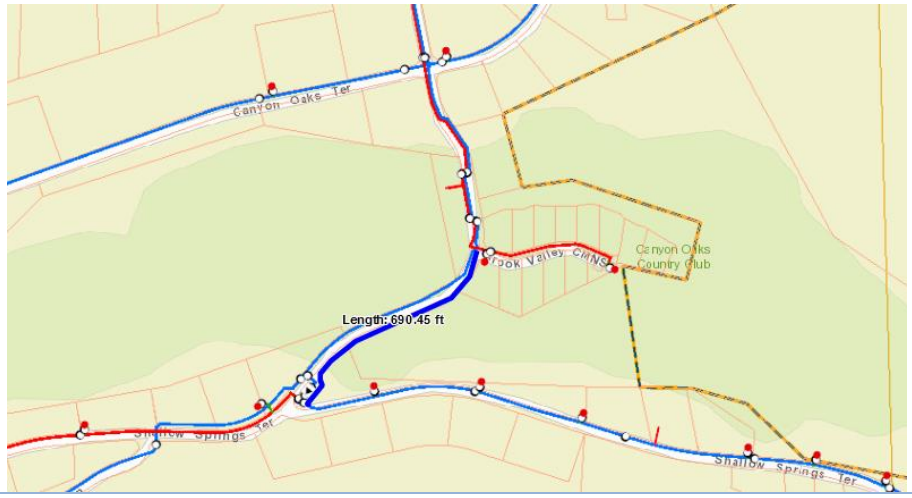
Project	Scope	Estimated Cost
Install new main in Buck Meadows Dr.	Install approximately 1400 ft. of new main along Buck Meadows Dr. to provide additional distribution system reliability for the 1055 zone. 	$630,000
Install backup generator Station 25	Install a backup generator at Station 25 to provide additional supply reliability to the 1090 zone in the event of a power outage.	$300,000
Install additional storage Station 36	Install an additional 125,000 gallon tank at Station 36 to provide additional storage for fire protection within the 1255 zone as well as additional storage for fire protection for the entire Los Trancos system.	$500,000

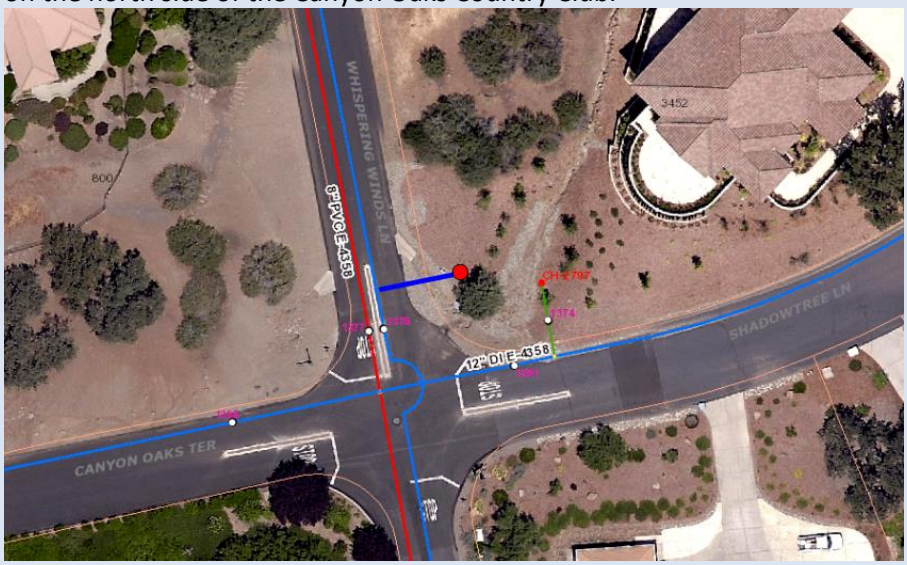
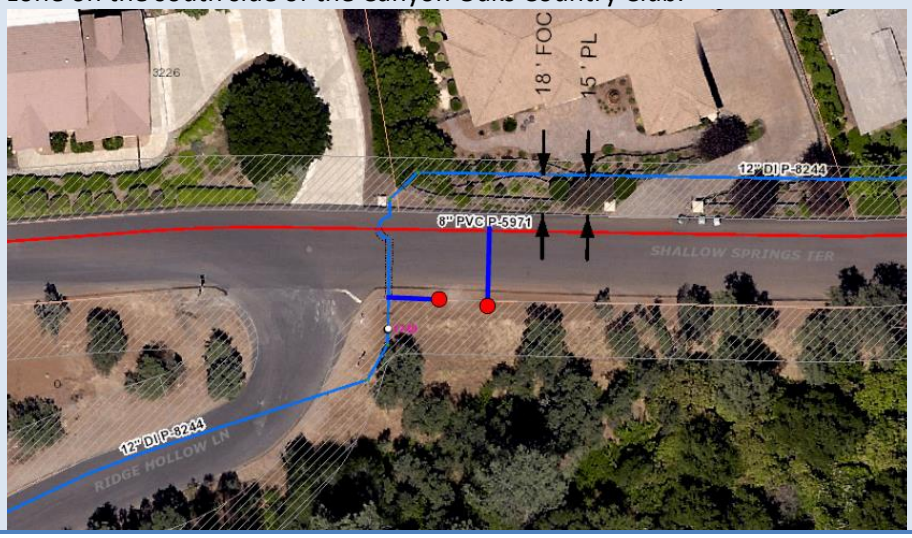
Project	Scope	Estimated Cost
Install PRV at Station 36 for 1435 zone	Install PRV and approximately 500 ft. of additional main to supply 1435 zone from the discharge of the booster pumps at Station 36. 	$325,000
Install PRV and new main for 1510 zone	Install PRV and approximately 1150 ft. of new main to provide additional distribution system reliability to the 1510 zone. Note that this project assumes the distribution system improvements for the 1435 zone listed above are installed. Adjustment to the length of new main needs to be considered if the scope of the aforementioned project is changed.	$650,000
Total Costs		**$17.7M**

Chico

Project	Scope	Estimated Cost
Install parallel main to pipeline on Bruce Rd.	Install approximately 600 ft. of 12” main along Notre Dame Blvd. crossing Little Chico Creek. Install approximately an additional 2400 ft. of 12” main from Notre Dame East of Bedford Dr then south along Bedford Dr. to 20th St. and then east to Notre Dame Blvd to connect back into the 475 zone. Rezone a portion of the 350 zone along Notre Dame Blvd to the 475 zone. See map below: 	$1.5M

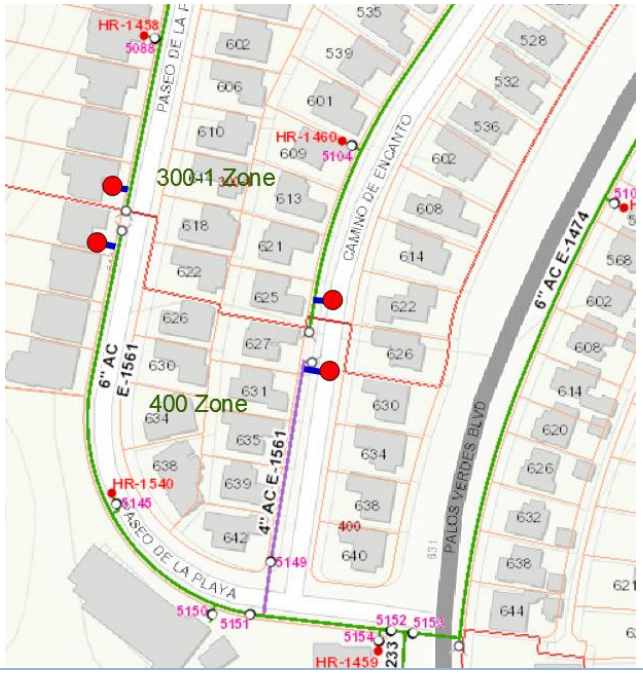
Project	Scope	Estimated Cost
Install ground level storage tank and pump station near Chico Airport	Install a pump storage facility at the existing station 44 site located near the Chico airport. Install new 300,000 gallon tank at existing site. Install booster pumps to provide approximately 2000 gpm so that without the largest well in service within the airport system, a minimum of 2500 gpm can be supplied within that zone during a widespread wildfire.	$2.0 M
Install new main from Station 62 to Cohasset Rd.	Install approximately 1600 ft of new 12" main along Eaton Rd. near Station 62 to Cohasset Rd. 	$600,000

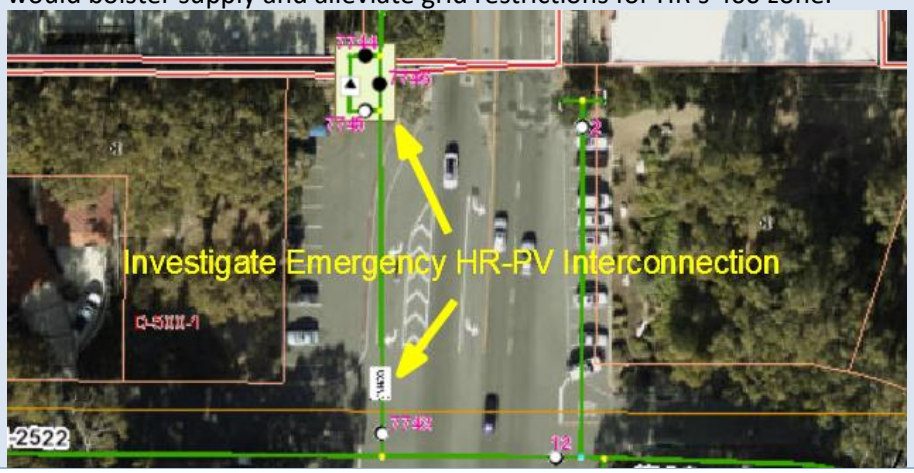
Project	Scope	Estimated Cost
Install new main in 635 zone to improve grid resiliency	Install approximately 700 ft. of new main in Whispering Winds Ln. from approximately Brook Valley Commons to Shallow Springs Terrace. See map below: 	$250,000

Project	Scope	Estimated Cost
Install portable booster connections between 635 and 795 zones.	Install a portable booster connection at Whispering Winds Ln and Canyon Oaks Terrace to allow for a portable booster to pump from 635 to 795 zone on the north side of the Canyon Oaks Country Club.  Install a portable booster connection on Shallow Springs Terrace and Ridge Hollow Ln to provide a location to pump from the 635 zone into the 795 zone on the south side of the Canyon Oaks Country Club.  	$100,000
Total Costs		**$3.85M**

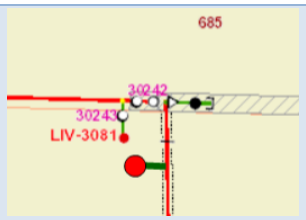
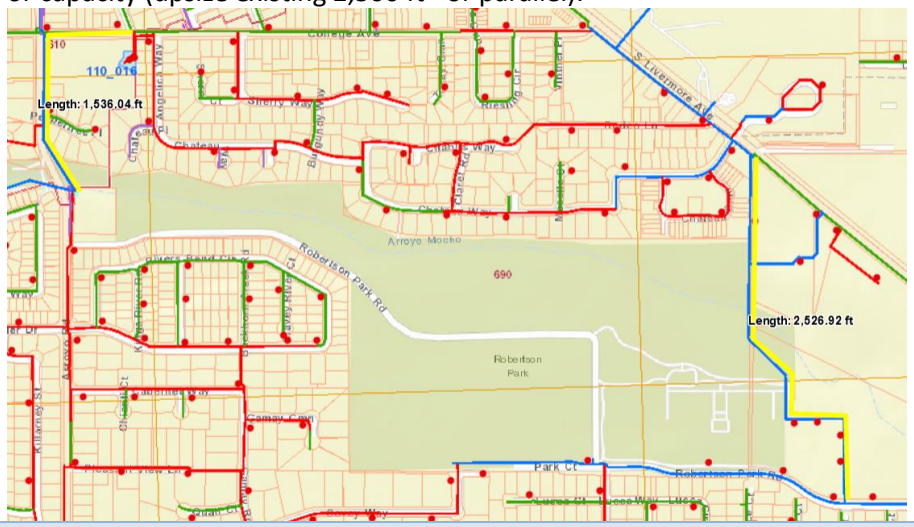
Hermosa/Redondo

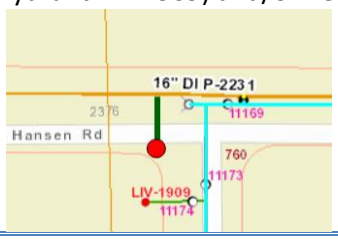
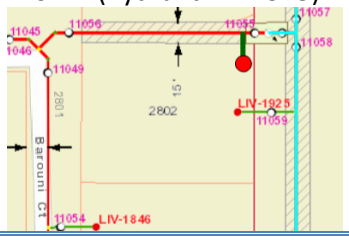
Project	Scope	Estimated Cost
Introduce additional supply source for 300-1 to alleviate reliance on WB 16 Met connection	Supply to the 300-1, 400, and 500 zones relies primarily on the WB 16 Met connection. To alleviate reliance on this single source, additional supply could be added in one of two ways: 1. Additional Met West Bay connection (estimated cost ~$8M) 2. Connection to 300-2 zone (supplied by northern Met connections) through one or more of the following: a. At station 26 – install connection on discharge side of pumps D and E that would be pressure actuated/open if pressure dropped in either zone. Backup power should be added for station 26. (Estimated cost $300,000) b. By replacing 8" check valve on Lucia Ave @ Rita Ave with pressure actuated valve and opening NCV on Camino Real at Prospect Ave. (Estimated cost $100,000) c. By permanently opening, or replacing with pressure actuated valve(s), one or more of the 5 NCVs along Prospect Ave (6" pipes at A, B, C, and D Aves) and Ynez Ave (8" pipe at D Ave) separating the two 300 zones. (Estimated cost < $100,000)	$0.1 - 8M
Procure portable backup generator and retrofit stations 14 and 28 as necessary	Procure and maintain two portable generators and upgrade necessary electrical equipment at stations 28 and 14 in Hermosa Redondo. Supply to the 300-1, 400, and 500 zones relies primarily on the WB 16 Met connection via station 28 and secondarily on 225-1 via station 14. Neither station has backup power nor is there space at either site readily available for a backup generator. In the event supply is not available directly from WB 16 connection and a power outage has occurred, backup power could be provided by a portable backup generator brought to the site.	$400,000
Install backup generator at station 23	Install a backup generator and upgrade necessary electrical equipment at station 23 in Hermosa Redondo. Backup generator will ensure that supply can be maintained for the 400 zone and thus the 500 zone also.	$300,000

Project	Scope	Estimated Cost
Consider portable booster connections on Paseo de la Playa or Camino de Encanto	If it is deemed insufficient to rely on utilizing existing blow off valves and hoses to create an emergency connection from the 300-1 zone to the 400 zone on Paseo de la Playa and Camino de Encanto, install portable booster connections to allow for a portable booster to pump from 300-1 zone to 400 zone on the west side of both streets. 	$200,000

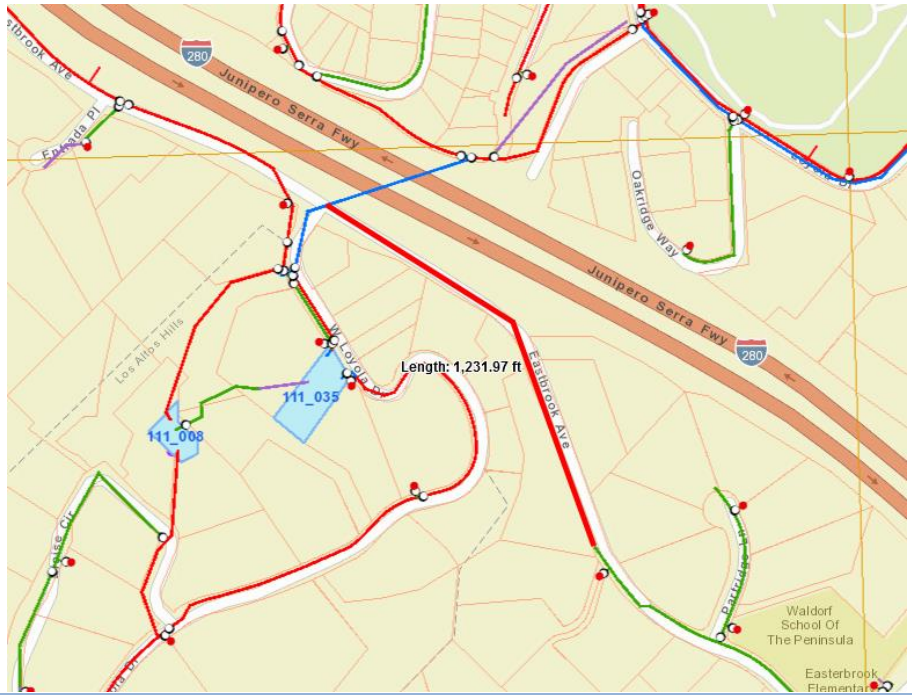
Project	Scope	Estimated Cost
Investigate viability, perform necessary repairs, and exercise/ test existing emergency CWS PV inter-connection at Palos Verde Blvd.	Operable interconnection with PV's D-500-1 zone at Palos Verdes Blvd. would bolster supply and alleviate grid restrictions for HR's 400 zone. 	$50,000
Install backup generator at station 24	Install a backup generator and upgrade necessary electrical equipment at station 24 in Hermosa Redondo. Backup generator will ensure that supply can be maintained for the 500 zone as well as ensuring minimum immediate storage availability for the zone.	$300,000
Investigate viability, perform necessary repairs, and exercise/ test existing emergency CWS PV inter-connection at Via Colusa.	Operable interconnection with PV's J-600 zone at Via Colusa would bolster supply and storage availability for HR's 500 zone.	$50,000
Total Costs		**$1.4 – 8.3M**

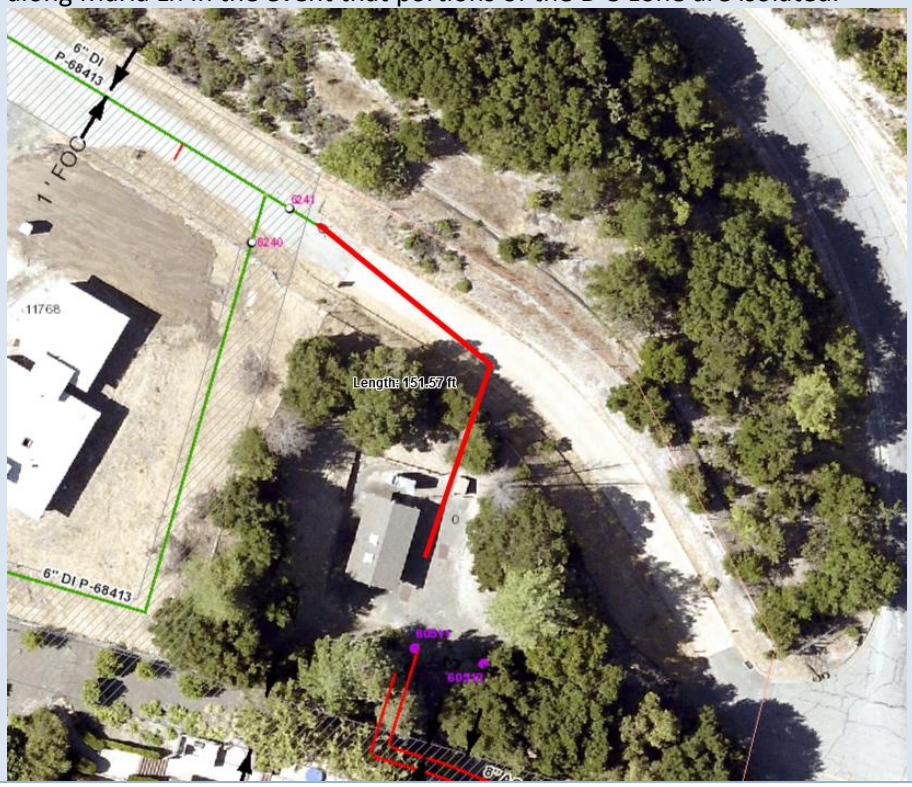
Livermore

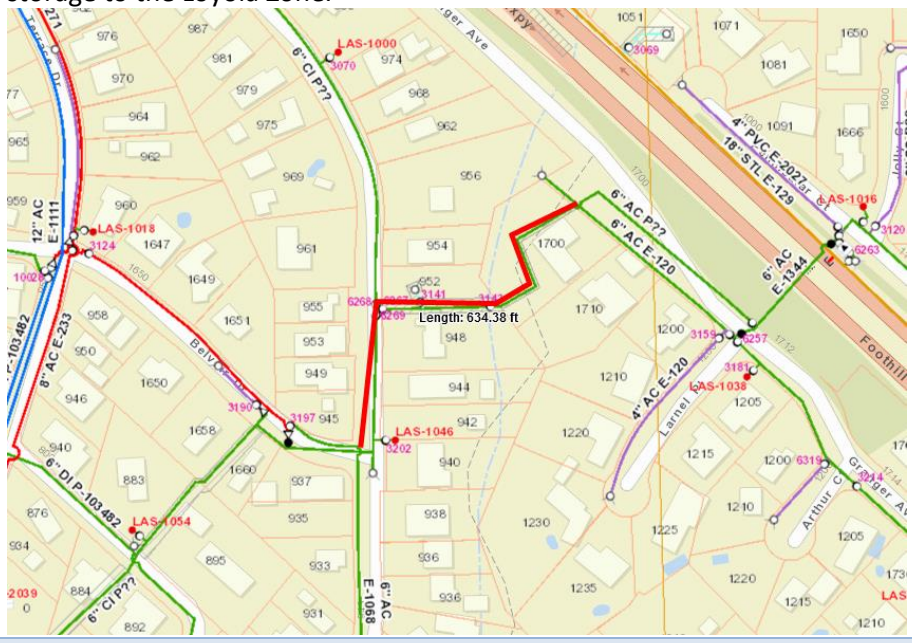
Project	Scope	Estimated Cost
Install backup power at Station 10	Install a backup generator and upgrade necessary electrical equipment at Station 10 in Livermore for further redundancy/resiliency if necessary. Backup power will ensure that supply can be maintained for the 600 zone in the event of a Zone 7 or power outage.	$300,000
Install backup power at Station 20	Install a backup generator and upgrade necessary electrical equipment at Station 20 in Livermore for further redundancy/resiliency if necessary. Backup power will ensure that supply can be maintained for the 610 zone in the event of a Zone 7 or power outage.	$300,000
Install portable booster connection between 600 and 685	Establish a portable booster connection on Las Colinas Rd. near Arthur H. Breed Fwy (at existing hydrant LIV-3081) to allow flow from the 600 to 685 zones in event of an outage along the Las Colinas Rd. 685 zone pipeline. 	$100,000
Alleviate 690 zone grid restriction of Arroyo Mocho xing at Robertson Park	Consider ways to strengthen grid and alleviate grid limitation presented by single 12” pipeline across Arroyo Mocho at Robertson Park by introducing additional connection (perhaps 1,500 feet on Arroyo Rd. and College Ave.) or capacity (upsize existing 2,500 ft+ or parallel). 	$500,000
Install backup power at Station 26	Install a backup generator and upgrade necessary electrical equipment at Station 26 to ensure supply to single pipe zone (710 zone) reliant on 690 zone for supply and storage.	$300,000

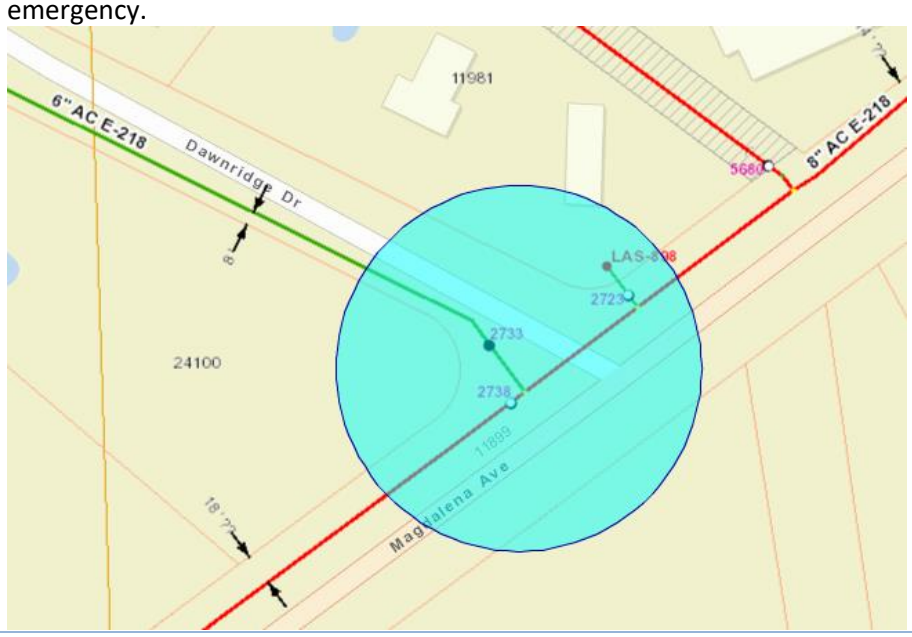
Project	Scope	Estimated Cost
Install backup power at Station 13	Install a backup generator and upgrade necessary electrical equipment at Station 13 to ensure supply to small zone (730 zone) reliant on 690 zone for supply and storage.	$300,000
Investigate viability of standby connection	Investigate viability of standby connection to City of Livermore to 730 zone at East Ave and Buena Vista and determine whether it could be made available during an emergency.	$100,000
Install backup power at Stations 27 and 28	Install a backup generator and upgrade necessary electrical equipment at each Station 27 and Station 28 to ensure 740 zone has supply during an emergency.	$700,000
Install portable booster connection between 685 and 740	Consider an emergency portable booster connection at an existing NCV from 740 to 685 zone. NCVs are located on Waverly Wy., Edinburgh Dr., Windemere Cir., Knottingham Cir., Sheridan Cir., Montrose Pl., Laurel Wood Ct., Newbury St., and Bellmar Dr.	$100,000
Install portable booster connection between 690 and 760	Install portable booster connection at either Hansen Rd. and Saratoga Court (hydrant LIV-1909) and/or Pendolino Ln. (hydrant LIV-1925).  	$100,000
Total Costs		**$2.8M**

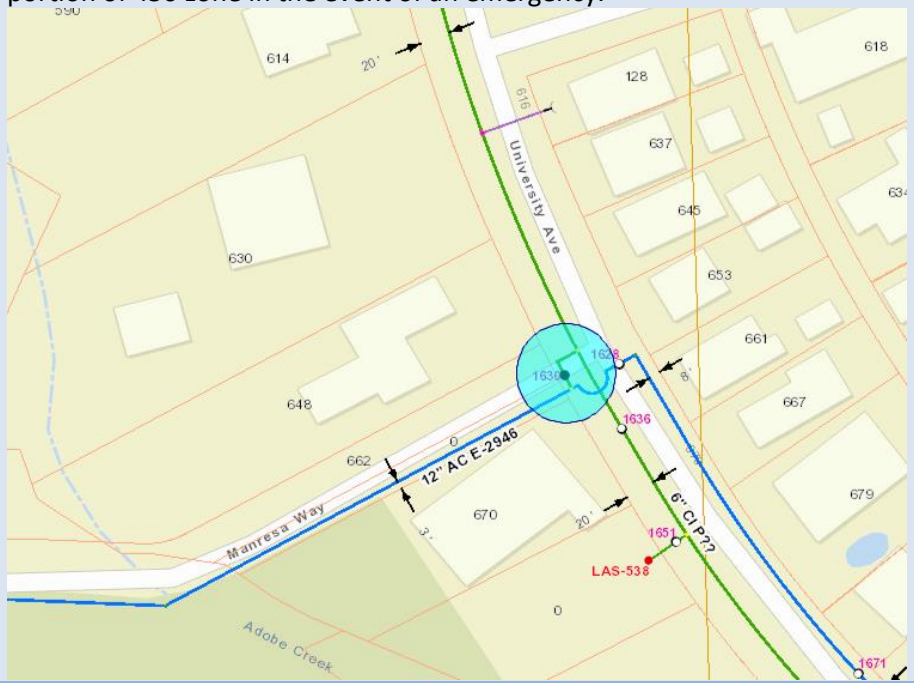
Los Altos

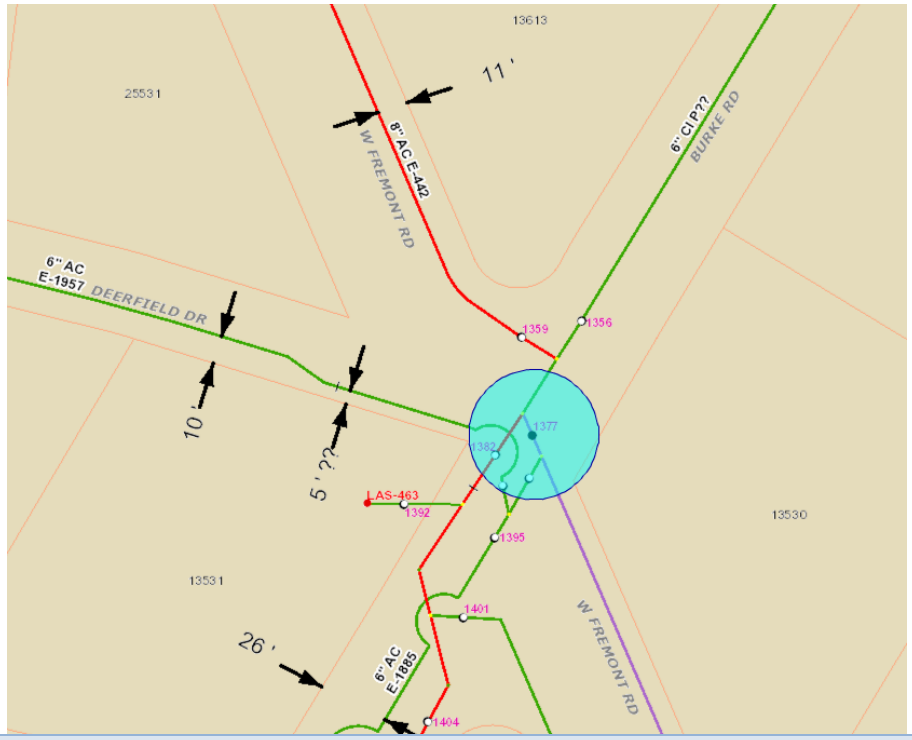
Project	Scope	Estimated Cost
Install PRV and check valve at Fallen Leaf Ln and Louise Ln	Install a PRV and check valve located at Fallen Leaf and Louise Ln. to supply 380 zone from 465 zone in the event that the portion of the zone located near Jones Ln and Fallen Leaf is isolated. Install check valve in parallel to provide water to portion of 465 zone east of Foothill Expwy in the event that portion of the 465 zone is isolated.	$100,000
Install approximately 1250 ft of 8" main on Eastbrook Ave.	Install approximately 1250 ft. of 8" main along Eastbrook Ave. and install check valve to supply D-1 zone from 445 zone in the event that portions of the D-1 zone are isolated. 	$400,000

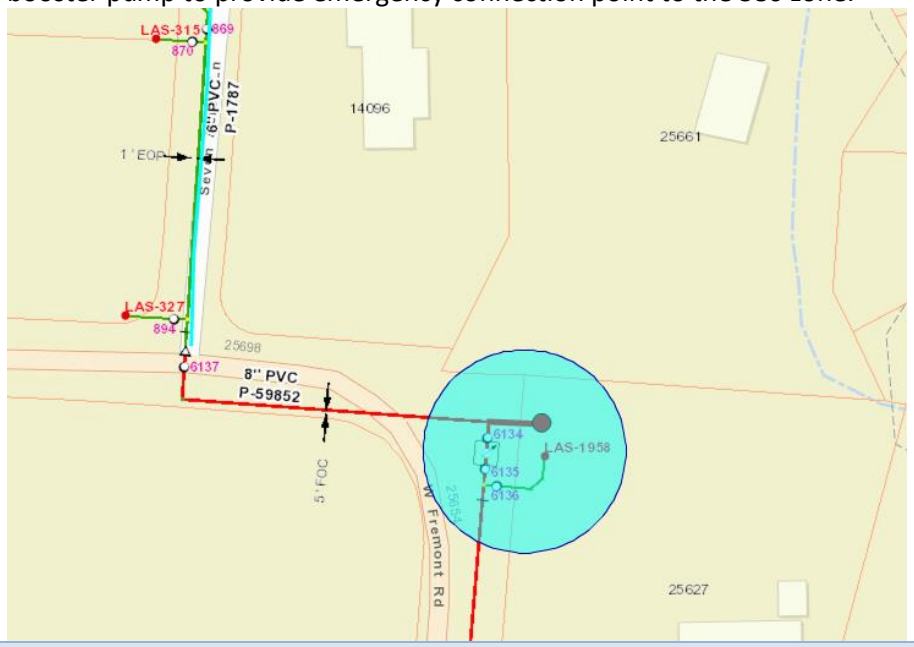
Project	Scope	Estimated Cost
Install PRV at Station 38	Install PRV at station 38 to supply D-3 zone off from alternate source. Install an additional 150 ft. of 6" main to supply portion of the zone located along Maria Ln in the event that portions of the D-3 zone are isolated. 	$200,000

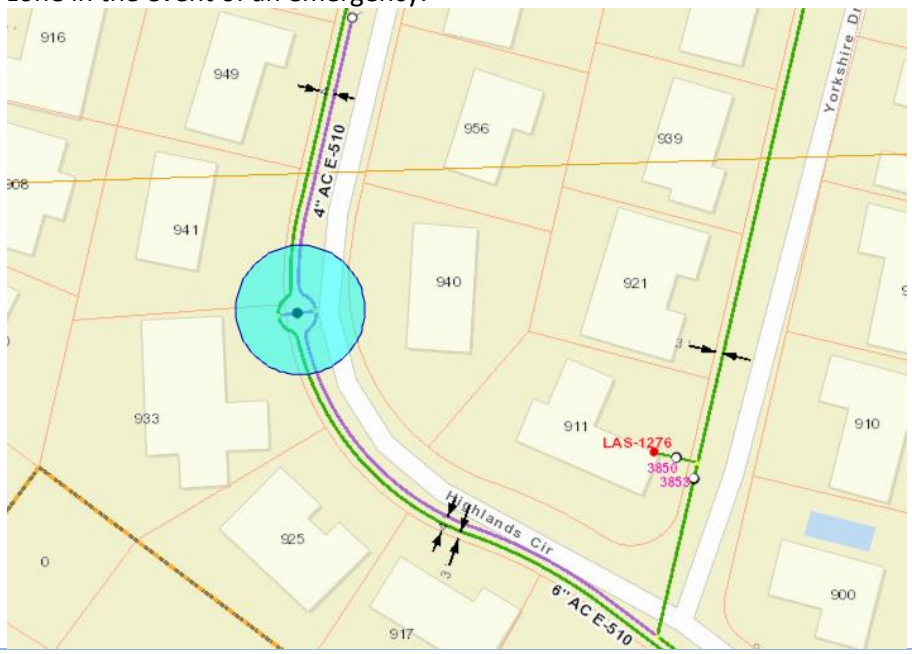
Project	Scope	Estimated Cost
Install approximately 650 ft of 6” main between Granger and Lundy Ln	Install approximately 650 ft or 6” main to connected to the existing Sta 13 zone and the Loyola zone to supply water to provide additional emergency storage to the Loyola Zone. 	$250,000
Install backup generator at Station 8	Install backup generator at station 8 to provide additional reliability to Price zone.	$300,000

Project	Scope	Estimated Cost
Install check valve at Dawnridge and Magdalena	Install a 6” check valve at Dawnridge and Madalena to supply water to portions of the 535 Zone in the event that portion is isolated during an emergency. 	$75,000

Project	Scope	Estimated Cost
Install check valve at Manresa Way and University Ave.	Install 6” check valve at Manresa and University to supply water to isolated portion of 450 zone in the event of an emergency. 	$75,000

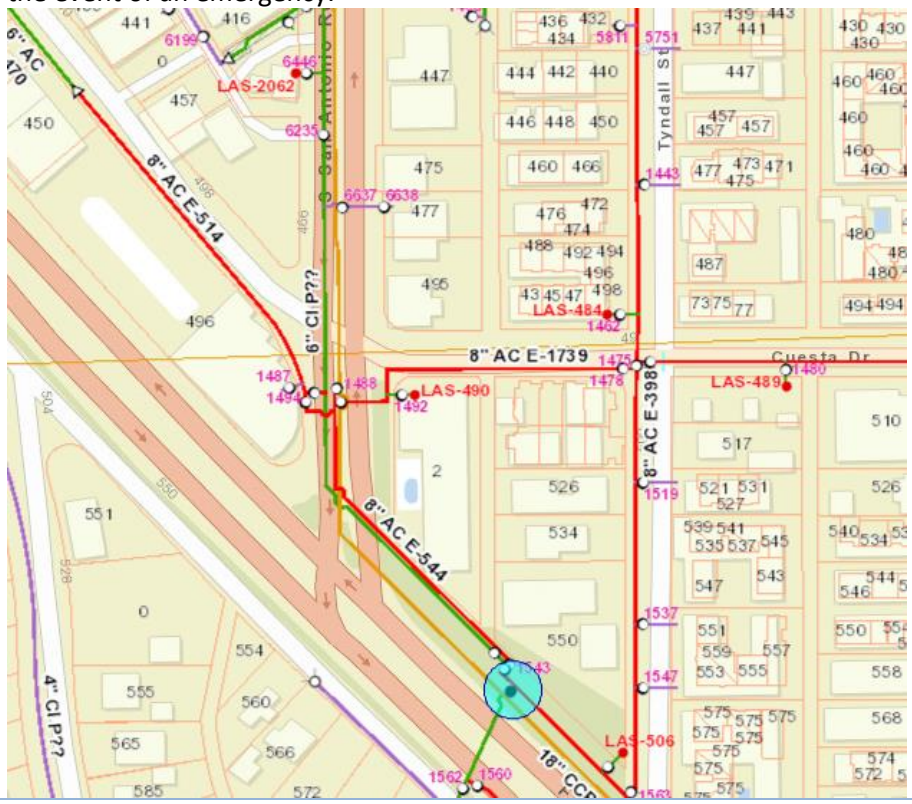
Project	Scope	Estimated Cost
Install check valve at Burke Rd. and Fremont Rd.	Install check valve in place of existing normally closed valve located at Fremont Rd. and Burke Rd. to supply isolated portion of the 420 zone from the 340 zone. 	$75,000
Install backup generator at Station 113	Install backup generator at Station 113 to maintain supply to the zone in the event of a power outage.	$300,000

Project	Scope	Estimated Cost
Install hydrant near Seven Acres Ln and Fremont Rd.	Install hydrant at Fremont Rd. near Seven Acres Ln for use with a portable booster pump to provide emergency connection point to the 380 zone. 	$15,000
Install backup generator at Station 14	Install backup generator at Station 14 to supply water to the Station 13 (410) zone in the event of a power outage.	$300,000

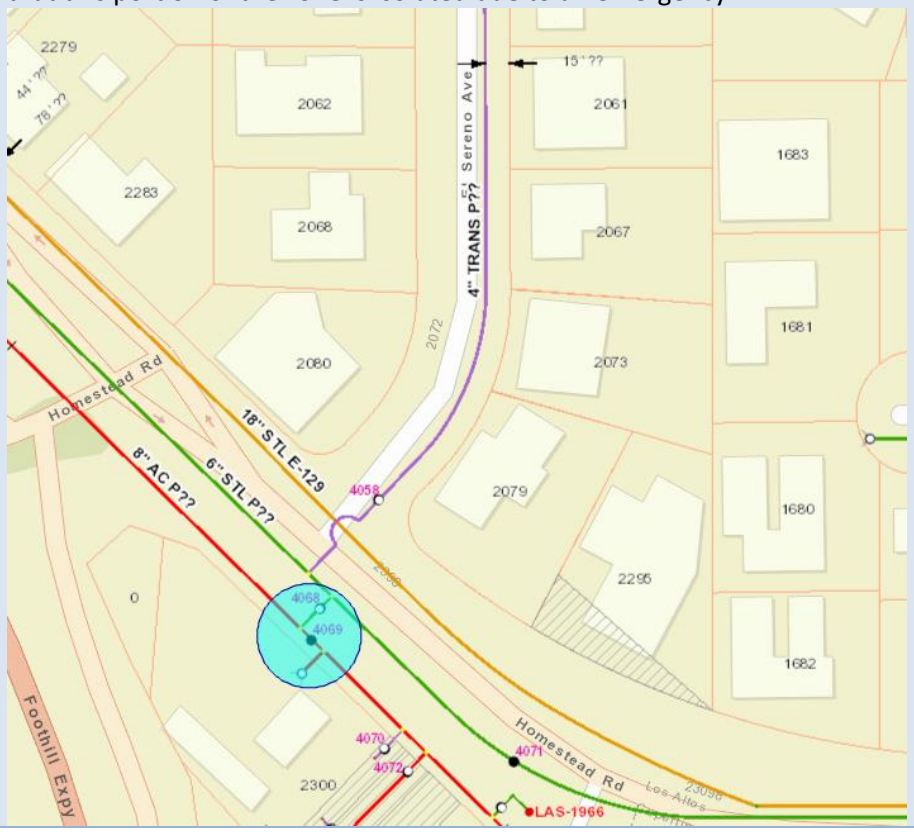
Project	Scope	Estimated Cost
Install check valve on Highlands Cir	Install a check valve in place of existing normally closed valve located on Highlands Cir. to supply water to isolated portions of the Station 19 (505) zone in the event of an emergency. 	$75,000

Project	Scope	Estimated Cost
Install booster pump for Station 19 zone at Station 14	Install booster pump at Station 14 and approximately 225 ft. of new main to provide additional reliability to the Station 19 (505) zone.	$500,000
Install backup booster pumps at Station 42	Install booster pumps at Station 42 to supply portions of Woodland (465) and Station 33 (590) zones located south of the 280 freeway in the event of an emergency or requirement to isolate the existing mains underneath the freeway.	$2M

Project	Scope	Estimated Cost
Install check valve at University and Anita	Install check valve in place of normally closed valve at University and Anita to supply University (380) zone in the event that portions of that zone are isolated.	$75,000

Project	Scope	Estimated Cost
Install check valve at Foothill Expwy near Tyndall	Install check valve in place of existing normally closed valve on Foothill near Tyndall Ave. to supply isolated portions of the University (380) zone in the event of an emergency. 	$75,000

Project	Scope	Estimated Cost
Install check valve at University and Main	Install check valve at University and Main St to supply water to isolated portions of the University (380) zone in the event of an emergency.	$75,000
Install backup generator at Station 9	Install a backup generator at Station 9 to supply water to the Woodland (465) zone.	$300,000 (note this was included in the company's 2018 GRC filing)

Project	Scope	Estimated Cost
Install check valve at Homestead Rd. and El Sereno Ave	Install a check valve in place of normally closed valve located at Homestead Rd. and El Sereno Ave. Check valve will supply isolated portions of the Woodland (465) zone from the 380 zone located to the north in the event that this portion of the zone is isolated due to an emergency. 	$75,000
Total Costs		$5.265M

Oroville

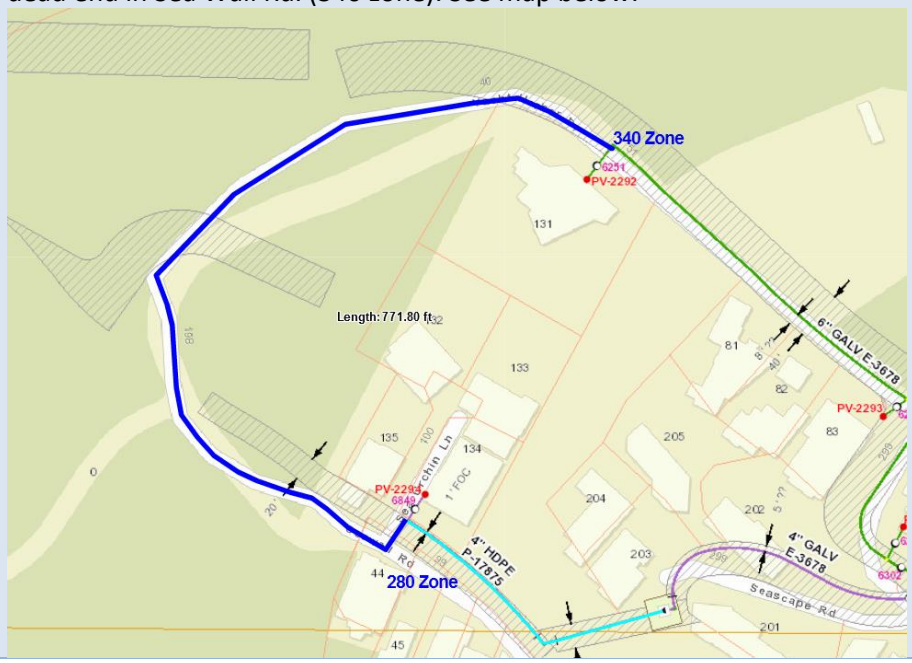
Project	Scope	Estimated Cost
Install backup power at stations 1, 3, 5, and/or 11	Install a backup generator and upgrade necessary electrical equipment at Station 1, 3, 5, and/or 11 in Oroville depending on priority to supply. Backup power will ensure that supply can be maintained for the 435 zones in the event of a power outage.	$1.2 M

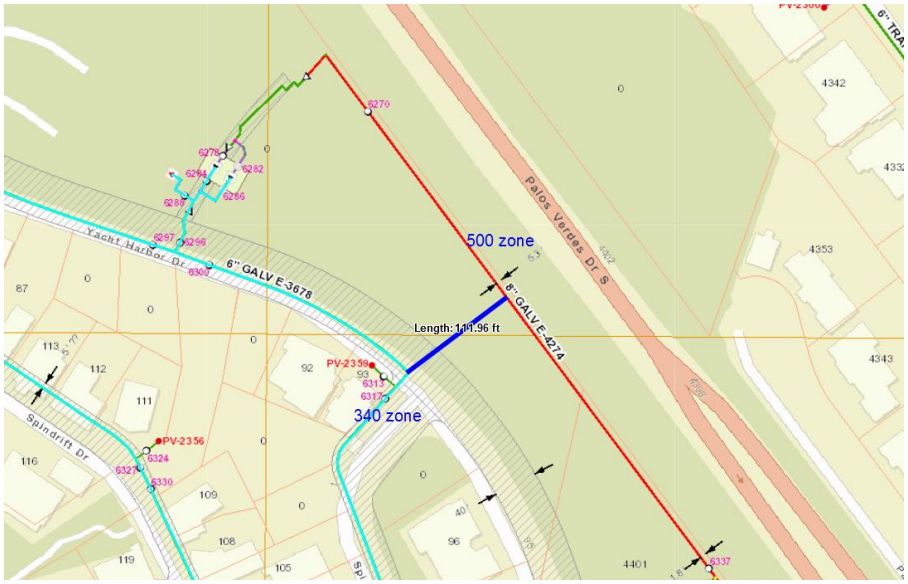
Project	Scope		Estimated Cost
Install portable booster connection between 470 and 325	Establish a portable booster connection on Riverview Terrace Dr. to 20" 325 zone pipe at either existing normally closed valves (existing hydrant ORO-331 is a candidate) to allow flow from 325 to 470 zone in event of pipeline outage.		$100,000
Total Costs			$1.3M

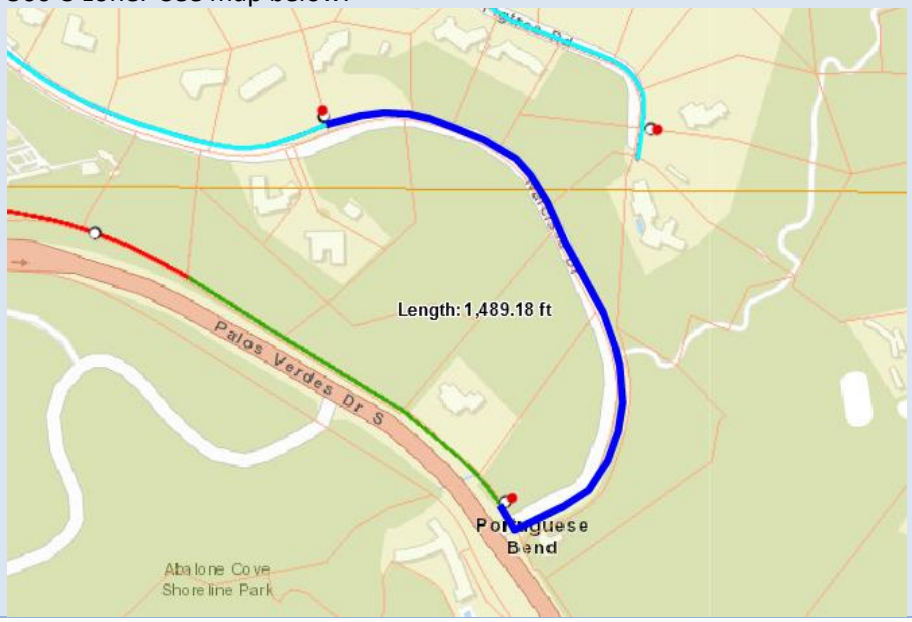
Palos Verdes

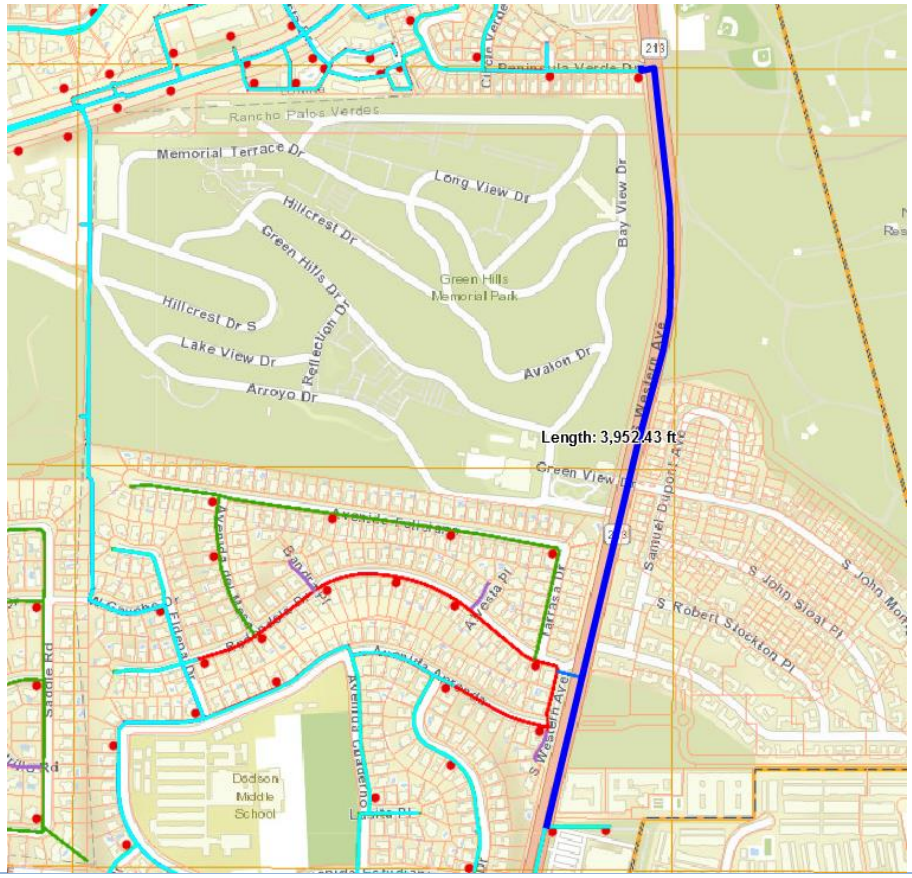
Project	Scope	Estimated Cost
Install backup generator at Station 23	Install a backup generator and upgrade necessary electrical equipment at station 23 in Palos Verdes. Large Backup generator will ensure that supply can be maintained for P-1450 Zone and hence lower zones that P-1450 gravity feeds.	$975,000
Install backup generator at Station 22	Install a backup generator and upgrade necessary electrical equipment at station 22 in Palos Verdes. Large Backup generator will ensure that supply can be maintained for C-850 Zone and hence lower zones that C-850 gravity feeds.	$975,000
Install backup generator at Station 15	Install a backup generator and upgrade necessary electrical equipment at station 15 in Palos Verdes. Large Backup generator will ensure that supply can be maintained for D-500 Zone and hence lower zones that D-500 gravity feeds.	$300,000

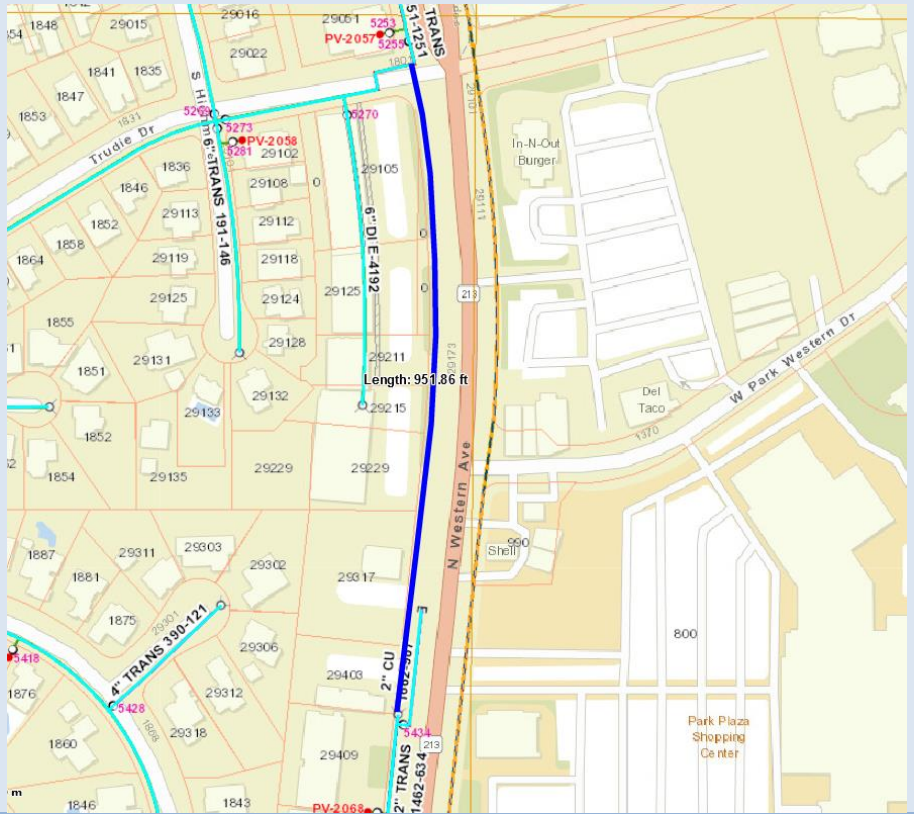
Project	Scope	Estimated Cost
Install new main between A-970 and 1150 zones to improve grid resiliency	Install approximately 320 ft. of new 6-inch main and PRV in Palos Verdes Dr. East from dead end in Palos Verdes Dr East (A-970 zone) to dead end in Palos Verdes Dr. East (1150 zone). See map below:	$215,000

Project	Scope	Estimated Cost
Install new main between B-280 and 340 zones to improve grid resiliency	Install approximately 780 ft. of new 6-inch main and PRV in Yacht Harbor Drive/ Sea Wall Rd from dead end in Yacht Harbor Dr. (B-280 zone) to dead end in Sea Wall Rd. (340 zone). See map below: 	$375,000

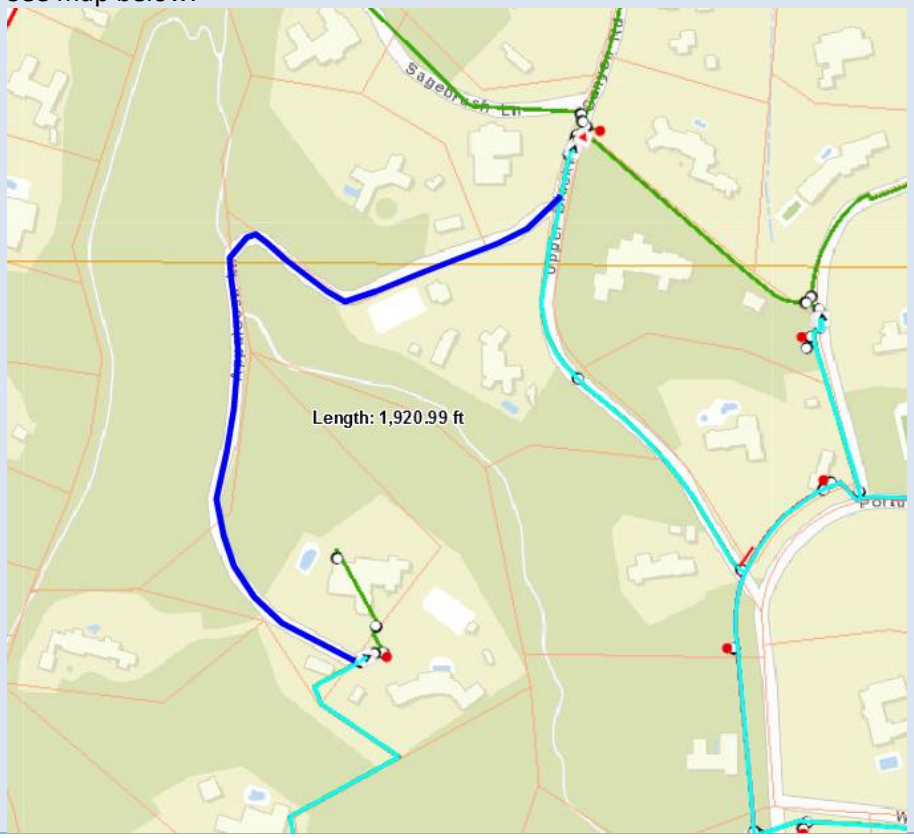
Project	Scope	Estimated Cost
Install new main between B-340 and 500 zones to improve grid resiliency	Install approximately 115 ft. of new 8-inch main and PRV in open space from bend in Yacht Harbor Dr./Spindrift Dr. (B-340 zone) to mid-section of 8 inch pipe in 500 zone. See map below: 	$150,000

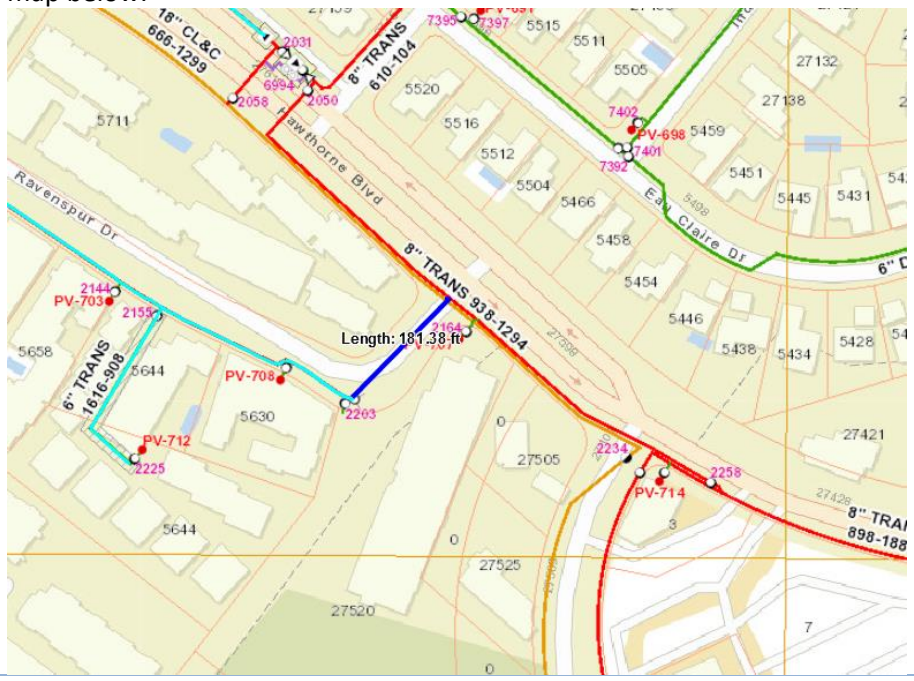
Project	Scope	Estimated Cost
Install new main in B-500-3 zone to improve grid resiliency	Install approximately 1500 ft. of new 6-inch main in Narcissa Dr. dead end in Narcissa Dr. to dead end in Palos Verdes Dr. South in order create loop in 500-3 zone. See map below: 	$525,000

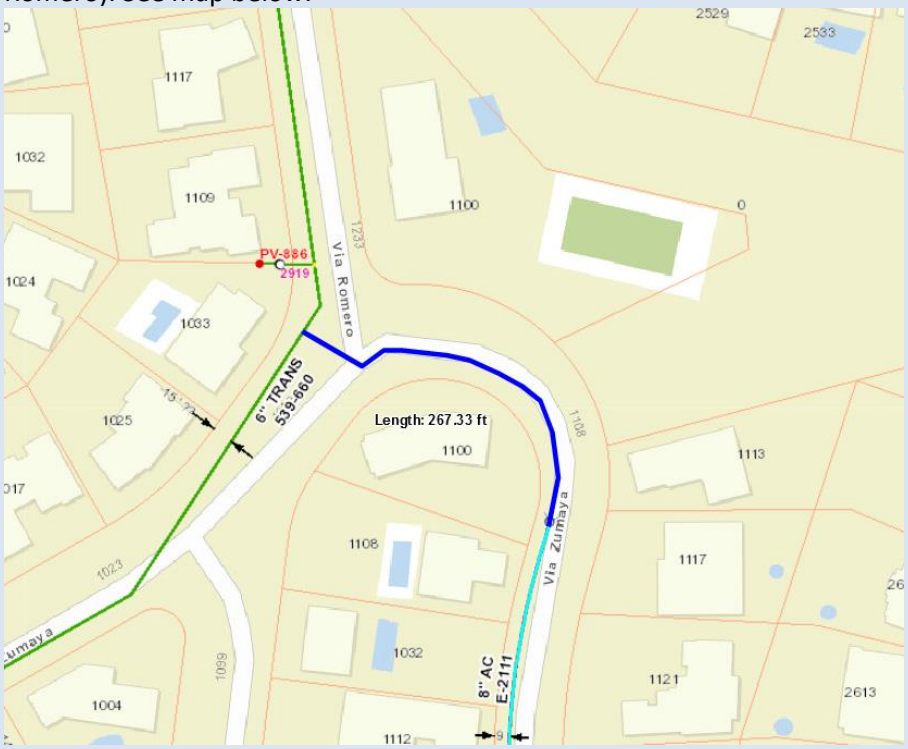
Project	Scope	Estimated Cost
Install new main in C-480 zone to improve grid resiliency	Install approximately 4000 ft. of new 8-inch main along S. Western Drive from dead in end in Western Dr. to dead end in Peninsula Verde Dr. See map below: 	$1,400,000

Project	Scope	Estimated Cost
Install new main in C-635 zone to improve grid resiliency	Install approximately 950 ft. of new 12-inch main in along Western Ave from dead end in Western Ave. to bend in Trudie Dr. See map below: 	$335,000

Project	Scope	Estimated Cost
Install new main in H-675 zone along Via del Monte	Install approximately 2600 ft. of new 8” main along Via del Monte between Station 5 and Via Somante. 	$1M

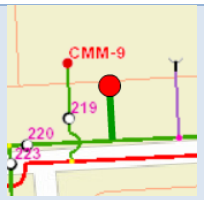
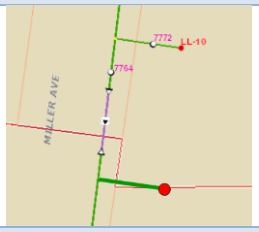
Project	Scope	Estimated Cost
Install new main in F-1325 zone to improve grid resiliency	Install approximately 1900 ft. of new 6-inch main in along Appaloosa Ln from dead end in in Appaloosa to pipe in Upper Blackwater Canyon Rd. See map below: 	$665,000

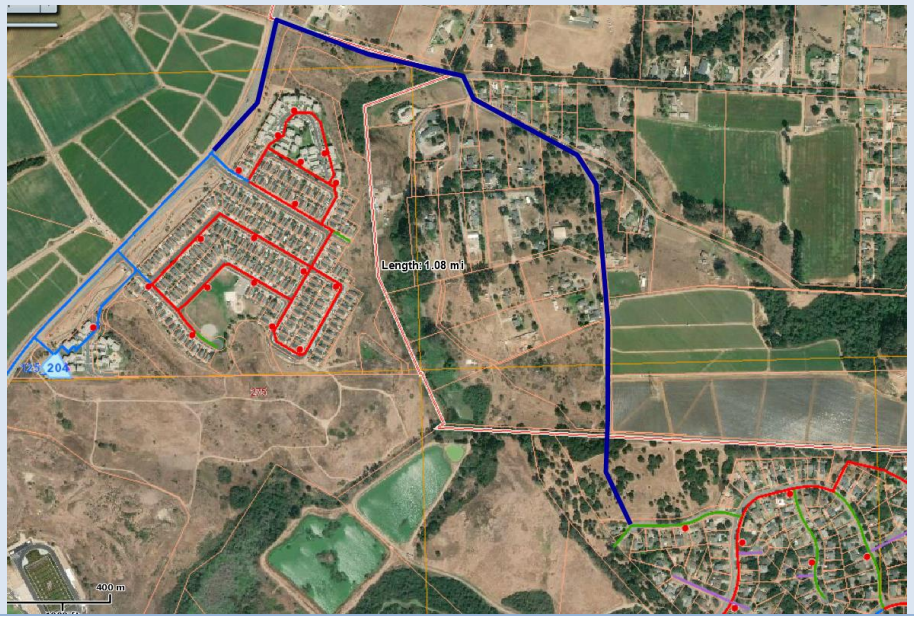
Project	Scope	Estimated Cost
Install new main between H-1300 and 1450 zones to improve grid resiliency	Install approximately 180 ft. of new 8-inch main and PRV in Ravenspur Dr. between H-1300 zone and 1450 zone (18 inch line/Hawthorne Rd.). See map below: 	$160,000

Project	Scope	Estimated Cost
Install new main between L-550 and 500 zones to improve grid resiliency	Install approximately 270 ft. of new 8-inch main and check valve from dead end in Via Zumaya (550 zone) to mid-section of 6 inch pipe in 500 zone (Via Romero). See map below: 	$145,000
Total Costs		$6.22M

Salinas

Project	Scope	Estimated Cost
	Country Meadows	
Install backup generators at Stations 60 and/or 61	Install a backup generator and upgrade necessary electrical equipment at Station 60 and/or Station 61 in Country Meadows. Backup power will ensure that supply can be maintained for the 340 zone and subsequently the entire Country Meadows system in the event of a power outage.	$600,000

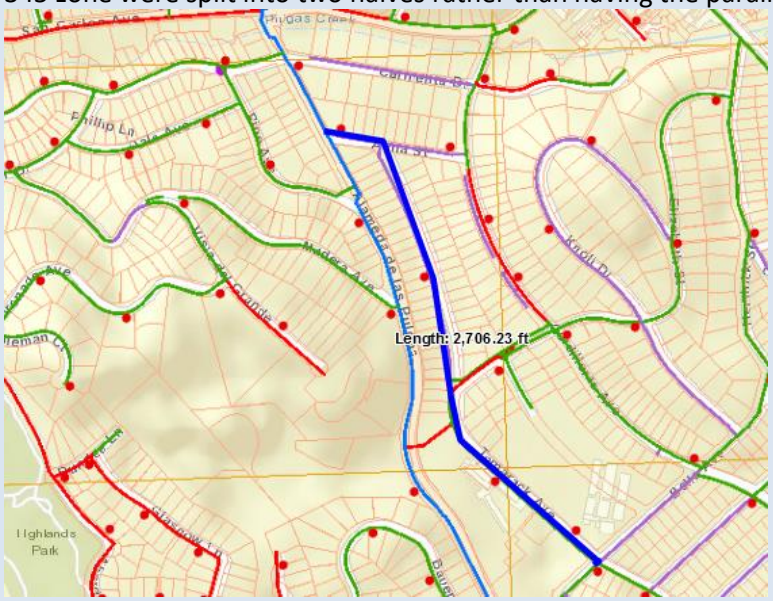
Project	Scope	Estimated Cost
Install backup generators at Stations 57 and 58	Install a backup generator and upgrade necessary electrical equipment at both Station 57 and 58 in Country Meadows. Backup power will ensure sufficient fire flow supply and minimum immediate storage availability for the 425 zone.	$600,000
Introduce new supply to 425 zone	Construct booster pump station and necessary pipelines to connect Country Meadows with main Salinas CWS distribution system.	[Project in Progress]
Install portable booster connection between 340 and 425	Install a portable booster connection at Golden Meadow Circle and Meadow Ridge Rd (on north side, at existing hydrant CMM-9) to allow for a portable booster to pump from 340 to 425 zone in event Station 58 is unavailable or of pipe failure in intermediate pipes. 	$100,000
Las Lomas		
Investigate need for further or updated backup power for Wells	Backup power on the main supply point, Station 303 Well, was noted on schematic as being a diesel generator. Determine status, condition, and plan going forward. Station 302 was noted as being unconnected but having backup power, status of connection and backup power should be confirmed. Depending on these investigations, determine whether further backup power is warranted on supply sources at Stations 301 and 305.	$300,000
Install portable booster connection on Miller Ave.	Install a portable booster connection along Miller Ave. (on east side, at existing hydrant LL-10) to allow for a portable booster to pump from 210 to 360 zone in event Station 302 is unavailable or of pipe failure in intermediate pipes. 	$100,000
Install backup power at Station 304	Install a backup generator and upgrade necessary electrical equipment at Station 304 to provide backup power to the station in the event of a power outage so that supply to the 470 zone will not be interrupted.	$200,000

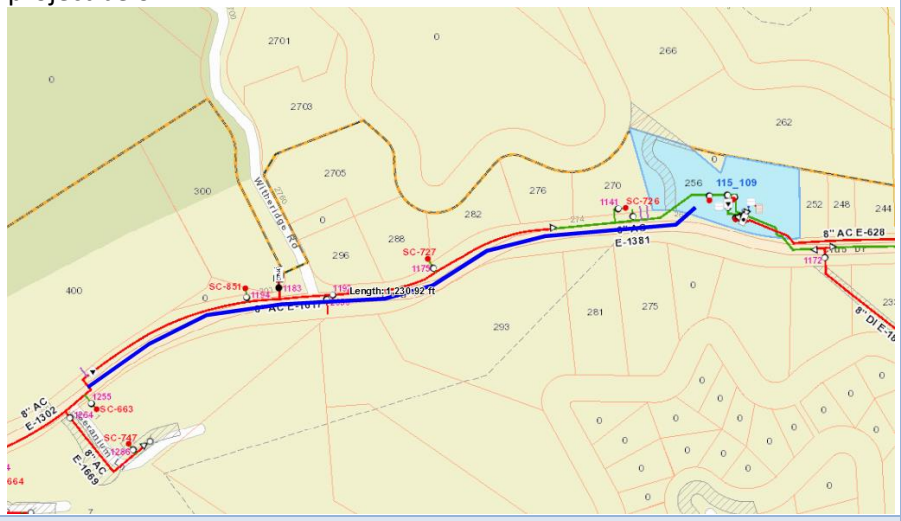
Project	Scope	Estimated Cost
Install portable booster connection on Las Lomas Dr.	Install a portable booster connection along Las Lomas Dr. (on east side, at existing hydrant LL-19) to allow for a portable booster to pump from 360 to 470 zone in event Station 304 is unavailable or of pipe failure in intermediate pipes.	$100,000
Oak Hills		
Install backup power at Stations 201, 203, and 205	Install backup generators and upgrade necessary electrical equipment at Stations 201, 203, and 205 to provide backup power to the stations in the event of a power outage so that supply to the 275 zone will not be interrupted and be available throughout the zone.	$1 M
Investigate possibility of looping outside service area	To alleviate grid limitation and provide a secondary path from the northern portion of the system (near Station 204) and the southern portion, investigate the possibility of installing 1+ mile of pipeline outside of the Oak Hills service area along Mossy Oak Pl., Hillcrest + Valley + Meridian Rds. and back to Castroville Blvd. 	$1.5 M

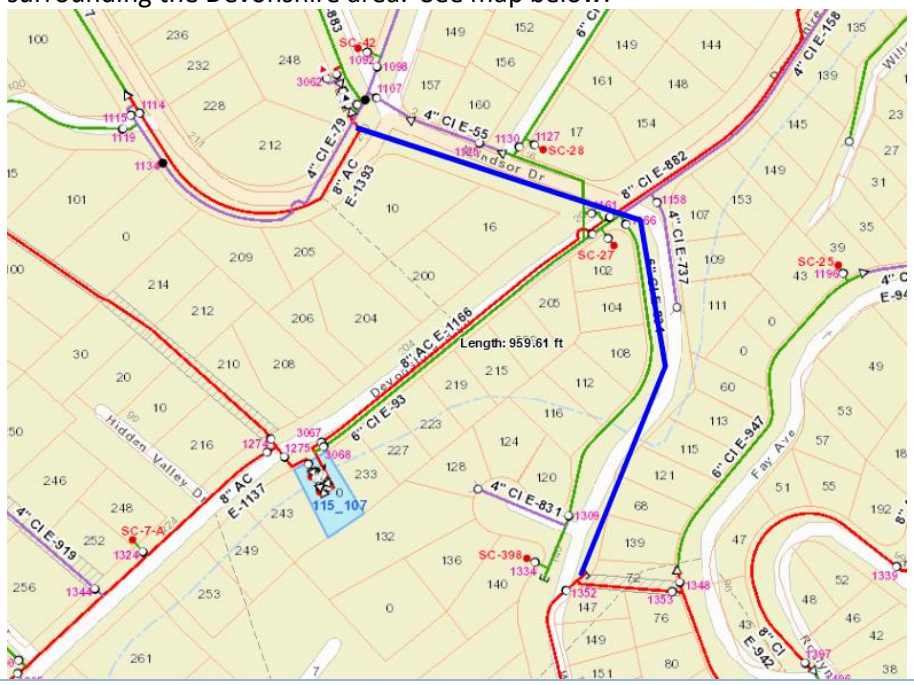
Project	Scope	Estimated Cost
Investigate feasibility of emergency connections	Research nearby water providers (if any, example: Castroville) and investigate the possibility of establishing emergency connections to their systems to serve as backup supplies and improve resiliency.	$100,000
Salinas (+ Bolsa Knolls)		
Investigate possibility of storage at Stations 45 or 46	The Salinas 360 zone is a single development on Valle San Juan Dr. removed from the main portion of the Salinas system and is thus inherently vulnerable. Apart from introducing an independent, power outage-protected supply, providing storage at either Station 45 or 46 could serve as a buffer during wildfire emergencies. The feasibility of installing storage at these stations should be investigated.	$100,000
Salinas Hills		
Install backup power at Stations 48, 62, 70, 72, and 73	**Priority Project** - Install backup generators and upgrade necessary electrical equipment at Stations 48, 62, 70, 72, and 73 to provide backup power to the stations in the event of a power outage so that supply to upper zones continues without interruption; if auxiliary power is already present, ensure sufficient for anticipated wildfire demands.	$1.5 M
Install backup power at Wells 32, 33, 40, and/or 63; 49 and 50; and 71	Install backup generators and upgrade necessary electrical equipment at the primary supply wells in the 320 zone (Stations 32, 33, 40, and/or 60, depending on priority), 430 zone (Stations 49 and/or 50 depending on priority), and 405 zone (Station 71) to provide backup power to the stations in the event of a power outage so that supply to the entire system may be maintained; if already present, ensure sufficient for anticipated wildfire demands.	$2 M
Ensure wells 35, 36, 39, and 59 can be activated	In an emergency, standby or currently inactive wells may be needed. Determine which wells can be activated, exercise as needed, and ensure all necessary equipment for startup is available.	$100,000
Install booster capacity at Station 50	Station 50 can pump to the 430 zone given booster pump capacity. This recommendation is included in the company's 2018 GRC filing as Project # 115930.	Per the company's 2018 GRC filing: $316,500

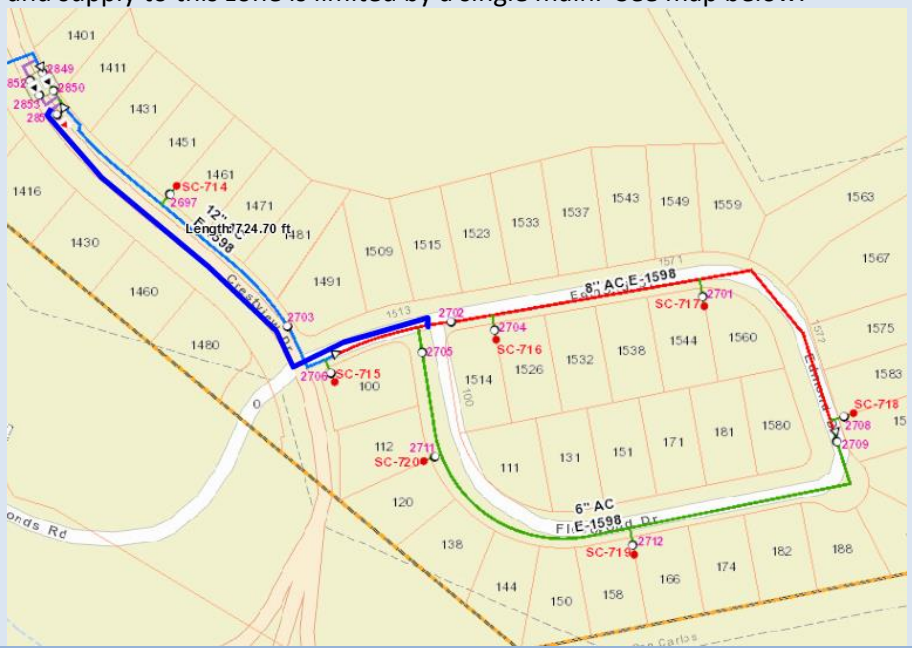
Project	Scope	Estimated Cost
Investigate new looping (677), paralleling (320, 360, 530), and/or emergency connections (240, 530, 630) to strengthen grid	The Salinas Hills system is a small service area with numerous topological challenges to creating a strong, gridded system. Investigate the feasibility of the following possibilities for reducing grid limitations: • Emergency connection between pipelines on Portola Rd. in event one fails • Parallel pipelines for portions of single main on Portola Rd. • Parallel pipeline on Las Palmas Pkwy to reduce dependency on existing solo 12” • Emergency portable booster connection between 320 and 530 zone at Forest Song Dr. and Las Palmas Pkwy • Emergency booster connections with 535, 805, or 905 zone at 805 zone PRVs at Pine Canyon Rd. for looping • Secondary pipeline from Station 48 (or 530 zone) along Las Palmas Pkwy (looks like may be difficult corridor construction-wise)	$300,000
Total Costs		$8.917M

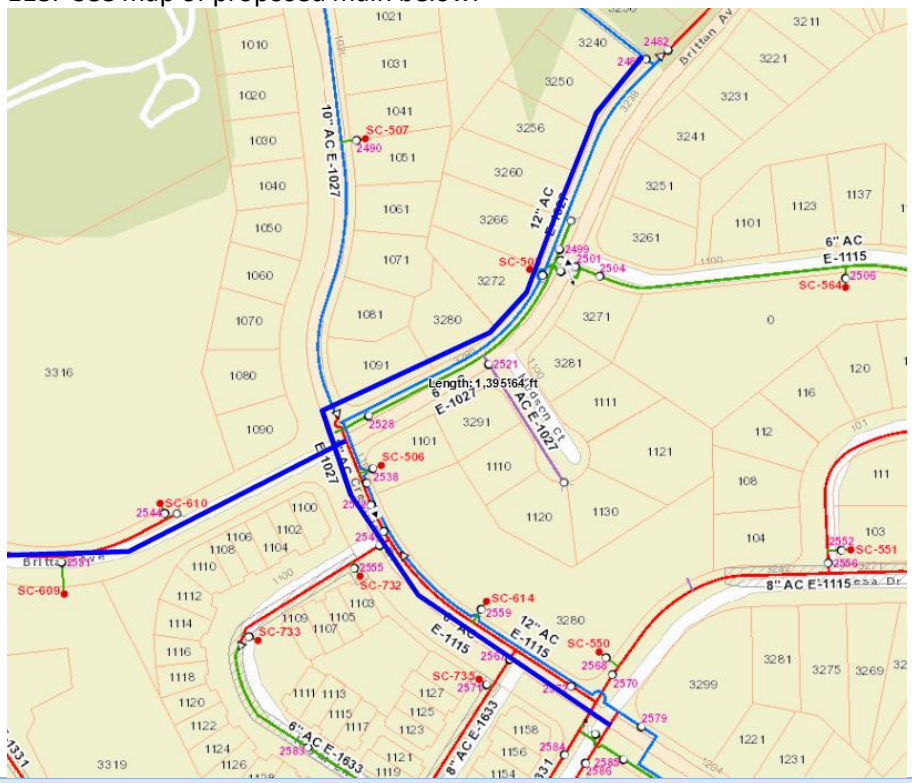
San Carlos

Project	Scope	Estimated Cost
Parallel Main along Alameda de las Pulgas	Install approximately 2700 ft. of new main to parallel area of branched main within the 345 zone. This will ensure reliable supply to the north side of the San Carlos system, including the 585 zone which is at risk of wildfire. Additionally this parallel main will provide more reliable supply to the booster pumps at station 107 and provide that same benefit to the project proposed to install a pump station at station 109. See map below of proposed project area. An alternative proposal to install an additional pump along with a backup generator at station 123 provides similar benefit; however, there are customers within the 345 zone north of San Carlos Ave. that would experience low pressures (less than 20 PSI) if the 345 zone were split into two halves rather than having the parallel main. 	$1.3 M

Project	Scope	Estimated Cost
Install pumps and backup generator at station 109 and main to connect to 930 zone	Install new booster pumps, backup generator, and main to connect from station 109 to the 930 zone to provide an alternate path to supply water to the zones along Crestview Dr. The pumps will supply water to the tanks at Station 120 where water can then be supplied to the lower zones through gravity utilizing the existing control valves located at stations 119 and 118. Some control changes may be required at those valves in order to make this function reliably and remotely. See map of project below: 	$2.1 M (Note the pumps and new main are proposed in the company's 2018 GRC. The generator is not included in that filing)
Install backup generator station 107	Install a backup generator and upgrade necessary electrical equipment at station 107 in San Carlos. Backup generator will ensure that supply can be maintained for the 585 zone as well as for the proposed booster pumps at station 109.	$300,000 (Note major electrical equipment improvements have been proposed for this site in the company's 2018 GRC filing. This did not include the generator)

Project	Scope	Estimated Cost
Install parallel main in 850 zone	Install approximately 1800 ft. of main along Brittan Ave. west of Crestview Dr. to provide alternative path to branched main that supplies water from station 118 to station 119. Install an additional 600 ft. of new main from Leslie Ct. to the tanks at station 119 to complete alternative path for the 850 zone.	$1M
Install backup generator station 120	Install a backup generator at station 120 to provide backup power to the station in the event of a power outage so that supply to the 1035 zone will not be interrupted.	$325,000. (Note this project was proposed in the company's 2018 GRC filing)
Install parallel main within 585 zone	Install approximately 1000 ft. of main within the 585 zone to create alternative path of water from the north side of the zone where the tank and booster pumps supply pressure to the south side where the zone extends into a "Very High" wildfire threat area near the canyons surrounding the Devonshire area. See map below: 	$500,000

Project	Scope	Estimated Cost
Install parallel main in 460 zone	Install approximately 700 ft. of additional main to provide alternative supply to the 460 zone. This zone is located near a "Very High" threat area and supply to this zone is limited by a single main. See map below: 	$350,000

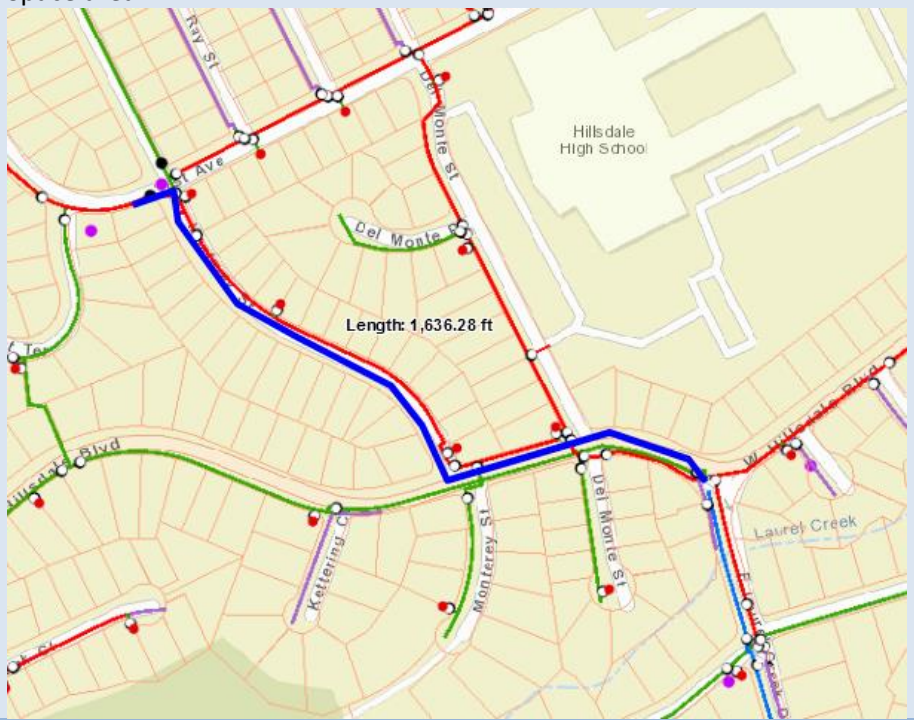
Project	Scope	Estimated Cost
Install parallel main in 600 zone	Install approximately 1400 ft. of main along Crestview Dr. and Brittan Ave to provide alternate path from pumps at station 117 to tanks at station 118. See map of proposed main below: 	$700,000
Install backup generator at station 118	Install a backup generator at station 118 to supply water to the tanks at station 119 and the 850 zone.	$325,000
Install backup generator at station 119	Install a backup generator at station 119 to supply water to the tanks at station 120 and the 930 zone.	$325,000

Project	Scope	Estimated Cost
Replace booster pump and install new main at station 121	Replace the booster pump and electrical equipment at station 121. Replace suction piping from SFPUC interconnection to the pump station and replace the discharge piping from the station to Duggan Rd. Install a portable booster connection at the site to allow for operation of a portable booster pump to supply water to the tank at station 122. Install a permanent backup generator.	$900,000 (Note this project, minus the generator, was proposed in the company's 2018 GRC filing)
Total Costs		$8.125M (Note that $2.875 M was proposed in the company's 2018 GRC filing)

San Mateo

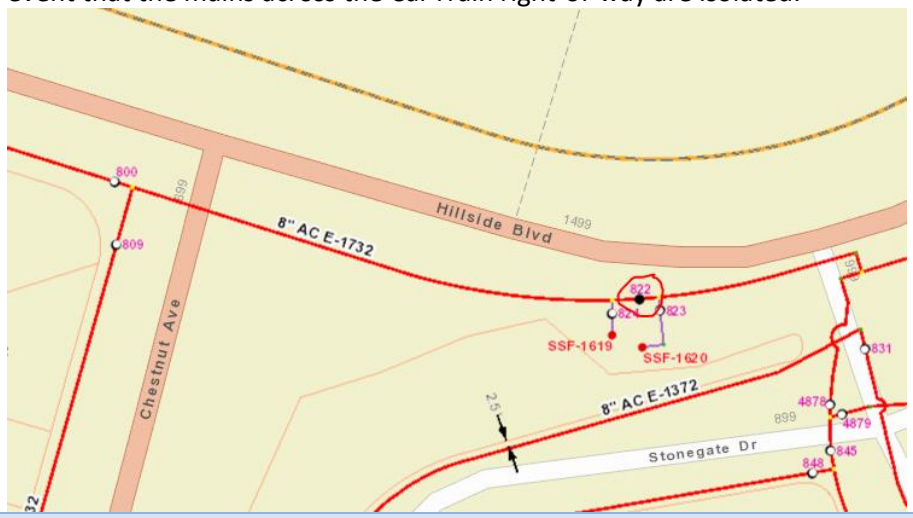
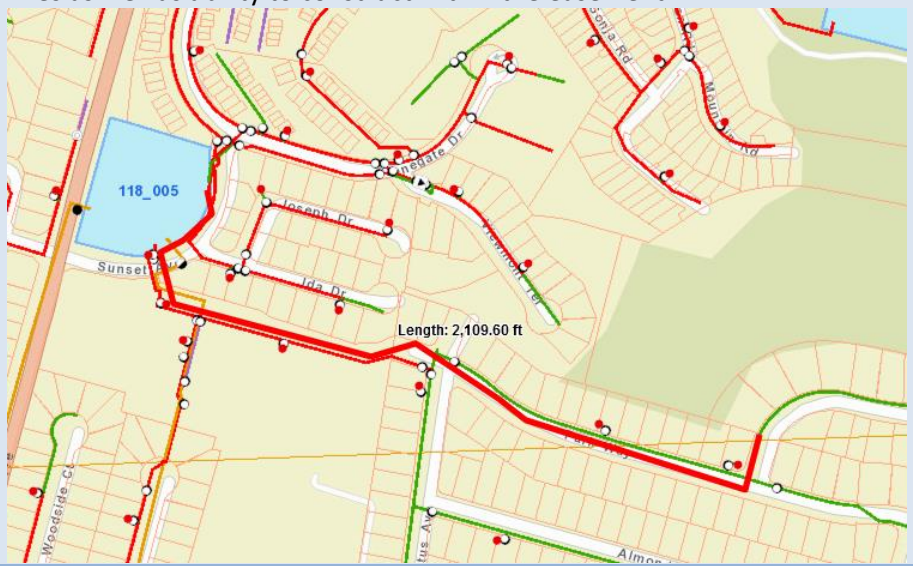
Project	Scope	Estimated Cost
Install Backup Generator Station 27	Install a backup generator at station 27 that is sized to power all 4 booster pumps in the event of a power outage. Install an automatic transfer switch to automatically transfer power to the backup generator.	$450,000
Install control valve at Station 27	Install a control valve at Station 27 that can be automatically controlled to supply water from the Baywood zone to the Hillsdale zone. The control valve will be in-lieu of an additional booster pump to supply water to Hillsdale tanks but has the added benefit of being able to move water from the connection at Polhemus into the tanks at Hillsdale in the event that the connection at El Cerrito and Crystal Springs is out of service.	$100,000
Install Backup Generator at Station 24	Install a backup generator and transfer switch at Station 24 to supply water to the 760 zone in the event of a long term power outage.	$300,000

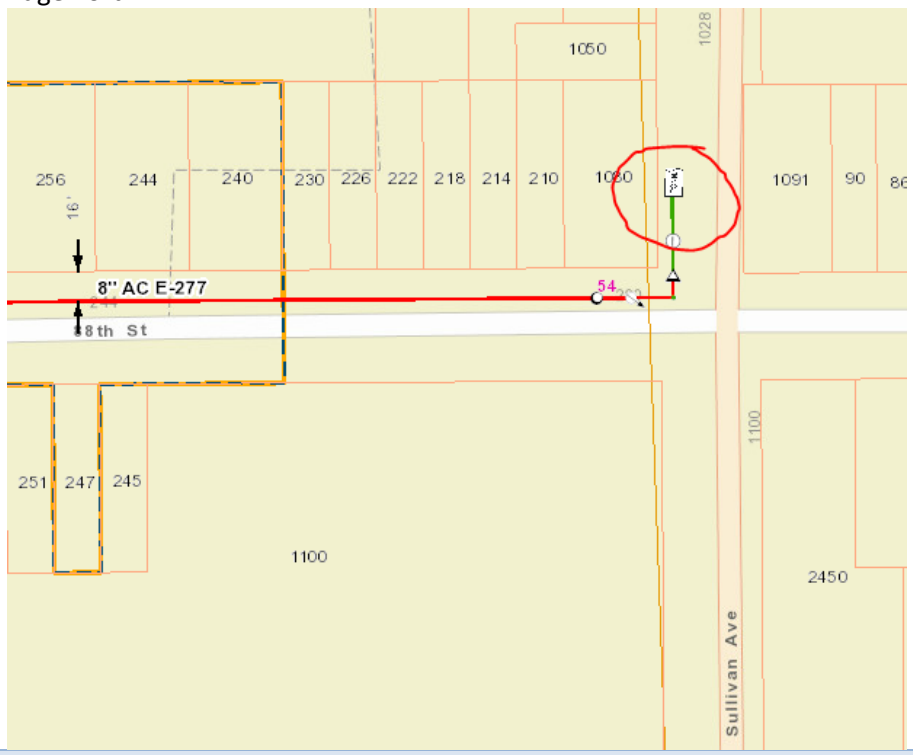
Project	Scope	Estimated Cost
Install new main from Station 17 to Alameda and 42nd Ave.	Install approximately 1600 ft. of new main that parallels existing single supply source to Station 25. New main will also provide another supply to 465 zone should existing main be isolated for repairs.	$500,000
Install backup generator Station 12	Install permanent fixed backup generator and automatic transfer switch at Station 12 to maintain supply for 345 zone in the event of a power outage.	$300,000
Install backup generator at Station 28	Install a permanent fixed backup generator and automatic transfer switch at Station 28 to supply water to Ashwood Tank in the event of an extended power outage.	$300,000

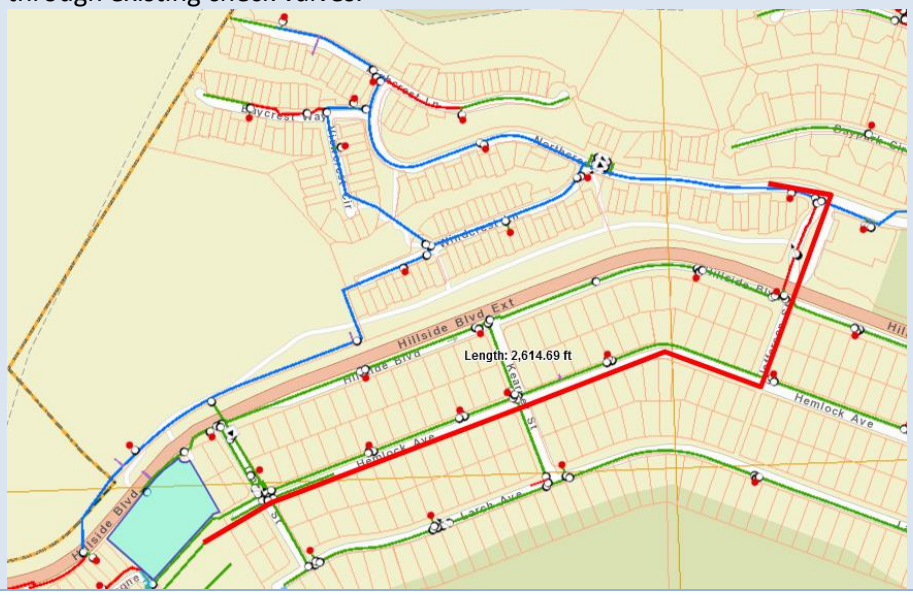
Project	Scope	Estimated Cost
Install 1600 ft. new main from 31st and Monterey to West Hillsdale and Laurel Creek Dr.	Install approximately 1600 ft. of new main to provide alternative path to supply water to portion of 440 zone located along Laurel Creek Dr. and Viewridge Dr. Project will improve reliability near the Sugarloaf Open Space area. 	$500,000
Total Costs		$2.45M

South San Francisco

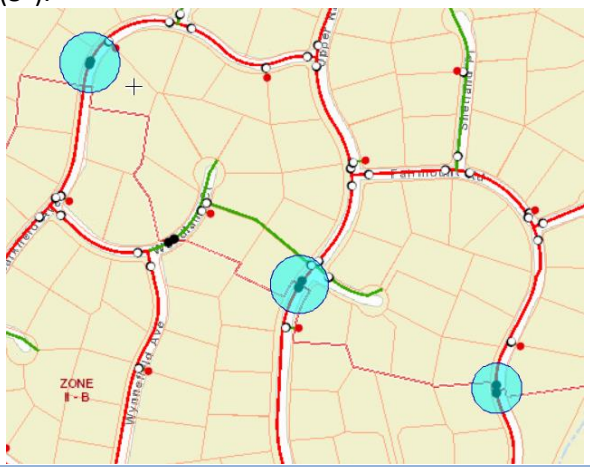
Project	Scope	Estimated Cost
Install backup generator at Station 101	Install a backup generator and upgrade necessary electrical equipment at Station 101 in South San Francisco. Backup generator will ensure that supply can be maintained to the 520 and 415 zones.	$300,000

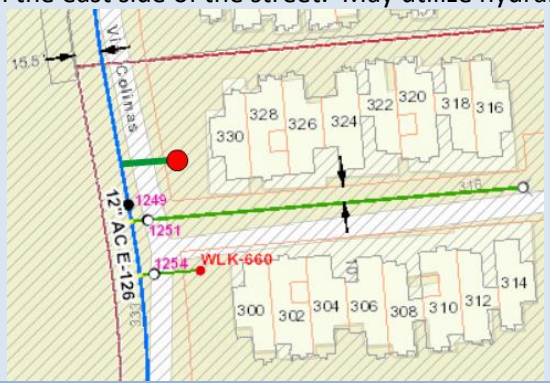
Project	Scope	Estimated Cost
Install PRV from 555 zone to 330 zone	Install 8" PRV, along with appropriate controls and SCADA RTU, in place of normally closed valve to automatically supply water to the 330 zone in the event that the mains across the Cal Train right-of-way are isolated. 	$125,000
Install approximately 2100 ft. of 8" main between Rocca Ave. and Sunset Ave.	Install approximately 2100 ft. of 8" main between discharge piping of booster 5-B and the 390 zone (to be consolidated with the 430 zone). Main may be able to be installed in existing easement through elementary school between Sunset Ave. and Park Way. Easement allows for multiple lines as well as ability to construct within the easement. 	$600,000

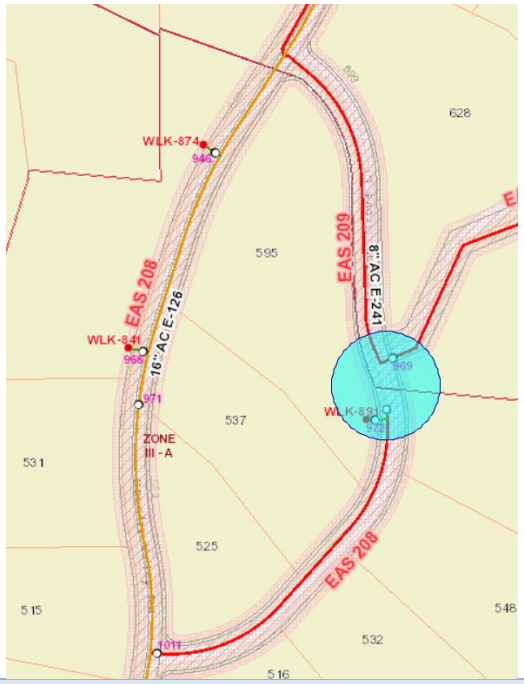
Project	Scope	Estimated Cost
Install additional supply source on west side of 280 for 380 zone	Install replacement connection at 88th and Sullivan to provide reliable supply source to portion of the system west of 280. Depending on ability to re-establish this connection, alternatives could be considered such as automating the emergency connections with Daly City at Bradley and at Edgeworth. 	$1M-$6M
Install pressure regulator at Station 7	Install a permanent pressure relief valve that can be used to regulate pressure in an isolated portion of the 430 zone in the event that a portion of the 430 zone is isolated along South San Francisco Dr. This will maintain supply and some wildfire protection along the wilderness/urban interface on San Bruno Mountain.	$100,000

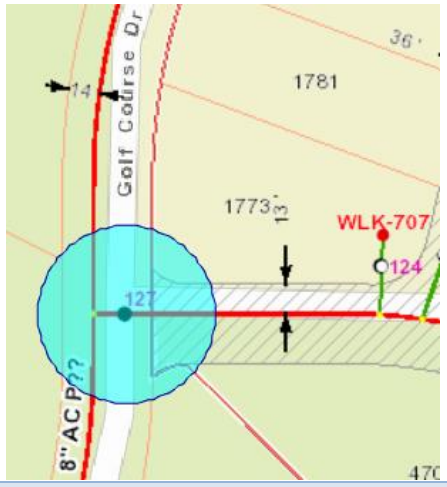
Project	Scope	Estimated Cost
Install booster pump for 330 zone at Station 1	Install an additional booster pump at Station 1 that will supply water to the 330 zone from either the treatment plant or, if needed, the Orange Ave. connection. This project has the added benefit of providing an additional option for supplying water from the treatment plant at Station 1 to different portions of the South San Francisco system. Project includes installing booster pump in place of existing booster 5-A and installing approximately 100 ft. of on-site piping to connect discharge to portion of 330 zone piping located at driveway to pump station.	$150,000
Install parallel main along Hillside Blvd.	Install approximately 2600 ft. of 8" main along Hillside Blvd (or alternatively Hemlock Blvd) and relocate PRV vault at Windcrest and Northcrest to tie-in point. This project may not be needed if the 430 zone can adequately supply fire flow to the isolated area of the 555 zone through existing check valves. 	$1M
Total Costs		$3.275 – 8.275M

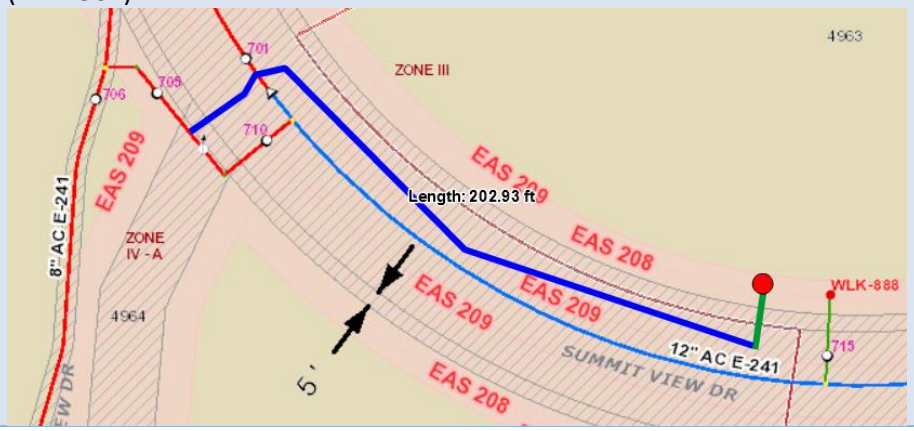
Westlake

Project	Scope	Estimated Cost
Install backup generator at Station 10	Install a backup generator and upgrade necessary electrical equipment at Station 10 in Westlake; if auxiliary power is present, ensure it is adequate for anticipated wildfire demand. Backup power will ensure that supply can be maintained to the 1160 zone via the Cravitz station connection.	$300,000
Investigate viability, perform necessary repairs, and exercise existing emergency inter-connections to 1164 zone	Operable standby interconnections with Las Virgenes (8" along Triunfo Canyon Rd. and 8" along Agoura Rd.) could bolster supply and storage availability for the 1164 zone west of Highway 101. This could become vital if the two cross-highway pipelines supplying the west side of the 1164 zone are compromised. Operable emergency interconnection with Thousand Oaks (8" along E. Hillcrest Dr.) could bolster supply to the 1164 zone east of Highway 101 and subsequently to the 1315 zone (II-A) via the emergency portable booster connection along Westlake Blvd.	$150,000
Install backup generator at Station 2	Install a backup generator and upgrade necessary electrical equipment at Station 2 in Westlake. Backup generator will ensure that supply can be maintained to the 1315 (II-A) zone via the CMWD connection if pressure at that connection drops below average and Harper Res. is not available.	$300,000
Install PRV connection between 1500 zone and 1315 (II-A) zone	Remote or emergency actuated PRV connection(s) between Zone 1500 and Zone 1315 (II-A) at NCVs would alleviate reliance on 16" along Westlake Blvd. Consider either Larkfield Ave (8"), Upper Ranch Rd (8"), and/or Fairmont Rd (8"). 	$200,000

Project	Scope	Estimated Cost
Install bypass valve(s) at Station 5	A dedicated bypass valve or valves would relieve the current practice of running Station 5 pumps in bypass mode when the 1315 (II-B) zone and Galanis Res. can be fed by gravity and reduce the possibility of associated unintended wear on the pumps. This would also ease operational adjustments before and during an emergency.	$100,000
Install backup generator at Station 5	Install a backup generator and upgrade necessary electrical equipment at Station 5 in Westlake. Backup generator will ensure that supply can be maintained to the 1315 (II-B) zone via the CMWD connection if pressure at that connections drop below average and Galanis Res. is not available.	$300,000
Install portable booster connection at 330 Via Colinas	Create an emergency connection from the 1315 (II-A) zone to the 1330 (III-A) zone near existing NCV at 330 Via Colinas by installing portable booster connections on the east side of the street. May utilize hydrant (WLK-660). 	$200,000

Project	Scope	Estimated Cost
Install second PRV connection between 1500 zone and 1330 zone	Establishing a second PRV connection between 1500 and 1330 zone at 8" on Meadow Grove Lane would introduce backup for existing PRVs at Lakeview Canyon Rd. and Windhaven Dr. 	$150,000
Replace NCV at Golf Course Ct. @ Canterbury St. with check valve	Check valve at Golf Course Ct. and Canterbury St. would allow the 1510 zone to be automatically combined with the 1500 zone should pressure in the zone fall below the pressure in the adjoining zone. Pressure in the 1510 zone could feasibly drop if the 1620 zone was unable to provide supply.	$100,000

Project	Scope	Estimated Cost
Install backup generator at Station 6	Install a backup generator and upgrade necessary electrical equipment at Station 6 in Westlake. Backup generator will ensure that supply can be maintained to the 1620 zone via the 1500 zone. 	$300,000
Install portable booster connection at Grey Feather Ct. & Royal Ridge Ct.	Create an emergency connection from the 1500 (III) zone to the 1620 (IV-B) zone near existing NCV at 5539 Grey Feather Ct. by installing portable booster connections on the east side of the street. May utilize hydrant (WLK-901).	$200,000
Construct booster pump station at Station 11	Install a booster pump station at existing Station 11 to bring water from the 1500 (III) zone to the 1620 (IV-B) zone. This booster pump station would reduce reliance on Station 6 to supply the 1620 zone.	$2M

Project	Scope	Estimated Cost
Install portable booster connection at 4963 Summit View Dri.	Create an emergency connection from the 1500 (III) zone to the 1620 (IV-B) zone near existing NCV at 5539 Grey Feather Ct. by installing portable booster connections on the east side of the street. May utilize hydrant (WLK-901). 	$250,000
Total Costs		$4.75M

Summary

All projects recommended within this report warrant further evaluation for prioritization and verifying the scope of the project is consistent with any new information available. Additionally, priority should be given to facilities that may be affected by the PSPS program. Distribution system growth is adding vulnerabilities (instances with long, dead-end stretches and fire marshals giving variances from fire flow requirements). As the water system continues to grow outside of these recommended projects, further evaluation of vulnerabilities should be considered.

A summary of the costs of recommended capital projects by district is included below:

System	Cost of Recommended Capital Projects (in million $)
Bakersfield	4.44 – 7.71
Bear Gulch	17.7
Chico	3.9
Hermosa/Redondo	1.4 – 9.3
Livermore	2.8
Los Altos	5.3
Oroville	1.3
Palos Verdes	6.2
Salinas	8.9
San Carlos	8.1
San Mateo	2.5
South San Francisco	3.3 – 8.3
Westlake	4.6
Total	**70.6 – 86.6**

Appendix A –Proposed Disposition of Recommended Capital Projects, Nov. 30, 2020

The proposed project list was thus refined with District feedback and project categories began to emerge. Following discussion with the Districts, projects could be classified based on status as:

- To be removed following discussion with District
- Currently In Progress
- Included as part of 2018 GRC Capital Projects
- Planned as part of a PSPS-related Memorandum Account
- Include in Wildfire Hardening Recommendations due to urgent need
- Recommended Project; however, revisit in future GRC due to various reasons
- Additional Analysis Needed Project - Revisit in Future GRC

The following tables document the categorization of the recommended capital projects as of November 30, 2020.

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Bakersfield	Install backup generators in the low zone						X	
Bakersfield	Install backup generator at Station 146							X
Bakersfield	Install backup generator at Station 133							X
Bakersfield	Install backup generator at Station 212					X		
Bakersfield	Consider additional storage at Station 213 or backup options for single main along Rancheria Rd.						X	
Bakersfield	Install new main in 1000 zone to improve grid resiliency					X		
Bear Gulch	Install PRV at Alpine and La Mesa						X	
Bear Gulch	Install check valve at Wildwood and Woodside Dr.					X		

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Bear Gulch	Install PRV on Westridge near Alpine Rd.						X	
Bear Gulch	Install hydrant in 590 zone near Woodside Dr and Sheridan Way					X		
Bear Gulch	Install check valve at Deladera and La Mesa						X	
Bear Gulch	Install check valve on Jane Dr.						X	
Bear Gulch	Install backup generator at Station 23					X		
Bear Gulch	Install PRV at Westridge and Alamos Rd.						X	
Bear Gulch	Install control valve at Station 14					X		
Bear Gulch	Install control valve at Station 21					X		
Bear Gulch	Install PRV in place of normally closed valve on Grove Dr.						X	
Bear Gulch	Install backup generator at Station 19							X
Bear Gulch	Install new main Ladera						X	
Bear Gulch	Install PRV at Oak and Sausal						X	
Bear Gulch	Install new main from Valley Oak St. to Los Trancos Rd					X		
Bear Gulch	Install new pump station near Alpine Rd. and Willowbrook Dr.					X	X	
Bear Gulch	Install new main Tynan Way						X	
Bear Gulch	Install backup generator Station 6				X			
Bear Gulch	Install backup generator Station 7				X			
Bear Gulch	Install PRV on Wayside						X	

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Bear Gulch	Install backup generator Station 26				X			
Bear Gulch	Install backup generator Station 24				X			
Bear Gulch	Install pump station at Kings Mountain Rd. and Entrance Way							X
Bear Gulch	Install check valve at Raymundo Dr.					X		
Bear Gulch	Install backup generator Station 17					X		
Bear Gulch	Install additional booster pump at Station 27							X
Bear Gulch	Install new main in Buck Meadows Dr.					X		
Bear Gulch	Install backup generator Station 25				X			
Bear Gulch	Install additional storage Station 36	X						
Bear Gulch	Install PRV at Station 36 for 1435 zone					X		
Bear Gulch	Install PRV and new main for 1510 zone					X		
Chico	Install parallel main to pipeline on Bruce Rd.					X		
Chico	Install ground level storage tank and pump station near Chico Airport						X	
Chico	Install new main in 635 zone to improve grid resiliency					X		
Chico	Install portable booster connections between 635 and 795 zones.				X			

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Hermosa/ Redondo	Introduce additional supply source for 300-1 to alleviate reliance on WB 16 Met connection						X	
Hermosa/ Redondo	Procure portable backup generator and retrofit stations 14 and 28 as necessary				X			
Hermosa/ Redondo	Install backup generator at station 23					X		
Hermosa/ Redondo	Consider portable booster connections on Paseo de la Playa or Camino de Encanto				X			
Hermosa/ Redondo	Investigate viability, perform necessary repairs, and exercise/ test existing emergency CWS PV inter-connection at Palos Verde Blvd.					X		
Hermosa/ Redondo	Install backup generator at station 24				X			
Hermosa/ Redondo	Investigate viability, perform necessary repairs, and exercise/ test existing emergency CWS PV inter-connection at Via Colusa.					X		
Livermore	Install backup power at Station 10					X		
Livermore	Install backup power at Station 20							X
Livermore	Install portable booster connection between 600 and 685					X		

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Livermore	Alleviate 690 zone grid restriction of Arroyo Mocho crossing at Robertson Park					X		
Livermore	Install backup power at Station 26						X	
Livermore	Install backup power at Station 13		X					
Livermore	Investigate viability of standby connection							X
Livermore	Install backup power at Stations 27 and 28					X	X	
Livermore	Install portable booster connection between 685 and 740							X
Livermore	Install portable booster connection between 690 and 760					X		
Los Altos	Install PRV and check valve at Fallen Leaf Ln and Louise Ln						X	
Los Altos	Install approximately 1250 ft of 8” main on Eastbrook Ave.					X		
Los Altos	Install PRV at Station 38							X
Los Altos	Install approximately 650 ft of 6” main between Granger and Lundy Ln						X	
Los Altos	Install backup generator at Station 8						X	
Los Altos	Install check valve at Dawnridge and Magdalena							X
Los Altos	Install check valve at Manresa Way and University Ave.							X
Los Altos	Install check valve at Burke Rd. and Fremont Rd.						X	

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Los Altos	Install backup generator at Station 113						X	
Los Altos	Install hydrant near Seven Acres Ln and Fremont Rd.					X		
Los Altos	Install backup generator at Station 14			X				
Los Altos	Install check valve on Highlands Cir							X
Los Altos	Install booster pump for Station 19 zone at Station 14							X
Los Altos	Install backup booster pumps at Station 42						X	
Los Altos	Install check valve at University and Anita							X
Los Altos	Install check valve at Foothill Expwy near Tyndall						X	
Los Altos	Install check valve at University and Main							X
Los Altos	Install backup generator at Station 9			X				
Los Altos	Install check valve at Homestead Rd. and El Sereno Ave						X	
Oroville	Install backup power at stations 1, 3, 5, and/or 11							X
Oroville	Install portable booster connection between 470 and 325	X						
Palos Verdes	Install backup generator at Station 23				X			
Palos Verdes	Install backup generator at Station 22				X			
Palos Verdes	Install backup generator at Station 15				X			

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Palos Verdes	Install new main between A-970 and 1150 zones to improve grid resiliency					**X**		
Palos Verdes	Install new main between B-280 and 340 zones to improve grid resiliency							**X**
Palos Verdes	Install new main between B-340 and 500 zones to improve grid resiliency					**X**		
Palos Verdes	Install new main in B-500-3 zone to improve grid resiliency					**X**		
Palos Verdes	Install new main in C-480 zone to improve grid resiliency		**X**					
Palos Verdes	Install new main in C-635 zone to improve grid resiliency							**X**
Palos Verdes	Install new main in F-1325 zone to improve grid resiliency							**X**
Palos Verdes	Install new main between H-1300 and 1450 zones to improve grid resiliency							**X**
Palos Verdes	Install new main between L-550 and 500 zones to improve grid resiliency							**X**
Salinas – Country Meadows	Install backup generators at Stations 60 and/or 61						**X**	
Salinas – Country Meadows	Install backup generators at Stations 57 and 58						**X**	

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Salinas – Country Meadows	Introduce new supply to 425 zone		X					
Salinas – Country Meadows	Install portable booster connection between 340 and 425					X		
Salinas – Las Lomas	Investigate need for further or updated backup power for Wells						X	X
Salinas – Las Lomas	Install portable booster connection on Miller Ave.					X		
Salinas – Las Lomas	Install backup power at Station 304						X	X
Salinas – Las Lomas	Install portable booster connection on Las Lomas Dr.					X		
Salinas – Oak Hills	Install backup power at Stations 201, 203, and 205						X	X
Salinas – Oak Hills	Investigate possibility of looping outside service area						X	X
Salinas – Oak Hills	Investigate feasibility of emergency connections							X
Salinas (main)	Investigate possibility of storage at Stations 45 or 46							X
Salinas Hills	Install backup power at Stations 48, 62, 70, 72, and 73	X						
Salinas Hills	Install backup power at Wells 32, 33, 40, and/or 63; 49 and 50; and 71				X			
Salinas Hills	Ensure wells 35, 36, 39, and 59 can be activated							X
Salinas Hills	Install booster capacity at Station 50			X				

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
Salinas Hills	Investigate new looping (677), paralleling (320, 360, 530), and/or emergency connections (240, 530, 630) to strengthen grid					X		
San Carlos	Parallel Main along Alameda de las Pulgas							X
San Carlos	Install pumps and backup generator at station 109 and main to connect to 930 zone			X				
San Carlos	Install backup generator station 107				X			
San Carlos	Install parallel main in 850 zone						X	
San Carlos	Install backup generator station 120			X				
San Carlos	Install parallel main within 585 zone			X				
San Carlos	Install parallel main in 460 zone						X	
San Carlos	Install parallel main in 600 zone						X	
San Carlos	Install backup generator at station 118				X			
San Carlos	Install backup generator at station 119				X			
San Carlos	Replace booster pump and install new main at station 121						X	
San Mateo	Install Backup Generator Station 27				X			
San Mateo	Install control valve at Station 27					X		

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
San Mateo	Install Backup Generator at Station 24				X			
San Mateo	Install new main from Station 17 to Alameda and 42nd Ave.							X
San Mateo	Install backup generator Station 12							X
San Mateo	Install backup generator at Station 28						X	
San Mateo	Install 1600 ft. new main from 31st and Monterey to West Hillsdale and Laurel Creek Dr.					X		
South San Francisco	Install backup generator at Station 101							X
South San Francisco	Install PRV from 555 zone to 330 zone					X		
South San Francisco	Install approximately 2100 ft. of 8" main between Rocca Ave. and Sunset Ave.							X
South San Francisco	Install additional supply source on west side of 280 for 380 zone						X	
South San Francisco	Install pressure regulator at Station 7					X		
South San Francisco	Install booster pump for 330 zone at Station 1						X	
South San Francisco	Install parallel main along Hillside Blvd.						X	
Westlake	Install backup generator at Station 10			X				
Westlake	Investigate viability, perform necessary repairs, and exercise existing emergency	X						

District	Project Description	Remove	In Progress	2018 GRC	PSPS Memo Account	Wildfire Hardening	Revisit or Reconfigure	Future GRC
	inter-connections to 1164 zone							
Westlake	Install backup generator at Station 2						X	
Westlake	Install PRV connection between 1500 zone and 1315 (II-A) zone					X		
Westlake	Install bypass valve(s) at Station 5						X	
Westlake	Install backup generator at Station 5							X
Westlake	Install portable booster connection at 330 Via Colinas	X						
Westlake	Install second PRV connection between 1500 zone and 1330 zone							X
Westlake	Replace NCV at Golf Course Ct. @ Canterbury St. with check valve						X	
Westlake	Install backup generator at Station 6					X		
Westlake	Install portable booster connection at Grey Feather Ct. & Royal Ridge Ct.				X			
Westlake	Construct booster pump station at Station 11					X		
Westlake	Install portable booster connection at 4963 Summit View Dr.						X	

Well Infrastructure Renewal Program

***Cal Water WIRP 2021 Package*:**

2021

Well Infrastructure Renewal Program

CALIFORNIA WATER SERVICE

Table of Contents

1 Introduction....1
2 Asset Inventory....1
3 Well Life Cycle....2
4 Well Failure Modes....2
- 4.1 Physical Mortality....2
- 4.2 Levels of Service....4
- 4.2 Capacity....4
- 4.4 Financial Efficiency....5

5 Likelihood of Failure....5
6 Project Prioritization....7
- 6.1 Antelope Valley....7
- 6.2 Bakersfield....7
- 6.3 Chico....8
- 6.4 Dixon....8
- 6.5 Dominguez....8
- 6.6 East Los Angeles....8
- 6.7 Livermore....8
- 6.8 Los Altos....8
- 6.9 Marysville....8
- 6.10 Oroville....9
- 6.11 Salinas....9
- 6.12 Selma....9
- 6.13 Stockton....9
- 6.14 Visalia....9
- 6.15 Willows....9

7 Proposed Project....9

Appendix A - Well Master Database
Appendix B - Water Well Asset Plan
Appendix C - Water Wells Survival Analysis Report

Well Infrastructure Renewal Program

1 Background

California Water Service (Cal Water) is committed to managing its infrastructure in order to provide reliable high quality water to its customers.

An important component of this effort is the continuous monitoring of asset conditions and planning for asset replacement to meet existing and future demands. Failure to do so can lead to catastrophic failures, damage to the environment, reduced service to customers, and higher costs in the long term due to increased repair needs.

The Well Infrastructure Renewal Program (WIRP) project justification is developed as part of the General Rate Case (GRC) proceeding submitted to the California Public Utilities Commission (CPUC). This report is a product of Cal Water asset management improvement efforts through extensive data collection, analysis, and application of industry standards, recognized asset management methodologies, and regulatory requirements, to understand Cal Water's asset risk and future asset replacement and renewal investment needs to sustain the delivery and level of services at an affordable cost and acceptable level of risk. Understanding of well renewal and long-term replacement needs will provide Cal Water and CPUC with the information necessary to make effective decisions about future capital investments and to ensure a reliable level of services continues to be delivered to customers.[1]

Specifically, this report will highlight well infrastructure in fifteen operating districts within Cal Water. These districts include Antelope Valley, Bakersfield, Chico, Dixon, Dominguez, East Los Angeles, Livermore, Los Altos, Marysville, Oroville, Salinas, Selma, Stockton, Visalia, and Willows.

2 Asset Inventory

Over the years, California Water Service has owned over 700 groundwater wells ranging from active status to destroyed status. According to the Cal Water Well Status Policy, developed in accordance with CCR Title 22 Waterworks Standards, a well may have one of the following statuses:

- ***Active*** – a source that is approved by California State Regional Water Resources Control Board - Division of Drinking Water (DDW) and meets all or is treated to meet all drinking water standards
- ***Standby*** – a well not routinely operated but capable of being made an operating well with a minimum amount of effort
- ***Inactive*** – acknowledged by the DDW as a source that is out of service, for repair or treatment construction, for a time period of less than one year. If the planned improvements exceed the one-year time period, DDW may require updates to maintain inactive status
- ***Abandoned*** – defined by California Department of Water Resources (DWR), and acknowledged by DDW, as permanently inactive if it has not been used for one year, unless the owner demonstrates intention to use the well again
- ***Destroyed*** – a well filled with a sealing material (concrete or bentonite clay) and restored to, as nearly as possible, subsurface conditions that existed before the well was constructed, taking into account changes, if any, that have occurred since the time of construction

Among the 747 wells in Cal Water's well history, there are 139 wells with Destroyed status and currently the is no well with Abandoned status. Figure 1 shows the distribution of Cal Water current well inventory. It consists of 391 Active wells, 25 Standby wells, and 192 Inactive wells.

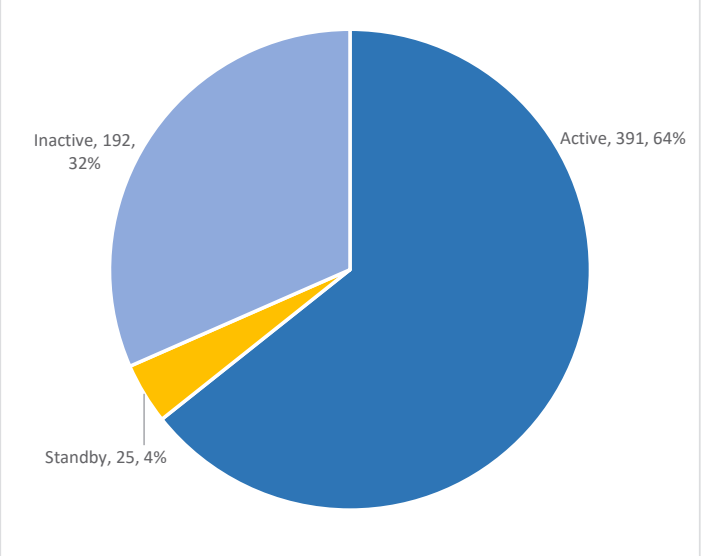


Figure 1. Current Well Inventory

Figure 2 shows the installation profile of the 391 Active wells. The installation profile shows that almost half of Cal Water's active wells were installed before 1970 and more than 62% were installed before 1980.

[1] U.S. General Accounting Office, GAO-04-461 *Water Utility Asset Management*. (2004)

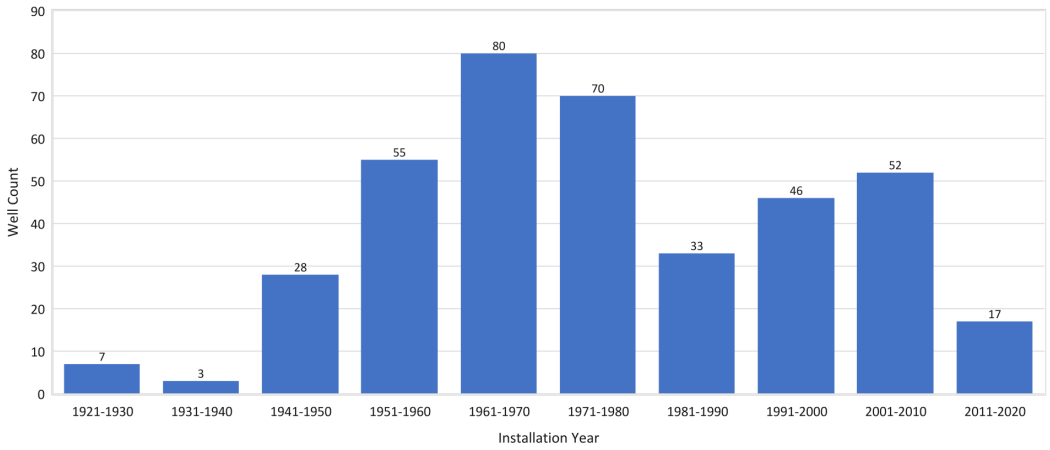


Figure 2. Well Installation Profile

3 Well Life Cycle

The understanding of a full asset life cycle is one of five core component of asset management.[2] It provides a complete timeline from the inception of the idea, the realization of asset into operation, and eventually the decommission or disposal process at the end of its life. Figure 3 shows the life cycle stages of well infrastructure. The estimated timelines shown in the well life cycle below are based on Cal Water's experience and industry best practice for proper feasibility study, planning, design, and construction of well infrastructure. The timeline between initial planning to operations ranges from 3 years for a routine well renewal up to 10 years for a more complex new well development. As such, most well renewal or replacement project will be delivered across multiple 3-year GRC cycles.

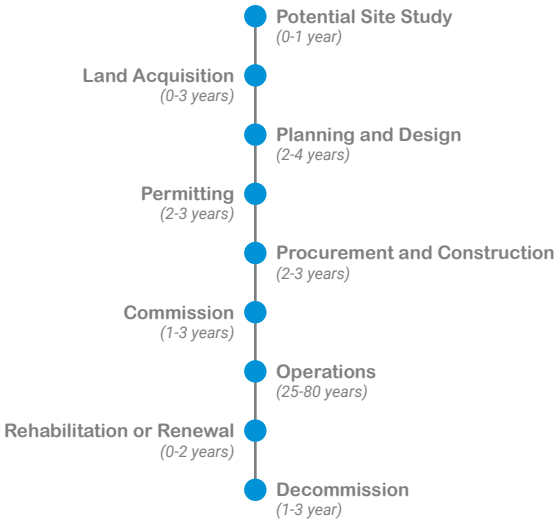


Figure 3. Well Life Cycle

Compared to other asset types, a well has a unique life cycle because it requires extensive pre-construction activities such as finding potential sites, land acquisition, and planning and design with no guarantee of satisfying results. It is possible a well development project could be put on hold and redone in a different location. The construction timeline depends heavily on the extent of infrastructure required. Some well development sites may be located in remote areas far from the closest power connection. Some wells may require installation of advanced treatment, and some wells may need a new transmission to connect with existing distribution system. Proactive, advanced planning is critical to maintaining water supply reliability and meeting customer demands due to these extended timeframe requirements. A timely well renewal project will benefit customers with reliable and affordable water supply.

4 Well Failure Modes

4.1 Physical Mortality

Over the years, Cal Water has been managing hundreds of water wells. As part of the well management program, Cal Water maintains a database of all well assets and historical records related to construction, operations, and replacement. To estimate the median useful life, it is not only important to use past failure (or well replacement) records, but also to consider the possibility of the active wells lasting longer than expected (i.e., old wells in good conditions). The survival analysis will bring together this information to estimate the survival rate of the entire well population. Specifically, Kaplan-Meier Survival Analysis was used to estimate the median life expectancy of Cal Water wells. The result shows the median useful life of Cal Water wells is 63 years. A more specific analysis by district found some variation on median life expectancy as shown in the following Table 1.

[2] Southwest Environmental Finance Center, *Understanding Life Cycle Cost*, https://swefcamswitchboard.unm.edu/am/product/understanding-life-cycle-cost/

Table 1. Well Median Life Expectancy

Districts	Kaplan-Meier Median Life Expectancy
Kern River Valley, Antelope Valley	28 years
Salinas, King City	53 years
Selma, Visalia, Bakersfield, City of Bakersfield	61 years
Dixon, Travis AFB, Bear Gulch, South San Francisco, Mid-Peninsula, Stockton, Los Altos, Livermore	62 years
Hermosa Redondo, Palos Verdes, Westlake, Hawthorne, Dominguez, East Los Angeles, City of Commerce	63 years
Chico, Hamilton City, Marysville, Oroville, Redwood Valley, Willows	75 years

Source: Water Wells Survival Analysis Report (2020)

Comparing the actual age of wells to the median useful life above, 65 of the 343 active wells located in the 15 focus districts in this study are beyond their median life expectancy. Figure 4 shows well age comparison to median life expectancy for 15 districts. For some districts, the majority of its wells are beyond the median useful life. Bakersfield (18 wells), Salinas (8 wells), and Visalia (7 wells) represent districts with the highest count of wells older than the median useful life.

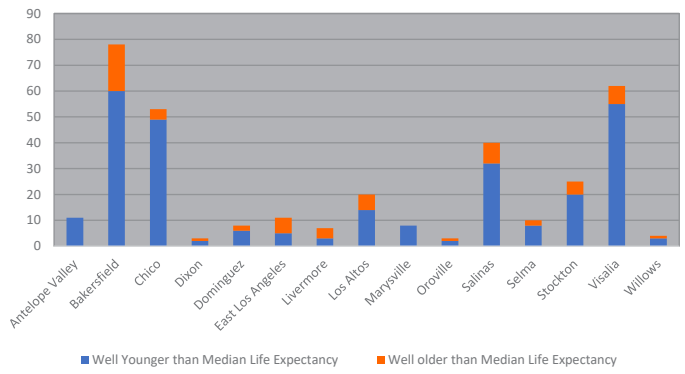


Figure 4. Well Age Comparison to Median Life Expectancy

To improve age-based assessment and optimize the use of resources, Cal Water implemented a multi-level condition assessment strategy as shown in Figure 5. With minimum resources, a Level 1 (desktop analysis) assessment is used to assess all wells in the inventory. At Level 2 (Intermediate), historical records such as performance trends, repair work, and water quality parameters related to well material decay are used to supplement the assessment. At Level 3 (Advanced), field inspection and specialty tools (e.g., CITM, GYRO) are utilized to improve the confidence level of the well physical mortality assessment. To date, Cal Water has performed Level 2 or 3 assessment on 12% of its active wells.

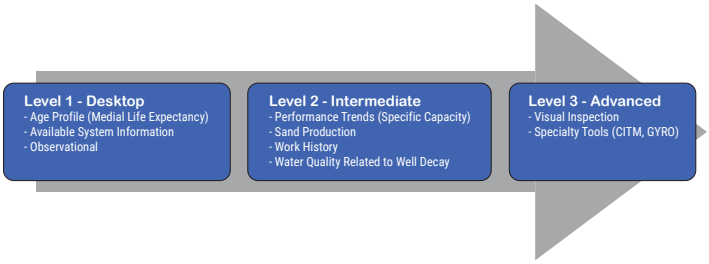


Figure 5. Condition Assessment Strategy

Each well is given a condition score using criteria listed in Table 2 below.

Table 2. Condition Scoring Criteria

Score	Description
1	Like-new well with appropriate construction, alignment, water quality, and efficiency.
2	Generally good condition well with appropriate construction, alignment, water quality, and efficiency, may have the following: • Age between 30%-50% of median useful life for the district • Water quality incompatible with the construction materials • Shows signs of excessive sand at some point of operation • Specific capacity decline without static water level decline
3	Appropriate construction, may have at least one of the following: • Age between 50%-80% of median useful life • Alignment issue (dog-leg or deviation affecting pump setting or tool descent) • Water quality incompatible with the construction materials • Shows signs of excessive sand at some point of operation • Has casing damage, blank or perforated casing holes/ deterioration • Results of diagnostic tools (e.g., CITM, static and dynamic testing)
4	Well requires mitigation within 5 years for a combination of the following issues: • Age between 80%-100% of median useful life • Condition: pitting, hole, or perforation enlargement(s) • Water quality issues from contaminants for treatment • Shows excessive sand at some point of operation in naturally developed wells • Shows excessive sand at some point of operation in gravel pack wells (that can be mitigated) • Has repairable casing damage, blank or perforated casing holes/deterioration • Results of diagnostic tools (e.g., CITM, static and dynamic testing) • Candidate for well liner
5	Well needs replacement within 5 years due to a combination of the following issues: • Age over median useful life • Condition: extreme pitting, hole, or perforation enlargement(s) • Water quality issues that are not economical for treatment • Shows excessive sand at some point of operation in naturally developed wells • Shows excessive sand at some point of operation in gravel pack wells (that can be mitigated) • Has non-repairable casing damage, blank or perforated casing holes/deterioration • Results of diagnostic tools (e.g., CITM, static and dynamic testing) • Not a candidate for well liner

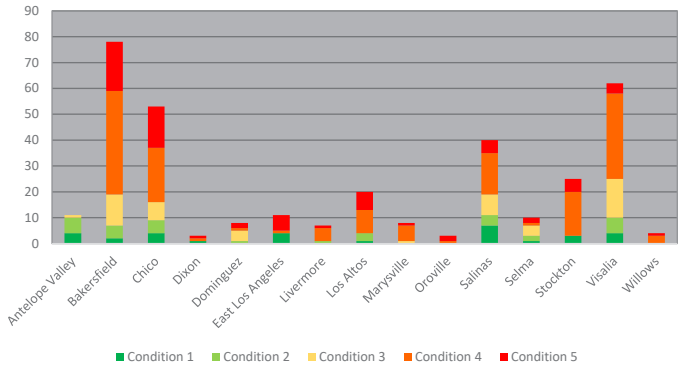


Figure 6. Well Condition Scores by District

Figure 6 shows the distribution of well condition scores among 343 active wells located in the 15 focus districts in this study. Collectively, there are 155 wells with condition score 4 and 72 wells with condition score 5.

4.2 Levels of Service

The importance of providing safe reliable water is paramount. Cal Water is committed to maintaining the quality of its water to meet the State and Federal regulations. This effort includes continued sampling and testing for standard water quality indicators and possible contaminants. The results are published annually.

Some of these possible contaminants are the presence of per- and poly-fluoroalkyl substances (PFAS). Knowing that these are constituents of emerging concern, Cal Water had identified and tested water sources in 2019 and earlier that would be more likely to have these compounds present. In Chico, Oroville, Visalia, and East Los Angeles districts, a few wells have been taken out of production due to an exceedance in response levels.

Whenever it is economically feasible, advanced treatment is added to a well site to treat the water. Other factors that may affect the feasibility of treating water quality impairments are site limitations and existing infrastructure conditions. Wells located in urban areas such as the East Los Angeles district have very limited space for an additional treatment facility. Some wells in the Stockton district are not eligible for additional treatment due to old age.

4.3 Capacity

Supply-demand analysis is an integral part of water operations at Cal Water. It simulates the ability to meet the fluctuation of water demand with different scenarios of water supply conditions (e.g., well, pumps, storage out of service).

Table 3. Supply-Demand by District

District	System	Max Month	Firm Supply	Maximum Daily Demand (MDD)	MDD Surplus (Deficit)	Firm Supply & Pump	Peak Hourly Demand (PHD)	PHD Surplus (Deficit)
Antelope Valley	LAN	Aug	715	1,233	(518)	952	1849	(897)
Antelope Valley	LEO	Aug	46	429	(383)	310	643	(333)
Antelope Valley	LHUG	Aug	84	95	(11)	84	143	(59)
Antelope Valley	FMT	Aug	88	31	57	0	46	(46)
Bakersfield	BK	Aug	84,414	77,911	6,503	118,738	116,867	1,871
Bakersfield	BKNG	Aug	17,132	13,116	4,016	27,464	19,675	7,789
Chico	CH	Aug	41,234	30,066	11,168	48,704	45,098	3,606
Chico	HAM	Aug	899	811	88	899	1,217	(318)
Dixon	DIX	Aug	1,825	1,840	(15)	3,325	2,760	565
Dominguez	DOM	Sept	75,001	33,381	41,620	78,646	50,072	28,574
East Los Angeles	ELA	Aug	19,872	16,936	2,936	32,886	25,403	7,483
Livermore	LIV	Aug	18,904	14,097	4,807	27,500	21,146	6,354
Los Altos	LAS	Aug	30,723	15,486	15,237	39,660	23,229	16,431
Marysville	MRL	Aug	5,465	2,778	2,687	6,665	4,167	2,498
Oroville	ORO	Sept	235	4,465	(4,230)	935	6,698	(5,763)
Salinas	SLN	Aug	19,862	15,101	4,761	27,987	22,652	5,335
Salinas	CMM	Aug	108	76	32	699	114	585
Salinas	LL	Aug	378	227	151	690	340	350
Salinas	OH	Sept	306	347	(41)	1,884	520	1,364
Salinas	SLNH	Aug	2,594	1,348	1,246	3,447	2,021	1,426
Selma	SEL	Aug	7,712	6,972	740	14,912	10,458	4,454
Stockton	STK	Sept	23,838	29,410	(5,572)	32,349	44,115	(11,766)
Visalia	VIS	Aug	34,060	32,982	1,078	38,585	49,473	(10,888)
Visalia	TUL	Aug	0	85	(85)	0	128	(128)
Visalia	MUL	July	242	20	222	123	30	93
Willows	WIL	Aug	1,150	2,007	(857)	3,406	3,010	396

In accordance with industry standard practice, supply-demand analysis was conducted assuming the largest water supply is taken out of service. The result of the supply-demand analysis based on 10-year Maximum Daily Demand (MDD), 2019 average production, and 2019 service connection data is presented in Table 3. For additional details, Supply Demand Analysis report will be made available in each Project Justification District book filed as part of the 2021 GRC application. All numbers are in million gallons.

Based on the deficit supply alone, Visalia-TUL, Oroville-ORO, Stockton-STK, and Visalia-VIS systems are the most vulnerable to meet Maximum Daily Demand (MDD) and Peak Hour Demand (PHD). In addition, Willows-WIL and Dixon-DIX also show deficits to meet MDD and Dominguez shows deficit to meet PHD. This analysis does not consider future increase in demand or the degradation of well production due to deteriorating well condition. Additionally, some system (e.g., Stockton-STK) may have alternative supply plan in place as emergency response during high demand periods.

With the increased occurrence of wildfires in recent years, many districts will need to increase their production capacity to meet additional demand related to firefighting activity. Based on the Cal Water Wildfire Risk Assessment for Wildfire Hardening study (May 2020), there are four water systems in Antelope Valley, Westlake, and Chico districts that are located within CalFire extreme wildfire threat area. An additional 27 water systems in 12 other districts are located within “Very High” wildfire threat areas. Considering the wildfire demand, more districts and water systems will have a deficit in water production.

4.4 Financial Efficiency

Ensuring water affordability is an important element to consider in water production. In order to determine the costs related to different sources of water supply (e.g., well water production cost, purchased water), Cal Water developed a regression model. This model considers the historical records of operations and maintenance costs tracked through several general ledger accounts. These accounts include purchased water, pumping labor and expenses, wages and payroll, water treatment operations, equipment and material costs, and fuel and energy costs. The analysis utilizes expense data from 2015 to 2010 period. This expense data is then compared to production data from the same period to estimate the true cost of different water supply.

In general, well water has the lowest cost per gallon compared to surface water or purchased water. When this is not the case, having a well as part of the water supply is still needed to maintain water supply reliability and resiliency. Over time, as the pump efficiency decreases, the operating cost (i.e., power usage) will increase. To maintain a lower water production cost, a timely renewal of pumping equipment is necessary. From a long-term planning perspective, a well with good production also offers a more stable cost compared to purchased water.

Additionally, some districts may not have alternative water supplies other than wells. Among the focused districts, 7 districts rely solely on wells for their water supply. These districts include Chico, Dixon, Marysville, Salinas, Selma, Visalia, and Willows.

For the remaining districts, Figure 7 below shows the cost comparison between well water and purchased water. In Livermore, the purchased water cost is almost 4 times higher than well water. In Bakersfield and East Los Angeles, the purchase water cost is almost double the well water.

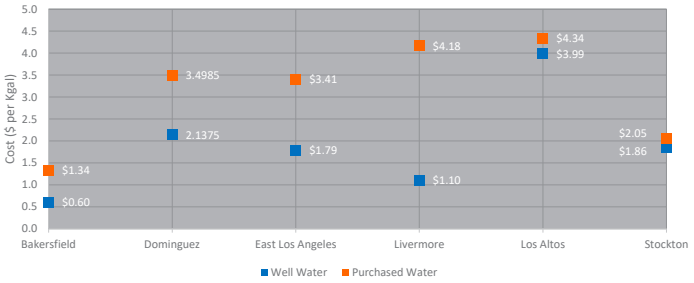


Figure 7. Cost Comparison: Well Water vs. Purchased Water

5 Likelihood of Failure

Based on the physical mortality (i.e., levels 1, 2, and 3 condition assessment) alone, the 50-year outlook for Cal Water well replacement or renewal needs is presented in Figure 8.

In 2021, Cal Water has a backlog of 86 wells due for replacement or renewal. Another 90 wells are due for renewal by 2030. Combined, this outlook represents the needs for 176 well replacement or renewal projects within the next decade. In 2021 GRC, Cal Water has listed 21 well replacement or renewal projects. To meet the need for 176 well replacement or renewal by 2030, Cal Water needs to triple its well renewal/replacement spending in the next three GRCs (i.e., 2024, 2027, and 2030). Figure 8 shows the 50-year outlook of well replacement or renewal needs.

Considering the four failure modes discussed above, Table 4 summarizes the main drivers of potential capital projects in the focus districts.

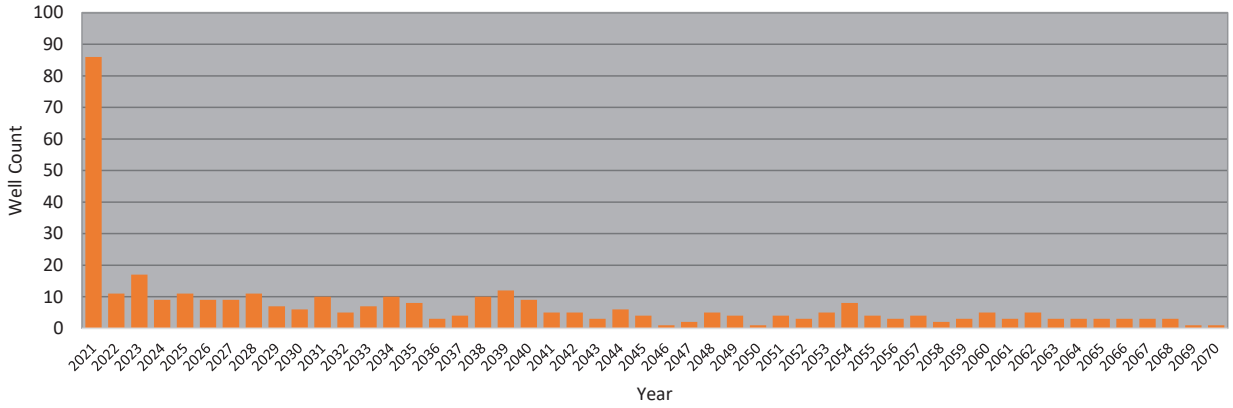


Figure 8. Well Replacement/Renewal Outlook

Table 4. Failure Modes Summary by District

District	Physical Mortality	Levels of Service[1,2]	Capacity	Financial Efficiency
Antelope Valley		1 well has treatment due to manganese	• LAN system has problem meeting MDD • Purchase water source is not reliable	
Bakersfield	• 19 wells (24%) condition 5 • 40 wells (51%) condition 4	• 29 wells have treatment due to TCP, PCE, H2S, and manganese • 1 well inactive due to Nitrate • 13 wells monitored for arsenic, PCE, and MtBE	Very High wildfire threat	Purchased water cost almost double of well water cost
Chico	• 16 wells (30%) condition 5 • 21 wells (40%) condition 4	• 2 wells have treatment for PCE • 2 wells have treatment for cis 1,2-DCE • Wells are monitored for nitrate, PCE, TCE, TCP, cis 1,2-DCE, and PFOS	• No option to purchase water • Extreme wildfire threat	
Dixon	• 1 well (33%) condition 5 • 1 well (33%) condition 4	• 1 will has treatment for bacteria • 4 wells are monitored for arsenic, chromium-6	No option to purchase water	
Dominguez	• 1 well (13%) condition 5 • 2 wells (25%) condition 4	• 6 wells have treatment for H2S • 3 wells have treatment for methane	DOM has problem meeting PHD	Purchased water cost is 50% higher than well water
East Los Angeles	• 6 wells (55%) condition 5 • 1 well (9%) condition 4 • Site limitation for additional treatment facility	• 4 wells have treatment for PCE, TCE, 1,1-DCE • 2 wells have treatment for manganese • 1 well has treatment for perchlorate • All wells are monitored for 1,4 Dioxane, PCE, TCE • PFAS presence[3]		Purchased water cost almost double of well water cost
Livermore	• 1 well (14%) condition 5 • 5 wells (71%) condition 4	• 2 wells have treatment for PCE • 4 wells monitored for nitrate	Very High wildfire threat	Purchased water cost almost four times well water cost
Los Altos	• 7 wells (35%) condition 5 • 9 wells (45%) condition 4	• 1 well is monitored for high iron (discoloration) • 5 wells monitored for nitrate	Very High wildfire threat	Purchased water cost about 10% higher than well water cost
Marysville	• 1 well (13%) condition 5 • 6 wells (75%) condition 4	• 1 well has treatment for MtBE • 4 wells have treatment for manganese • 2 wells monitored for arsenic	No option to purchase water	
Oroville	• 2 wells (67%) condition 5 • 1 well (33%) condition 4	• Wells are monitored for boron and PCE • PFAS presence3	• ORO system has problem meeting PHD • Very High wildfire threat	

District	Physical Mortality	Levels of Service[1,2]	Capacity	Financial Efficiency
Salinas	• 5 wells (13%) condition 5 • 16 wells (40%) condition 4	• 5 wells have treatment for nitrate • 2 wells have treatment for chromium-6 • Wells are monitored for MtBE, 1,4-Dioxane, chloride, and arsenic	• No option to purchase water • CMM system has problem meeting PHD • Very High wildfire threat	
Selma	• 2 wells (20%) condition 5 • 1 well (10%) condition 4	• 1 well has treatment for DBCP and TCP • Remaining wells are monitored for DBCP and TCP	No option to purchase water	
Stockton	• 5 wells (20%) condition 5 • 17 wells (68%) condition 4 • Sanding issues damaging pumping equipment	• 1 well has treatment for TCE, PCE, and TCP • Wells are monitored for arsenic, iron, manganese, and nitrate	STK system has problem meeting PHD without storage facility	Purchased water cost about 10% higher than well water cost
Visalia	• 4 wells (6%) condition 5 • 33 wells (53%) condition 4	• 11 wells have treatment for PCE, CCL4, DBCP, and TCP • Wells are monitored for PCE, CCL4, DBCP, TCP, and nitrate • PFAS presence[3]	• No option to purchase water • TUL system has problem meeting PHD VIS system has problem meeting PHD without storage facility	
Willows	• 1 well (25%) condition 5 • 3 wells (75%) condition 4	4 wells have treatment for chromium-6	No option to purchase water	

Notes:
1- Water quality data is compiled from Cal Water 2017 Water Quality Testimony
2- Water quality contaminants abbreviations:
- *MCL: maximum contaminant level*
- *TCP: 1,2,3-Trichloropropane*
- *PCE: Tetrachloroethylene*
- *TCE: Trichloroethylene*
- *MtBE: Methyl tertiary-Butyl Ether*
- *1,1-DCE: 1,1-dichloroethylene*
- *cis 1,2-DCE: cis-1,2-Dichloroethene*
- *DBCP: Dibromo-3-chloroprane*
- *CCL4: Carbon Tetrachloride*
- *PFAS: per- and poly-fluoroalkyl*
- *PFOS: Perfluoro octane sulfonate*
- *H2S: Hydrogen Sulfide*

3- Source: 2019 Water Quality Report

6 Project Prioritization

Considering the likelihood of failure and all four failure modes summarized in Section 5 above, it is apparent that Cal Water needs a significant amount of investment to continue providing a reliable source of high quality water to customers. While it is not possible to address all these capital needs immediately, it is important to identify them to develop a comprehensive long-term plan that is financially sustainable.

The following section summarizes the current challenges of water production considering all possible failure modes and the respective capital improvement project needs. Additional planning, design, and permitting efforts are required for every well replacement or renewal project. It may also involve well siting studies and land acquisition for new well development. Water quality treatment related projects may involve study, installation of new treatment, or update on existing treatment (e.g., replacement of filter media).

6.1 Antelope Valley

Well infrastructure in Antelope Valley is still generally in good condition. However, the systems in this district do not have the capability to meet demand. Currently there is no purchased water source for the Fremont Valley and Lake Hughes systems. In the next decade, the focus is to increase the well production by adding a new well. Cal Water is starting this process planning to acquire land for a new well site in Leona Valley.

6.2 Bakersfield

While well infrastructure in Bakersfield North Garden is in good condition, more than 75% of wells in Bakersfield system district are in conditions 4 or 5, so aging infrastructure is a major issue that must be addressed. In this system, "groundwater satisfies approximately sixty percent of the water requirements for the District"[3]; combined with high cost of imported water and limited treated surface water, it

[3] California Water Service/KJ, *Water Supply and Facilities Master Plan* – Bakersfield District , ES-1

is more critical for Bakersfield system to maintain its ability to produce well water. This district is also within CalFire's Very High wildfire threat area. In the next decade, the capital projects will be focused on replacing degraded wells, and when possible, extending the life with various renewal techniques. Among 20 wells with condition 5, at least half should be replaced or renewed to ensure the ability to meet water demand. To address water quality issues, Bakersfield district also needs to continue maintain existing advanced treatment facilities or install new facilities as required.

6.3 Chico

The Chico district is supplied solely by groundwater production wells. In the Chico district, 70 % of wells have been assessed to be in degraded condition (i.e., condition score 4 or 5). The Hamilton City system is having difficulties to meet Peak Hour Demand. The Chico district is also located within CalFire's Extreme wildfire threat area. To maintain its current supply capacity, this district needs to start replacement/renewal or rehabilitation on 16 wells with condition 5. Whenever possible, rehabilitation as the lowest cost option should be prioritized. However, addressing water quality issues should be prioritized in the near future to ensure water production is reliable and to meet water quality requirements. For the next 3 years, Chico has six water treatment related projects consisting of new facilities and rehabilitation of existing treatment facilities.

6.4 Dixon

The entire Dixon district only has 3 active wells, with 2 in condition 4 or 5. Because this district does not have much redundancy, it is very critical to have all 3 active wells in good working condition. However, Dixon have water quality issue with the presence of chromium-6. To maintain its ability to meet water demand, Cal Water is currently in the process to add a new well with treatment facility.

6.5 Dominguez

The Dominguez district cannot meet minimum demand days with only ground water supply. This district has been depending on purchased water to meet water demand. Currently, well water supply is used to offset the high cost of purchased water. To maintain water affordability, it is really important for Dominguez district to increase groundwater production by adding new wells. In the next few years, Dominguez will prioritize its capital projects on acquiring land for a new well site and installing a new well. The district also needs to invest in treatment facilities to address its water quality issues.

6.6 East Los Angeles

The East Los Angeles district has a major aging infrastructure problem. More than 64% of its wells are in condition 5. However, the recent addition of 3 new wells were able provide the majority of ground water supply. In the next decade, the capital projects will continue to focus on replacing old wells, some at new locations to accommodate additional treatment facilities.

6.7 Livermore

In Livermore district, 86% of wells are in degraded condition (i.e., condition score 4 or 5). The cost of imported water is four times higher than well water. This district is also within CalFire's Very High wildfire threat area. As such, it is critically important for Livermore district to sustain its ability to produce well water. In the next few years, the capital investment in Livermore district will be focused on addressing aging wells by well replacement and renewal. To increase water production, Livermore district will acquire new property for future well site.

6.8 Los Altos

The Los Altos district has 80% of its wells in degraded condition (i.e., condition score 4 or 5). The district is located within CalFire's Very High wildfire threat area. This district also experiencing numbers of outages of purchased water from Valley Water. In recent years, these outages include disruption of service due to repair on West pipeline, planned outages of the Rinconada Water Treatment Plant, and outages due to limited raw water supply from San Luis Reservoir and the South Bay Aqueduct. To maintain its ability to meet water demand, Los Altos district needs to replace or renew at least 7 wells. This includes acquiring land for a new well site. Additionally, this district needs to continue on installing and updating existing disinfection facilities.

6.9 Marysville

The Marysville district relies on 8 wells for its water supply. Currently, 7 of these wells are in degraded condition (i.e., condition score 4 or 5). With no option for imported water, Marysville district needs to focus on replacement of these wells. In the next few years, this district will focus on well renewal projects.

6.10 Oroville

All 3 wells in Oroville districts are in degraded condition (i.e., condition score 4 or 5). The low ground water level and the presence of PFAS add to the challenges of well water production in Oroville. Currently this district has difficulties to meet water demand. This district is also located within CalFire's Very High wildfire threat area. To improve the reliability, Oroville district will prioritize its capital investment to focus on well renewal, replacement, and additional treatment facility related to PFAS.

6.11 Salinas

In Salinas district, 53% of its wells are in conditions 4 or 5. Specifically, Oak Hills system has difficulties to meet water demand while Salinas Hills system is located within CalFire's Very High wildfire threat area. An additional well is needed to increase reliability and addressed issues within specific zones in Salinas main system. Recently, arsenic level exceeding Maximum Contaminant Levels (MCL) has been reported in one of the wells. In addition to new well project and replacement of old infrastructure, Salinas district needs to also focus on adding advanced treatment to address water quality issues.

6.12 Selma

Among 10 active wells in Selma district, there are two are identified in degraded condition (i.e., condition score 5). With no option for imported water, Selma district needs to focus on replacement or renewal of these wells. In the next few years, Selma district will focus on well renewal projects while continuing to monitor the level of water quality contaminants.

6.13 Stockton

The Stockton district has 88% of its wells identified as degraded condition (i.e., condition score 4 or 5). The well conditions are worsened by high sand levels in the water, which damages the pumping equipment. It also has water quality issues related to elevated levels of nitrate and arsenic. As such, currently Stockton district is highly dependent on purchased water. To reduce the dependency on purchased water, Stockton district need to focus its capital improvement project on well renewal or replacement, rehabilitation (i.e., replacing pumping equipment), and installing a treatment facility to address the water quality issues. Considering the relatively lower price of purchased water, high capital spending may not be the most economical option. A more detailed benefit cost analysis study is needed to help Cal Water make the best decision considering all the environmental, social, and economical factors.

6.14 Visalia

In Visalia district, there are 60% of wells with conditions 4 or 5. The Visalia and Tulare systems are having difficulties meeting Peak Hour Demand. The district also has a problem with PFAS presence in some of its wells. In the next few years, the capital improvement projects in Visalia district will focus on installing adding new wells and renewing some existing wells. The district will also continue to invest in advanced treatment to meet water quality standards. The district is also planning to acquire land for a future well site.

6.15 Willows

The Willows district relies on 4 wells for its water supply. Currently, all of these wells are in condition 4 or 5. With no option for imported water, Willows district needs to focus on replacement or renewal of these wells. With regards to water quality, the existing treatment for Chromium-6 is still in good condition and will not require media replacement in the near future.

7 Proposed Project

The proposed projects planned included in the 2021 GRC is provided in 2021 GRC Common Plant Justification report.

Appendix A

Well Master Database

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
1	ARM-W-001-01	Active	OWNED	105284	1955	EIS Install Year	ARM	Armstrong Valley	RDV	Redwood	148	Armstrong Valley
2	ARM-W-001-02	Active	OWNED	105307	1982	EIS Install Year	ARM	Armstrong Valley	RDV	Redwood	148	Armstrong Valley
3	BG-W-044-02	Inactive	OWNED			Data not available	BG	Bear Gulch	BG	Bear Gulch	102	Bear Gulch
4	BK-W-002-10	Active	OWNED	100005	1948	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
5	BK-W-003-04	Active	OWNED	101596	1953	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
6	BK-W-005-05	Active	OWNED	102546	1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
7	BK-W-007-07	Active	OWNED	103491	1963	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
8	BK-W-010-02	Active	OWNED	104356	1962	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
9	BK-W-022-02	Inactive	OWNED	105204	1957	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
10	BK-W-029-02	Active	OWNED	106028	1951	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
11	BK-W-032-02	Active	OWNED	106815	1954	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
12	BK-W-033-02	Inactive	OWNED	107425	1950	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
13	BK-W-034-02	Inactive	OWNED		1966	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
14	BK-W-035-02	Inactive	OWNED	100286	1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
15	BK-W-036-02	Active	OWNED	100489	1960	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
16	BK-W-037-01	Inactive	OWNED	100710	1939	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
17	BK-W-039-02	Inactive	OWNED		1950	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
18	BK-W-040-02	Active	OWNED	101068	1960	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
19	BK-W-041-02	Inactive	OWNED	101174	1953	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
20	BK-W-042-02	Active	OWNED	101298	1952	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
21	BK-W-043-02	Active	OWNED	101396	1964	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
22	BK-W-044-01	Inactive	OWNED	101495	1949	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
23	BK-W-047-02	Active	OWNED	101619	1951	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
24	BK-W-049-02	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
25	BK-W-049-03	Active	Owned		2020	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
26	BK-W-054-02	Active	OWNED	101799	1968	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
27	BK-W-058-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
28	BK-W-060-02	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
29	BK-W-062-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
30	BK-W-062-02	Active	OWNED	102082	1987	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
31	BK-W-064-01	Inactive	OWNED		1946	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
32	BK-W-066-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
33	BK-W-066-02	Inactive	OWNED	102262	1962	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
34	BK-W-069-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
35	BK-W-071-01	Inactive	OWNED	102362	1948	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
36	BK-W-075-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
37	BK-W-076-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
38	BK-W-077-02	Standby	OWNED	102561	1952	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
39	BK-W-078-01	Inactive	OWNED	102649	1949	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
40	BK-W-079-01	Active	OWNED	102744	1949	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
41	BK-W-081-01	Active	OWNED	102835	1949	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
42	BK-W-081-02	Active	OWNED	102932	1960	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
43	BK-W-082-01	Active	OWNED	103016	1950	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
44	BK-W-083-01	Inactive	OWNED	103109	1950	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
45	BK-W-085-02	Active	OWNED	103213	1962	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
46	BK-W-086-01	Active	OWNED	103303	1950	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
47	BK-W-087-01	Inactive	OWNED	103387	1954	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
48	BK-W-088-01	Active	OWNED	103498	1950	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
49	BK-W-089-01	Active	OWNED	103588	1951	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
50	BK-W-092-01	Inactive	OWNED	103679	1952	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
51	BK-W-093-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
52	BK-W-094-01	Inactive	OWNED	103860	1953	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
53	BK-W-095-01	Inactive	OWNED	103944	1953	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
54	BK-W-097-01	Inactive	OWNED	104023	1954	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
55	BK-W-098-01	Inactive	OWNED	104118	1954	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
56	BK-W-099-01	Inactive	OWNED	104198	1954	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
57	BK-W-101-01	Active	OWNED	104276	1954	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
58	BK-W-102-01	Active	OWNED	104372	1958	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
59	BK-W-104-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
60	BK-W-105-01	Active	OWNED	104458	1955	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
61	BK-W-106-01	Inactive	OWNED	104536	1955	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
62	BK-W-107-01	Inactive	OWNED		1955	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
63	BK-W-108-01	Inactive	OWNED	104705	1955	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
64	BK-W-110-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
65	BK-W-111-01	Inactive	OWNED	104783	1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
66	BK-W-112-01	Inactive	OWNED	104875	1957	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
67	BK-W-113-01	Inactive	OWNED	104951	1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
68	BK-W-114-01	Inactive	OWNED	105034	1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
69	BK-W-115-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
70	BK-W-117-01	Inactive	OWNED		1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
71	BK-W-118-01	Inactive	OWNED	105218	1956	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
72	BK-W-119-01	Inactive	OWNED	105298	1958	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
73	BK-W-120-01	Inactive	OWNED	105373	1958	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
74	BK-W-121-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
75	BK-W-123-01	Active	OWNED	105547	1978	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
76	BK-W-123-02	Active	OWNED	105626	1965	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
77	BK-W-125-01	Active	OWNED	105710	1959	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
78	BK-W-126-01	Active	OWNED	105789	1959	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
79	BK-W-127-01	Inactive	OWNED	105866	1960	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
80	BK-W-128-01	Active	OWNED	105947	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
81	BK-W-129-01	Active	OWNED	106046	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
82	BK-W-130-01	Active	OWNED	106134	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
83	BK-W-132-01	Active	OWNED	106208	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
84	BK-W-133-01	Active	OWNED	106290	1962	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
85	BK-W-134-01	Active	OWNED	106374	1964	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
86	BK-W-135-01	Active	OWNED	106460	1962	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
87	BK-W-136-01	Inactive	OWNED	106534	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
88	BK-W-137-01	Inactive	OWNED	126213	1962	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
89	BK-W-138-01	Standby	OWNED	106695	1978	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
90	BK-W-139-01	Inactive	OWNED	106750	1963	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
91	BK-W-140-01	Active	OWNED	106833	1964	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
92	BK-W-141-01	Active	OWNED	106887	1964	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
93	BK-W-142-01	Active	OWNED	106958	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
94	BK-W-143-01	Active	OWNED	107014	1965	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
95	BK-W-144-01	Active	OWNED	107073	1965	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
96	BK-W-145-01	Active	OWNED	107142	1966	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
97	BK-W-146-01	Active	OWNED	107206	1966	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
98	BK-W-146-02	Active	OWNED	107263	1966	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
99	BK-W-146-03	Active	OWNED	107312	1966	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
100	BK-W-146-04	Active	OWNED	107365	1967	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
101	BK-W-146-05	Active	OWNED	107430	1967	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
102	BK-W-148-01	Invalid	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
103	BK-W-149-01	Active	OWNED	107487	1968	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
104	BK-W-150-01	Active	OWNED	107538	1968	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
105	BK-W-151-01	Active	OWNED	107588	1970	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
106	BK-W-153-01	Inactive	OWNED	107638	1970	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
107	BK-W-154-01	Active	OWNED	107686	1970	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
108	BK-W-156-01	Active	OWNED	107725	1971	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
109	BK-W-157-01	Active	OWNED	107765	1974	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
110	BK-W-158-01	Active	OWNED	107806	1972	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
111	BK-W-159-01	Inactive	OWNED	107847	1973	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
112	BK-W-160-01	Inactive	OWNED	100031	1970	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
113	BK-W-161-01	Inactive	OWNED	105845	1971	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
114	BK-W-163-01	Inactive	OWNED	100076	1967	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
115	BK-W-164-01	Inactive	OWNED	100117	1967	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
116	BK-W-167-01	Inactive	OWNED	100142	1961	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
117	BK-W-177-01	Active	OWNED	100258	1978	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
118	BK-W-180-01	Active	OWNED	100327	1963	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
119	BK-W-182-01	Active	OWNED	100351	1980	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
120	BK-W-183-01	Active	OWNED		1980	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
121	BK-W-184-01	Active	OWNED	100387	1981	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
122	BK-W-185-01	Active	OWNED	100416	1981	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
123	BK-W-187-01	Inactive	OWNED	100434	1982	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
124	BK-W-189-01	Active	OWNED	100649	1983	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
125	BK-W-191-01	Active	OWNED	100527	1979	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
126	BK-W-192-01	Active	OWNED	100548	1977	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
127	BK-W-193-01	Inactive	OWNED	100567	1988	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
128	BK-W-194-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
129	BK-W-195-01	Active	OWNED	100581	1988	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
130	BK-W-198-01	Inactive	OWNED		1960	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
131	BK-W-199-01	Inactive	OWNED	100667	1988	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
132	BK-W-200-01	Destroyed	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
133	BK-W-201-01	Invalid	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
134	BK-W-202-01	Active	OWNED	138029	1992	EIS Install Year	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
135	BK-W-217-01	Invalid	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
136	BK-W-217-02	Invalid	OWNED			Data not available	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
137	BK-W-224-01	Inactive	OWNED		2018	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
138	BK-W-225-01	Active	Owned		2020	LIMS 1st Sample Date	BK	Bakersfield	BK	Bakersfield	101	Bakersfield
139	BKNG-W-169-01	Inactive	OWNED		1961	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
140	BKNG-W-172-01	Inactive	OWNED		1953	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
141	BKNG-W-173-01	Inactive	OWNED		1947	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
142	BKNG-W-174-01	Active	OWNED	100216	1973	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
143	BKNG-W-175-01	Inactive	OWNED	100236	1977	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
144	BKNG-W-178-01	Active	OWNED	100289	1978	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
145	BKNG-W-179-01	Destroyed	OWNED			Data not available	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
146	BKNG-W-188-01	Active	OWNED	100454	1978	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
147	BKNG-W-190-01	Active	OWNED	100467	1984	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
148	BKNG-W-196-01	Active	OWNED	100502	1988	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
149	BKNG-W-197-01	Active	OWNED	126745	1989	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
150	BKNG-W-201-01	Active	OWNED	100625	1990	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
151	BKNG-W-203-01	Inactive	OWNED	100721	1997	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
152	BKNG-W-204-01	Destroyed	OWNED			Data not available	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
153	BKNG-W-204-02	Destroyed	OWNED			Data not available	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
154	BKNG-W-214-01	Active	OWNED	100735	2001	LIMS 1st Sample Date	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
155	BKNG-W-217-01	Active	OWNED	100759	2001	LIMS 1st Sample Date	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
156	BKNG-W-219-01	Active	OWNED	100775	2004	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
157	BKNG-W-220-01	Active	OWNED	100797	2005	EIS Install Year	BKNG	North Garden	BK	Bakersfield	101	Bakersfield
158	CH-W-001-04	Inactive	OWNED	100842	1909	EIS Install Year	CH	Chico	CH	Chico	104	Chico
159	CH-W-002-01	Destroyed	OWNED			Data not available	CH	Chico	CH	Chico	104	Chico
160	CH-W-003-03	Inactive	OWNED	100855	1909	EIS Install Year	CH	Chico	CH	Chico	104	Chico
161	CH-W-004-02	Inactive	OWNED	100874	1960	EIS Install Year	CH	Chico	CH	Chico	104	Chico
162	CH-W-005-02	Active	OWNED	100897	1971	EIS Install Year	CH	Chico	CH	Chico	104	Chico

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
163	CH-W-007-04	Inactive	OWNED	100928	1946	EIS Install Year	CH	Chico	CH	Chico	104	Chico
164	CH-W-008-01	Active	OWNED	100952	1929	EIS Install Year	CH	Chico	CH	Chico	104	Chico
165	CH-W-009-02	Destroyed	OWNED			Data not available	CH	Chico	CH	Chico	104	Chico
166	CH-W-009-03	Pending	OWNED	138187		Data not available	CH	Chico	CH	Chico	104	Chico
167	CH-W-010-01	Destroyed	OWNED			Data not available	CH	Chico	CH	Chico	104	Chico
168	CH-W-011-01	Active	OWNED	100991	1944	EIS Install Year	CH	Chico	CH	Chico	104	Chico
169	CH-W-012-01	Active	OWNED	101000	1945	EIS Install Year	CH	Chico	CH	Chico	104	Chico
170	CH-W-013-01	Inactive	OWNED	101016	1948	EIS Install Year	CH	Chico	CH	Chico	104	Chico
171	CH-W-014-01	Standby	OWNED	101025	1948	EIS Install Year	CH	Chico	CH	Chico	104	Chico
172	CH-W-015-01	Inactive	OWNED	101035	1949	EIS Install Year	CH	Chico	CH	Chico	104	Chico
173	CH-W-016-01	Active	OWNED	101049	1949	EIS Install Year	CH	Chico	CH	Chico	104	Chico
174	CH-W-017-01	Active	OWNED	101050	1950	EIS Install Year	CH	Chico	CH	Chico	104	Chico
175	CH-W-018-01	Active	OWNED	101078	1951	EIS Install Year	CH	Chico	CH	Chico	104	Chico
176	CH-W-019-01	Active	OWNED	101083	1951	EIS Install Year	CH	Chico	CH	Chico	104	Chico
177	CH-W-020-01	Active	OWNED	101100	1952	EIS Install Year	CH	Chico	CH	Chico	104	Chico
178	CH-W-021-01	Active	OWNED	101103	1953	EIS Install Year	CH	Chico	CH	Chico	104	Chico
179	CH-W-022-01	Inactive	OWNED	101121	1954	EIS Install Year	CH	Chico	CH	Chico	104	Chico
180	CH-W-023-01	Active	OWNED	101128	1955	EIS Install Year	CH	Chico	CH	Chico	104	Chico
181	CH-W-024-01	Standby	OWNED	101138	1955	EIS Install Year	CH	Chico	CH	Chico	104	Chico
182	CH-W-025-01	Inactive	OWNED	101144	1956	EIS Install Year	CH	Chico	CH	Chico	104	Chico
183	CH-W-026-01	Active	OWNED	101158	1959	EIS Install Year	CH	Chico	CH	Chico	104	Chico
184	CH-W-027-01	Active	OWNED	101163	1957	EIS Install Year	CH	Chico	CH	Chico	104	Chico
185	CH-W-028-01	Active	OWNED	101194	1957	EIS Install Year	CH	Chico	CH	Chico	104	Chico
186	CH-W-029-01	Active	OWNED	101197	1958	EIS Install Year	CH	Chico	CH	Chico	104	Chico
187	CH-W-030-01	Active	OWNED	101213	1963	EIS Install Year	CH	Chico	CH	Chico	104	Chico
188	CH-W-031-01	Active	OWNED	101216	1960	EIS Install Year	CH	Chico	CH	Chico	104	Chico
189	CH-W-032-01	Active	OWNED	101226	1962	EIS Install Year	CH	Chico	CH	Chico	104	Chico
190	CH-W-033-01	Active	OWNED	101239	1961	EIS Install Year	CH	Chico	CH	Chico	104	Chico
191	CH-W-034-01	Active	OWNED	101249	1965	EIS Install Year	CH	Chico	CH	Chico	104	Chico
192	CH-W-035-01	Active	OWNED	101256	1963	EIS Install Year	CH	Chico	CH	Chico	104	Chico
193	CH-W-037-01	Active	OWNED	101266	1979	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
194	CH-W-038-01	Active	OWNED	101280	1967	EIS Install Year	CH	Chico	CH	Chico	104	Chico
195	CH-W-039-01	Active	OWNED	101308	1967	EIS Install Year	CH	Chico	CH	Chico	104	Chico
196	CH-W-040-01	Active	OWNED	101317	1968	EIS Install Year	CH	Chico	CH	Chico	104	Chico
197	CH-W-041-01	Inactive	OWNED	101326	1966	EIS Install Year	CH	Chico	CH	Chico	104	Chico
198	CH-W-042-01	Active	OWNED	101331	1970	EIS Install Year	CH	Chico	CH	Chico	104	Chico
199	CH-W-043-01	Destroyed	OWNED			Data not available	CH	Chico	CH	Chico	104	Chico
200	CH-W-044-01	Active	OWNED	101342	1942	EIS Install Year	CH	Chico	CH	Chico	104	Chico
201	CH-W-045-01	Destroyed	OWNED			Data not available	CH	Chico	CH	Chico	104	Chico
202	CH-W-046-01	Active	OWNED	101353	1972	EIS Install Year	CH	Chico	CH	Chico	104	Chico
203	CH-W-047-01	Inactive	OWNED	101360	1973	EIS Install Year	CH	Chico	CH	Chico	104	Chico
204	CH-W-048-01	Inactive	OWNED	101365	1973	EIS Install Year	CH	Chico	CH	Chico	104	Chico
205	CH-W-049-01	Active	OWNED	101376	1973	EIS Install Year	CH	Chico	CH	Chico	104	Chico
206	CH-W-050-01	Active	OWNED	101387	1973	EIS Install Year	CH	Chico	CH	Chico	104	Chico
207	CH-W-051-01	Inactive	OWNED	101410	1976	EIS Install Year	CH	Chico	CH	Chico	104	Chico
208	CH-W-052-01	Active	OWNED	101414	1976	EIS Install Year	CH	Chico	CH	Chico	104	Chico
209	CH-W-053-01	Active	OWNED	101422	1977	EIS Install Year	CH	Chico	CH	Chico	104	Chico
210	CH-W-054-01	Active	OWNED	101434	1977	EIS Install Year	CH	Chico	CH	Chico	104	Chico
211	CH-W-055-01	Inactive	OWNED	101444	1978	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
212	CH-W-056-01	Active	OWNED	101450	1978	EIS Install Year	CH	Chico	CH	Chico	104	Chico
213	CH-W-057-01	Active	OWNED	101465	1980	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
214	CH-W-058-01	Inactive	OWNED	101471	1981	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
215	CH-W-059-01	Active	OWNED	101484	1981	EIS Install Year	CH	Chico	CH	Chico	104	Chico
216	CH-W-060-01	Destroyed	OWNED			Data not available	CH	Chico	CH	Chico	104	Chico
217	CH-W-061-01	Active	OWNED	101488	1989	EIS Install Year	CH	Chico	CH	Chico	104	Chico

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
218	CH-W-062-01	Active	OWNED	101512	1986	EIS Install Year	CH	Chico	CH	Chico	104	Chico
219	CH-W-063-01	Active	OWNED	101518	1988	EIS Install Year	CH	Chico	CH	Chico	104	Chico
220	CH-W-064-01	Active	OWNED	101526	1988	EIS Install Year	CH	Chico	CH	Chico	104	Chico
221	CH-W-065-01	Active	OWNED	101536	1990	EIS Install Year	CH	Chico	CH	Chico	104	Chico
222	CH-W-067-01	Active	OWNED	101544	1995	EIS Install Year	CH	Chico	CH	Chico	104	Chico
223	CH-W-068-01	Inactive	OWNED	101560	1998	EIS Install Year	CH	Chico	CH	Chico	104	Chico
224	CH-W-069-01	Active	OWNED	101562	1998	EIS Install Year	CH	Chico	CH	Chico	104	Chico
225	CH-W-070-01	Active	OWNED	101576	2000	EIS Install Year	CH	Chico	CH	Chico	104	Chico
226	CH-W-071-01	Active	OWNED	101580	2001	EIS Install Year	CH	Chico	CH	Chico	104	Chico
227	CH-W-072-01	Active	OWNED	101586	2002	EIS Install Year	CH	Chico	CH	Chico	104	Chico
228	CH-W-075-01	Active	OWNED	126166	2006	EIS Install Year	CH	Chico	CH	Chico	104	Chico
229	CH-W-076-01	Active	OWNED	126169	2006	EIS Install Year	CH	Chico	CH	Chico	104	Chico
230	CH-W-079-01	Active	OWNED	131403	2007	EIS Install Year	CH	Chico	CH	Chico	104	Chico
231	CH-W-080-01	Active	OWNED	131174	2009	EIS Install Year	CH	Chico	CH	Chico	104	Chico
232	CMM-W-060-01	Active	OWNED	102992	1978	EIS Install Year	CMM	Country Meadows	SLN	Salinas	114	Salinas
233	CMM-W-061-01	Active	OWNED	103000	1987	EIS Install Year	CMM	Country Meadows	SLN	Salinas	114	Salinas
234	CS-W-001-01	Active	OWNED	105329	2001	LIMS 1st Sample Date	CS	Coast Springs	RDV	Redwood	149	Coast Springs
235	CS-W-002-01	Active	OWNED	105331	2002	LIMS 1st Sample Date	CS	Coast Springs	RDV	Redwood	149	Coast Springs
236	CS-W-003-01	Active	OWNED	105341	2002	LIMS 1st Sample Date	CS	Coast Springs	RDV	Redwood	149	Coast Springs
237	CS-W-004-01	Active	OWNED	105344	2000	LIMS 1st Sample Date	CS	Coast Springs	RDV	Redwood	149	Coast Springs
238	CS-W-005-01	Active	OWNED	105351	2003	EIS Install Year	CS	Coast Springs	RDV	Redwood	149	Coast Springs
239	CS-W-006-01	Active	OWNED	106259	2000	LIMS 1st Sample Date	CS	Coast Springs	RDV	Redwood	149	Coast Springs
240	CS-W-009-01	Active	OWNED	105359	1964	EIS Install Year	CS	Coast Springs	RDV	Redwood	149	Coast Springs
241	CS-W-010-01	Active	OWNED	105366	2002	LIMS 1st Sample Date	CS	Coast Springs	RDV	Redwood	149	Coast Springs
242	CS-W-011-01	Active	OWNED	138189	2011	EIS Install Year	CS	Coast Springs	RDV	Redwood	149	Coast Springs
243	DIX-W-001-02	Destroyed	OWNED			Data not available	DIX	Dixon	DIX	Dixon	105	Dixon
244	DIX-W-001-03	Active	OWNED	101623	1954	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
245	DIX-W-002-01	Standby	OWNED	101628	1950	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
246	DIX-W-003-01	Standby	OWNED	101642	1956	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
247	DIX-W-004-01	Destroyed	OWNED			Data not available	DIX	Dixon	DIX	Dixon	105	Dixon
248	DIX-W-004-02	InLieu(Off)	OWNED			Data not available	DIX	Dixon	DIX	Dixon	105	Dixon
249	DIX-W-005-01	Standby	OWNED	101653	1973	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
250	DIX-W-006-01	Standby	OWNED	101664	1976	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
251	DIX-W-007-01	Active	OWNED	101670	1979	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
252	DIX-W-008-01	Standby	OWNED	101678	1979	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
253	DIX-W-009-01	Active	OWNED	131210	2009	EIS Install Year	DIX	Dixon	DIX	Dixon	105	Dixon
254	DOM-W-215-01	Active	OWNED	104740	1944	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
255	DOM-W-215-02	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
256	DOM-W-216-02	Inactive	OWNED		2019	LIMS 1st Sample Date	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
257	DOM-W-219-01	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
258	DOM-W-219-02	Inactive	OWNED	104764	1997	LIMS 1st Sample Date	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
259	DOM-W-223-01	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
260	DOM-W-224-01	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
261	DOM-W-231-01	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
262	DOM-W-232-01	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
263	DOM-W-232-02	Destroyed	OWNED			Data not available	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
264	DOM-W-275-01	Active	OWNED	104799	1991	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
265	DOM-W-279-01	Active	OWNED	104812	1980	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
266	DOM-W-294-01	Active	OWNED	104825	1994	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
267	DOM-W-298-01	Active	OWNED	132909	1999	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
268	ELA-W-006-02	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
269	ELA-W-007-02	Inactive	OWNED	101691	1950	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
270	ELA-W-010-03	Active	OWNED	101697	1970	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
271	ELA-W-013-02	Active	OWNED	101714	1950	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
272	ELA-W-015-02	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
273	ELA-W-019-03	Inactive	OWNED	101736	1938	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
274	ELA-W-019-04	Inactive	OWNED	101744	1978	LIMS 1st Sample Date	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
275	ELA-W-020-01	Inactive	OWNED	101745	1933	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
276	ELA-W-022-01	Active	OWNED	101759	1930	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
277	ELA-W-025-01	Active	OWNED	101768	1939	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
278	ELA-W-028-01	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
279	ELA-W-029-01	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
280	ELA-W-029-02	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
281	ELA-W-033-01	Inactive	OWNED		1944	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
282	ELA-W-037-01	Inactive	OWNED		1946	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
283	ELA-W-038-01	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
284	ELA-W-038-02	Active	OWNED	101822	1949	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
285	ELA-W-039-01	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
286	ELA-W-039-02	Active	OWNED	132035	2009	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
287	ELA-W-043-01	Active	OWNED		1949	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
288	ELA-W-046-01	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
289	ELA-W-051-01	Inactive	OWNED	101861	1952	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
290	ELA-W-052-01	Inactive	OWNED	101865	1951	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
291	ELA-W-053-01	Destroyed	OWNED			Data not available	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
292	ELA-W-053-02	Inactive	OWNED		2015	LIMS 1st Sample Date	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
293	ELA-W-054-01	Active	OWNED	101883	1953	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
294	ELA-W-056-01	Inactive	OWNED	101901	1953	EIS Install Year	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
295	ELA-W-062-01	Active	OWNED		2019	LIMS 1st Sample Date	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
296	ELA-W-062-02	Active	OWNED		2018	LIMS 1st Sample Date	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
297	ELA-W-063-01	Active	OWNED	135835	2015	LIMS 1st Sample Date	ELA	East Los Angeles	ELA	East Los Angeles	106	East Los Angeles
298	FMT-W-001-01	Active	OWNED	132921	1995	LIMS 1st Sample Date	FMT	Fremont Valley	AV	Antelope Valley	131	Fremont Valley
299	FMT-W-001-02	Active	OWNED	134365	2013	EIS Install Year	FMT	Fremont Valley	AV	Antelope Valley	131	Fremont Valley
300	GRAN-W-001-01	Active	OWNED	106467	2000	LIMS 1st Sample Date	GRAN	Grand Oaks	AV	Antelope Valley	153	Grand Oaks
301	GRAN-W-001-03	Active	OWNED	121217	2010	EIS Install Year	GRAN	Grand Oaks	AV	Antelope Valley	153	Grand Oaks
302	HAM-W-001-01	Active	OWNED	101914	1951	EIS Install Year	HAM	Hamilton City	CH	Chico	107	Hamilton City
303	HAM-W-002-01	Active	OWNED	101917	1968	EIS Install Year	HAM	Hamilton City	CH	Chico	107	Hamilton City
304	HAM-W-002-02	Active	OWNED	101923	1979	LIMS 1st Sample Date	HAM	Hamilton City	CH	Chico	107	Hamilton City
305	HR-W-008-02	Active	OWNED	101932	1971	EIS Install Year	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
306	HR-W-012-01	Destroyed	OWNED			Data not available	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
307	HR-W-016-01	Destroyed	OWNED			Data not available	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
308	HR-W-020-01	Destroyed	OWNED			Data not available	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
309	HR-W-021-01	Destroyed	OWNED			Data not available	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
310	HR-W-021-02	Destroyed	OWNED			Data not available	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
311	HR-W-022-01	Active	OWNED	101944	1947	EIS Install Year	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
312	HR-W-025-01	Destroyed	OWNED			Data not available	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
313	HR-W-030-01	Standby	OWNED	101947	1984	LIMS 1st Sample Date	HR	Hermosa Redondo	RDOM	Rancho Dominguez	108	Hermosa Redondo
314	HWK-W-001-01	Standby	OWNED	105388	2000	LIMS 1st Sample Date	HWK	Hawkins	RDV	Redwood	150	Hawkins
315	HWK-W-001-02	Active	OWNED	105394	1987	EIS Install Year	HWK	Hawkins	RDV	Redwood	150	Hawkins
316	KC-W-001-02	Destroyed	OWNED			Data not available	KC	King City	KC	King City	109	King City
317	KC-W-001-03	Destroyed	OWNED			Data not available	KC	King City	KC	King City	109	King City
318	KC-W-002-02	Destroyed	OWNED			Data not available	KC	King City	KC	King City	109	King City
319	KC-W-002-03	Destroyed	OWNED			Data not available	KC	King City	KC	King City	109	King City
320	KC-W-005-01	Inactive	OWNED		1970	EIS Install Year	KC	King City	KC	King City	109	King City
321	KC-W-006-01	Active	OWNED	102013	1976	EIS Install Year	KC	King City	KC	King City	109	King City
322	KC-W-007-01	Active	OWNED	102018	1991	EIS Install Year	KC	King City	KC	King City	109	King City
323	KC-W-008-01	Active	OWNED	102025	1994	EIS Install Year	KC	King City	KC	King City	109	King City
324	KC-W-012-01	Active	OWNED	102038	2001	EIS Install Year	KC	King City	KC	King City	109	King City
325	KC-W-013-01	Active	OWNED	126682	2006	EIS Install Year	KC	King City	KC	King City	109	King City
326	KC-W-014-01	Active	OWNED	126173	2006	EIS Install Year	KC	King City	KC	King City	109	King City

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
327	KC-W-HS-01	Inactive	OWNED			Data not available	KC	King City	KC	King City	109	King City
328	ARD-W-013-01	Destroyed	OWNED			Data not available	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
329	ARD-W-014-01	Active	OWNED	104913	1990	EIS Install Year	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
330	ARD-W-015-01	Inactive	OWNED		1992	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
331	ARD-W-016-01	Inactive	OWNED			Data not available	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
332	ARD-W-017-01	Active	OWNED	104919	1992	EIS Install Year	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
333	ARD-W-018-01	Active	OWNED	104930	1992	EIS Install Year	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
334	COUN-W-002-01	Active	OWNED		1997	EIS Install Year	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
335	COUN-W-003-01	Inactive	OWNED		2000	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
336	KERV-W-002-01	Inactive	OWNED	106120	1995	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
337	KERV-W-003-01	Inactive	OWNED	106135	1980	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
338	KERV-W-004-01	Inactive	OWNED	106155	1995	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
339	KERV-W-005-01	Inactive	OWNED		1980	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
340	KERV-W-007-01	Inactive	OWNED			Data not available	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
341	KERV-W-009-01	Inactive	OWNED		1986	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
342	KERV-W-010-01	Inactive	OWNED	106159	2003	EIS Install Year	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
343	KERV-W-011-01	Inactive	OWNED		1995	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
344	KERV-W-012-01	Inactive	OWNED		1995	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
345	KERV-W-013-01	Inactive	OWNED		1995	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
346	KERV-W-014-01	Inactive	OWNED	106163		Data not available	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
347	KERV-W-015-01	Inactive	OWNED		1999	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
348	KERV-W-016-01	Inactive	OWNED		2000	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
349	MSHA-W-001-01	Inactive	OWNED	105086	1991	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
350	MSHA-W-002-01	Inactive	OWNED	105092	1989	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
351	POND-W-002-01	Inactive	OWNED		1979	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
352	POND-W-003-01	Inactive	OWNED		1988	LIMS 1st Sample Date	KERV	Arden/Kernville/Quail Valley	KRV	Kern River Valley	137	Kernville
353	LAN-W-001-01	Active	OWNED	104834	1995	LIMS 1st Sample Date	LAN	Lancaster	AV	Antelope Valley	130	Lancaster
354	LAN-W-001-02	Inactive	OWNED	104842	1995	LIMS 1st Sample Date	LAN	Lancaster	AV	Antelope Valley	130	Lancaster
355	LAN-W-001-03	Active	OWNED	106001	2006	LIMS 1st Sample Date	LAN	Lancaster	AV	Antelope Valley	130	Lancaster
356	LAS-W-001-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
357	LAS-W-001-02	Active	OWNED	102183	1946	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
358	LAS-W-002-02	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
359	LAS-W-002-03	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
360	LAS-W-004-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
361	LAS-W-004-02	Inactive	OWNED	102210	1950	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
362	LAS-W-006-02	Active	OWNED	102219	1964	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
363	LAS-W-015-01	Active	OWNED	102228	1978	LIMS 1st Sample Date	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
364	LAS-W-016-02	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
365	LAS-W-017-01	Active	OWNED	102239	1956	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
366	LAS-W-018-02	Active	OWNED	102243	1962	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
367	LAS-W-020-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
368	LAS-W-021-01	Active	OWNED	102276	1959	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
369	LAS-W-022-01	Inactive	OWNED	102282	1958	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
370	LAS-W-024-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
371	LAS-W-025-01	Active	OWNED	126749	1959	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
372	LAS-W-026-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
373	LAS-W-027-01	Active	OWNED	102308	1955	LIMS 1st Sample Date	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
374	LAS-W-029-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
375	LAS-W-030-01	Active	OWNED	102324	1962	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
376	LAS-W-031-01	Active	OWNED	102334	1962	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
377	LAS-W-032-01	Active	OWNED	102335	1963	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
378	LAS-W-034-01	Active	OWNED	102347	1966	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
379	LAS-W-034-02	Active	OWNED	132191	2006	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
380	LAS-W-039-01	Active	OWNED	102368	1922	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
381	LAS-W-104-02	Active	OWNED	102377	1940	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
382	LAS-W-108-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
383	LAS-W-110-01	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
384	LAS-W-115-01	Active	OWNED	102388	1978	LIMS 1st Sample Date	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
385	LAS-W-116-01	Active	OWNED	126233	1958	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
386	LAS-W-119-03	Active	OWNED	102405	1960	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
387	LAS-W-121-02	Active	OWNED	102413	1978	LIMS 1st Sample Date	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
388	LAS-W-123-01	Active	OWNED	102420	1959	EIS Install Year	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
389	LAS-W-123-02	Destroyed	OWNED			Data not available	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
390	LAS-W-139-01	Inactive	OWNED		2001	LIMS 1st Sample Date	LAS	Los Altos Suburban	LAS	Los Altos	111	Los Altos Suburban
391	LBOD-W-005-01	Inactive	OWNED	104980	1990	LIMS 1st Sample Date	LBOD	Lower Bodfish	KRV	Kern River Valley	136	Bodfish
392	LBOD-W-005-02	Inactive	OWNED	104988	1990	LIMS 1st Sample Date	LBOD	Lower Bodfish	KRV	Kern River Valley	136	Bodfish
393	LBOD-W-008-01	Active	OWNED	104990	1990	LIMS 1st Sample Date	LBOD	Lower Bodfish	KRV	Kern River Valley	136	Bodfish
394	LBOD-W-008-02	Active	OWNED	104999	1995	LIMS 1st Sample Date	LBOD	Lower Bodfish	KRV	Kern River Valley	136	Bodfish
395	LBOD-W-008-03	Inactive	OWNED	105008	1995	LIMS 1st Sample Date	LBOD	Lower Bodfish	KRV	Kern River Valley	136	Bodfish

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
396	LBOD-W-013-01	Active	OWNED	133721	2005	EIS Install Year	LBOD	Lower Bodfish	KRV	Kern River Valley	136	Bodfish
397	LEO-W-001-01	Active	OWNED	104854	1994	EIS Install Year	LEO	Leona Valley	AV	Antelope Valley	132	Leona Valley
398	LEO-W-001-07	Active	OWNED	134144	2007	EIS Install Year	LEO	Leona Valley	AV	Antelope Valley	132	Leona Valley
399	LEO-W-002-01	Inactive	OWNED	104861	1995	LIMS 1st Sample Date	LEO	Leona Valley	AV	Antelope Valley	132	Leona Valley
400	LHUG-W-001-01	Active	OWNED	130890	1995	LIMS 1st Sample Date	LHUG	Lake Hughes	AV	Antelope Valley	133	Lake Hughes
401	LHUG-W-001-02	Active	OWNED	134150	2003	EIS Install Year	LHUG	Lake Hughes	AV	Antelope Valley	133	Lake Hughes
402	LHUG-W-002-01	Standby	OWNED	104887	1995	LIMS 1st Sample Date	LHUG	Lake Hughes	AV	Antelope Valley	133	Lake Hughes
403	LHUG-W-002-02	Active	OWNED	104896	1997	LIMS 1st Sample Date	LHUG	Lake Hughes	AV	Antelope Valley	133	Lake Hughes
404	LIV-W-003-01	Destroyed	OWNED			Data not available	LIV	Livermore	LIV	Livermore	110	Livermore
405	LIV-W-004-01	Destroyed	OWNED			Data not available	LIV	Livermore	LIV	Livermore	110	Livermore
406	LIV-W-005-01	Standby	OWNED	102053	1945	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
407	LIV-W-008-01	Active	OWNED	102063	1942	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
408	LIV-W-009-01	Active	OWNED	102070	1951	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
409	LIV-W-010-01	Active	OWNED	102086	1954	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
410	LIV-W-012-01	Destroyed	OWNED			Data not available	LIV	Livermore	LIV	Livermore	110	Livermore
411	LIV-W-014-01	Active	OWNED	102102	1958	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
412	LIV-W-017-01	Destroyed	OWNED			Data not available	LIV	Livermore	LIV	Livermore	110	Livermore
413	LIV-W-019-01	Standby	OWNED	102131	1960	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
414	LIV-W-020-01	Active	OWNED	102135	1961	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
415	LIV-W-024-01	Active	OWNED	102147	1972	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
416	LIV-W-031-01	Active	OWNED	102154	2002	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
417	LL-W-301-01	Standby	OWNED	103088	1984	LIMS 1st Sample Date	LL	Las Lomas	SLN	Salinas	124	Las Lomas
418	LL-W-302-01	Inactive	OWNED	103099	1984	LIMS 1st Sample Date	LL	Las Lomas	SLN	Salinas	124	Las Lomas
419	LL-W-303-01	Active	OWNED	103101	1986	EIS Install Year	LL	Las Lomas	SLN	Salinas	124	Las Lomas
420	LL-W-305-01	Active	OWNED	103122	1991	EIS Install Year	LL	Las Lomas	SLN	Salinas	124	Las Lomas
421	LLAN-W-001-01	Inactive	OWNED	105061	1993	LIMS 1st Sample Date	LLAN	Lakeland	KRV	Kern River Valley	138	Lakeland
422	LLAN-W-003-01	Inactive	OWNED		1993	LIMS 1st Sample Date	LLAN	Lakeland	KRV	Kern River Valley	138	Lakeland
423	LLAN-W-004-01	Active	OWNED	105070	1993	LIMS 1st Sample Date	LLAN	Lakeland	KRV	Kern River Valley	138	Lakeland
424	LLAN-W-005-01	Active	OWNED	105073	1993	LIMS 1st Sample Date	LLAN	Lakeland	KRV	Kern River Valley	138	Lakeland
425	LLAN-W-006-01	Active	OWNED	105082	1995	LIMS 1st Sample Date	LLAN	Lakeland	KRV	Kern River Valley	138	Lakeland
426	LLAN-W-007-01	Active	OWNED	138210	2016	EIS Install Year	LLAN	Lakeland	KRV	Kern River Valley	138	Lakeland
427	MRL-W-003-01	Destroyed	OWNED			Data not available	MRL	Marysville	MRL	Marysville	112	Marysville
428	MRL-W-004-02	Destroyed	OWNED			Data not available	MRL	Marysville	MRL	Marysville	112	Marysville
429	MRL-W-005-01	Destroyed	OWNED			Data not available	MRL	Marysville	MRL	Marysville	112	Marysville
430	MRL-W-006-02	Destroyed	OWNED			Data not available	MRL	Marysville	MRL	Marysville	112	Marysville
431	MRL-W-007-02	Active	OWNED	102469	1974	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
432	MRL-W-008-01	Active	OWNED	102475	1948	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
433	MRL-W-009-01	Active	OWNED	102486	1953	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
434	MRL-W-010-01	Active	OWNED	102494	1955	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
435	MRL-W-011-01	Active	OWNED	102502	1960	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
436	MRL-W-012-01	Active	OWNED	102509	1963	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
437	MRL-W-013-01	Inactive	OWNED	102520	1976	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
438	MRL-W-014-01	Active	OWNED	102525	1979	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
439	MRL-W-015-01	Active	OWNED	102535	1986	EIS Install Year	MRL	Marysville	MRL	Marysville	112	Marysville
440	MUL-W-300-01	Active	OWNED	104632	2001	EIS Install Year	MUL	Mullen	VIS	Visalia	120	Visalia
441	MUL-W-301-01	Active	OWNED	122250	2013	EIS Install Year	MUL	Mullen	VIS	Visalia	120	Visalia
442	NH-W-002-01	Destroyed	OWNED			Data not available	NH	Noel Heights	RDV	Redwood	148	Armstrong Valley
443	NH-W-201-01	Active	OWNED	132907	1950	EIS Install Year	NH	Noel Heights	RDV	Redwood	148	Armstrong Valley
444	OH-W-201-01	Standby	OWNED	103067	1983	LIMS 1st Sample Date	OH	Oak Hills	SLN	Salinas	125	Oak Hills
445	OH-W-202-01	Inactive	OWNED	103073	1966	LIMS 1st Sample Date	OH	Oak Hills	SLN	Salinas	125	Oak Hills
446	OH-W-203-01	Active	OWNED	103077	1977	EIS Install Year	OH	Oak Hills	SLN	Salinas	125	Oak Hills

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
447	OH-W-205-01	Active	OWNED	133727	2013	LIMS 1st Sample Date	OH	Oak Hills	SLN	Salinas	125	Oak Hills
448	ONYX-W-001-01	Active	OWNED	105128	2003	EIS Install Year	ONYX	Onyx	KRV	Kern River Valley	140	Onyx
449	ONYX-W-002-01	Active	OWNED		1999	LIMS 1st Sample Date	ONYX	Onyx	KRV	Kern River Valley	140	Onyx
450	ONYX-W-005-01	Inactive	OWNED	106202	1994	LIMS 1st Sample Date	ONYX	Onyx	KRV	Kern River Valley	140	Onyx
451	ORO-W-002-01	Active	OWNED	102567	1928	EIS Install Year	ORO	Oroville	ORO	Oroville	113	Oroville
452	ORO-W-005-01	Active	OWNED	102572	1949	EIS Install Year	ORO	Oroville	ORO	Oroville	113	Oroville
453	ORO-W-010-01	Active	OWNED	102580	1956	EIS Install Year	ORO	Oroville	ORO	Oroville	113	Oroville
454	RDP-W-101-01	Destroyed	OWNED			Data not available	RDP	Rancho Del Paradiso	RDV	Redwood	148	Armstrong Valley
455	SEL-W-004-03	Inactive	OWNED		1978	LIMS 1st Sample Date	SEL	Selma	SEL	Selma	117	Selma
456	SEL-W-005-03	Destroyed	OWNED			Data not available	SEL	Selma	SEL	Selma	117	Selma
457	SEL-W-006-01	Active	OWNED	103151	1927	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
458	SEL-W-007-01	Inactive	OWNED		1932	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
459	SEL-W-008-01	Inactive	OWNED	103166	1934	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
460	SEL-W-009-01	Destroyed	OWNED			Data not available	SEL	Selma	SEL	Selma	117	Selma
461	SEL-W-010-01	Inactive	OWNED	103181	1950	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
462	SEL-W-011-01	Active	OWNED	103186	1956	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
463	SEL-W-012-01	Inactive	OWNED	103200	1961	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
464	SEL-W-013-02	Active	OWNED	103221	1983	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
465	SEL-W-014-01	Active	OWNED	103228	1976	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
466	SEL-W-015-01	Inactive	OWNED	103233	1979	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
467	SEL-W-016-01	Destroyed	OWNED			Data not available	SEL	Selma	SEL	Selma	117	Selma
468	SEL-W-016-03	Active	OWNED	103243	1987	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
469	SEL-W-017-01	Destroyed	OWNED			Data not available	SEL	Selma	SEL	Selma	117	Selma
470	SEL-W-017-02	Active	OWNED	126182	2006	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
471	SEL-W-018-01	Active	OWNED	103260	1992	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
472	SEL-W-019-01	Active	OWNED	103267	1994	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
473	SEL-W-020-01	Active	OWNED	103272	1999	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
474	SEL-W-022-01	Active	OWNED	132848	2010	EIS Install Year	SEL	Selma	SEL	Selma	117	Selma
475	SLN-W-001-04	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
476	SLN-W-005-03	Active	OWNED	102607	1974	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
477	SLN-W-006-01	Active	OWNED	102617	1935	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
478	SLN-W-010-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
479	SLN-W-011-01	Active	OWNED	102631	1950	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
480	SLN-W-012-01	Active	OWNED	102636	1952	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
481	SLN-W-013-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
482	SLN-W-013-02	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
483	SLN-W-014-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
484	SLN-W-015-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
485	SLN-W-016-01	Active	OWNED	102688	1964	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
486	SLN-W-016-02	Active	OWNED	102698	2002	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
487	SLN-W-017-01	Standby	OWNED	102708	1964	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
488	SLN-W-018-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
489	SLN-W-019-01	Active	OWNED	102722	1966	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
490	SLN-W-020-01	Active	OWNED	102729	1968	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
491	SLN-W-021-01	Active	OWNED	102754	1968	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
492	SLN-W-022-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
493	SLN-W-022-02	Active	OWNED	126808	2006	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
494	SLN-W-023-01	Active	OWNED	102764	1960	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
495	SLN-W-024-01	Inactive	OWNED	102765	1971	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
496	SLN-W-025-01	Active	OWNED	102777	1972	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
497	SLN-W-026-01	Active	OWNED	102787	1973	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
498	SLN-W-027-01	Active	OWNED	102793	1975	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
499	SLN-W-028-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
500	SLN-W-029-01	Active	OWNED	102806	1978	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
501	SLN-W-030-01	Active	OWNED	102819	1979	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
502	SLN-W-031-01	Inactive	OWNED	102825	1980	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
503	SLN-W-037-01	Active	OWNED	102874	1985	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
504	SLN-W-038-01	Active	OWNED	102883	1986	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
505	SLN-W-041-01	Inactive	OWNED	102907	1989	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
506	SLN-W-042-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
507	SLN-W-043-01	Inactive	OWNED	102920	1990	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
508	SLN-W-044-01	Active	OWNED	102941	1991	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
509	SLN-W-045-01	Inactive	OWNED	102945	1993	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
510	SLN-W-046-01	Active	OWNED	102955	1992	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
511	SLN-W-047-01	Active	OWNED	134712	2011	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
512	SLN-W-056-01	Inactive	OWNED	102977	2002	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
513	SLN-W-064-01	Active	OWNED	131148	2007	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
514	SLN-W-065-01	Active	OWNED	126729	2005	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
515	SLN-W-067-01	Active	OWNED	130830	2007	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
516	SLN-W-069-01	Active	OWNED	132419	2008	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
517	SLN-W-102-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
518	SLN-W-103-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
519	SLN-W-104-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
520	SLN-W-105-01	Inactive	OWNED	103042	1971	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
521	SLN-W-106-01	Active	OWNED	103046	1975	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
522	SLN-W-108-01	Destroyed	OWNED			Data not available	SLN	Salinas	SLN	Salinas	114	Salinas
523	SLN-W-108-02	Active	OWNED		2016	EIS Install Year	SLN	Salinas	SLN	Salinas	114	Salinas
524	ISP-W-049-01	Active	OWNED	102960	1961	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
525	ISP-W-050-01	Active	OWNED	102972	1974	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
526	SLNH-W-032-01	Active	OWNED	102848	1965	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
527	SLNH-W-033-01	Active	OWNED	102856	1980	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
528	SLNH-W-034-01	Destroyed	OWNED			Data not available	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
529	SLNH-W-035-01	Inactive	OWNED	102860	1964	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
530	SLNH-W-036-01	Inactive	OWNED	102871	1982	LIMS 1st Sample Date	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
531	SLNH-W-039-01	Standby	OWNED	102891	1987	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
532	SLNH-W-040-01	Active	OWNED	102901	1988	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
533	SLNH-W-063-01	Active	OWNED	105913	2004	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
534	SLNH-W-070-01	Destroyed	OWNED			Data not available	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
535	SLNH-W-070-02	Destroyed	OWNED			Data not available	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
536	SLNH-W-071-01	Active	OWNED	132344	2007	LIMS 1st Sample Date	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
537	SLNH-W-072-01	Destroyed	OWNED			Data not available	SLNH	Salinas Hills	SLN	Salinas	114	Salinas
538	SMTN-W-001-01	Inactive	OWNED	105139	2003	LIMS 1st Sample Date	SMTN	Split Mountain	KRV	Kern River Valley	135	Arden
539	SMTN-W-002-01	Active	OWNED	105149	1990	LIMS 1st Sample Date	SMTN	Split Mountain	KRV	Kern River Valley	135	Arden
540	SMTN-W-003-01	Active	OWNED	105157	1982	LIMS 1st Sample Date	SMTN	Split Mountain	KRV	Kern River Valley	135	Arden
541	SMTN-W-015-01	Active	OWNED	106217	1992	EIS Install Year	SMTN	Split Mountain	KRV	Kern River Valley	135	Arden
542	SOLA-W-001-01	Destroyed	OWNED			Data not available	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
543	SOLA-W-002-01	Destroyed	OWNED			Data not available	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
544	SOLA-W-005-01	Active	OWNED	105274	1991	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
545	SOLA-W-005-02	Active	OWNED	105281	1991	EIS Install Year	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
546	SOLA-W-007-01	Active	OWNED	122230	2005	EIS Install Year	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
547	SOLA-W-008-01	Active	OWNED	133898	2003	EIS Install Year	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
548	SQUM-W-003-01	Inactive	OWNED	105165	1992	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
549	SQUM-W-005-01	Inactive	OWNED	105171	1991	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
550	SQUM-W-005-02	Inactive	OWNED		1992	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
551	SQUM-W-007-01	Inactive	OWNED	105182	1992	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
552	SQUM-W-009-01	Inactive	OWNED	105229	1993	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
553	SQUM-W-010-01	Inactive	OWNED	105238	1993	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
554	SQUM-W-012-01	Inactive	OWNED	105254	1996	LIMS 1st Sample Date	SOLA	South Lake/ Squirrel Mountain	KRV	Kern River Valley	143	South Lake
555	SSF-W-001-01	Destroyed	OWNED			Data not available	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
556	SSF-W-001-02	Inactive	OWNED	103278	1935	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
557	SSF-W-001-14	Inactive	OWNED	103293	1923	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
558	SSF-W-001-15	Destroyed	OWNED			Data not available	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
559	SSF-W-001-17	Inactive	OWNED	103321	1937	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
560	SSF-W-001-18	Inactive	OWNED	103323	1940	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
561	SSF-W-001-19	Active	OWNED	103337	1947	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
562	SSF-W-001-20	Active	OWNED	103346	1972	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
563	SSF-W-001-21	Active	OWNED	103347	1976	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
564	SSF-W-001-22	Active	OWNED	131483	2010	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
565	SSF-W-001-23	Active	OWNED	133049	2011	EIS Install Year	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
566	SSF-W-001-24	Inactive	OWNED			Data not available	SSF	South San Francisco	BAY	Bayshore	118	South San Francisco
567	STK-W-001-16	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
568	STK-W-001-23	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
569	STK-W-001-24	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
570	STK-W-001-25	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
571	STK-W-004-02	Inactive	OWNED	103383	1964	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
572	STK-W-007-02	Active	OWNED	103407	1957	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
573	STK-W-008-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
574	STK-W-009-01	Inactive	OWNED	103423	1943	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
575	STK-W-010-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
576	STK-W-013-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
577	STK-W-015-01	Inactive	OWNED	103434	1946	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
578	STK-W-016-01	Active	OWNED	103444	1947	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
579	STK-W-017-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
580	STK-W-018-01	Active	OWNED	103458	1947	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
581	STK-W-019-01	Inactive	OWNED		1947	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
582	STK-W-020-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
583	STK-W-021-01	Standby	OWNED	103510	1949	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
584	STK-W-021-02	Active	OWNED	132949	2011	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
585	STK-W-023-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
586	STK-W-026-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
587	STK-W-027-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
588	STK-W-028-01	Inactive	OWNED	103536	1950	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
589	STK-W-030-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
590	STK-W-031-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
591	STK-W-034-01	Inactive	OWNED	103546	1952	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
592	STK-W-035-01	Active	OWNED	103555	1954	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
593	STK-W-036-01	Active	OWNED	103564	1953	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
594	STK-W-037-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
595	STK-W-038-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
596	STK-W-039-01	Inactive	OWNED	103602	1959	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
597	STK-W-040-01	Inactive	OWNED	103612	1955	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
598	STK-W-042-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
599	STK-W-043-01	Inactive	OWNED	103622	1978	LIMS 1st Sample Date	STK	Stockton	STK	Stockton	119	Stockton
600	STK-W-043-02	Inactive	OWNED	103626	1965	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
601	STK-W-044-01	Inactive	OWNED	103637	1957	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
602	STK-W-046-01	Inactive	OWNED	103639	1956	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
603	STK-W-047-01	Inactive	OWNED	103651	1957	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
604	STK-W-049-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
605	STK-W-050-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
606	STK-W-051-01	Inactive	OWNED	103677	1959	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
607	STK-W-052-01	Active	OWNED	103696	1966	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
608	STK-W-053-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
609	STK-W-056-01	Destroyed	OWNED			Data not available	STK	Stockton	STK	Stockton	119	Stockton
610	STK-W-057-01	Inactive	OWNED	103718	1956	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
611	STK-W-059-01	Active	OWNED	103730	1960	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
612	STK-W-060-01	Active	OWNED	103738	1961	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
613	STK-W-061-01	Active	OWNED	103745	1961	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
614	STK-W-062-01	Active	OWNED	126231	1962	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
615	STK-W-063-01	Active	OWNED	103761	1960	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
616	STK-W-066-01	Active	OWNED	103767	1965	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
617	STK-W-066-02	Active	OWNED	103791	1972	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
618	STK-W-067-01	Inactive	OWNED	103794	1967	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
619	STK-W-068-01	Active	OWNED	103801	1967	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
620	STK-W-069-01	Active	OWNED	103814	1967	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
621	STK-W-069-02	Active	OWNED	103817	1967	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
622	STK-W-070-01	Active	OWNED	103822	1968	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
623	STK-W-071-01	Active	OWNED	103829	1969	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
624	STK-W-075-01	Active	OWNED	103838	1973	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
625	STK-W-076-01	Active	OWNED	103847	1974	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
626	STK-W-077-01	Active	OWNED	103851	1974	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
627	STK-W-078-01	Inactive	OWNED	103874	1974	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
628	STK-W-079-01	Active	OWNED	103879	1966	LIMS 1st Sample Date	STK	Stockton	STK	Stockton	119	Stockton
629	STK-W-085-01	Active	OWNED	132715	2006	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
630	STK-W-087-01	Active	OWNED	136510	2015	EIS Install Year	STK	Stockton	STK	Stockton	119	Stockton
631	TAB-W-001-01	Active	OWNED		2019	LIMS 1st Sample Date	TAB	Travis	TAB	Travis	157	Travis
632	TAB-W-002-01	Active	OWNED		2019	LIMS 1st Sample Date	TAB	Travis	TAB	Travis	157	Travis

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
633	TAB-W-003-01	Standby	OWNED		2019	LIMS 1st Sample Date	TAB	Travis	TAB	Travis	157	Travis
634	TAB-W-004-01	Standby	OWNED		2019	LIMS 1st Sample Date	TAB	Travis	TAB	Travis	157	Travis
635	TAB-W-005-01	Standby	OWNED			Data not available	TAB	Travis	TAB	Travis	157	Travis
636	TUL-W-200-01	Inactive	OWNED	105975	1997	LIMS 1st Sample Date	TUL	Tulco	VIS	Visalia	120	Visalia
637	TUL-W-201-01	Inactive	OWNED	104606	1996	LIMS 1st Sample Date	TUL	Tulco	VIS	Visalia	120	Visalia
638	TUL-W-201-02	Active	OWNED	104616	1995	EIS Install Year	TUL	Tulco	VIS	Visalia	120	Visalia
639	UBOD-W-001-01	Inactive	OWNED		1990	LIMS 1st Sample Date	UBOD	Upper Bodfish	KRV	Kern River Valley	136	Bodfish
640	UBOD-W-002-01	Destroyed	OWNED			Data not available	UBOD	Upper Bodfish	KRV	Kern River Valley	136	Bodfish
641	UBOD-W-003-01	Inactive	OWNED		1990	LIMS 1st Sample Date	UBOD	Upper Bodfish	KRV	Kern River Valley	136	Bodfish
642	UBOD-W-104-01	Active	OWNED		2007	EIS Install Year	UBOD	Upper Bodfish	KRV	Kern River Valley	136	Bodfish
643	UBOD-W-104-02	Active	OWNED		2007	EIS Install Year	UBOD	Upper Bodfish	KRV	Kern River Valley	136	Bodfish
644	FW-W-060-01	Active	OWNED	104340	1991	LIMS 1st Sample Date	VIS	Visalia	VIS	Visalia	120	Visalia
645	OR-W-033-01	Inactive	OWNED	104100	1978	LIMS 1st Sample Date	VIS	Visalia	VIS	Visalia	120	Visalia
646	OR-W-033-02	Active	OWNED	104123	1962	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
647	OR-W-042-01	Active	OWNED	104181	1976	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
648	VIS-W-002-03	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
649	VIS-W-003-03	Inactive	OWNED	103894	1934	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
650	VIS-W-004-03	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
651	VIS-W-004-04	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
652	VIS-W-006-02	Inactive	OWNED	103898	1950	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
653	VIS-W-006-03	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
654	VIS-W-007-01	Active	OWNED	103914	1929	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
655	VIS-W-008-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
656	VIS-W-009-01	Inactive	OWNED	103919	1945	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
657	VIS-W-011-02	Active	OWNED	103931	1984	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
658	VIS-W-012-01	Active	OWNED	103935	1949	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
659	VIS-W-013-01	Active	OWNED	103958	1950	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
660	VIS-W-014-01	Active	OWNED	103965	1949	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
661	VIS-W-015-01	Active	OWNED	103973	1951	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
662	VIS-W-016-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
663	VIS-W-016-02	Active	OWNED	103977	2002	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
664	VIS-W-017-01	Inactive	OWNED	103985	1953	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
665	VIS-W-018-01	Inactive	OWNED	103992	1955	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
666	VIS-W-019-01	Active	OWNED	104000	1957	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
667	VIS-W-020-01	Active	OWNED	104006	1958	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
668	VIS-W-021-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
669	VIS-W-022-01	Active	OWNED	104018	1960	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
670	VIS-W-023-01	Active	OWNED	104039	1962	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
671	VIS-W-024-01	Active	OWNED	104046	1961	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
672	VIS-W-025-01	Active	OWNED	104055	1963	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
673	VIS-W-026-01	Active	OWNED	104059	1964	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
674	VIS-W-027-01	Active	OWNED	126232	1965	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
675	VIS-W-028-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
676	VIS-W-029-02	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
677	VIS-W-030-01	Active	OWNED	104080	1967	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
678	VIS-W-031-01	Active	OWNED	104086	1961	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
679	VIS-W-032-01	Active	OWNED	104092	1969	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
680	VIS-W-034-01	Active	OWNED	104131	1970	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
681	VIS-W-036-01	Active	OWNED	104133	1971	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
682	VIS-W-037-01	Active	OWNED	104144	1972	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
683	VIS-W-038-01	Active	OWNED	126230	1973	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
684	VIS-W-039-01	Active	OWNED	104159	1973	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
685	VIS-W-040-01	Active	OWNED	104167	1973	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
686	VIS-W-041-01	Active	OWNED	104173	1974	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
687	VIS-W-042-01	Invalid	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
688	VIS-W-043-01	Inactive	OWNED	104183	1962	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
689	VIS-W-044-01	Inactive	OWNED	104207	1963	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
690	VIS-W-044-02	Inactive	OWNED	104209	1963	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
691	VIS-W-045-01	Active	OWNED	104219	1976	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
692	VIS-W-046-01	Active	OWNED	104224	1977	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
693	VIS-W-047-01	Active	OWNED	104231	1977	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
694	VIS-W-048-01	Active	OWNED	104243	1977	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
695	VIS-W-049-01	Active	OWNED	104246	1978	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
696	VIS-W-050-01	Active	OWNED	104257	1978	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
697	VIS-W-051-01	Active	OWNED	104261	1978	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
698	VIS-W-052-01	Active	OWNED	104267	1978	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
699	VIS-W-053-01	Active	OWNED	104291	1979	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
700	VIS-W-054-01	Inactive	OWNED	104295	1964	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
701	VIS-W-055-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
702	VIS-W-055-02	Active	OWNED	131007	2006	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
703	VIS-W-056-01	Active	OWNED	104311	1987	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
704	VIS-W-057-01	Active	OWNED	104314	1962	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
705	VIS-W-057-02	Active	OWNED	104326	1962	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
706	VIS-W-058-01	Active	OWNED	104331	1979	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
707	VIS-W-061-01	Active	OWNED	104342	1990	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
708	VIS-W-062-01	Active	OWNED	104350	1990	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
709	VIS-W-063-01	Inactive	OWNED	104381	1989	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
710	VIS-W-063-02	Inactive	OWNED	104390	1989	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
711	VIS-W-064-01	Active	OWNED	104397	1992	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
712	VIS-W-065-01	Inactive	OWNED	104408	1960	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
713	VIS-W-066-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
714	VIS-W-067-01	Inactive	OWNED	104410	1978	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
715	VIS-W-068-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
716	VIS-W-069-01	Inactive	OWNED	104429	1989	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
717	VIS-W-070-01	Active	OWNED	104432	1992	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
718	VIS-W-071-01	Inactive	OWNED	104441	1959	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
719	VIS-W-071-02	Inactive	OWNED	121194		Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
720	VIS-W-072-01	Active	OWNED	104446	1993	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
721	VIS-W-073-01	Inactive	OWNED	104465	1969	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
722	VIS-W-074-01	Inactive	OWNED	104477	1969	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
723	VIS-W-075-01	Inactive	OWNED	104479	1971	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
724	VIS-W-076-01	Inactive	OWNED	104485	1971	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
725	VIS-W-077-01	Active	OWNED	104494	1979	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
726	VIS-W-078-01	Active	OWNED	104505	1993	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
727	VIS-W-079-01	Active	OWNED	104511	1994	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
728	VIS-W-080-01	Active	OWNED	104513	1995	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
729	VIS-W-081-01	Active	OWNED	104523	1997	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
730	VIS-W-082-01	Active	OWNED	104530	1999	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
731	VIS-W-083-01	Active	OWNED	105962	2004	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
732	VIS-W-084-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
733	VIS-W-085-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
734	VIS-W-086-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
735	VIS-W-087-01	Inactive	OWNED	104572	1997	LIMS 1st Sample Date	VIS	Visalia	VIS	Visalia	120	Visalia
736	VIS-W-088-01	Destroyed	OWNED			Data not available	VIS	Visalia	VIS	Visalia	120	Visalia
737	VIS-W-089-01	Inactive	OWNED	104584	1996	LIMS 1st Sample Date	VIS	Visalia	VIS	Visalia	120	Visalia
738	VIS-W-090-01	Inactive	OWNED	104589	1996	LIMS 1st Sample Date	VIS	Visalia	VIS	Visalia	120	Visalia
739	VIS-W-091-01	Active	OWNED	104602	1996	LIMS 1st Sample Date	VIS	Visalia	VIS	Visalia	120	Visalia
740	VIS-W-092-01	Inactive	OWNED	105970	2004	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
741	VIS-W-093-01	Active	OWNED	126234	2005	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
742	VIS-W-094-01	Active	OWNED	126620	2006	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
743	VIS-W-095-01	Active	OWNED	132981	2010	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
744	VIS-W-096-01	Inactive	OWNED	126146	2007	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
745	VIS-W-097-01	Active	OWNED	137508	2007	EIS Install Year	VIS	Visalia	VIS	Visalia	120	Visalia
746	WIL-W-002-01	Inactive	OWNED	104638	1921	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
747	WIL-W-004-01	Active	OWNED	104649	1929	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
748	WIL-W-005-01	Standby	OWNED	104656	1950	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
749	WIL-W-006-01	Standby	OWNED	104661	1956	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
750	WIL-W-007-01	Active	OWNED	104665	1964	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
751	WIL-W-008-01	Active	OWNED	104672	1967	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
752	WIL-W-009-01	Active	OWNED	104680	1974	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
753	WIL-W-010-01	Standby	OWNED	104687	1980	EIS Install Year	WIL	Willows	WIL	Willows	121	Willows
754	DOM-W-232-03	Active	MAINTAINED	104770	1991	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
755	CBK-W-001-02	Active	MAINTAINED	105403	2002	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
756	CBK-W-002-01	Active	MAINTAINED	105409	1961	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
757	CBK-W-003-01	Active	MAINTAINED	105418	1973	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
758	CBK-W-004-01	Active	MAINTAINED	105420	1973	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
759	CBK-W-005-01	Active	MAINTAINED	105428	1973	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
760	CBK-W-006-01	Active	MAINTAINED	105433	1972	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
761	CBK-W-007-01	Active	MAINTAINED	105442	1973	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
762	CBK-W-008-01	Active	MAINTAINED	105447	1974	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
763	CBK-W-009-01	Active	MAINTAINED	105471	1977	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
764	CBK-W-013-01	Active	MAINTAINED	105498	1982	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
765	CBK-W-019-01	Active	MAINTAINED	105553	1989	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
766	CBK-W-023-01	Active	MAINTAINED	105581	1992	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
767	CBK-W-024-01	Active	MAINTAINED	105587	1994	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
768	CBK-W-025-01	Active	MAINTAINED	105592	1989	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
769	CBK-W-026-01	Active	MAINTAINED	105599	1991	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
770	CBK-W-027-01	Active	MAINTAINED	105604	1993	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
771	CBK-W-028-01	Active	MAINTAINED	105614	1991	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
772	CBK-W-029-01	Active	MAINTAINED	105635	1992	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
773	CBK-W-030-01	Active	MAINTAINED	105639	1992	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
774	CBK-W-031-01	Active	MAINTAINED	105645	1993	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
775	CBK-W-032-01	Active	MAINTAINED	105651	1998	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
776	CBK-W-033-01	Active	MAINTAINED	105658	1994	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
777	CBK-W-034-01	Active	MAINTAINED	105670	1995	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
778	CBK-W-035-01	Active	MAINTAINED	105676	1995	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
779	CBK-W-039-01	Active	MAINTAINED	105718	1998	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
780	CBK-W-041-01	Active	MAINTAINED	105732	2000	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
781	CBK-W-047-01	Active	MAINTAINED	138180	2009	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
782	CBK-W-050-01	Inactive	MAINTAINED			Data not available	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
783	CBK-W-051-01	Inactive	MAINTAINED			Data not available	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
784	CBK-W-052-01	Active	MAINTAINED	138181	2011	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield

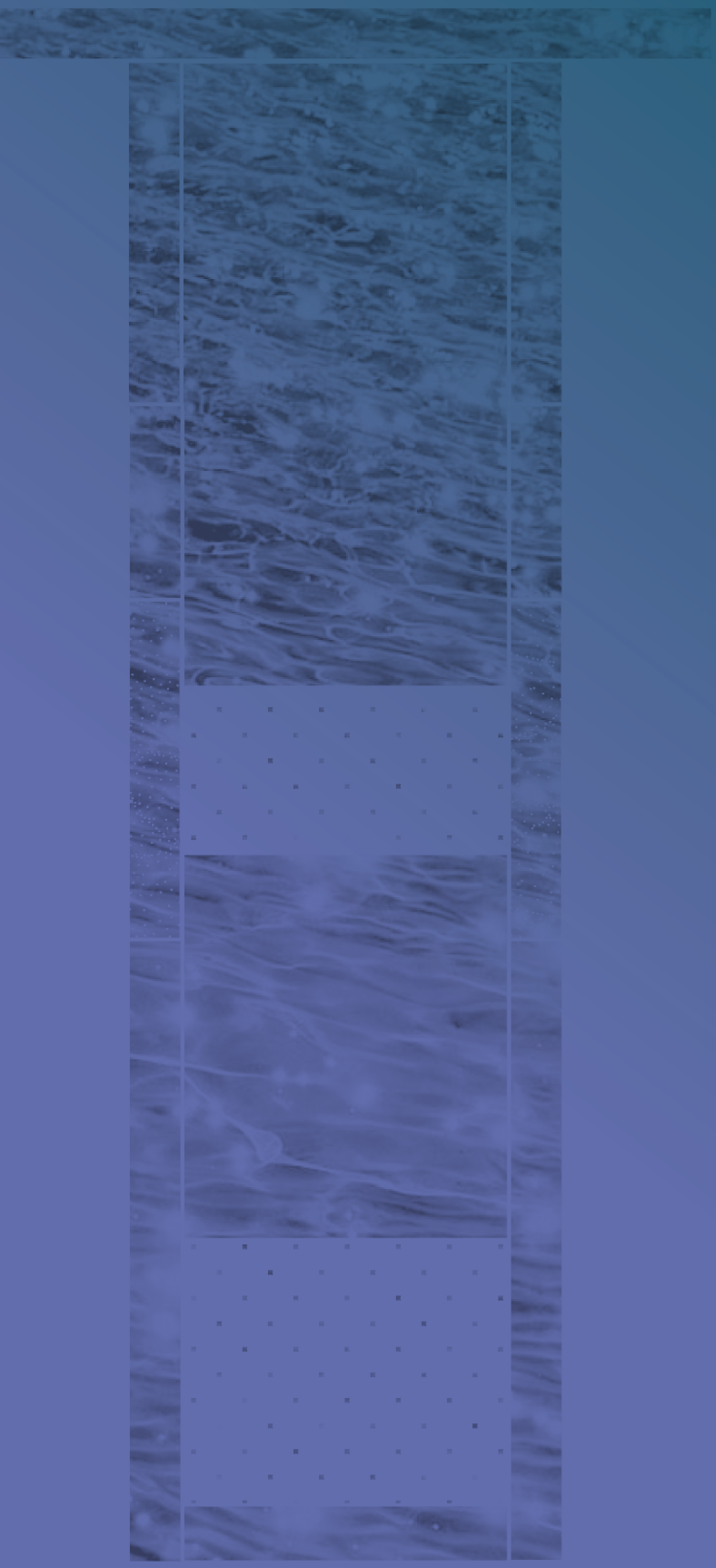
No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
785	CBK-W-053-01	Active	MAINTAINED	138182	2012	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
786	CBK-W-054-01	Active	MAINTAINED	138183	2017	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
787	CBK-W-055-01	Active	MAINTAINED	138184	2012	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
788	CBK-W-058-01	Under Construction	MAINTAINED	138185	2018	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
789	CBK-W-103-01	Active	MAINTAINED	105744	1986	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
790	CBK-W-201-01	Active	MAINTAINED	105753	1987	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
791	CBK-W-202-01	Inactive	MAINTAINED	105756	1988	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
792	CBK-W-204-01	Inactive	MAINTAINED	105772	1993	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
793	CBK-W-205-01	Active	MAINTAINED	105775	1997	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
794	CBK-W-206-01	Inactive	MAINTAINED	105796	1999	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
795	CBK-W-207-01	Active	MAINTAINED	105804	1999	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
796	CBK-W-OLC1-01	Active	MAINTAINED	130754	2005	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
797	CBK-W-OLC2-01	Active	MAINTAINED	130768	2005	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
798	CBK-W-OLC3-01	Active	MAINTAINED		2014	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
799	CBK-W-010-02	Active	MAINTAINED	105476	1987	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
800	CBK-W-011-01	Active	MAINTAINED	105484	1980	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
801	CBK-W-012-01	Active	MAINTAINED	105492	1981	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
802	CBK-W-014-01	Active	MAINTAINED	105505	1977	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
803	CBK-W-015-01	Active	MAINTAINED	105508	1984	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
804	CBK-W-016-01	Active	MAINTAINED	105515	1987	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
805	CBK-W-017-01	Active	MAINTAINED	105527	1985	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
806	CBK-W-018-01	Standby	MAINTAINED	105533	1987	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
807	CBK-W-020-01	Active	MAINTAINED	105557	1987	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
808	CBK-W-021-01	Active	MAINTAINED	105568	1986	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
809	CBK-W-022-01	Active	MAINTAINED	105574	1987	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
810	CBK-W-036-01	Active	MAINTAINED	105679	1997	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
811	CBK-W-037-01	Active	MAINTAINED	105687	1998	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
812	CBK-W-038-01	Active	MAINTAINED	105694	1998	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
813	CBK-W-040-01	Inactive	MAINTAINED		1999	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
814	CBK-W-043-01	Active	MAINTAINED	126130	2007	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
815	CBK-W-045-01	Active	MAINTAINED	126138	2005	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
816	CBK-W-046-01	Active	MAINTAINED	126198	2005	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
817	CBK-W-049-01	Active	MAINTAINED	130990	2007	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
818	CBK-W-101-01	Active	MAINTAINED	105735	1981	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
819	CBK-W-203-01	Active	MAINTAINED	105764	1997	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
820	CBK-W-208-01	Standby	MAINTAINED	106284	2000	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
821	CBK-W-210-01	Active	MAINTAINED	121209	2003	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
822	CBK-W-211-01	Standby	MAINTAINED	121210	2003	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
823	CBK-W-212-01	Active	MAINTAINED	126124	2005	EIS Install Year	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
824	CBK-W-001-01	Destroyed	MAINTAINED		1978	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
825	CBK-W-042-01	Destroyed	MAINTAINED		2002	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
826	CBK-W-044-01	Abandoned	MAINTAINED			Data not available	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
827	CBK-W-102-01	Destroyed	MAINTAINED		1981	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
828	CBK-W-209-01	Destroyed	MAINTAINED		2003	LIMS 1st Sample Date	CBK	City of Bakersfield	BK	Bakersfield	250	City of Bakersfield
829	TCWD-W-001-01	No Longer Operated	MAINTAINED		2005	LIMS 1st Sample Date						
830	HAW-W-004-01	Inactive	MAINTAINED	104698	1941	EIS Install Year	HAW	Hawthorne	RDOM	Rancho Dominguez	127	Hawthorne
831	HAW-W-008-01	Inactive	MAINTAINED	104717	1948	EIS Install Year	HAW	Hawthorne	RDOM	Rancho Dominguez	127	Hawthorne
832	HAW-W-012-01	Inactive	MAINTAINED	104721	1992	LIMS 1st Sample Date	HAW	Hawthorne	RDOM	Rancho Dominguez	127	Hawthorne
833	HAW-W-013-01	Active	MAINTAINED	104729	1992	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce
834	CC-W-004-01	Active	MAINTAINED	132908	1985	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce
835	CC-W-006-01	Inactive	MAINTAINED	105815	1985	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce

No.	SPC	SPCStatus (March 2021)	Ownership Status	Maximo Asset Number	Intall Year	Install Year Source	Water System Code	Water System Name	Operating District Code	Operating District Name	GL	Financial Department
836	CC-W-007-01	Active	MAINTAINED	105825	1986	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce
837	CC-W-001-01	Destroyed	MAINTAINED		2000	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce
838	CC-W-003-01	Destroyed	MAINTAINED		1985	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce
839	CC-W-003-02	Destroyed	MAINTAINED		1985	LIMS 1st Sample Date	CC	City of Commerce	ELA	East Los Angeles	251	City of Commerce
840	MESA-W-001-01	No Longer Operated	MAINTAINED	106480	1998	LIMS 1st Sample Date	MESA	Mountain Mesa	KRV	Kern River Valley	282	Mountain Mesa
841	MESA-W-003-01	No Longer Operated	MAINTAINED	106485	2002	LIMS 1st Sample Date	MESA	Mountain Mesa	KRV	Kern River Valley	282	Mountain Mesa
842	MESA-W-004-01	No Longer Operated	MAINTAINED	106492	2000	LIMS 1st Sample Date	MESA	Mountain Mesa	KRV	Kern River Valley	282	Mountain Mesa
843	RIVK-W-001-01	Active	MAINTAINED	138212	2006	LIMS 1st Sample Date	RIVK	River Kern	KRV	Kern River Valley	279	River Kern
844	RIVK-W-003-01	Active	MAINTAINED	138213	1997	LIMS 1st Sample Date	RIVK	River Kern	KRV	Kern River Valley	279	River Kern
845	PREM-W-002-01	Active	MAINTAINED		2019	LIMS 1st Sample Date	PREM	Preserve at Millerton	SEL	Selma	158	Madera Preserve
846	PREM-W-014-01	Active	MAINTAINED		2019	LIMS 1st Sample Date	PREM	Preserve at Millerton	SEL	Selma	158	Madera Preserve
847	PREM-W-015-01	Inactive	MAINTAINED				PREM	Preserve at Millerton	SEL	Selma	158	Madera Preserve
848	PREM-W-017-01	Active	MAINTAINED		2019	LIMS 1st Sample Date	PREM	Preserve at Millerton	SEL	Selma	158	Madera Preserve
849	TESV-W-004-02	Inactive	MAINTAINED			Data not available	TESV	Tesoro Viejo	SEL	Selma	217	Tesoro Viejo
850	TESV-W-005-01	Inactive	MAINTAINED			Data not available	TESV	Tesoro Viejo	SEL	Selma	217	Tesoro Viejo
851	FE-W-001-01	Active	MAINTAINED	105929	1990	LIMS 1st Sample Date	FE	Foothill Estates	SLN	Salinas	296	Foothill Estates
852	FE-W-002-01	Active	MAINTAINED	105938	1990	LIMS 1st Sample Date	FE	Foothill Estates	SLN	Salinas	296	Foothill Estates
853	CH-W-S-01	Active	LEASED		1995	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
854	CH-W-S-02	Active	LEASED		1996	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
855	CH-W-S-03	Active	LEASED		2013	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
856	CH-W-S-04	Active	LEASED		2013	LIMS 1st Sample Date	CH	Chico	CH	Chico	104	Chico
857	DOM-W-272-01	Active	LEASED	104779	1993	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
858	DOM-W-277-01	Active	LEASED	104809	1977	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
859	DOM-W-290-01	Active	LEASED	104820	1991	EIS Install Year	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
860	DOM-W-297-01	Active	LEASED	105989	1997	LIMS 1st Sample Date	DOM	Dominguez	RDOM	Rancho Dominguez	128	Dominguez
861	LIV-W-015-01	Active	LEASED	102109	1958	EIS Install Year	LIV	Livermore	LIV	Livermore	110	Livermore
862	SLNH-W-059-01	Inactive	LEASED	102984	1974	EIS Install Year	SLNH	Salinas Hills	SLN	Salinas	114	Salinas

Appendix B

Water Wells Asset Plan

ASSET PLAN



Water Wells

CALIFORNIA WATER SERVICE

Table of Contents

1 Introduction.....1
- 1.1 Asset Class Definition.....1
- 1.2 Asset Standards.....2
- 1.3 Asset Types.....2
- 1.4 Asset Class Purpose.....3
- 1.5 Governance.....3
- 1.6 Ownership.....3
- 1.7 Asset Inventory.....3
- 1.8 Hierarchy.....3
- 1.9 Parameters.....3
- 1.10 Master of Records/Data Systems.....4

2 Level of Service.....4
- 2.1 Regulatory Level of Service Expectations.....4
- 2.2 Customer Level of Service Expectations.....4
- 2.3 Environmental Sustainability and Water Loss Control and Management.....4

3 Asset Life Cycle.....5
- 3.1 Status.....5
- 3.2 Asset Commissioning.....5
  - 3.2.1 Documentation.....5
- 3.3 Acceptance.....5
- 3.4 Asset Decommissioning.....5

4 Failure Modes.....5
- 4.1 Condition/Physical Mortality Failure.....5
- 4.2 Capacity Failure.....6
- 4.3 Level of Service Failure.....6
- 4.4 Financial Efficiency Failure.....6

5 Business Risk Exposure.....7
- 5.1 Likelihood of Failure (LoF).....7
- 5.2 Consequence of Failure (CoF).....8
- 5.3 BRE Matrix.....8

6 Asset Sustainment and Replacement.....9
- 6.1 Operational and Safety Plan.....9
- 6.2 Preventive Maintenance.....9
- 6.3 Predictive Maintenance.....10
- 6.4 Corrective Maintenance.....10
- 6.5 Emergency Maintenance.....10
- 6.6 Replacement Strategy.....11
  - 6.6.1 Condition/Physical Mortality Replacement Strategy.....11
  - 6.6.2 Capacity Replacement Strategy.....11
  - 6.6.3 Level of Service Replacement Strategy.....11
  - 6.6.4 Financial Efficiency Replacement Strategy.....11

7 Continuous Improvement.....11

Water Wells

1 Introduction

Cal Water is developing comprehensive asset plans to support continuous improvement, communication with stakeholders, and enhanced documentation. The purpose of the asset plans is to centralize existing practices with enhanced methodologies into a structured, defined approach. Cal Water is developing formalized asset plans to strengthen its asset life-cycle processes and to have the documents serve as a guide for identifying and prioritizing necessary improvements. The asset plans will guide the overall development and maturation of Cal Water's asset management program.

This asset plan covers the following information:

- Definition and standards of water wells
- Cal Water's responsibility for managing the assets
- Level of service based on regulatory and customer expectations
- Life cycle process of water wells
- Modes of asset failure and methods to monitor and inspect water wells to prevent failure
- Business risk exposure
- Methods of asset sustainment, including maintenance and replacement strategies
- Continuous improvement

1.1 Asset Class Definition

At Cal Water, a water well is defined as a below-ground open vertical structure that was constructed to provide access to an aquifer to obtain groundwater for economic use.

Operational production equipment such as pump equipment, electrical equipment, piping, meter, valves, and treatment systems are not included in this asset management plan.

The main components of a water well include the following:

- Well casing
- Water intake section(s)
- Pump pedestal
- Annular material
- Sanitary seal

The well construction techniques include drilling methods, such as cable tool drilling and rotary drilling.

Well Casing

Blank well casing or surface casing extends from surface to the first intake section serves three primary functions:

- Support to the formation wall and to prevent unconsolidated material from collapsing into the borehole
- Provide proper housing to the pumping equipment
- Provide part of the sanitary seal as required by DWR and local county standards

In areas where multiple aquifers are penetrated by the well, blank well casing is placed between water intake sections to allow separation of aquifers when needed and to better protect the groundwater from mixing between zones of good and lower quality groundwater.

Water Intake Section

The water intake section may be perforated or an open borehole, or in gravel envelope construction a gravel material (filter pack or formation stabilizer) is placed between the water intake section and drilled formation. The purpose of the perforated intake with gravel envelope is to keep the sand or gravel out of the well while maintaining the stability of the aquifer or water bearing formation. The well can be perforated continuously along the bore or at specific depth intervals. The latter is more common where a well taps multiple aquifer zones. Cal Water also operates naturally developed boreholes (e.g., Bakersfield, Visalia, Selma, Los Angeles, Salinas).

Concrete and Pump Pedestal

A concrete pedestal is constructed at ground surface around the top of the well casing designed to provide access to the well and shall protect against the entrance of the surface waters or foreign matter. The concrete pedestal, also referred to as a pump pedestal, provides a solid landing for the pump head. Contacts between the pedestal, the sanitary seal, and pump head shall be water tight.

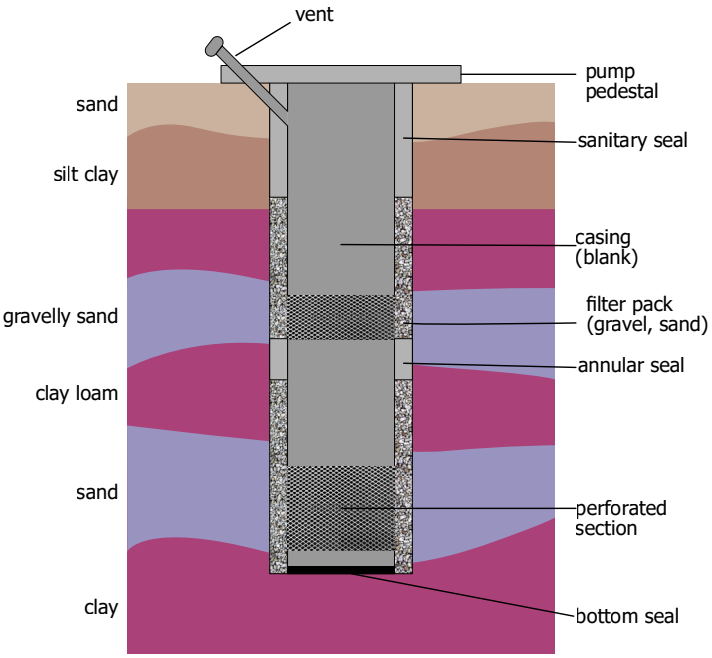
Annular Space Material

Water wells are constructed with formation stabilizer or filter pack materials (e.g., graded or gradational sands or silica beads) that fill the annular space between the borehole wall and the well casing/screen.

Sanitary Seal

The uppermost section of the annular space is normally sealed (generally called a sanitary seal) with cement grout to ensure no contamination can enter the well from the surface. According to the California Department of Water Resources DWR standard (Bulletin 74-81 and 74-90), the sanitary seal should be 50 feet deep from the surface of the well.

Typical components for a water well are shown in the figure below.



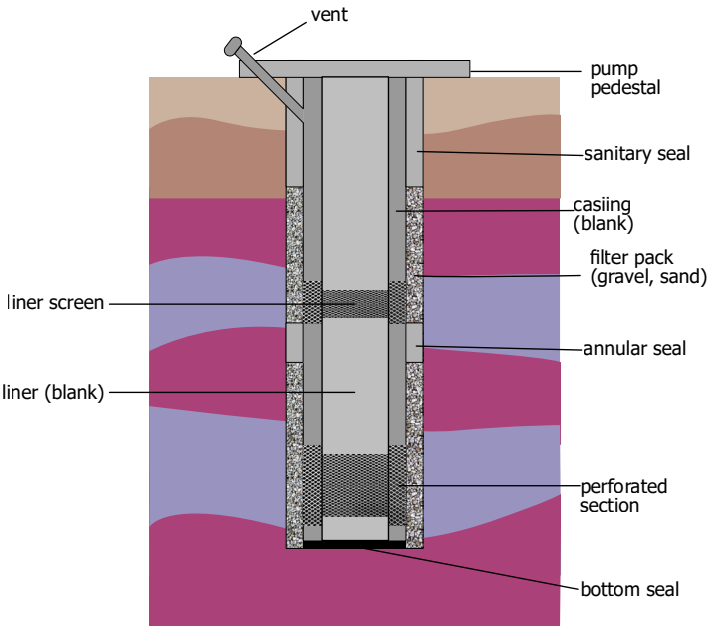
Typical components of a water well

Water Well Liner

In the event that a well is damaged or degraded by age (e.g., natural developed section unstable as a result of hydraulic change or other stabilization challenges), a liner may be installed to extend the life of the well. A liner is a well casing and screened section (i.e., stainless steel wire wrap) with a smaller diameter than the original well casing. It is inserted into the well as an inner casing using two options: (1) complete relining where the liner extends from the top of the casing to the bottom of the well, and (2) partial liners which are placed within a portion of the casing. Liners can be blank steel or screen and can consist of a pre-packed well screen with graded sand or silica bead media.

A liner can be effective to deal with a structural problem in a well and might add many years to its life. However, in some cases, it can negatively affect the pumping capacity due to a reduced diameter and added well losses. In some cases, the smaller diameter makes it difficult to reinstall the pump that was previously used in the well.

A typical well liner is shown in the figure below.



Typical complete relined water well

1.2 Asset Standards

Following is a list of standards for water wells:

- California DWR Bulletin 74-81 and 74-90 Well Standards
- AWWA A100-15 Water Wells
- AWWA C654-13 Standard for Disinfection of Wells
- AWWA M21, Fourth Edition (2014) Groundwater
- Additional applicable county water well standards

1.3 Asset Types

Water wells operated by Cal Water can be generally categorized into following two types:

Gravel Packed/Enveloped Wells

Gravel packed wells have a borehole which is larger in diameter than the well casing. The annular space between the well casing and borehole is filled with filter pack made of gravel or graded sand.

Naturally Developed Wells

Naturally developed wells have casing directly in contact with the surrounding borehole and water bearing strata.

1.4 Asset Class Purpose

The purpose of water wells is to produce groundwater from basins where Cal Water has operational rights. The water is pumped to the surface using a pump before it is chlorinated and distributed into the distribution system. In some cases, water treatment is also carried out to meet water quality standards. Cal Water operates over 700 water wells.

1.5 Governance

The responsibility of owning and managing the wells at Cal Water is defined as follows:

Responsibility	Responsible Department
Design	Engineering
Procurement	Engineering
Operation	Operations
Engineering Inspection	Asset Management
Maintenance	Asset Management
Environmental Compliance	Environmental Affairs
Risk Assessment	Asset Management

Governance of the water wells is under the jurisdiction of the California Department of Water Resources (DWR) which establishes regulations for the minimum set of requirements for water supply wells. County, city, and local jurisdictions, such as groundwater sustainability agencies (GSAs) formed under the Sustainable Groundwater Management Act (SGMA), may also set standards for water supply wells and are to be evaluated on a district by district basis.

1.6 Ownership

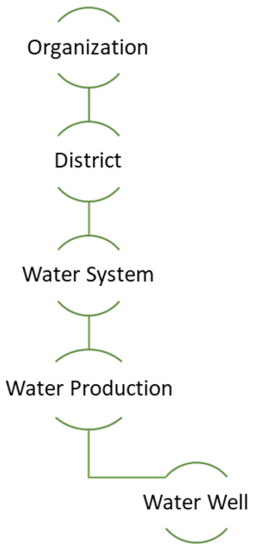
Financial and operational responsibility falls on Operations. Maintenance is a shared responsibility between Operations and Asset Management.

1.7 Asset Inventory

Information about the current well inventory can be found in the Asset Health Report.

1.8 Hierarchy

The hierarchy for the organization of the water well is presented in the figure to the right. The water wells are generally organized by location (e.g., District, System) and organized under Water Production.



1.9 Parameters

The following table contains the attributes for the water well.

Element	Description	Units
Asset ID	Maximo asset ID	
GIS ID	GIS asset ID	
Well Name	Well name	
State Well Number	State well number	
Location Description	Water well physical location	
X-Coordinate	X-coordinates from GIS	
Y-Coordinate	Y-coordinates from GIS	
Sample Point Code	Sample point code	
Installed Date	Date the water well was commissioned	
Status	Maximo status (refer section 3.1.1)	
DWR Status	DWR status (refer section 3.1.2)	
Construction Type	Type of construction	
Borehole Diameter	Borehole diameter	inch
Borehole Depth	Borehole depth	ft
Casing Size	Casing diameter	inch
Casing Length	Casing length	ft
Conductor Casing Length	Conductor casing length	ft
Sanitary Seal Depth	Sanitary seal depth	ft
Blank Casing Material	Casing material	
Perforated Casing Material	Perforated casing material	
Perforation Type	Type of perforation	
Perforated from 1	Perforated section 1 starts from	ft
Perforated to 1	Perforated section 1 ends to	ft
Perforated from 2	Perforated section 2 starts from	ft
Perforated to 2	Perforated section 2 ends to	ft
Perforated from 3	Perforated section 3 starts from	ft
Perforated to 3	Perforated section 3 ends to	ft
Liner	Is the well retrofitted with a liner?	(Yes/No)

In case a liner is installed in the well, the following additional attributes are required:

Element	Description	Units
Install Date	Liner installed date	
Liner Type	Liner type (full or partial)	
Liner Diameter	Liner diameter	inch
Blank Liner Material	Liner material	
Liner Length	Liner length	ft
Perforated Liner Material	Perforated liner material	
Perforation Type	Perforation type	
Placed from 1	Liner from	ft
Placed to 1	Liner to	ft

1.10 Master of Records/Data Systems

The master of records for water wells will be Maximo and GIS. In addition, other systems including Engineering Information System, S&PI and Capital files and folders may also contain historical records. The goal is to transfer any data from other systems into Maximo to strengthen the data source.

Water wells are to be identified in Maximo using the following schema:

System-Station-Well Number

(####-###-W#)

System	Water system designation abbreviation as given in Maximo.
Station	Three-digit station number. If the station number is less than three digits, the number shall be preceded with 1 or 2 zeros as appropriate.
Water Well Number	The well number is assigned chronologically as the well is installed at the station. If a well is decommissioned, the well number is to be retired.
Example	BK-176-W1 or ELA-012-W2

2 Level of Service

The key concept of asset management is to balance the level of service, cost to provide the service, and risk. Level of service sets the commitments the company intends to provide. Level of service is dictated from a combination and balance between regulatory and customer expectations.

2.1 Regulatory Level of Service Expectations

The following regulatory expectations have been established for water wells:

- Minimum requirements as set by the regulators to maintain a water well status will be met
- Wells shall be operated to maintain an uninterrupted water supply based on the potable water quality standards
- Samples will be routinely collected and tested following DWR reporting standards

2.2 Customer Level of Service Expectations

The following customer expectations have been established for water wells:

- Wells shall comply with all regulatory expectations
- Wells shall provide affordable, safe and reliable service
- Wells shall be operated in a way to ensure high-quality water
- Noise and disturbance to the neighbors shall be minimal
- The aesthetic appearance of well sites shall not unreasonably visually disrupt the community
- The design of the water wells shall meet current and future needs of the districts by employing the best methods, materials, and practices
- Effort will be made to increase the efficiency, usability, and protection of the groundwater basin and basin management (SGMA)

2.3 Environmental Sustainability and Water Loss Control and Management

Unlike other assets, wells as a source of water have no direct role in water loss related environmental risk. Some assets, like hydrants, are connected to disinfected water, which can adversely affect the ecosystem of local water bodies if a spill occurs. Well water is generally untreated, so a spill does not present as high an environmental risk.

Wells also do not play a major role in water loss. However, the management approach should promote responsible usage of the water source.

3 Asset Life Cycle

The following section gives an overview for the life-cycle procedures for wells.

3.1 Status

3.1.1 Maximo Status

Each water well will be assigned a status. The statuses for water well are outlined in the list below. Note that the same statuses may have different meanings for other asset classes.

Status	Description
Active	Water well is operational
Inactive	Water well is out of service for longer than two weeks for operational, maintenance, or regulatory reasons
Decommissioned	Water well is still in place but is severed (separated or disconnected) from the water system
Destroyed	Water well has been destroyed in-place per DWR and local jurisdiction standards
Construction	Water well is currently under installation or is offline for a construction project
No Contract	Water well is no longer operated by Cal Water

Preventive maintenance schedules will be stopped for Destroyed or No Contract status wells.

3.1.2 DWR Status

In addition to the statuses above, each water well will be assigned a status based on the guidelines provided by DWR as a regulatory requirement. The statuses for water wells are outlined in the list below.

DWR Status	Description
Active	a source that is approved by the California Department of Public Health (DPH) and meets all or is treated to meet all drinking water standards
Standby	a well not routinely operated but capable of being made an operating well with a minimum amount of effort
Inactive	acknowledged by the Division of Drinking Water (DDW) as a source that is out of service, for repair or treatment construction, for a time period of less than one year. If the planned improvements exceed the one-year time period, DDW may require updates to maintain inactive status
Abandoned	defined by California Department of Water Resources (DWR), and acknowledged by DDW, as permanently inactive if it has not been used for one year, unless the owner demonstrates intention to use the well again
Destroyed	a well filled with a sealing material (concrete or bentonite clay) and restored to, as nearly as possible, subsurface conditions that existed before the well was constructed, taking into account changes, if any, that have occurred since the time of construction

3.2 Asset Commissioning

3.2.1 Documentation

Many documents are developed during the installation of a water well. Not all documents are required to be part of the asset file. The list below are the minimum documents required to be retained in Maximo with the commissioning work order.

- As-built plans
- Inspection reports
- Subsurface reports and geophysical surveys, loggings, and reports
- Well drilling (DWR) report
- Well development report
- Performance testing report
- Final inspection video and casing deviation survey
- Completed Asset Equipment Profile (AEP) form

3.3 Acceptance

A satisfactory inspection, testing, and data review of the water well along with an inventory of the required documents listed in Section 3.2.1 will demarcate the acceptance of the well into the asset inventory.

3.4 Asset Decommissioning

Water wells that reach the end of their lives shall be decommissioned and destroyed in accordance with DWR and local county standards. The well must be filled with a sealing material (concrete) and restored, as closely as possible, to subsurface conditions that existed before the well was constructed, taking into account any changes that may have occurred since the time of construction.

4 Failure Modes

Failure modes are causes of failure or possible ways that an asset can fail. The four identified failure modes are condition/physical mortality, capacity, level of service, and financial efficiency.

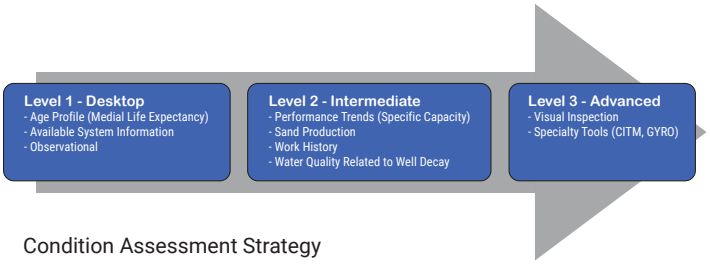
4.1 Condition/Physical Mortality Failure

A water well fails by mode of physical mortality if the physical condition of the asset causes it to no longer be able to perform its primary function. Such failures may include degradation of the well structure that result from deteriorating or damaged materials that comprise the physical well. Natural disturbances unrelated to structural damage, including land subsidence and earthquake, may cause failed casing.

Physical condition failure may include but are not limited to the following:

- Blank section failure that may result from age and/or water corrosion or from aggressive mechanical and/or chemical treatment to a weak casing or through a bend or "dog-legged" casing section. Certain constituents that occur in groundwater will cause or exacerbate the corrosion of the well casing and screen steel surfaces.
- Perforated section(s) failure that may result from age and/or water corrosion, sand, high entrance velocity, aggressive mechanical and/or chemical treatment to a weak casing, plugging, or overgrowth of materials on the screen. Additionally, lack of maintenance may increase the entrance velocity of the water, resulting in erosion of the perforated sections.
- Failure that may result from the collapse of the formation in either the blank or perforated section or both. As sand is mined from behind the gravel envelope, the stability of the well can be compromised and capacity can be altered. In naturally developed wells, a well liner may be installed with a formation stabilizer to mitigate failure and return the well to operation.

To improve age-based assessment and optimize the use of resources, Cal Water implemented a multi-level condition assessment strategy as shown in the below. With minimum resources, a Level 1 (desktop analysis) assessment is used to assess all wells in the inventory. At Level 2 (Intermediate), historical records such as performance trends, repair work, and water quality parameters related to well material decay are used to supplement the assessment. At Level 3 (Advanced), field inspection and specialty tools (e.g., CITM, GYRO) are utilized to improve the confidence level of the well physical mortality assessment.



Condition Assessment Strategy

4.2 Capacity Failure

A water well fails by mode of capacity if it can no longer produce the desired flow rate. The indications of a diminishing water production capacity may include but are not limited to the following:

- Decline in static water level as part of a declining basin water level
- Decline in pumping water level
- Decline in specific capacity (pumping rate divided by drawdown)
- Reductions in well efficiency

Note that well production capacity may intentionally be reduced to mitigate over-production based on declining water levels and/or water quality issues. These cases do not indicate a capacity failure.

4.3 Level of Service Failure

The Levels of Service (LOS) agreement is Cal Water's commitment to maintain its water well infrastructure to a minimum standard that meets regulatory and customer expectations. Cal Water wells serve as a source of public supply water for potable use, so the required level of service is 100 percent of the time, with no interruptions or outages. Continual and uninterrupted service relies on the resiliency of the well structure and availability of other wells in the system to account for individual well failures.

Cal Water monitors for contaminants that would cause well failure due to water quality not meeting regulatory requirements. In these failure cases, the contaminant treatment would not be economical.

4.4 Financial Efficiency Failure

When a water well reaches a point where the cost to operate and maintain the well exceeds reasonable operational costs, the well has failed in financial efficiency. For example, a well may fail due to financial efficiency when the cost of other sources of water (e.g., imported water) is less than the cost to operate and maintain the well. Financial efficiency attributes that are monitored in Cal Water supply wells include the following:

- **Cost of water outage** - This is a measure of criticality and level of service of the well. The cost of purchased water or water delivered from an alternative source is an indication of the economic importance of the well.
- **Cost of treatment** - If the well does not produce potable-quality water, the cost of wellhead treatment (including sand separators) or blending are part of the overall operational cost of the water source.
- **Operating cost savings** - Financial benefits can be realized by proactive operational activities. Such strategic actions as preventative maintenance and monitoring facilitate significant cost savings over the life of the well.
- **Structural modification cost** - Extended operational life of a well or augmentation of the asset (improved water quality, reduction of sanding, etc.) are accomplished through structural modification. Structural modifications include activities such as construction of well liner, packer, and annular seal. As of now, the California Public Utility Commission does not recognize well redevelopment or rehabilitation work as a benefit to Cal Water customers.

4.4 Financial Efficiency Failure (cont.)

- **Replacement cost** - The costs of well replacement are dynamic and ever-changing, with continual fluctuations in the cost of materials, labor, and equipment that are associated with the installation or a replacement well. Replacement wells eventually must be located on new land parcels, so real estate acquisition costs must also be included when applicable. New land parcel costs are daunting and can be prohibitive in some areas, which may designate rehabilitation and reconstruction as being the best pragmatic alternative. In addition, development of a new well site will also include costs to related to site improvements in accordance with local ordinances, pipeline connections, electrical connections, and water discharge.
- **Life-cycle cost -** The cumulative costs of a well during its operational life are components of its life-cycle cost. These cost elements include the following: well installation, pumping equipment, well-cleaning frequency, monitoring or other labor costs, electrical cost (as a function of well efficiency), well longevity and replacement cost (including land costs), and projected well rehabilitation cost.

In some cases, the cost of imported water may be lower than water from well production. A decision may be made to import water rather than operate wells, provided the water production level meets regulations.

5 Business Risk Exposure

An analysis is completed for each water well to assess its Business Risk Exposure (BRE) to represent the level of risk the water well presents to Cal Water. A 5x5 matrix is used to determine its BRE with the lowest score being 1 and the highest being 25. In general, Cal Water aims to keep the risk below a score of 15. The BRE score is related to condition but is a separate parameter.

The following sections describe the methods used to establish the inputs for the BRE Matrix.

5.1 Likelihood of Failure

Likelihood of Failure (LoF) indicates the probability that the asset fails to function at the established levels of service. Physical condition is one of the best indicators for estimation of an asset's likelihood of failure. The following table outlines the criteria is developed to calculate LoF based on different modes of failures.

Score	Description
1	Like-new well with appropriate construction, alignment, water quality, and efficiency.
2	Generally good condition well with appropriate construction, alignment, water quality, and efficiency, may have the following: • Age between 30%-50% of median useful life • Water quality incompatible with the construction materials • Shows signs of excessive sand at some point of operation • Specific capacity decline without static water level decline
3	Appropriate construction, may have at least one of the following: • Age between 50%-80% of median useful life • Alignment issue (dog-leg or deviation affecting pump setting or tool descent) • Water quality incompatible with the construction materials • Shows signs of excessive sand at some point of operation • Has casing damage, blank or perforated casing holes/deterioration • Results of diagnostic tools (e.g., CITM, static and dynamic testing)
4	Well requires mitigation within 5 years for a combination of the following issues: • Age between 80%-100% of median useful life • Condition – pitting, hole, or perforation enlargement(s) • Water quality issues from contaminants for treatment • Shows excessive sand at some point of operation in naturally developed wells • Shows excessive sand at some point of operation in gravel pack wells that can be mitigated • Has repairable casing damage, blank or perforated casing holes/deterioration • Results of diagnostic tools (e.g., CITM, static and dynamic testing) • Candidate for well liner
5	Well needs replacement within 5 years due to a combination of the following issues: • Age over median useful life • Condition – extreme pitting, hole, or perforation enlargement(s) • Water quality issues that are not economical for treatment • Shows excessive sand at some point of operation in naturally developed wells • Shows excessive sand at some point of operation in gravel pack wells (that can be mitigated) • Has non-repairable casing damage, blank or perforated casing holes/deterioration • Results of diagnostic tools (e.g., CITM, static and dynamic testing) • Not a candidate for well liner

5.2 Consequence of Failure

The Consequence of Failure (CoF) is the impact due to the failure of the water well. The CoF criteria that will be used to determine the score of each water well will be based on the following criteria.

Station Criticality

The station criticality is based on the 2018 GRC Critical Facilities scoring guide. The criticality of each station is based on the availability of other water sources and on whether the station would be necessary in an emergency situation. The rating scores are shown in the following table.

Station Criticality Criteria	Critical Facility Ranking	Rating Score
Significant availability of water from other sources.	1	1
Adequate availability of water from other sources. Problems shall be addressed/repairs performed ASAP	2	
Stations with limited availability of water from other sources. Problems shall be addressed/repairs performed immediately.	3	2
Extremely critical. Facilities shall be maintained to minimize failures. Failure mitigation plans required. Not needed during emergency.	4	3
Stations with limited availability of water from other sources. Problems shall be addressed/repairs performed immediately. Needed during emergency.	6	4
Extremely critical. Facilities shall be maintained to minimize failures. Failure mitigation plans required. Needed during emergency.	8	5

Fire Hazards

This criterion considers the exposure of fire hazards around the location/service area of the water well. Cal Fire determines the severity of fire hazards by considering how often an area will burn and what is the expected fire behavior. Fire Hazard Severity Zones (FHSZ) is classified by Moderate, High, and Very High.

Fire Hazard Severity Zones (FHSZ) Class	Rating Score
No Designation	0
Moderate	3
High	4
Very High	5

Difficulty to Repair or Replace

This criterion considers the level of difficulties for repair or replacement work for this particular well. Examples could include dog-leg or deviation affecting pump setting or tool descent, pitting, hole or perforation enlargement(s), etc. Repair difficulties may cause a prolonged repair duration, increased financial impact, and increased impact of failure.

The example of rating scores for this criterion is shown on the following table.

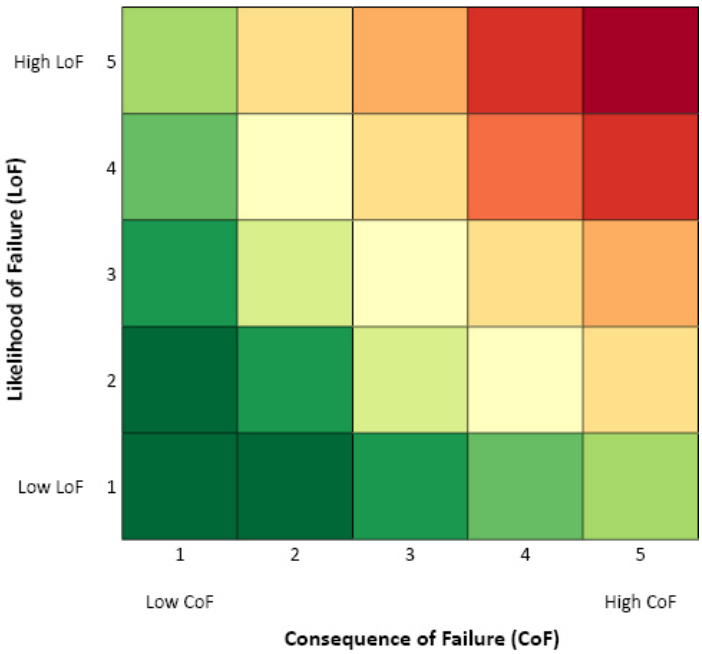
Difficulty to Repair	Rating Score
No	0
Moderate Difficulty	2
High Difficulty	4

The final CoF score is then calculated by applying weights. The following table shows the example of weight distribution using the criteria described above.

CoF Criteria	Weight
Station Criticality	50%
Fire Hazards	30%
Difficulty to Repair	20%
Total	**100%**

5.3 BRE Matrix

Once the CoF and LoF have been established for a water well, they are multiplied together to determine the overall risk rating. The 5x5 matrix below is a visualization of the risk ratings and the resulting actions. In general, Cal Water's risk rating goal is to have all water wells below a risk rating of 15.



6 Asset Sustainment and Replacement

Asset sustainment outlines the operation and maintenance approaches to ensure an asset remains functional and maintains alignment with the level of service, safety, and environmental protection throughout its life-cycle. Sustainment strategies provide the recommended course of action for the preservation of the water wells. They characterize the life-cycle behavior of the asset (e.g., how it will decay, how long it will last, necessary refurbishment during the life of the asset, when refurbishment is needed, how much refurbishment will cost).

By applying asset sustainment strategies, Cal Water will be able to proactively manage its assets and be able to predict which assets are nearing the end of their expected lives. This leads to a more proactive plan for replacement of high-risk assets to prevent failure. Reacting to a high-risk asset failure typically results in the highest expense.

6.1 Operational and Safety Plan

Water Level Monitoring

Since 2009, DWR has established the California Statewide Groundwater Elevation Monitoring (CASGEM) program to track seasonal and long-term groundwater elevation trends in groundwater basins statewide. As part of this program, CASGEM has developed guidelines for well monitoring plans that covers monitoring sites and timing, field methods, and data reporting standards. Key components of monitoring plans include the following:

- Monitoring sites and timing
  - Well network design
  - Selected wells (current)
  - Planned wells (future)
  - Frequency to capture seasonal highs and lows
  - Map and shapefile of monitoring area and well locations
- Methods for measuring
  - Reference point
  - Static water level
  - Depth to water
  - Standardized form for data collection
- Data Reporting

Water Quality Testing

Section 15 of Bulletin 74-81 requires water from all community water supply wells to be sampled and tested immediately following development and disinfection. Rules and regulations governing the type of testing are covered in Chapter 15 Domestic Water Quality and Monitoring of Title 22 California Administrative Code. Water quality monitoring shall be performed by a laboratory certified by the California Department of Health Services. In addition to water quality testing as part of well commissioning, Cal Water also performs water quality tests as part of the ongoing water quality compliance program. The results of water quality testing are summarized in the annual water quality report developed for each district and system in the Cal Water service area.

Occupational Health and Safety

All activities should comply with Occupational Safety and Health Administration (OSHA) regulations and all in-house standard operating procedures. Safety plans and programs relevant to well operations and maintenance include but are not limited to the following:

- Heat Illness Prevention Program (SF 100)
- Stop Work Authority (SF 101)
- Personal Protective Equipment (SF 105)
- Hazard Communication Program (SF 111)
- General Workplace Housekeeping (SF 114)
- Occupational Injury and Illness Reporting Program (SF 115)
- Fire Protection and Prevention Plan (SF 120)
- Portable Fire Extinguisher Guidelines (SF 130)
- Hearing Conservation Program (SF 140)
- Job Hazard Recognition and Reporting (SF 160)
- Injury and Illness Prevention Program
- Respiratory Protection Program (SF 205)
- Lead Program (SF 207)
- Fall Protection Program (SF 245)
- Lockout Tagout Program (SF 270)
- Job Safety Analysis Program (SF 360)
- OSHA Standards for Power Line Safety

6.2 Preventive Maintenance

In general, preventive maintenance is a proactive methodology to keep assets in working order. This type of maintenance is performed on a regular basis to minimize the likelihood of an asset failing, and it is performed while the asset is still functioning so that it does not fail unexpectedly.

Water wells in active status do not require any preventive maintenance. However, in the case of inactive wells, short-term pumping is sometimes required to exercise the well and purge stagnate water that exacerbates biochemical growth and associated corrosion on the well casing and perforations.

Each time the pump is pulled, an engineering assessment review on the well takes place. The assessment may include the following:

- Well historical (water level) data is reviewed and analyzed
- Well pumping and hydraulic test data are input for trend and analyzed
- Well sand test data are analyzed
- Well is videoed
- Condition score is assigned

Depending on the results of the video, the following tasks or tests are performed as appropriate:

- Brush and bail scale build-up on casing and perforations to ensure reliable pumping operation
- Re-video, CITM, deviation

Additional diagnostic testing may be performed as follow-up to preventive maintenance. These tests may include but are not limited to the following:

- Sand test
- Field performance test
- In-well testing (static and/or dynamic)
- Wireline Testing - CITM, Deviation, Video, in-well depth specific sampling, spinner and flow velocity survey, temperature and conductive survey, caliper survey

6.3 Predictive Maintenance

Predictive maintenance is a method utilized to predict when an asset might fail. It involves techniques designed to determine the performance of the asset in order to predict when and what type of maintenance will be required.

The focus of predictive maintenance for wells is on trending analysis of previous testing over time. The diagnostic testing as described in Section 6.2 Preventive Maintenance contributes to the overall trending analysis of the well. The trending analysis is most effective if performed for multiple tests over time; analysis on limited testing may not be used to indicate a change in condition or an early failure.

6.4 Corrective Maintenance

Corrective maintenance is a maintenance method that is implemented in order to restore an asset to its operational condition. Corrective maintenance demonstrates a reactive approach and should be minimized through robust preventive and predictive maintenance activities assigned to the particular asset. A number of activities are available to mitigate well performance problems. The specific approach depends greatly on the issue being addressed and the local circumstances of the well.

Whatever approach is selected, funding must be encumbered and budget management is essential to assure the activity is cost-effective.

Corrective mitigation options include but are not limited to the following:

- **Well liner installation** - This approach can be used for stabilization of structurally deteriorated wells, sanding in cable tool or open bottom wells, or to mitigate other problems. In rare cases, this method is also used in poor quality wells when upper or sectional blank casing is compromised. Depending on its specific intent, a well liner is commonly constructed of stainless or mild steel upper blank casing and stainless-steel wire wrapped screen, and it can be installed through a portion or the entire length of the well.
- **Inflatable packers** - This is an effective technique to provide hydraulic control of the interval(s) that produce water in a well and can be used to improve pumped water quality. This is considered a semi-permanent approach.
- **Mechanical or chemical well redevelopment** - These are effective to address scale or biofilm accumulation that will impede well efficiency (specific capacity) and can be used as part of a sand and water quality corrective process.
- **Swaging** - This is a mechanical technique used to physically correct bulged or collapsed well casing sections. The technique is often used in combination with one or more other corrective mitigation options to resolve a defective well problem.
- **Zone or casing seal** - Creating a permanent seal of an intermediate zone or semi-permanently sealing the lower section of a well to change water quality produced from the well.

6.5 Emergency Maintenance

Emergency maintenance is immediate maintenance required to restore the service of a critical asset. During emergency maintenance, timing is important to minimize and localize the impact of failure (e.g., property damage, personal injury, public safety). Cal Water strives to minimize emergency maintenance.

6.6 Replacement Strategy

If a water well fails due to one of the four failure modes and cannot be rehabilitated or reconstructed to regain functionality, the asset should be replaced.

6.6.1 Condition/Physical Mortality Replacement Strategy

Liners can be used as one of the options to extend the remaining life of an aging well. In general, liners may extend the life of the well up to 15 years depending on several conditions (e.g., well development type, liner challenges). Other corrective maintenance measures are explained in section 6.4. In case all these options are inapplicable, the water well should be decommissioned and destroyed (refer to section 3.4).

6.6.2 Capacity Replacement Strategy

If a water well fails due to its capacity limitations, the well should be abandoned and a new well should be installed.

6.6.3 Level of Service Replacement Strategy

If a water well does not operate to meet the level of service requirements, assess the deficiency and consider repair/ reconstruction (e.g. adding a liner). If the repair does not bring the asset to operate at the current standards, the well should be abandoned and a new water well should be installed.

6.6.4 Financial Efficiency Replacement Strategy

If the operation and maintenance of a water well becomes financially inefficient, the well should be abandoned and a new water well should be installed.

7 Continuous Improvement

The asset plans have been developed to strengthen Cal Water's asset life-cycle processes and to have the documents to serve as a guide for identifying and prioritizing necessary improvements. As the procedures outlined in the Asset Plan are put into practice, additional tasks may be identified for continuous improvement practices.

Opportunities for improvements are identified in the following sections.

Asset Health Report

An Asset Health Report will be developed to support each Asset Plan. While the Asset Plan outlines the definitions and life cycle plans for the assets, the Asset Health Report will provide a summary of the current asset inventory. This Asset Health Report is intended to be updated periodically as needed as the inventory changes.

Maximo Inventory

The assets should be added to or updated in Maximo using the correct schema. Additional attributes should be added as necessary. Entering the assets in Maximo will support the ongoing Asset Sustainment and Replacement, as well as the development of the Asset Health Report.

Annual Operation and Maintenance Cost Report

An annual operation and maintenance cost report will be developed for wells. The goal of the report will be to track current operation and maintenance costs, with the goal to determine the financial efficiency of the wells. This report may also be used to determine if the well is failing by the financial efficiency failure mode.

Appendix C

Water Well Survival Analysis Report

KAYUGA
SOLUTION

California Water Service

Water Well Survival Analysis

November 2020

KAYUGASOLUTION
9641 Irvine Center Drive Irvine CA 92618
Kayugasolution.com

Table of Contents

California Water Service 1

Water Well Survival Analysis 1

1 Introduction 3

2 Methodology 3

3 Datasets 4

4 Results 4

5 Appendix 6

5.1 Datapoints 6

5.2 GroupAll Analysis 26

5.3 Group1 Analysis 27

5.4 Group2 Analysis 28

5.5 Group3 Analysis 29

5.6 Group4 Analysis 30

5.7 Group5 Analysis 31

5.8 Group6 Analysis 32

1 Introduction

Over the years, Cal Water has been managing hundreds of water wells as one of main sources of its water supply. As part of the well management program, Cal Water maintains a database of all well assets and historical records related to construction, operations, and replacement.

To have a better estimate of the useful life, the analysis not only should consider past failure (replacement) records but also the probability of the remaining active wells to last longer. The survival analysis will bring together this information to estimate the survival rate of the entire well population.

This study focuses on utilizing survival analysis to estimate the median age or useful life of Cal Water wells that provide a more realistic projection. A set of analyses will also be performed on different clusters of well data to see if the median useful life of wells differs by geographical location.

2 Methodology

The survival analysis for Cal Water well data is conducted using the Kaplan-Meier method performed in R software (www.r-project.org). This non-parametric method is widely used to analyze 'time-to-event' data. The Kaplan-Meier method is based on individual survival times and assumes that censoring is independent of survival time. It assumes the reason an observation is censored is unrelated to the cause of failure. The Kaplan-Meier estimator of survival at time t is shown in the following equation.

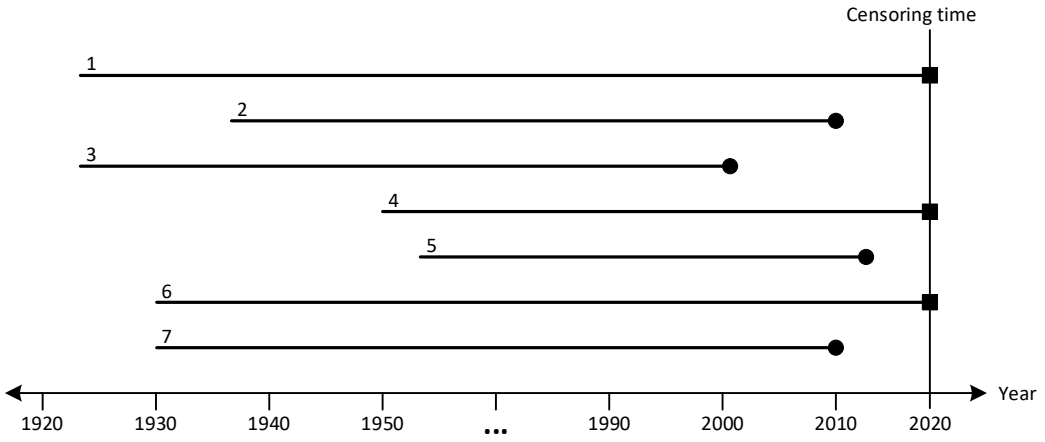
$$S_t = \prod_{t_i \leq t} \left[1 - \frac{d_i}{n_i}\right]$$

Where t_i is the time, d_i is the number of well failure at time *i*, and n_i is the number of well population prior to time *i*.

A Kaplan-Meier curve shows the estimated survival function by plotting estimated survival probabilities against time. The estimated survival probability is constant between the events. Therefore, the curve is a step-function in which each vertical drop indicates the occurrence of one or more events (i.e., well failure).

The median survival time is a commonly reported summary statistic for survival time data. It represents the time by when the failure has occurred in 50% of the wells. This median survival time can be conveniently estimated from the Kaplan-Meier curve as the x-axis (time) value at the point where an (imaginary) horizontal line at the 50% survival probability on the y-axis crosses the survival curve.

Survival analysis requires censored data. Censoring occurs when the value of an observation, such as age, is only partially known. For well asset data, age is the duration between the year of installation and the year of failure, which equals to the year of replacement in many cases. Since the right end of the data is partially known, this case is also known as right censoring. The figure below shows the illustration of the right censored data of seven wells.



3 Datasets

Overall, there is a 778-well dataset included in this analysis. Based on geographical location, the wells are further classified into six groups as shown in the following table.

Cluster	District Area	Data Size
GroupAll	All Districts	778
Group1	Dixon, Travis AFB, Bear Gulch, South San Francisco, Mid-Peninsula, Stockton, Los Altos, Livermore	124
Group2	Salinas, King City	81
Group3	Chico, Hamilton City, Marysville, Oroville, Redwood Valley, Willows	112
Group4	Selma, Visalia, Bakersfield, City of Bakersfield	331
Group5	Kern River Valley, Antelope Valley	69
Group6	Hermosa Redondo, Palos Verdes, Westlake, Hawthorne, Dominguez, East Los Angeles, City of Commerce	61

4 Results

The results of median survival age of well in each district are summarized in the following table. Detailed analysis is provided in the Appendix. The results show that the median survival age is a more conservative estimate of well useful life compared to average failure age. On average (GroupAll dataset), median survival age predicts a 43% longer expected useful life.

Cluster	District Area	Median Survival Age (Years)	Average Failure Age (Years)
GroupAll	All Districts	63	44
Group1	Dixon, Travis AFB, Bear Gulch, South San Francisco, Mid-Peninsula, Stockton, Los Altos, Livermore	62	53

Cluster	District Area	Median Survival Age (Years)	Average Failure Age (Years)
Group2	Salinas, King City	53	41
Group3	Chico, Hamilton City, Marysville, Oroville, Redwood Valley, Willows	75	55
Group4	Selma, Visalia, Bakersfield, City of Bakersfield	61	46
Group5	Kern River Valley, Antelope Valley	28	18
Group6	Hermosa Redondo, Palos Verdes, Westlake, Hawthorne, Dominguez, East Los Angeles, City of Commerce	63	45

5 Appendix

5.1 Datapoints

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
1	VIS-W-055-02	Visalia	1900	120	Censored	Group 4, GroupAll
2	CH-W-003-03	Chico	1909	103	Dead	Group 3, GroupAll
3	CH-W-001-04	Chico	1909	102	Dead	Group 3, GroupAll
4	WIL-W-002-01	Willows	1921	93	Dead	Group 3, GroupAll
5	LAS-W-039-01	Los Altos	1922	98	Censored	Group 1, GroupAll
6	SSF-W-001-14	South San Francisco	1923	85	Dead	Group 1, GroupAll
7	SEL-W-006-01	Selma	1927	93	Censored	Group 4, GroupAll
8	ORO-W-002-01	Oroville	1928	91	Censored	Group 3, GroupAll
9	CH-W-008-01	Chico	1929	91	Censored	Group 3, GroupAll
10	VIS-W-007-01	Visalia	1929	91	Censored	Group 4, GroupAll
11	WIL-W-004-01	Willows	1929	91	Censored	Group 3, GroupAll
12	ELA-W-022-01	East Los Angeles	1930	90	Censored	Group 6, GroupAll
13	SEL-W-007-01	Selma	1932	85	Dead	Group 4, GroupAll
14	ELA-W-020-01	East Los Angeles	1933	65	Dead	Group 6, GroupAll
15	SEL-W-008-01	Selma	1934	80	Dead	Group 4, GroupAll
16	VIS-W-003-03	Visalia	1934	85	Dead	Group 4, GroupAll
17	SLN-W-006-01	Salinas	1935	85	Censored	Group 2, GroupAll
18	SSF-W-001-02	South San Francisco	1935	62	Dead	Group 1, GroupAll
19	SSF-W-001-17	South San Francisco	1937	65	Dead	Group 1, GroupAll
20	CC-W-006-01	East Los Angeles	1938	80	Dead	Group 6, GroupAll
21	ELA-W-019-03	East Los Angeles	1938	63	Dead	Group 6, GroupAll
22	ELA-W-025-01	East Los Angeles	1939	81	Censored	Group 6, GroupAll
23	BK-W-037-01	Bakersfield	1939	59	Dead	Group 4, GroupAll
24	CH-W-009-02	Chico	1939	64	Dead	Group 3, GroupAll
25	LAS-W-104-02	Los Altos	1940	80	Censored	Group 1, GroupAll
26	SSF-W-001-18	South San Francisco	1940	68	Dead	Group 1, GroupAll
27	HAW-W-004-01	Hawthorne	1941	72	Dead	Group 6, GroupAll
28	CH-W-044-01	Chico	1942	78	Censored	Group 3, GroupAll
29	LIV-W-008-01	Livermore	1942	76	Censored	Group 1, GroupAll
30	STK-W-009-01	Stockton	1943	54	Dead	Group 1, GroupAll
31	CH-W-011-01	Chico	1944	76	Censored	Group 3, GroupAll
32	DOM-W-215-01	Dominguez	1944	76	Censored	Group 6, GroupAll
33	ELA-W-033-01	East Los Angeles	1944	53	Dead	Group 6, GroupAll
34	CH-W-012-01	Chico	1945	75	Censored	Group 3, GroupAll
35	VIS-W-009-01	Visalia	1945	73	Dead	Group 4, GroupAll
36	LAS-W-001-02	Los Altos	1946	74	Censored	Group 1, GroupAll
37	BK-W-064-01	Bakersfield	1946	56	Dead	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
38	CH-W-007-04	Chico	1946	72	Dead	Group 3, GroupAll
39	ELA-W-037-01	East Los Angeles	1946	63	Dead	Group 6, GroupAll
40	STK-W-015-01	Stockton	1946	54	Dead	Group 1, GroupAll
41	SSF-W-001-19	South San Francisco	1947	73	Censored	Group 1, GroupAll
42	HR-W-022-01	Hermosa Redondo	1947	73	Censored	Group 6, GroupAll
43	STK-W-016-01	Stockton	1947	69	Censored	Group 1, GroupAll
44	STK-W-018-01	Stockton	1947	72	Censored	Group 1, GroupAll
45	BKNG-W-173-01	Bakersfield	1947	68	Dead	Group 4, GroupAll
46	STK-W-019-01	Stockton	1947	55	Dead	Group 1, GroupAll
47	BK-W-002-10	Bakersfield	1948	72	Censored	Group 4, GroupAll
48	MRL-W-008-01	Marysville	1948	72	Censored	Group 3, GroupAll
49	BK-W-071-01	Bakersfield	1948	65	Dead	Group 4, GroupAll
50	HAW-W-008-01	Hawthorne	1948	54	Dead	Group 6, GroupAll
51	CH-W-013-01	Chico	1948	55	Dead	Group 3, GroupAll
52	BK-W-079-01	Bakersfield	1949	71	Censored	Group 4, GroupAll
53	BK-W-081-01	Bakersfield	1949	71	Censored	Group 4, GroupAll
54	CH-W-016-01	Chico	1949	71	Censored	Group 3, GroupAll
55	ELA-W-038-02	East Los Angeles	1949	71	Censored	Group 6, GroupAll
56	ELA-W-043-01	East Los Angeles	1949	71	Censored	Group 6, GroupAll
57	ORO-W-005-01	Oroville	1949	71	Censored	Group 3, GroupAll
58	VIS-W-012-01	Visalia	1949	71	Censored	Group 4, GroupAll
59	VIS-W-014-01	Visalia	1949	70	Censored	Group 4, GroupAll
60	BK-W-044-01	Bakersfield	1949	50	Dead	Group 4, GroupAll
61	BK-W-078-01	Bakersfield	1949	55	Dead	Group 4, GroupAll
62	CH-W-015-01	Chico	1949	53	Dead	Group 3, GroupAll
63	BK-W-082-01	Bakersfield	1950	70	Censored	Group 4, GroupAll
64	BK-W-086-01	Bakersfield	1950	70	Censored	Group 4, GroupAll
65	BK-W-088-01	Bakersfield	1950	70	Censored	Group 4, GroupAll
66	CH-W-017-01	Chico	1950	70	Censored	Group 3, GroupAll
67	ELA-W-013-02	East Los Angeles	1950	70	Censored	Group 6, GroupAll
68	NH-W-201-01	Redwood Valley	1950	70	Censored	Group 3, GroupAll
69	SLN-W-011-01	Salinas	1950	70	Censored	Group 2, GroupAll
70	VIS-W-013-01	Visalia	1950	69	Censored	Group 4, GroupAll
71	BK-W-083-01	Bakersfield	1950	68	Dead	Group 4, GroupAll
72	BK-W-039-02	Bakersfield	1950	61	Dead	Group 4, GroupAll
73	BK-W-033-02	Bakersfield	1950	56	Dead	Group 4, GroupAll
74	ELA-W-007-02	East Los Angeles	1950	68	Dead	Group 6, GroupAll
75	LAS-W-004-02	Los Altos	1950	52	Dead	Group 1, GroupAll
76	STK-W-028-01	Stockton	1950	47	Dead	Group 1, GroupAll
77	VIS-W-006-02	Visalia	1950	66	Dead	Group 4, GroupAll
78	BK-W-029-02	Bakersfield	1951	69	Censored	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
79	BK-W-047-02	Bakersfield	1951	69	Censored	Group 4, GroupAll
80	BK-W-089-01	Bakersfield	1951	69	Censored	Group 4, GroupAll
81	CH-W-018-01	Chico	1951	69	Censored	Group 3, GroupAll
82	CH-W-019-01	Chico	1951	69	Censored	Group 3, GroupAll
83	HAM-W-001-01	Chico	1951	69	Censored	Group 3, GroupAll
84	LIV-W-009-01	Livermore	1951	69	Censored	Group 1, GroupAll
85	VIS-W-015-01	Visalia	1951	69	Censored	Group 4, GroupAll
86	ELA-W-052-01	East Los Angeles	1951	67	Dead	Group 6, GroupAll
87	BK-W-042-02	Bakersfield	1952	68	Censored	Group 4, GroupAll
88	BK-W-077-02	Bakersfield	1952	67	Censored	Group 4, GroupAll
89	CH-W-020-01	Chico	1952	67	Censored	Group 3, GroupAll
90	SLN-W-012-01	Salinas	1952	68	Censored	Group 2, GroupAll
91	BK-W-092-01	Bakersfield	1952	54	Dead	Group 4, GroupAll
92	ELA-W-051-01	East Los Angeles	1952	67	Dead	Group 6, GroupAll
93	STK-W-034-01	Stockton	1952	50	Dead	Group 1, GroupAll
94	BK-W-003-04	Bakersfield	1953	67	Censored	Group 4, GroupAll
95	CH-W-021-01	Chico	1953	67	Censored	Group 3, GroupAll
96	ELA-W-054-01	East Los Angeles	1953	67	Censored	Group 6, GroupAll
97	MRL-W-009-01	Marysville	1953	67	Censored	Group 3, GroupAll
98	STK-W-036-01	Stockton	1953	67	Censored	Group 1, GroupAll
99	BK-W-041-02	Bakersfield	1953	60	Dead	Group 4, GroupAll
100	BK-W-095-01	Bakersfield	1953	52	Dead	Group 4, GroupAll
101	BK-W-094-01	Bakersfield	1953	45	Dead	Group 4, GroupAll
102	BKNG-W-172-01	Bakersfield	1953	45	Dead	Group 4, GroupAll
103	ELA-W-056-01	East Los Angeles	1953	46	Dead	Group 6, GroupAll
104	VIS-W-017-01	Visalia	1953	49	Dead	Group 4, GroupAll
105	BK-W-032-02	Bakersfield	1954	66	Censored	Group 4, GroupAll
106	BK-W-101-01	Bakersfield	1954	66	Censored	Group 4, GroupAll
107	DIX-W-001-03	Dixon	1954	66	Censored	Group 1, GroupAll
108	LIV-W-010-01	Livermore	1954	65	Censored	Group 1, GroupAll
109	STK-W-035-01	Stockton	1954	66	Censored	Group 1, GroupAll
110	BK-W-098-01	Bakersfield	1954	58	Dead	Group 4, GroupAll
111	BK-W-099-01	Bakersfield	1954	47	Dead	Group 4, GroupAll
112	BK-W-097-01	Bakersfield	1954	56	Dead	Group 4, GroupAll
113	BK-W-087-01	Bakersfield	1954	44	Dead	Group 4, GroupAll
114	CH-W-022-01	Chico	1954	63	Dead	Group 3, GroupAll
115	BK-W-105-01	Bakersfield	1955	65	Censored	Group 4, GroupAll
116	CH-W-023-01	Chico	1955	65	Censored	Group 3, GroupAll
117	MRL-W-010-01	Marysville	1955	65	Censored	Group 3, GroupAll
118	ARM-W-001-01	Redwood Valley	1955	65	Censored	Group 3, GroupAll
119	BK-W-107-01	Bakersfield	1955	63	Dead	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
120	BK-W-108-01	Bakersfield	1955	47	Dead	Group 4, GroupAll
121	BK-W-106-01	Bakersfield	1955	42	Dead	Group 4, GroupAll
122	STK-W-040-01	Stockton	1955	47	Dead	Group 1, GroupAll
123	VIS-W-018-01	Visalia	1955	63	Dead	Group 4, GroupAll
124	BK-W-005-05	Bakersfield	1956	64	Censored	Group 4, GroupAll
125	LAS-W-017-01	Los Altos	1956	64	Censored	Group 1, GroupAll
126	ORO-W-010-01	Oroville	1956	64	Censored	Group 3, GroupAll
127	SEL-W-011-01	Selma	1956	64	Censored	Group 4, GroupAll
128	BK-W-035-02	Bakersfield	1956	53	Dead	Group 4, GroupAll
129	BK-W-118-01	Bakersfield	1956	50	Dead	Group 4, GroupAll
130	BK-W-111-01	Bakersfield	1956	45	Dead	Group 4, GroupAll
131	BK-W-114-01	Bakersfield	1956	43	Dead	Group 4, GroupAll
132	BK-W-113-01	Bakersfield	1956	53	Dead	Group 4, GroupAll
133	BK-W-117-01	Bakersfield	1956	41	Dead	Group 4, GroupAll
134	CH-W-025-01	Chico	1956	61	Dead	Group 3, GroupAll
135	STK-W-046-01	Stockton	1956	61	Dead	Group 1, GroupAll
136	STK-W-057-01	Stockton	1956	41	Dead	Group 1, GroupAll
137	CH-W-027-01	Chico	1957	63	Censored	Group 3, GroupAll
138	CH-W-028-01	Chico	1957	63	Censored	Group 3, GroupAll
139	STK-W-007-02	Stockton	1957	63	Censored	Group 1, GroupAll
140	VIS-W-019-01	Visalia	1957	63	Censored	Group 4, GroupAll
141	BK-W-022-02	Bakersfield	1957	43	Dead	Group 4, GroupAll
142	BK-W-112-01	Bakersfield	1957	60	Dead	Group 4, GroupAll
143	STK-W-047-01	Stockton	1957	60	Dead	Group 1, GroupAll
144	STK-W-044-01	Stockton	1957	60	Dead	Group 1, GroupAll
145	BK-W-102-01	Bakersfield	1958	62	Censored	Group 4, GroupAll
146	CH-W-029-01	Chico	1958	62	Censored	Group 3, GroupAll
147	LAS-W-116-01	Los Altos	1958	62	Censored	Group 1, GroupAll
148	LIV-W-015-01	Livermore	1958	60	Censored	Group 1, GroupAll
149	LIV-W-014-01	Livermore	1958	62	Censored	Group 1, GroupAll
150	VIS-W-020-01	Visalia	1958	62	Censored	Group 4, GroupAll
151	BK-W-120-01	Bakersfield	1958	54	Dead	Group 4, GroupAll
152	BK-W-119-01	Bakersfield	1958	39	Dead	Group 4, GroupAll
153	LAS-W-022-01	Los Altos	1958	44	Dead	Group 1, GroupAll
154	BK-W-125-01	Bakersfield	1959	60	Censored	Group 4, GroupAll
155	BK-W-126-01	Bakersfield	1959	61	Censored	Group 4, GroupAll
156	CH-W-026-01	Chico	1959	60	Censored	Group 3, GroupAll
157	LAS-W-123-01	Los Altos	1959	61	Censored	Group 1, GroupAll
158	LAS-W-021-01	Los Altos	1959	61	Censored	Group 1, GroupAll
159	LAS-W-025-01	Los Altos	1959	61	Censored	Group 1, GroupAll
160	STK-W-051-01	Stockton	1959	47	Dead	Group 1, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
161	STK-W-039-01	Stockton	1959	47	Dead	Group 1, GroupAll
162	VIS-W-071-01	Visalia	1959	50	Dead	Group 4, GroupAll
163	BK-W-036-02	Bakersfield	1960	60	Censored	Group 4, GroupAll
164	BK-W-040-02	Bakersfield	1960	60	Censored	Group 4, GroupAll
165	BK-W-081-02	Bakersfield	1960	60	Censored	Group 4, GroupAll
166	CH-W-031-01	Chico	1960	60	Censored	Group 3, GroupAll
167	LAS-W-119-03	Los Altos	1960	60	Censored	Group 1, GroupAll
168	LAS-W-027-01	Los Altos	1955	65	Censored	Group 1, GroupAll
169	MRL-W-011-01	Marysville	1960	59	Censored	Group 3, GroupAll
170	SLN-W-023-01	Salinas	1960	60	Censored	Group 2, GroupAll
171	STK-W-059-01	Stockton	1960	60	Censored	Group 1, GroupAll
172	STK-W-063-01	Stockton	1960	60	Censored	Group 1, GroupAll
173	VIS-W-022-01	Visalia	1960	60	Censored	Group 4, GroupAll
174	BK-W-198-01	Bakersfield	1960	58	Dead	Group 4, GroupAll
175	BK-W-127-01	Bakersfield	1960	37	Dead	Group 4, GroupAll
176	CH-W-004-02	Chico	1960	43	Dead	Group 3, GroupAll
177	VIS-W-065-01	Visalia	1960	47	Dead	Group 4, GroupAll
178	BK-W-128-01	Bakersfield	1961	59	Censored	Group 4, GroupAll
179	BK-W-129-01	Bakersfield	1961	59	Censored	Group 4, GroupAll
180	BK-W-130-01	Bakersfield	1961	59	Censored	Group 4, GroupAll
181	BK-W-132-01	Bakersfield	1961	59	Censored	Group 4, GroupAll
182	BK-W-142-01	Bakersfield	1961	59	Censored	Group 4, GroupAll
183	CBK-W-002-01	City of Bakersfield	1961	59	Censored	Group 4, GroupAll
184	CH-W-033-01	Chico	1961	58	Censored	Group 3, GroupAll
185	LIV-W-020-01	Livermore	1961	59	Censored	Group 1, GroupAll
186	ISP-W-049-01	Salinas	1961	59	Censored	Group 2, GroupAll
187	STK-W-060-01	Stockton	1961	59	Censored	Group 1, GroupAll
188	STK-W-061-01	Stockton	1961	59	Censored	Group 1, GroupAll
189	VIS-W-024-01	Visalia	1961	59	Censored	Group 4, GroupAll
190	VIS-W-031-01	Visalia	1961	59	Censored	Group 4, GroupAll
191	BK-W-167-01	Bakersfield	1961	38	Dead	Group 4, GroupAll
192	BKNG-W-169-01	Bakersfield	1961	37	Dead	Group 4, GroupAll
193	BK-W-136-01	Bakersfield	1961	51	Dead	Group 4, GroupAll
194	SEL-W-012-01	Selma	1961	56	Dead	Group 4, GroupAll
195	BK-W-010-02	Bakersfield	1962	55	Censored	Group 4, GroupAll
196	BK-W-085-02	Bakersfield	1962	58	Censored	Group 4, GroupAll
197	BK-W-133-01	Bakersfield	1962	57	Censored	Group 4, GroupAll
198	BK-W-135-01	Bakersfield	1962	58	Censored	Group 4, GroupAll
199	CH-W-032-01	Chico	1962	58	Censored	Group 3, GroupAll
200	LAS-W-018-02	Los Altos	1962	58	Censored	Group 1, GroupAll
201	LAS-W-030-01	Los Altos	1962	58	Censored	Group 1, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
202	LAS-W-031-01	Los Altos	1962	58	Censored	Group 1, GroupAll
203	STK-W-062-01	Stockton	1962	58	Censored	Group 1, GroupAll
204	OR-W-033-02	Visalia	1962	58	Censored	Group 4, GroupAll
205	VIS-W-023-01	Visalia	1962	58	Censored	Group 4, GroupAll
206	VIS-W-057-01	Visalia	1962	58	Censored	Group 4, GroupAll
207	VIS-W-057-02	Visalia	1962	58	Censored	Group 4, GroupAll
208	BK-W-137-01	Bakersfield	1962	54	Dead	Group 4, GroupAll
209	BK-W-066-02	Bakersfield	1962	49	Dead	Group 4, GroupAll
210	TUL-W-201-01	Visalia	1962	55	Dead	Group 4, GroupAll
211	OR-W-033-01	Visalia	1962	56	Dead	Group 4, GroupAll
212	VIS-W-043-01	Visalia	1962	53	Dead	Group 4, GroupAll
213	BK-W-007-07	Bakersfield	1963	57	Censored	Group 4, GroupAll
214	BK-W-180-01	Bakersfield	1963	57	Censored	Group 4, GroupAll
215	CH-W-030-01	Chico	1963	56	Censored	Group 3, GroupAll
216	CH-W-035-01	Chico	1963	56	Censored	Group 3, GroupAll
217	LAS-W-032-01	Los Altos	1963	57	Censored	Group 1, GroupAll
218	MRL-W-012-01	Marysville	1963	57	Censored	Group 3, GroupAll
219	VIS-W-025-01	Visalia	1963	57	Censored	Group 4, GroupAll
220	BK-W-139-01	Bakersfield	1963	40	Dead	Group 4, GroupAll
221	VIS-W-044-01	Visalia	1963	52	Dead	Group 4, GroupAll
222	VIS-W-044-02	Visalia	1963	52	Dead	Group 4, GroupAll
223	BK-W-043-02	Bakersfield	1964	56	Censored	Group 4, GroupAll
224	BK-W-134-01	Bakersfield	1964	56	Censored	Group 4, GroupAll
225	BK-W-140-01	Bakersfield	1964	56	Censored	Group 4, GroupAll
226	BK-W-141-01	Bakersfield	1964	56	Censored	Group 4, GroupAll
227	LAS-W-006-02	Los Altos	1964	56	Censored	Group 1, GroupAll
228	CS-W-009-01	Redwood Valley	1964	55	Censored	Group 3, GroupAll
229	SLN-W-016-01	Salinas	1964	56	Censored	Group 2, GroupAll
230	SLN-W-017-01	Salinas	1964	56	Censored	Group 2, GroupAll
231	VIS-W-026-01	Visalia	1964	56	Censored	Group 4, GroupAll
232	WIL-W-007-01	Willows	1964	56	Censored	Group 3, GroupAll
233	SLNH-W-035-01	Salinas	1964	51	Dead	Group 2, GroupAll
234	STK-W-004-02	Stockton	1964	42	Dead	Group 1, GroupAll
235	VIS-W-054-01	Visalia	1964	43	Dead	Group 4, GroupAll
236	BK-W-123-02	Bakersfield	1965	55	Censored	Group 4, GroupAll
237	BK-W-143-01	Bakersfield	1965	55	Censored	Group 4, GroupAll
238	BK-W-144-01	Bakersfield	1965	55	Censored	Group 4, GroupAll
239	CH-W-034-01	Chico	1965	55	Censored	Group 3, GroupAll
240	SLNH-W-032-01	Salinas	1965	55	Censored	Group 2, GroupAll
241	STK-W-066-01	Stockton	1965	55	Censored	Group 1, GroupAll
242	VIS-W-027-01	Visalia	1965	55	Censored	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
243	STK-W-043-02	Stockton	1965	41	Dead	Group 1, GroupAll
244	BK-W-145-01	Bakersfield	1966	53	Censored	Group 4, GroupAll
245	BK-W-146-01	Bakersfield	1966	54	Censored	Group 4, GroupAll
246	BK-W-146-02	Bakersfield	1966	54	Censored	Group 4, GroupAll
247	BK-W-146-03	Bakersfield	1966	54	Censored	Group 4, GroupAll
248	LAS-W-034-01	Los Altos	1966	54	Censored	Group 1, GroupAll
249	SLN-W-019-01	Salinas	1966	53	Censored	Group 2, GroupAll
250	STK-W-052-01	Stockton	1966	52	Censored	Group 1, GroupAll
251	BK-W-034-02	Bakersfield	1966	40	Dead	Group 4, GroupAll
252	CH-W-041-01	Chico	1966	52	Dead	Group 3, GroupAll
253	BK-W-146-04	Bakersfield	1967	52	Censored	Group 4, GroupAll
254	BK-W-146-05	Bakersfield	1967	53	Censored	Group 4, GroupAll
255	CH-W-038-01	Chico	1967	53	Censored	Group 3, GroupAll
256	CH-W-039-01	Chico	1967	53	Censored	Group 3, GroupAll
257	STK-W-068-01	Stockton	1967	53	Censored	Group 1, GroupAll
258	STK-W-069-01	Stockton	1967	53	Censored	Group 1, GroupAll
259	STK-W-069-02	Stockton	1967	53	Censored	Group 1, GroupAll
260	VIS-W-030-01	Visalia	1967	53	Censored	Group 4, GroupAll
261	WIL-W-008-01	Willows	1967	53	Censored	Group 3, GroupAll
262	BK-W-163-01	Bakersfield	1967	51	Dead	Group 4, GroupAll
263	BK-W-164-01	Bakersfield	1967	50	Dead	Group 4, GroupAll
264	OH-W-202-01	Salinas	1966	49	Dead	Group 2, GroupAll
265	STK-W-067-01	Stockton	1967	43	Dead	Group 1, GroupAll
266	BK-W-054-02	Bakersfield	1968	52	Censored	Group 4, GroupAll
267	BK-W-149-01	Bakersfield	1968	51	Censored	Group 4, GroupAll
268	BK-W-150-01	Bakersfield	1968	52	Censored	Group 4, GroupAll
269	CH-W-040-01	Chico	1968	52	Censored	Group 3, GroupAll
270	HAM-W-002-01	Chico	1968	52	Censored	Group 3, GroupAll
271	SLN-W-020-01	Salinas	1968	52	Censored	Group 2, GroupAll
272	SLN-W-021-01	Salinas	1968	52	Censored	Group 2, GroupAll
273	STK-W-070-01	Stockton	1968	52	Censored	Group 1, GroupAll
274	STK-W-071-01	Stockton	1969	51	Censored	Group 1, GroupAll
275	VIS-W-032-01	Visalia	1969	51	Censored	Group 4, GroupAll
276	VIS-W-073-01	Visalia	1969	46	Dead	Group 4, GroupAll
277	VIS-W-074-01	Visalia	1969	46	Dead	Group 4, GroupAll
278	BK-W-151-01	Bakersfield	1970	50	Censored	Group 4, GroupAll
279	BK-W-154-01	Bakersfield	1970	50	Censored	Group 4, GroupAll
280	CH-W-042-01	Chico	1970	50	Censored	Group 3, GroupAll
281	ELA-W-010-03	East Los Angeles	1970	50	Censored	Group 6, GroupAll
282	VIS-W-034-01	Visalia	1970	50	Censored	Group 4, GroupAll
283	BK-W-153-01	Bakersfield	1970	48	Dead	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
284	BK-W-160-01	Bakersfield	1970	37	Dead	Group 4, GroupAll
285	KC-W-005-01	King City	1970	28	Dead	Group 2, GroupAll
286	BK-W-156-01	Bakersfield	1971	49	Censored	Group 4, GroupAll
287	CH-W-005-02	Chico	1971	49	Censored	Group 3, GroupAll
288	HR-W-008-02	Hermosa Redondo	1971	49	Censored	Group 6, GroupAll
289	VIS-W-036-01	Visalia	1971	49	Censored	Group 4, GroupAll
290	BK-W-161-01	Bakersfield	1971	46	Dead	Group 4, GroupAll
291	SLN-W-024-01	Salinas	1971	44	Dead	Group 2, GroupAll
292	SLN-W-105-01	Salinas	1971	28	Dead	Group 2, GroupAll
293	VIS-W-076-01	Visalia	1971	38	Dead	Group 4, GroupAll
294	VIS-W-075-01	Visalia	1971	34	Dead	Group 4, GroupAll
295	SSF-W-001-20	South San Francisco	1972	47	Censored	Group 1, GroupAll
296	BK-W-158-01	Bakersfield	1972	48	Censored	Group 4, GroupAll
297	CBK-W-006-01	City of Bakersfield	1972	48	Censored	Group 4, GroupAll
298	CH-W-046-01	Chico	1972	48	Censored	Group 3, GroupAll
299	LIV-W-024-01	Livermore	1972	47	Censored	Group 1, GroupAll
300	SLN-W-025-01	Salinas	1972	48	Censored	Group 2, GroupAll
301	STK-W-066-02	Stockton	1972	48	Censored	Group 1, GroupAll
302	VIS-W-037-01	Visalia	1972	48	Censored	Group 4, GroupAll
303	BKNG-W-174-01	Bakersfield	1973	45	Censored	Group 4, GroupAll
304	CBK-W-003-01	City of Bakersfield	1973	47	Censored	Group 4, GroupAll
305	CBK-W-004-01	City of Bakersfield	1973	47	Censored	Group 4, GroupAll
306	CBK-W-005-01	City of Bakersfield	1973	47	Censored	Group 4, GroupAll
307	CBK-W-007-01	City of Bakersfield	1973	47	Censored	Group 4, GroupAll
308	CH-W-048-01	Chico	1973	47	Censored	Group 3, GroupAll
309	CH-W-049-01	Chico	1973	47	Censored	Group 3, GroupAll
310	CH-W-050-01	Chico	1973	47	Censored	Group 3, GroupAll
311	SLN-W-026-01	Salinas	1973	47	Censored	Group 2, GroupAll
312	STK-W-075-01	Stockton	1973	47	Censored	Group 1, GroupAll
313	VIS-W-038-01	Visalia	1973	47	Censored	Group 4, GroupAll
314	VIS-W-039-01	Visalia	1973	47	Censored	Group 4, GroupAll
315	VIS-W-040-01	Visalia	1973	47	Censored	Group 4, GroupAll
316	BK-W-159-01	Bakersfield	1973	38	Dead	Group 4, GroupAll
317	CH-W-047-01	Chico	1973	40	Dead	Group 3, GroupAll
318	BK-W-157-01	Bakersfield	1974	46	Censored	Group 4, GroupAll
319	CBK-W-008-01	City of Bakersfield	1974	46	Censored	Group 4, GroupAll
320	MRL-W-007-02	Marysville	1974	45	Censored	Group 3, GroupAll
321	ISP-W-050-01	Salinas	1974	46	Censored	Group 2, GroupAll
322	SLN-W-005-03	Salinas	1974	46	Censored	Group 2, GroupAll
323	STK-W-076-01	Stockton	1974	45	Censored	Group 1, GroupAll
324	STK-W-077-01	Stockton	1974	42	Censored	Group 1, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
325	VIS-W-041-01	Visalia	1974	46	Censored	Group 4, GroupAll
326	WIL-W-009-01	Willows	1974	46	Censored	Group 3, GroupAll
327	SLNH-W-059-01	Salinas	1974	37	Dead	Group 2, GroupAll
328	STK-W-078-01	Stockton	1974	30	Dead	Group 1, GroupAll
329	SLN-W-027-01	Salinas	1975	45	Censored	Group 2, GroupAll
330	SLN-W-106-01	Salinas	1975	45	Censored	Group 2, GroupAll
331	SSF-W-001-21	South San Francisco	1976	44	Censored	Group 1, GroupAll
332	CH-W-052-01	Chico	1976	44	Censored	Group 3, GroupAll
333	KC-W-006-01	King City	1976	44	Censored	Group 2, GroupAll
334	SEL-W-014-01	Selma	1976	44	Censored	Group 4, GroupAll
335	OR-W-042-01	Visalia	1976	44	Censored	Group 4, GroupAll
336	VIS-W-045-01	Visalia	1976	44	Censored	Group 4, GroupAll
337	CH-W-051-01	Chico	1976	41	Dead	Group 3, GroupAll
338	MRL-W-013-01	Marysville	1976	37	Dead	Group 3, GroupAll
339	CBK-W-009-01	City of Bakersfield	1977	43	Censored	Group 4, GroupAll
340	CBK-W-014-01	City of Bakersfield	1977	43	Censored	Group 4, GroupAll
341	CH-W-053-01	Chico	1977	43	Censored	Group 3, GroupAll
342	CH-W-054-01	Chico	1977	43	Censored	Group 3, GroupAll
343	DOM-W-277-01	Dominguez	1977	43	Censored	Group 6, GroupAll
344	OH-W-203-01	Salinas	1977	43	Censored	Group 2, GroupAll
345	STK-W-079-01	Stockton	1966	54	Censored	Group 1, GroupAll
346	VIS-W-046-01	Visalia	1977	43	Censored	Group 4, GroupAll
347	VIS-W-047-01	Visalia	1977	43	Censored	Group 4, GroupAll
348	VIS-W-048-01	Visalia	1977	43	Censored	Group 4, GroupAll
349	BKNG-W-175-01	Bakersfield	1977	39	Dead	Group 4, GroupAll
350	CH-W-002-01	Chico	1900	99	Dead	Group 3, GroupAll
351	BK-W-177-01	Bakersfield	1978	42	Censored	Group 4, GroupAll
352	BKNG-W-178-01	Bakersfield	1978	42	Censored	Group 4, GroupAll
353	BKNG-W-188-01	Bakersfield	1978	42	Censored	Group 4, GroupAll
354	CH-W-056-01	Chico	1978	42	Censored	Group 3, GroupAll
355	CMM-W-060-01	Salinas	1978	42	Censored	Group 2, GroupAll
356	SLN-W-029-01	Salinas	1978	42	Censored	Group 2, GroupAll
357	VIS-W-049-01	Visalia	1978	42	Censored	Group 4, GroupAll
358	VIS-W-050-01	Visalia	1978	42	Censored	Group 4, GroupAll
359	VIS-W-051-01	Visalia	1978	42	Censored	Group 4, GroupAll
360	VIS-W-052-01	Visalia	1978	42	Censored	Group 4, GroupAll
361	CH-W-055-01	Chico	1978	38	Dead	Group 3, GroupAll
362	VIS-W-067-01	Visalia	1978	28	Dead	Group 4, GroupAll
363	CH-W-043-01	Chico	1979	35	Dead	Group 3, GroupAll
364	CH-W-045-01	Chico	1979	18	Dead	Group 3, GroupAll
365	CH-W-010-01	Chico	1900	98	Dead	Group 3, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
366	BK-W-191-01	Bakersfield	1979	41	Censored	Group 4, GroupAll
367	DIX-W-007-01	Dixon	1979	41	Censored	Group 1, GroupAll
368	MRL-W-014-01	Marysville	1979	40	Censored	Group 3, GroupAll
369	SLN-W-030-01	Salinas	1979	41	Censored	Group 2, GroupAll
370	VIS-W-058-01	Visalia	1979	41	Censored	Group 4, GroupAll
371	VIS-W-053-01	Visalia	1979	41	Censored	Group 4, GroupAll
372	POND-W-002-01	Kern River Valley	1979	30	Dead	Group 5, GroupAll
373	SEL-W-015-01	Selma	1979	18	Dead	Group 4, GroupAll
374	BK-W-182-01	Bakersfield	1980	40	Censored	Group 4, GroupAll
375	BK-W-183-01	Bakersfield	1980	39	Censored	Group 4, GroupAll
376	CBK-W-011-01	City of Bakersfield	1980	40	Censored	Group 4, GroupAll
377	DOM-W-279-01	Dominguez	1980	40	Censored	Group 6, GroupAll
378	SLNH-W-033-01	Salinas	1980	39	Censored	Group 2, GroupAll
379	SLN-W-031-01	Salinas	1980	36	Dead	Group 2, GroupAll
380	BK-W-184-01	Bakersfield	1981	39	Censored	Group 4, GroupAll
381	BK-W-185-01	Bakersfield	1981	39	Censored	Group 4, GroupAll
382	CBK-W-012-01	City of Bakersfield	1981	39	Censored	Group 4, GroupAll
383	CBK-W-101-01	City of Bakersfield	1981	39	Censored	Group 4, GroupAll
384	CH-W-059-01	Chico	1981	38	Censored	Group 3, GroupAll
385	CH-W-058-01	Chico	1981	23	Dead	Group 3, GroupAll
386	CH-W-060-01	Chico	1982	17	Dead	Group 3, GroupAll
387	CBK-W-013-01	City of Bakersfield	1982	37	Censored	Group 4, GroupAll
388	ARM-W-001-02	Redwood Valley	1982	38	Censored	Group 3, GroupAll
389	BK-W-187-01	Bakersfield	1982	31	Dead	Group 4, GroupAll
390	BK-W-189-01	Bakersfield	1983	37	Censored	Group 4, GroupAll
391	BKNG-W-190-01	Bakersfield	1984	36	Censored	Group 4, GroupAll
392	SEL-W-013-02	Selma	1983	37	Censored	Group 4, GroupAll
393	BKNG-W-196-01	Bakersfield	1988	31	Censored	Group 4, GroupAll
394	CBK-W-015-01	City of Bakersfield	1984	36	Censored	Group 4, GroupAll
395	VIS-W-011-02	Visalia	1984	36	Censored	Group 4, GroupAll
396	LL-W-302-01	Salinas	1984	31	Dead	Group 2, GroupAll
397	CBK-W-017-01	City of Bakersfield	1985	35	Censored	Group 4, GroupAll
398	CC-W-004-01	East Los Angeles	1985	35	Censored	Group 6, GroupAll
399	SLN-W-037-01	Salinas	1985	35	Censored	Group 2, GroupAll
400	CBK-W-021-01	City of Bakersfield	1986	34	Censored	Group 4, GroupAll
401	CH-W-062-01	Chico	1986	34	Censored	Group 3, GroupAll
402	CC-W-007-01	East Los Angeles	1986	34	Censored	Group 6, GroupAll
403	MRL-W-015-01	Marysville	1986	34	Censored	Group 3, GroupAll
404	LL-W-303-01	Salinas	1986	34	Censored	Group 2, GroupAll
405	SLN-W-038-01	Salinas	1986	34	Censored	Group 2, GroupAll
406	SLNH-W-036-01	Salinas	1982	16	Dead	Group 2, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
407	BK-W-062-02	Bakersfield	1987	33	Censored	Group 4, GroupAll
408	BK-W-192-01	Bakersfield	1977	42	Censored	Group 4, GroupAll
409	CBK-W-010-02	City of Bakersfield	1987	33	Censored	Group 4, GroupAll
410	CBK-W-016-01	City of Bakersfield	1987	33	Censored	Group 4, GroupAll
411	CBK-W-020-01	City of Bakersfield	1987	33	Censored	Group 4, GroupAll
412	CBK-W-022-01	City of Bakersfield	1987	33	Censored	Group 4, GroupAll
413	HWK-W-001-02	Redwood Valley	1987	33	Censored	Group 3, GroupAll
414	SEL-W-016-03	Selma	1987	33	Censored	Group 4, GroupAll
415	CMM-W-061-01	Salinas	1987	33	Censored	Group 2, GroupAll
416	VIS-W-056-01	Visalia	1987	33	Censored	Group 4, GroupAll
417	BK-W-195-01	Bakersfield	1988	32	Censored	Group 4, GroupAll
418	BKNG-W-197-01	Bakersfield	1989	31	Censored	Group 4, GroupAll
419	CH-W-063-01	Chico	1988	31	Censored	Group 3, GroupAll
420	CH-W-064-01	Chico	1988	32	Censored	Group 3, GroupAll
421	SLNH-W-040-01	Salinas	1988	32	Censored	Group 2, GroupAll
422	BK-W-193-01	Bakersfield	1988	24	Dead	Group 4, GroupAll
423	POND-W-003-01	Kern River Valley	1988	28	Dead	Group 5, GroupAll
424	BKNG-W-201-01	Bakersfield	1990	30	Censored	Group 4, GroupAll
425	CH-W-061-01	Chico	1989	31	Censored	Group 3, GroupAll
426	SLN-W-041-01	Salinas	1989	10	Dead	Group 2, GroupAll
427	VIS-W-063-01	Visalia	1989	26	Dead	Group 4, GroupAll
428	VIS-W-069-01	Visalia	1989	31	Dead	Group 4, GroupAll
429	VIS-W-063-02	Visalia	1989	21	Dead	Group 4, GroupAll
430	CH-W-065-01	Chico	1990	30	Censored	Group 3, GroupAll
431	ARD-W-014-01	Kern River Valley	1990	30	Censored	Group 5, GroupAll
432	FE-W-001-01	Salinas	1990	30	Censored	Group 2, GroupAll
433	FE-W-002-01	Salinas	1990	30	Censored	Group 2, GroupAll
434	VIS-W-061-01	Visalia	1990	30	Censored	Group 4, GroupAll
435	VIS-W-062-01	Visalia	1990	30	Censored	Group 4, GroupAll
436	BKNG-W-203-01	Bakersfield	1997	7	Dead	Group 4, GroupAll
437	UBOD-W-001-01	Kern River Valley	1990	21	Dead	Group 5, GroupAll
438	UBOD-W-003-01	Kern River Valley	1990	7	Dead	Group 5, GroupAll
439	SLN-W-043-01	Salinas	1990	12	Dead	Group 2, GroupAll
440	CBK-W-025-01	City of Bakersfield	1989	31	Censored	Group 4, GroupAll
441	CBK-W-028-01	City of Bakersfield	1991	29	Censored	Group 4, GroupAll
442	KC-W-007-01	King City	1991	29	Censored	Group 2, GroupAll
443	SOLA-W-005-02	Kern River Valley	1991	29	Censored	Group 5, GroupAll
444	DOM-W-232-03	Dominguez	1991	29	Censored	Group 6, GroupAll
445	DOM-W-275-01	Dominguez	1991	28	Censored	Group 6, GroupAll
446	DOM-W-290-01	Dominguez	1991	29	Censored	Group 6, GroupAll
447	LL-W-305-01	Salinas	1991	29	Censored	Group 2, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
448	SLN-W-044-01	Salinas	1991	29	Censored	Group 2, GroupAll
449	BK-W-202-01	Bakersfield	1992	28	Censored	Group 4, GroupAll
450	BKNG-W-214-01	Bakersfield	2001	19	Censored	Group 4, GroupAll
451	CBK-W-029-01	City of Bakersfield	1992	28	Censored	Group 4, GroupAll
452	ARD-W-017-01	Kern River Valley	1992	28	Censored	Group 5, GroupAll
453	ARD-W-018-01	Kern River Valley	1992	27	Censored	Group 5, GroupAll
454	SMTN-W-015-01	Kern River Valley	1992	28	Censored	Group 5, GroupAll
455	SEL-W-018-01	Selma	1992	28	Censored	Group 4, GroupAll
456	SLN-W-046-01	Salinas	1992	28	Censored	Group 2, GroupAll
457	VIS-W-064-01	Visalia	1992	28	Censored	Group 4, GroupAll
458	VIS-W-070-01	Visalia	1992	28	Censored	Group 4, GroupAll
459	CBK-W-023-01	City of Bakersfield	1992	28	Censored	Group 4, GroupAll
460	CBK-W-026-01	City of Bakersfield	1991	28	Censored	Group 4, GroupAll
461	CBK-W-027-01	City of Bakersfield	1993	27	Censored	Group 4, GroupAll
462	CBK-W-031-01	City of Bakersfield	1993	27	Censored	Group 4, GroupAll
463	DOM-W-272-01	Dominguez	1993	27	Censored	Group 6, GroupAll
464	VIS-W-072-01	Visalia	1993	27	Censored	Group 4, GroupAll
465	VIS-W-078-01	Visalia	1993	27	Censored	Group 4, GroupAll
466	CBK-W-204-01	City of Bakersfield	1993	21	Dead	Group 4, GroupAll
467	LLAN-W-003-01	Kern River Valley	1993	2	Dead	Group 5, GroupAll
468	SLN-W-045-01	Salinas	1993	22	Dead	Group 2, GroupAll
469	LEO-W-001-01	Antelope Valley	1994	25	Censored	Group 5, GroupAll
470	KC-W-008-01	King City	1994	26	Censored	Group 2, GroupAll
471	DOM-W-294-01	Dominguez	1994	25	Censored	Group 6, GroupAll
472	SEL-W-019-01	Selma	1994	26	Censored	Group 4, GroupAll
473	VIS-W-079-01	Visalia	1994	26	Censored	Group 4, GroupAll
474	ONYX-W-005-01	Kern River Valley	1994	21	Dead	Group 5, GroupAll
475	CH-W-S-01	Chico	1995	25	Censored	Group 3, GroupAll
476	CH-W-067-01	Chico	1995	25	Censored	Group 3, GroupAll
477	TUL-W-201-02	Visalia	1995	25	Censored	Group 4, GroupAll
478	VIS-W-080-01	Visalia	1995	25	Censored	Group 4, GroupAll
479	KERV-W-011-01	Kern River Valley	1995	21	Dead	Group 5, GroupAll
480	KERV-W-013-01	Kern River Valley	1995	21	Dead	Group 5, GroupAll
481	KERV-W-012-01	Kern River Valley	1995	11	Dead	Group 5, GroupAll
482	CH-W-S-02	Chico	1996	24	Censored	Group 3, GroupAll
483	BKNG-W-217-01	Bakersfield	2001	19	Censored	Group 4, GroupAll
484	CBK-W-205-01	City of Bakersfield	1997	23	Censored	Group 4, GroupAll
485	CBK-W-036-01	City of Bakersfield	1997	23	Censored	Group 4, GroupAll
486	CBK-W-203-01	City of Bakersfield	1997	22	Censored	Group 4, GroupAll
487	COUN-W-002-01	Kern River Valley	1997	21	Censored	Group 5, GroupAll
488	RIVK-W-003-01	Kern River Valley	1997	23	Censored	Group 5, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
489	VIS-W-081-01	Visalia	1997	23	Censored	Group 4, GroupAll
490	TUL-W-200-01	Visalia	1997	20	Dead	Group 4, GroupAll
491	CBK-W-032-01	City of Bakersfield	1998	22	Censored	Group 4, GroupAll
492	CBK-W-039-01	City of Bakersfield	1998	21	Censored	Group 4, GroupAll
493	CBK-W-037-01	City of Bakersfield	1998	22	Censored	Group 4, GroupAll
494	CBK-W-038-01	City of Bakersfield	1998	22	Censored	Group 4, GroupAll
495	CH-W-069-01	Chico	1998	22	Censored	Group 3, GroupAll
496	MESA-W-001-01	Kern River Valley	1998	20	Censored	Group 5, GroupAll
497	CH-W-068-01	Chico	1998	14	Dead	Group 3, GroupAll
498	DOM-W-298-01	Dominguez	1999	21	Censored	Group 6, GroupAll
499	SEL-W-020-01	Selma	1999	21	Censored	Group 4, GroupAll
500	VIS-W-082-01	Visalia	1999	21	Censored	Group 4, GroupAll
501	CBK-W-040-01	City of Bakersfield	1999	9	Dead	Group 4, GroupAll
502	CBK-W-206-01	City of Bakersfield	1999	11	Dead	Group 4, GroupAll
503	KERV-W-015-01	Kern River Valley	1999	17	Dead	Group 5, GroupAll
504	CH-W-070-01	Chico	2000	20	Censored	Group 3, GroupAll
505	HAM-W-002-02	Chico	1979	41	Censored	Group 3, GroupAll
506	SMTN-W-002-01	Kern River Valley	1990	30	Censored	Group 5, GroupAll
507	KERV-W-016-01	Kern River Valley	2000	16	Dead	Group 5, GroupAll
508	COUN-W-003-01	Kern River Valley	2000	15	Dead	Group 5, GroupAll
509	MESA-W-004-01	Kern River Valley	2000	5	Dead	Group 5, GroupAll
510	CH-W-071-01	Chico	2001	19	Censored	Group 3, GroupAll
511	HAW-W-013-01	Hawthorne	1992	28	Censored	Group 6, GroupAll
512	KC-W-012-01	King City	2001	19	Censored	Group 2, GroupAll
513	LAS-W-115-01	Los Altos	1978	42	Censored	Group 1, GroupAll
514	LAS-W-121-02	Los Altos	1978	42	Censored	Group 1, GroupAll
515	DOM-W-297-01	Dominguez	1997	23	Censored	Group 6, GroupAll
516	MUL-W-300-01	Visalia	2001	19	Censored	Group 4, GroupAll
517	HAW-W-012-01	Hawthorne	1992	10	Dead	Group 6, GroupAll
518	DOM-W-219-02	Dominguez	1997	19	Dead	Group 6, GroupAll
519	SEL-W-004-03	Selma	1978	39	Dead	Group 4, GroupAll
520	BK-W-123-01	Bakersfield	1978	42	Censored	Group 4, GroupAll
521	BKNG-W-219-01	Bakersfield	2004	16	Censored	Group 4, GroupAll
522	CBK-W-001-02	City of Bakersfield	1993	27	Censored	Group 4, GroupAll
523	CBK-W-019-01	City of Bakersfield	1989	31	Censored	Group 4, GroupAll
524	CBK-W-024-01	City of Bakersfield	1994	26	Censored	Group 4, GroupAll
525	CBK-W-030-01	City of Bakersfield	1992	28	Censored	Group 4, GroupAll
526	CBK-W-033-01	City of Bakersfield	1994	26	Censored	Group 4, GroupAll
527	CBK-W-034-01	City of Bakersfield	1995	25	Censored	Group 4, GroupAll
528	CBK-W-035-01	City of Bakersfield	1995	25	Censored	Group 4, GroupAll
529	CBK-W-103-01	City of Bakersfield	1986	34	Censored	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
530	CBK-W-201-01	City of Bakersfield	1987	33	Censored	Group 4, GroupAll
531	CH-W-072-01	Chico	2002	18	Censored	Group 3, GroupAll
532	MESA-W-003-01	Kern River Valley	2002	16	Censored	Group 5, GroupAll
533	LIV-W-031-01	Livermore	2002	17	Censored	Group 1, GroupAll
534	SLN-W-016-02	Salinas	2002	18	Censored	Group 2, GroupAll
535	VIS-W-016-02	Visalia	2002	18	Censored	Group 4, GroupAll
536	VIS-W-091-01	Visalia	1996	24	Censored	Group 4, GroupAll
537	CBK-W-202-01	City of Bakersfield	1988	15	Dead	Group 4, GroupAll
538	BK-W-199-01	Bakersfield	1988	27	Dead	Group 4, GroupAll
539	ELA-W-019-04	East Los Angeles	1978	20	Dead	Group 6, GroupAll
540	VIS-W-089-01	Visalia	1996	22	Dead	Group 4, GroupAll
541	VIS-W-090-01	Visalia	1996	19	Dead	Group 4, GroupAll
542	LAN-W-001-01	Antelope Valley	1995	25	Censored	Group 5, GroupAll
543	LHUG-W-001-01	Antelope Valley	1995	25	Censored	Group 5, GroupAll
544	LHUG-W-001-02	Antelope Valley	2003	17	Censored	Group 5, GroupAll
545	LHUG-W-002-02	Antelope Valley	1997	23	Censored	Group 5, GroupAll
546	CBK-W-041-01	City of Bakersfield	2000	20	Censored	Group 4, GroupAll
547	CBK-W-207-01	City of Bakersfield	1999	21	Censored	Group 4, GroupAll
548	CBK-W-210-01	City of Bakersfield	2003	16	Censored	Group 4, GroupAll
549	CH-W-037-01	Chico	1979	41	Censored	Group 3, GroupAll
550	CH-W-057-01	Chico	1980	40	Censored	Group 3, GroupAll
551	LBOD-W-008-01	Kern River Valley	1990	30	Censored	Group 5, GroupAll
552	LBOD-W-008-02	Kern River Valley	1995	25	Censored	Group 5, GroupAll
553	LLAN-W-004-01	Kern River Valley	1993	27	Censored	Group 5, GroupAll
554	LLAN-W-005-01	Kern River Valley	1993	27	Censored	Group 5, GroupAll
555	LLAN-W-006-01	Kern River Valley	1995	25	Censored	Group 5, GroupAll
556	ONYX-W-001-01	Kern River Valley	2003	17	Censored	Group 5, GroupAll
557	ONYX-W-002-01	Kern River Valley	1999	21	Censored	Group 5, GroupAll
558	SMTN-W-003-01	Kern River Valley	1982	38	Censored	Group 5, GroupAll
559	SOLA-W-005-01	Kern River Valley	1991	29	Censored	Group 5, GroupAll
560	LAS-W-015-01	Los Altos	1978	42	Censored	Group 1, GroupAll
561	CS-W-001-01	Redwood Valley	2001	18	Censored	Group 3, GroupAll
562	CS-W-002-01	Redwood Valley	2002	17	Censored	Group 3, GroupAll
563	CS-W-003-01	Redwood Valley	2002	17	Censored	Group 3, GroupAll
564	CS-W-004-01	Redwood Valley	2000	20	Censored	Group 3, GroupAll
565	CS-W-005-01	Redwood Valley	2003	16	Censored	Group 3, GroupAll
566	CS-W-010-01	Redwood Valley	2002	17	Censored	Group 3, GroupAll
567	LEO-W-002-01	Antelope Valley	1995	12	Dead	Group 5, GroupAll
568	LAN-W-001-02	Antelope Valley	1995	10	Dead	Group 5, GroupAll
569	KERV-W-005-01	Kern River Valley	1980	36	Dead	Group 5, GroupAll
570	KERV-W-009-01	Kern River Valley	1986	30	Dead	Group 5, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
571	LBOD-W-005-01	Kern River Valley	1990	25	Dead	Group 5, GroupAll
572	SQUM-W-003-01	Kern River Valley	1992	21	Dead	Group 5, GroupAll
573	SQUM-W-007-01	Kern River Valley	1992	21	Dead	Group 5, GroupAll
574	LBOD-W-005-02	Kern River Valley	1990	23	Dead	Group 5, GroupAll
575	KERV-W-002-01	Kern River Valley	1995	15	Dead	Group 5, GroupAll
576	LBOD-W-008-03	Kern River Valley	1995	13	Dead	Group 5, GroupAll
577	KERV-W-004-01	Kern River Valley	1995	10	Dead	Group 5, GroupAll
578	SMTN-W-001-01	Kern River Valley	2003	2	Dead	Group 5, GroupAll
579	KERV-W-003-01	Kern River Valley	1980	30	Dead	Group 5, GroupAll
580	MSHA-W-001-01	Kern River Valley	1991	23	Dead	Group 5, GroupAll
581	MSHA-W-002-01	Kern River Valley	1989	25	Dead	Group 5, GroupAll
582	STK-W-043-01	Stockton	1978	24	Dead	Group 1, GroupAll
583	SLNH-W-063-01	Salinas	2004	16	Censored	Group 2, GroupAll
584	VIS-W-083-01	Visalia	2004	16	Censored	Group 4, GroupAll
585	VIS-W-092-01	Visalia	2004	13	Dead	Group 4, GroupAll
586	BKNG-W-220-01	Bakersfield	2005	15	Censored	Group 4, GroupAll
587	CBK-W-OLC1-01	City of Bakersfield	2005	15	Censored	Group 4, GroupAll
588	CBK-W-OLC2-01	City of Bakersfield	2005	15	Censored	Group 4, GroupAll
589	CBK-W-045-01	City of Bakersfield	2005	13	Censored	Group 4, GroupAll
590	CBK-W-046-01	City of Bakersfield	2005	15	Censored	Group 4, GroupAll
591	CBK-W-212-01	City of Bakersfield	2005	15	Censored	Group 4, GroupAll
592	LBOD-W-013-01	Kern River Valley	2005	15	Censored	Group 5, GroupAll
593	SOLA-W-007-01	Kern River Valley	2005	15	Censored	Group 5, GroupAll
594	SLN-W-065-01	Salinas	2005	15	Censored	Group 2, GroupAll
595	VIS-W-093-01	Visalia	2005	15	Censored	Group 4, GroupAll
596	CH-W-075-01	Chico	2006	14	Censored	Group 3, GroupAll
597	CH-W-076-01	Chico	2006	13	Censored	Group 3, GroupAll
598	KC-W-013-01	King City	2006	14	Censored	Group 2, GroupAll
599	KC-W-014-01	King City	2006	14	Censored	Group 2, GroupAll
600	RIVK-W-001-01	Kern River Valley	2006	14	Censored	Group 5, GroupAll
601	SOLA-W-008-01	Kern River Valley	2003	16	Censored	Group 5, GroupAll
602	LAS-W-034-02	Los Altos	2006	14	Censored	Group 1, GroupAll
603	SEL-W-017-02	Selma	2006	14	Censored	Group 4, GroupAll
604	SLN-W-022-02	Salinas	2006	14	Censored	Group 2, GroupAll
605	STK-W-085-01	Stockton	2006	14	Censored	Group 1, GroupAll
606	VIS-W-094-01	Visalia	2006	14	Censored	Group 4, GroupAll
607	LEO-W-001-07	Antelope Valley	2007	13	Censored	Group 5, GroupAll
608	CBK-W-043-01	City of Bakersfield	2007	13	Censored	Group 4, GroupAll
609	CBK-W-049-01	City of Bakersfield	2007	13	Censored	Group 4, GroupAll
610	CH-W-079-01	Chico	2007	13	Censored	Group 3, GroupAll
611	UBOD-W-104-01	Kern River Valley	2007	13	Censored	Group 5, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
612	UBOD-W-104-02	Kern River Valley	2007	13	Censored	Group 5, GroupAll
613	SLN-W-064-01	Salinas	2007	13	Censored	Group 2, GroupAll
614	SLN-W-067-01	Salinas	2007	13	Censored	Group 2, GroupAll
615	SLNH-W-071-01	Salinas	2007	13	Censored	Group 2, GroupAll
616	VIS-W-097-01	Visalia	2007	13	Censored	Group 4, GroupAll
617	VIS-W-096-01	Visalia	2007	8	Dead	Group 4, GroupAll
618	CS-W-006-01	Redwood Valley	2000	19	Censored	Group 3, GroupAll
619	SLN-W-069-01	Salinas	2008	12	Censored	Group 2, GroupAll
620	CBK-W-047-01	City of Bakersfield	2009	11	Censored	Group 4, GroupAll
621	CH-W-080-01	Chico	2009	11	Censored	Group 3, GroupAll
622	DIX-W-009-01	Dixon	2009	11	Censored	Group 1, GroupAll
623	ELA-W-039-02	East Los Angeles	2009	11	Censored	Group 6, GroupAll
624	GRAN-W-001-03	Antelope Valley	2010	10	Censored	Group 5, GroupAll
625	SSF-W-001-22	South San Francisco	2010	10	Censored	Group 1, GroupAll
626	SEL-W-022-01	Selma	2010	10	Censored	Group 4, GroupAll
627	VIS-W-095-01	Visalia	2010	10	Censored	Group 4, GroupAll
628	GRAN-W-001-01	Antelope Valley	2000	20	Censored	Group 5, GroupAll
629	SSF-W-001-23	South San Francisco	2011	9	Censored	Group 1, GroupAll
630	CBK-W-052-01	City of Bakersfield	2011	9	Censored	Group 4, GroupAll
631	CS-W-011-01	Redwood Valley	2011	8	Censored	Group 3, GroupAll
632	SLN-W-047-01	Salinas	2011	9	Censored	Group 2, GroupAll
633	STK-W-021-02	Stockton	2011	9	Censored	Group 1, GroupAll
634	FMT-W-001-01	Antelope Valley	1995	25	Censored	Group 5, GroupAll
635	LAN-W-001-03	Antelope Valley	2006	14	Censored	Group 5, GroupAll
636	CBK-W-053-01	City of Bakersfield	2012	7	Censored	Group 4, GroupAll
637	CBK-W-055-01	City of Bakersfield	2012	8	Censored	Group 4, GroupAll
638	FMT-W-001-02	Antelope Valley	2013	7	Censored	Group 5, GroupAll
639	CH-W-S-03	Chico	2013	7	Censored	Group 3, GroupAll
640	CH-W-S-04	Chico	2013	7	Censored	Group 3, GroupAll
641	MUL-W-301-01	Visalia	2013	7	Censored	Group 4, GroupAll
642	CBK-W-OLC3-01	City of Bakersfield	2014	6	Censored	Group 4, GroupAll
643	OH-W-205-01	Salinas	2013	7	Censored	Group 2, GroupAll
644	STK-W-087-01	Stockton	2015	5	Censored	Group 1, GroupAll
645	ELA-W-063-01	East Los Angeles	2015	5	Censored	Group 6, GroupAll
646	LLAN-W-007-01	Kern River Valley	2016	4	Censored	Group 5, GroupAll
647	SLN-W-108-02	Salinas	2016	4	Censored	Group 2, GroupAll
648	CBK-W-054-01	City of Bakersfield	2017	3	Censored	Group 4, GroupAll
649	ELA-W-062-02	East Los Angeles	2018	2	Dead	Group 6, GroupAll
650	ELA-W-062-01	East Los Angeles	2019	1	Dead	Group 6, GroupAll
651	SSF-W-001-15	South San Francisco	1925	91	Dead	Group 1, GroupAll
652	BK-W-075-01	Bakersfield	1948	67	Dead	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
653	BK-W-058-01	Bakersfield	1943	64	Dead	Group 4, GroupAll
654	BK-W-093-01	Bakersfield	1952	63	Dead	Group 4, GroupAll
655	BK-W-060-02	Bakersfield	1962	53	Dead	Group 4, GroupAll
656	BKNG-W-179-01	Bakersfield	1963	52	Dead	Group 4, GroupAll
657	BK-W-049-02	Bakersfield	1967	52	Dead	Group 4, GroupAll
658	BK-W-121-01	Bakersfield	1957	50	Dead	Group 4, GroupAll
659	BK-W-115-01	Bakersfield	1983	22	Dead	Group 4, GroupAll
660	CBK-W-102-01	City of Bakersfield	1981	21	Dead	Group 4, GroupAll
661	CBK-W-001-01	City of Bakersfield	1978	22	Dead	Group 4, GroupAll
662	BK-W-069-01	Bakersfield	1900	98	Dead	Group 4, GroupAll
663	BK-W-076-01	Bakersfield	1900	98	Dead	Group 4, GroupAll
664	BK-W-062-01	Bakersfield	1991	27	Dead	Group 4, GroupAll
665	BK-W-066-01	Bakersfield	1991	14	Dead	Group 4, GroupAll
666	BK-W-200-01	Bakersfield	1988	27	Dead	Group 4, GroupAll
667	BK-W-194-01	Bakersfield	1988	30	Dead	Group 4, GroupAll
668	TCWD-W-001-01	Bakersfield	2005	3	Dead	Group 4, GroupAll
669	CBK-W-209-01	City of Bakersfield	2003	2	Dead	Group 4, GroupAll
670	BK-W-110-01	Bakersfield	1900	119	Dead	Group 4, GroupAll
671	DIX-W-004-01	Dixon	1966	49	Dead	Group 1, GroupAll
672	DIX-W-001-02	Dixon	1978	19	Dead	Group 1, GroupAll
673	ELA-W-029-01	East Los Angeles	1941	66	Dead	Group 6, GroupAll
674	ELA-W-029-02	East Los Angeles	1951	62	Dead	Group 6, GroupAll
675	ELA-W-015-02	East Los Angeles	1941	62	Dead	Group 6, GroupAll
676	ELA-W-028-01	East Los Angeles	1942	61	Dead	Group 6, GroupAll
677	ELA-W-039-01	East Los Angeles	1946	61	Dead	Group 6, GroupAll
678	ELA-W-053-01	East Los Angeles	1951	64	Dead	Group 6, GroupAll
679	ELA-W-046-01	East Los Angeles	1950	55	Dead	Group 6, GroupAll
680	CC-W-003-01	East Los Angeles	1985	28	Dead	Group 6, GroupAll
681	ELA-W-006-02	East Los Angeles	1900	105	Dead	Group 6, GroupAll
682	CC-W-003-02	East Los Angeles	1985	23	Dead	Group 6, GroupAll
683	CC-W-001-01	East Los Angeles	2000	18	Dead	Group 6, GroupAll
684	ELA-W-038-01	East Los Angeles	1991	10	Dead	Group 6, GroupAll
685	KC-W-001-02	King City	1929	69	Dead	Group 2, GroupAll
686	KC-W-001-03	King City	1937	61	Dead	Group 2, GroupAll
687	KC-W-002-02	King City	1948	53	Dead	Group 2, GroupAll
688	KC-W-002-03	King City	1955	46	Dead	Group 2, GroupAll
689	UBOD-W-002-01	Kern River Valley	1990	17	Dead	Group 5, GroupAll
690	ARD-W-013-01	Kern River Valley	1992	16	Dead	Group 5, GroupAll
691	SOLA-W-001-01	Kern River Valley	1997	15	Dead	Group 5, GroupAll
692	SOLA-W-002-01	Kern River Valley	1997	15	Dead	Group 5, GroupAll
693	LAS-W-001-01	Los Altos	1932	84	Dead	Group 1, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
694	LAS-W-002-02	Los Altos	1940	72	Dead	Group 1, GroupAll
695	LAS-W-004-01	Los Altos	1948	68	Dead	Group 1, GroupAll
696	LAS-W-002-03	Los Altos	1947	65	Dead	Group 1, GroupAll
697	LAS-W-108-01	Los Altos	1949	63	Dead	Group 1, GroupAll
698	LAS-W-024-01	Los Altos	1958	58	Dead	Group 1, GroupAll
699	LAS-W-020-01	Los Altos	1959	57	Dead	Group 1, GroupAll
700	LAS-W-123-02	Los Altos	1959	58	Dead	Group 1, GroupAll
701	LAS-W-026-01	Los Altos	1960	52	Dead	Group 1, GroupAll
702	LAS-W-016-02	Los Altos	1978	34	Dead	Group 1, GroupAll
703	LAS-W-110-01	Los Altos	1980	32	Dead	Group 1, GroupAll
704	LAS-W-029-01	Los Altos	1978	34	Dead	Group 1, GroupAll
705	LIV-W-012-01	Livermore	1956	60	Dead	Group 1, GroupAll
706	LIV-W-017-01	Livermore	1960	48	Dead	Group 1, GroupAll
707	LIV-W-003-01	Livermore	1978	23	Dead	Group 1, GroupAll
708	LIV-W-004-01	Livermore	1991	13	Dead	Group 1, GroupAll
709	MRL-W-005-01	Marysville	1940	67	Dead	Group 3, GroupAll
710	MRL-W-003-01	Marysville	1933	73	Dead	Group 3, GroupAll
711	MRL-W-006-02	Marysville	1969	33	Dead	Group 3, GroupAll
712	MRL-W-004-02	Marysville	1972	36	Dead	Group 3, GroupAll
713	DOM-W-215-02	Dominguez	1945	66	Dead	Group 6, GroupAll
714	DOM-W-232-01	Dominguez	1968	39	Dead	Group 6, GroupAll
715	DOM-W-232-02	Dominguez	1969	36	Dead	Group 6, GroupAll
716	HR-W-016-01	Hermosa Redondo	1900	106	Dead	Group 6, GroupAll
717	HR-W-021-02	Hermosa Redondo	1992	14	Dead	Group 6, GroupAll
718	HR-W-021-01	Hermosa Redondo	1992	14	Dead	Group 6, GroupAll
719	DOM-W-219-01	Dominguez	1991	12	Dead	Group 6, GroupAll
720	DOM-W-231-01	Dominguez	1995	7	Dead	Group 6, GroupAll
721	DOM-W-224-01	Dominguez	1995	7	Dead	Group 6, GroupAll
722	SEL-W-005-03	Selma	1924	87	Dead	Group 4, GroupAll
723	SEL-W-010-01	Selma	1950	59	Dead	Group 4, GroupAll
724	SEL-W-009-01	Selma	1949	54	Dead	Group 4, GroupAll
725	SEL-W-016-01	Selma	1900	95	Dead	Group 4, GroupAll
726	SEL-W-017-01	Selma	1985	21	Dead	Group 4, GroupAll
727	SLN-W-018-01	Salinas	1942	66	Dead	Group 2, GroupAll
728	SLN-W-010-01	Salinas	1947	61	Dead	Group 2, GroupAll
729	SLN-W-013-01	Salinas	1955	58	Dead	Group 2, GroupAll
730	SLN-W-001-04	Salinas	1948	57	Dead	Group 2, GroupAll
731	SLN-W-015-01	Salinas	1961	50	Dead	Group 2, GroupAll
732	SLN-W-103-01	Salinas	1955	53	Dead	Group 2, GroupAll
733	SLN-W-014-01	Salinas	1959	49	Dead	Group 2, GroupAll
734	SLN-W-013-02	Salinas	1958	47	Dead	Group 2, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
735	SLN-W-102-01	Salinas	1955	43	Dead	Group 2, GroupAll
736	SLN-W-108-01	Salinas	1979	37	Dead	Group 2, GroupAll
737	SLN-W-028-01	Salinas	1977	36	Dead	Group 2, GroupAll
738	SLN-W-104-01	Salinas	1985	20	Dead	Group 2, GroupAll
739	SLNH-W-034-01	Salinas	1980	18	Dead	Group 2, GroupAll
740	SLNH-W-070-02	Salinas	2007	11	Dead	Group 2, GroupAll
741	SLN-W-042-01	Salinas	1900	98	Dead	Group 2, GroupAll
742	SLN-W-022-01	Salinas	1996	23	Dead	Group 2, GroupAll
743	STK-W-017-01	Stockton	1947	69	Dead	Group 1, GroupAll
744	STK-W-037-01	Stockton	1953	63	Dead	Group 1, GroupAll
745	STK-W-038-01	Stockton	1954	62	Dead	Group 1, GroupAll
746	STK-W-008-01	Stockton	1941	56	Dead	Group 1, GroupAll
747	STK-W-050-01	Stockton	1960	56	Dead	Group 1, GroupAll
748	STK-W-010-01	Stockton	1944	55	Dead	Group 1, GroupAll
749	STK-W-031-01	Stockton	1951	50	Dead	Group 1, GroupAll
750	STK-W-020-01	Stockton	1949	52	Dead	Group 1, GroupAll
751	STK-W-049-01	Stockton	1958	48	Dead	Group 1, GroupAll
752	STK-W-026-01	Stockton	1950	50	Dead	Group 1, GroupAll
753	STK-W-027-01	Stockton	1950	61	Dead	Group 1, GroupAll
754	STK-W-056-01	Stockton	1953	44	Dead	Group 1, GroupAll
755	STK-W-001-23	Stockton	1965	43	Dead	Group 1, GroupAll
756	STK-W-001-25	Stockton	1968	40	Dead	Group 1, GroupAll
757	STK-W-001-24	Stockton	1968	39	Dead	Group 1, GroupAll
758	STK-W-053-01	Stockton	1960	37	Dead	Group 1, GroupAll
759	STK-W-001-16	Stockton	1980	22	Dead	Group 1, GroupAll
760	STK-W-030-01	Stockton	1978	21	Dead	Group 1, GroupAll
761	STK-W-042-01	Stockton	1900	102	Dead	Group 1, GroupAll
762	STK-W-013-01	Stockton	1900	97	Dead	Group 1, GroupAll
763	STK-W-023-01	Stockton	1900	97	Dead	Group 1, GroupAll
764	VIS-W-021-01	Visalia	1959	56	Dead	Group 4, GroupAll
765	VIS-W-006-03	Visalia	1963	53	Dead	Group 4, GroupAll
766	VIS-W-016-01	Visalia	1952	64	Dead	Group 4, GroupAll
767	VIS-W-028-01	Visalia	1966	46	Dead	Group 4, GroupAll
768	VIS-W-002-03	Visalia	1961	42	Dead	Group 4, GroupAll
769	VIS-W-055-01	Visalia	1967	39	Dead	Group 4, GroupAll
770	VIS-W-068-01	Visalia	1984	34	Dead	Group 4, GroupAll
771	VIS-W-004-03	Visalia	1900	99	Dead	Group 4, GroupAll
772	VIS-W-029-02	Visalia	1978	20	Dead	Group 4, GroupAll
773	VIS-W-004-04	Visalia	1978	20	Dead	Group 4, GroupAll
774	VIS-W-008-01	Visalia	1900	105	Dead	Group 4, GroupAll
775	VIS-W-088-01	Visalia	1997	16	Dead	Group 4, GroupAll

No	LIMS SPCID	District Name	Oldest Install or Sample Year	Age	Status	Datasets
776	VIS-W-066-01	Visalia	1989	9	Dead	Group 4, GroupAll
777	VIS-W-084-01	Visalia	1997	13	Dead	Group 4, GroupAll
778	VIS-W-086-01	Visalia	1997	13	Dead	Group 4, GroupAll

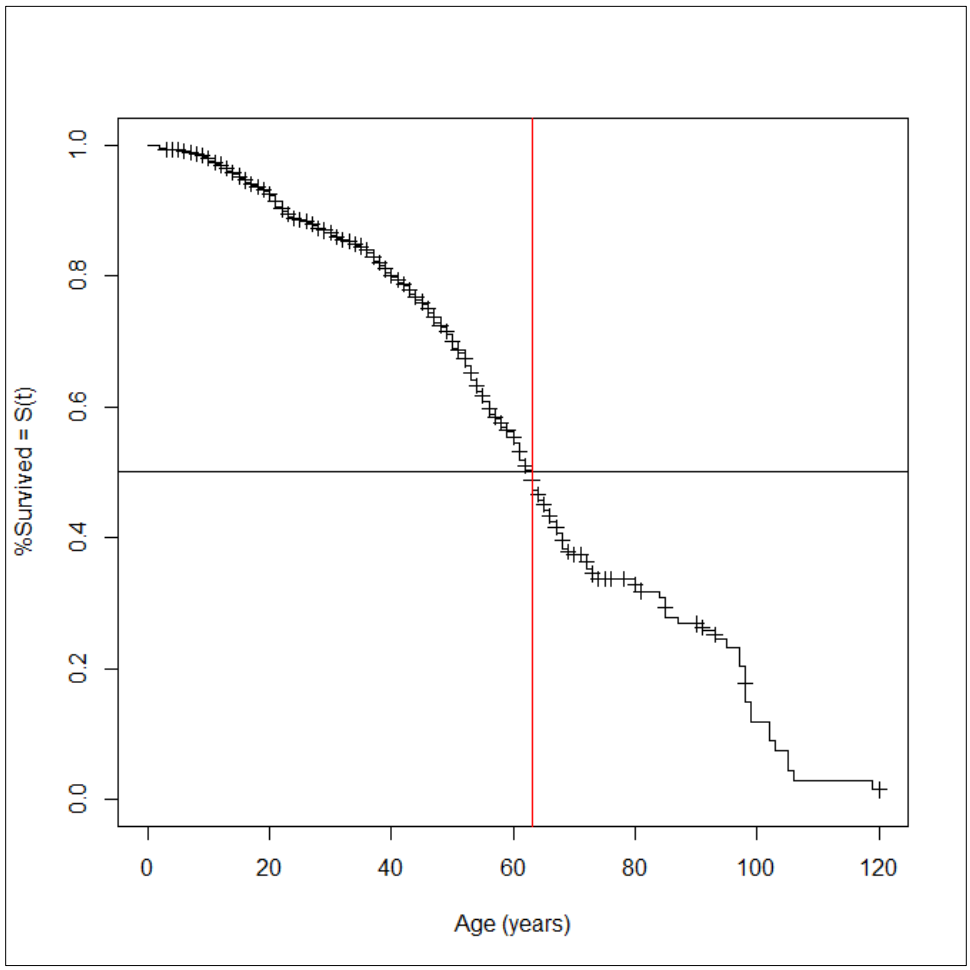
5.2 GroupAll Analysis

Dataset: 778 obs., 463 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
63	61	65	Use 63 as median useful life

Survival Curve:



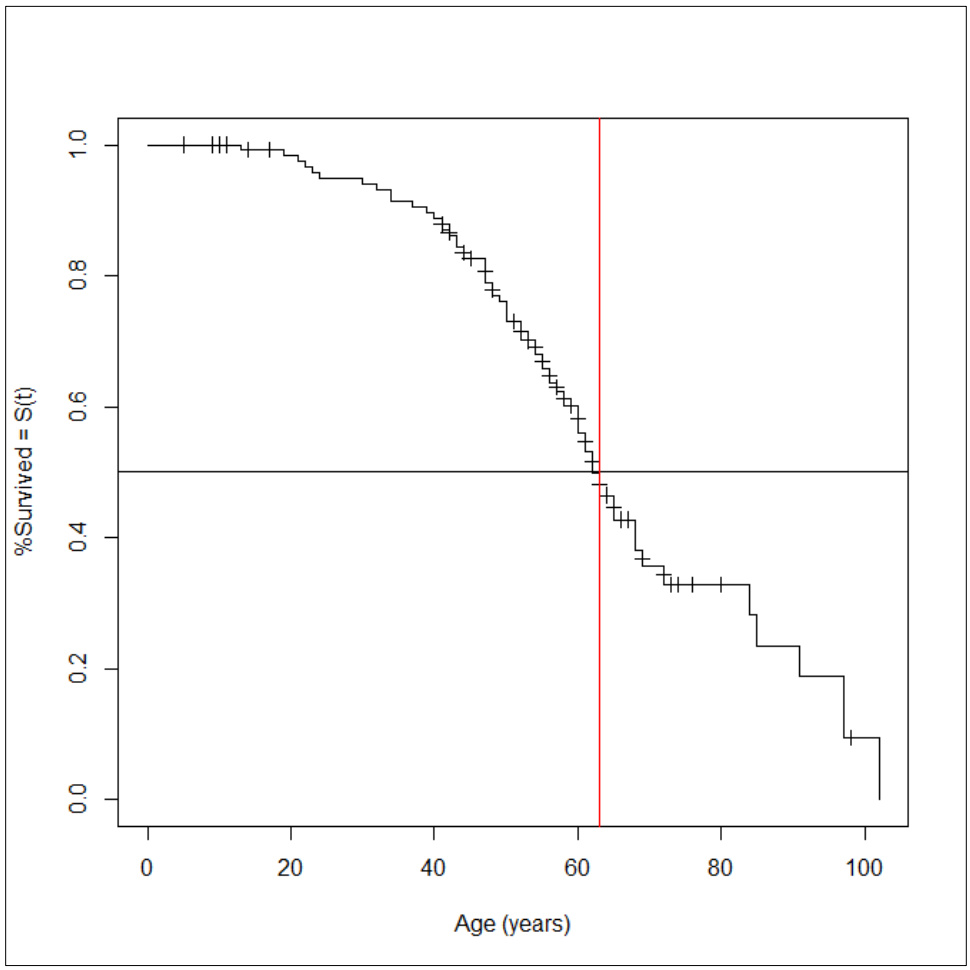
5.3 Group1 Analysis

Dataset: 124 obs., 61 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
62	60	69	Use 62 as median useful life

Survival Curve:



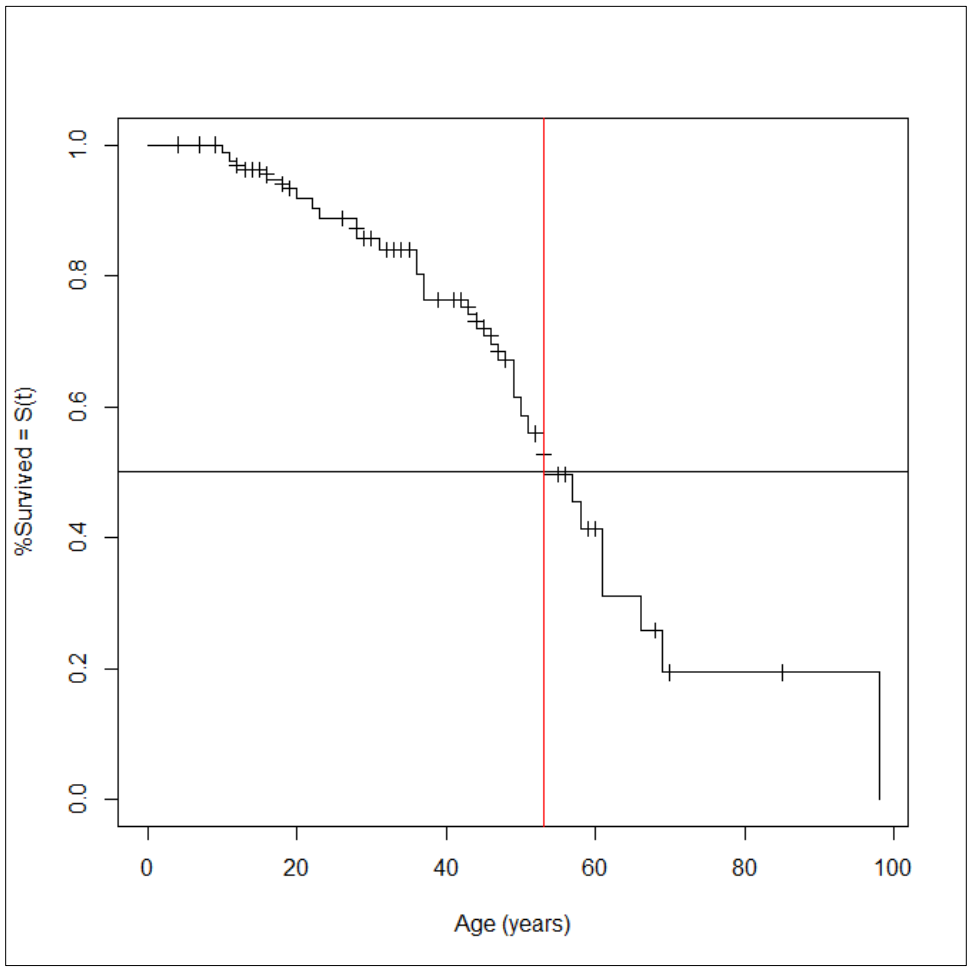
5.4 Group2 Analysis

Dataset: 81 obs., 49 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
53	49	69	Use 53 as median useful life

Survival Curve:



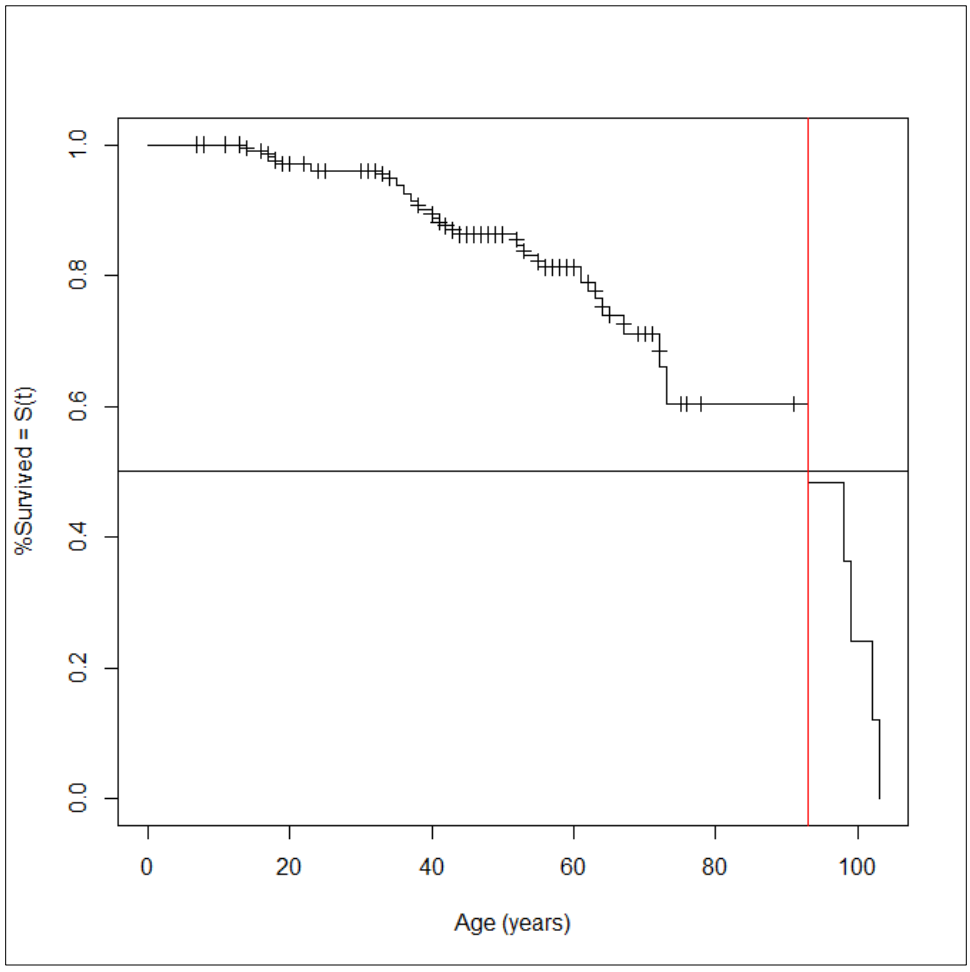
5.5 Group3 Analysis

Dataset: 112 obs., 86 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
93	73	NA	Use conservative estimate 75 as median useful life due to UCL unknown

Survival Curve:



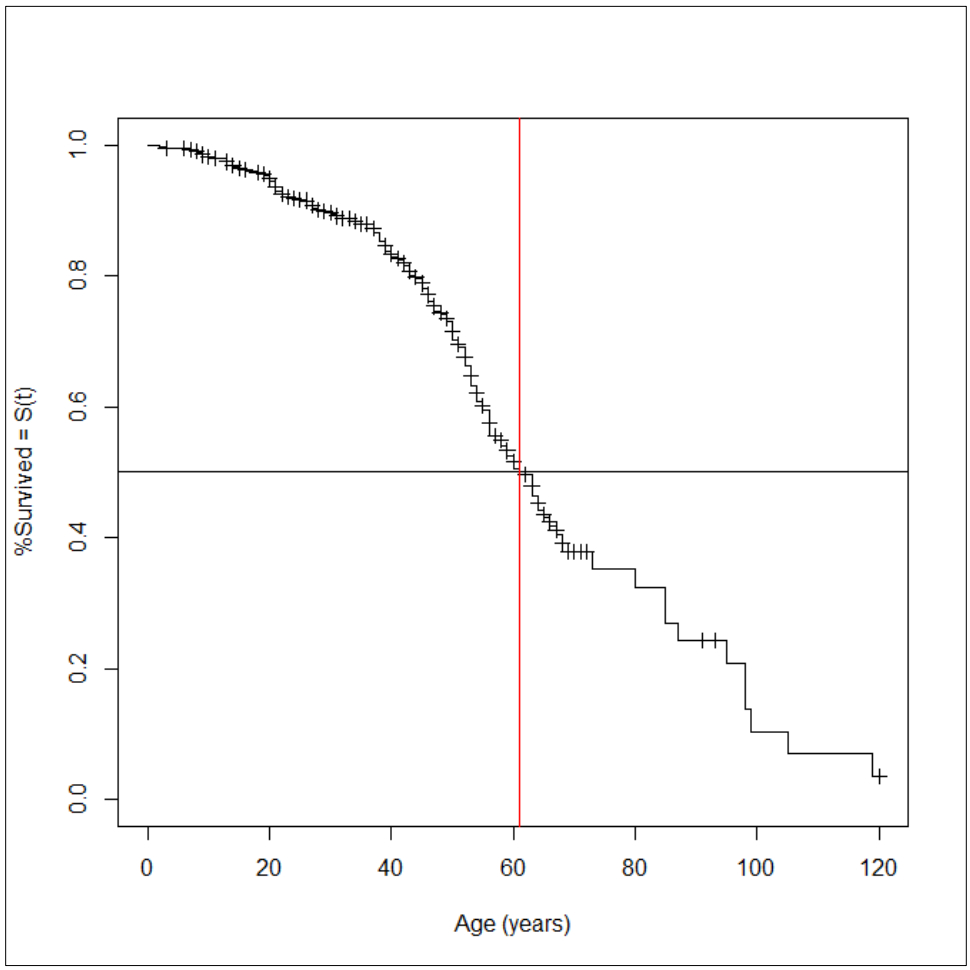
5.6 Group4 Analysis

Dataset: 331 obs., 206 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
61	56	67	Use 61 as median useful life

Survival Curve:



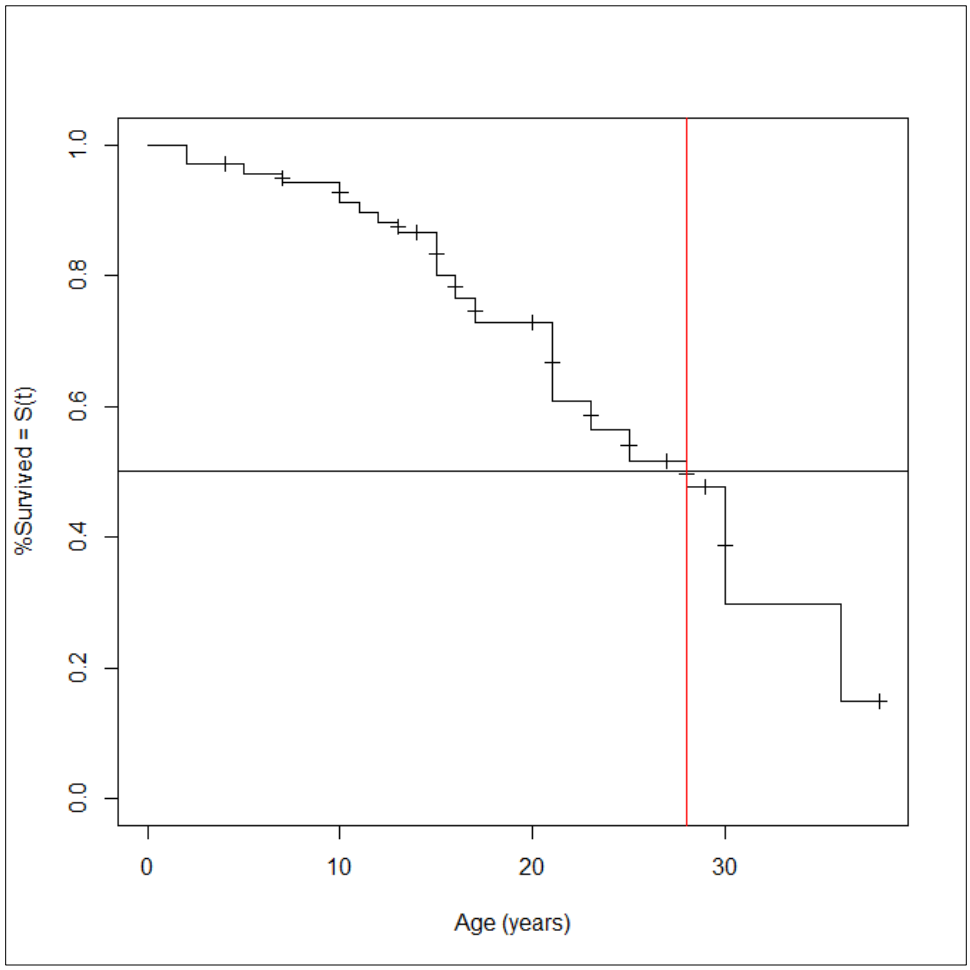
5.7 Group5 Analysis

Dataset: 69 obs., 37 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
28	21	NA	Use conservative estimate 28 as median useful life even though UCL unknown

Survival Curve:



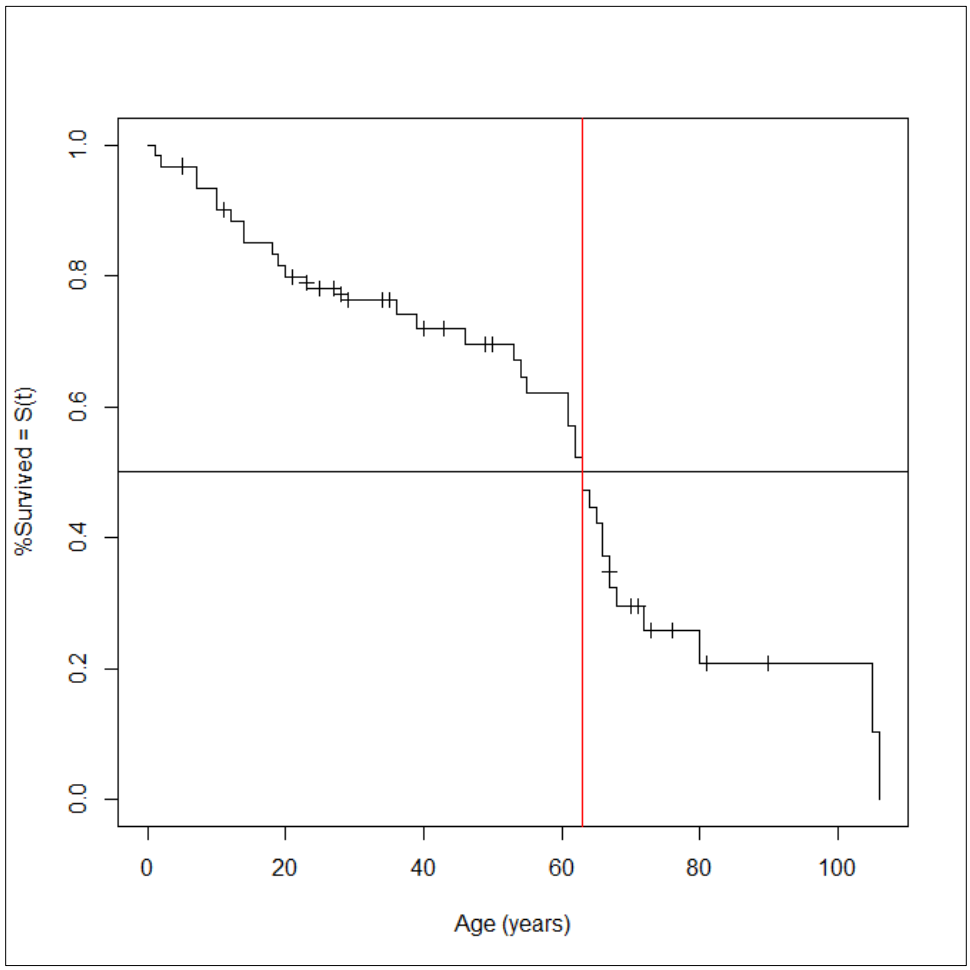
5.8 Group6 Analysis

Dataset: 61 obs., 24 censored obs.

Survival Fit:

Median	0.95LCL	0.95UCL	Note
63	55	67	Use 63 as median useful life

Survival Curve:



Technical Memorandum

2018 General Rate Case Main Replacement Program Review:

CALIFORNIA WATER SERVICE
1720 North First Street
San Jose, CA 95112-4598 *Tel:* (408) 367-8200

Technical Memorandum

2018 General Rate Case Main Replacement Program Review

Updated: June 1, 2021

This memorandum is intended to provide a summary of the main replacement program (MRP) projects agreed to in the 2018 General Rate Case (GRC) Settlement and their status as of June 1, 2021. Some of these projects have changed since first agreed upon 3 years ago and the most common reason for any change in scope, schedule and/or budget are discussed below. In addition, and as discuss further in the MRP program in the 2021 GRC Common Plant Issue Book, proposed projects are subject to revisions based on current priorities, leak history, or other data at the time of construction to ensure projects are still prudent investments and in the best interest of the customer. A tabulated summary of these projects are presented in Appendix A.

Rational for much of the changes that occurred over the last three years are identified in the following lists:

Common reasons for changes in scope

- A project with a higher likelihood of failure or higher consequence of failure was substituted for a project proposed in the GRC.
- The projects were reprioritized based on more recent leak history or grouping of projects for efficiency of construction.
- A project that was planned was not constructed because permitting was delayed or because there was a paving moratorium on the street.
- A high priority project was completed prior to the start of the main replacement program
- Projects were not completed because the overall MRP budget for footage of main a district was already exceeded.
- A projects linear footage was extended for a more logical construction sequencing, such as adding footage to connect to a tie-in point where the main was in better condition.
- A project needed to be completed because the local jurisdiction was repaving in the area. Replacing mains in conjunction with repaving projects reduces cost and avoids issues with Cal Water needing to do replacements in streets with paving moratoriums.
- When the settlement decision was reached, the target linear footage in several districts was reduced. Some projects were changed as a result of this impact.
- There were recent leaks on a section of pipe which changed the priority of a given section of main.

Common reasons for change in budget

- Paving costs were different than what was anticipated, often because the local jurisdiction imposes more stringent paving requirements on a street
- Work hours were restricted, which is also a requirement imposed by the local agency at the time of permitting.
- Sections of the piping were installed deeper than normal due to the presence of other utilities.
- Utility conflicts were encountered which required pipe alignment or depth changes.

- A pipeline could not be installed at a location which met the minimum separation from sanitary or storm sewers. DDW will often require upgraded pipe materials or other mitigation measures in these cases.
- The excavation included rocks, which increases the time and cost of construction
- Proposed pipe material or size changes to allow improved flow, due to permitting requirement (e.g. DDW requirements), or scope requirements due to utility conflicts or other factors determined at time of detailed design and permitting.
- Imported fill or soil remediation was required by the local agency.
- Work was done in an environmentally sensitive area.
- There was limited work area or restricted access for construction. This is common on narrow roads or busy streets where there is resistance to shutting down additional driving lanes during construction.

In addition to the changes resulting from unforeseen conditions, a number of projects from 2018 GRC Settlement are noted as being deferred from the 2018 GRC period. This was in response to the increasing cost of installing new main throughout California and which Cal Water chose to defer in order to more closely align with the authorized MRP investment. Cal Water believed deferring these projects to be financially prudent and in the customers best interest.

Summary

All of these projects will result in reduced risks, potential future leaks, and purchase of non-revenue water (which is more expensive than water production from Cal Water wells). While the leak rate varies every year in every district, it is Cal Water's expectation that, over time, the leak rate will be reduced, particularly for mains where there is a high consequence of failure.

Appendix A

2018 General Rate Case
Main Replacement Program Project Summary

2018 GRC
Main Replacement Program Project Summary

MID	WO (Project ID)	Description	# Leaks	Likelihood of Failure (LOF)	Consequence of Failure (COF)	Status	GRC Year	Actual Year	GRC Footage	Actual Footage	Replaced w/ higher LOF project	Replaced w/ higher COF project	Eng/Ops reprioritization	Extend to improved tie-in pont	Street Reconstruction/Relocation	Permit not available	Paving moratourium	Previously completed	Reduced footage w/ decision	Budget constraint	Recent leaks/property damage	Other - Scope	Scope Notes	Est. Cost	Est $/ft	Actual Cost	Actual $/ft	Paving	Restricted work hours	Extra depth	Utility conflicts	DDW seperation requirements	Rock Excavation	Import fill/soil remediation	Environmentally sensitive area	Limited work area/restricted access	Other Cost	Cost Notes
AV-18A	00119089	820' 8" PVC Tail K/Sunset Trl	1	5	4		2019	Defer	785		x	x								x			Deferred due to GRC settlement budget restraint	$242,832	$309												
AV-18C	00119090	520' 8" PVC 17th St W	1	5	4		2019	Defer	1,520		x	x											Footage moved to Lake Hughes area	$470,197	$309												
AV-18C	00121051	1530' 8" PVC Trail N/M/N/ELR	1	5	4	In Progress	2020	2020	1,530										x				New main not needed in easement.	$493,609	$323												
AV-18D	0	750' 8" PVC Leona Ave	1	4	4		2020	Defer	743		x	x											Footage moved to Lake Hughes area	$240,450	$324												
AV-18E	00124201	1490' 6/8" PVC Grandview/Mazanita	0	3	4	In Progress	2021	2021	1,490					x								x	GIS map not accurate and added scope.	$492,490	$331												
AV-18F	0	2090' 6" PVC Lake Hughes Truck Trl	2	5	4		2021	Defer	2,100											x			Deferred due to GRC settlement budget restraint	$694,113	$331												
BAY-18A	00119107	3870' 12" DI Bunker Hill Dr	2	5	4	Complete	2019	2020	3,870	6,054				X									Installed dual main for separate pressure zones; Adjusted scope for better tie-in location;	$1,954,814	$505		$0	x		x	x	x	x		x		Dual mains; extra cost in equipment due to rocky condition; pavement was extra thick; linestops installed to provide customers uninterrupted water during Covid; precautions taken for activities near the creek:
BAY-18B	00119112	3535' 8" PVC W 20th/Spurway	0	3	5		2019	Defer	3,535				x										Risk addressed by other projects	$1,785,599	$505												
BAY-18C	00119108	2680' 8/12" DI Starlite/Ascension Dr	2	5	4	Complete	2019	2020	2,720	3,249				x									Extended mains for better tie-in locations	$1,373,926	$505	$2,145,025	$660				x	x			x	x	Crossing large SFPUC pipelines (remove and replace requirement);
BAY-18D	00119109	3540' 8" PVC Bel Aire/Parrot Dr	2	5	4	Complete	2019	2019	3,520	4,040													Added scope to address surrounding risky mains and to provide redundency of water supply	$1,778,022	$505	$1,959,215	$485								x		Spent less than Engineering Est. Cost
BAY-18E	00119110	5920' 8" PVC Parrot Dr	2	5	4	Complete	2019	2019	5,920	6,128													Added a court due to its leak history and associated environmental concerns	$2,990,310	$505	$4,289,264	$700		x		x	x	x		x	x	Installed linestops to provide customers uninterrupted water supply during Covid; rocky condition; found a SS during construction which was not previously identified and had to revise the drawing and DDW variance application.
BAY-18F	00119113	3190' 8" PVC 27th/28th/Garfield	5	5	5	Complete	2019	2019	4,050	3,146								x	x				Part of the risk being addressed by other project; reduced scope due to less risky existing mains	$2,045,736	$505	$1,450,375	$461				x						Spent less than Engineering Est. Cost
BAY-18G	00119114	5210' 8" PVC Hillsdale/Overlook	16	5	4		2019	Defer	5,920													x	Deferred due to GRC settlement footage restraint	$2,990,310	$505												
BAY-18H1	00121054	7499' 8" DI Joanne/Connie/Wolfe	12	5	4	In Progress	2020	2020	5,460														No major change from GRC scope.	$2,871,632	$526												
BAY-18H2	00121729	2480' 8" DI Celeste/Edna	7	5	5	In Progress	2020	2020	2,480														No major change from GRC scope.	$1,304,331	$526												
BAY-18I	00121033	1758' 8" PVC Roland/Bromley	3	5	4		2020	Defer	1,760													x	Deferred due to GRC settlement footage restraint	$925,654	$526												
BAY-18J	00121057	1485' 8" PVC Bayview Dr/HV Easment	4	5	4		2020	Defer	1,490				x										Deferred due to GRC settlement footage restraint	$783,651	$526												
BAY-18K	00124214	4129' 8" Graceland/Howard/Emerald	14	5	5		2020	Defer	4,130														Defer/cancel	$2,172,132	$526												
BAY-18L	00121058	2177' 8" DI Devonshire	5	5	4		2020	Defer	2,180		x	x											Defer/cancel	$1,146,549	$526												
BAY-18M	00121060	456' 8" PVC Shoreview	3	5	3		2020	Defer	460				x											$241,932	$526												
BAY-18N	0	5971' Rockwood/Brentwood	1	4	5		2020	Defer	5,970													x	Deferred due to GRC settlement footage restraint	$3,139,862	$526												
BAY-18O	00121061	296' 6" PVC B st	3	5	1		2020	Defer	300			x	x									x	Deferred due to GRC settlement footage restraint	$157,782	$526												
BAY-18P	0	3044' 8" Rocca Ave/Telford	1	4	4		2020	Defer	3,050													x	Deferred due to GRC settlement footage restraint	$1,604,117	$526												
BAY-18Q1	122898	3180' 8" PVC Crystal Springs/3rd	0	5	4		2021	Defer	3,180											x			Defer/cancel	$1,714,370	$539												
BAY-18Q2	122898	1800' 8" PVC Arroyo Ct	1	4	3		2021	Defer	1,490											x			Defer/cancel	$803,274	$539												
BAY-18R	0	623' 8" Laurel St	3	5	4		2021	Cancel	620			x	x										Defer/cancel	$334,248	$539												
BAY-18S	0	1016' 8" Lomitas/Serena Ct	5	5	4		2021	Cancel	1,020			x	x										Defer/cancel	$549,892	$539												
BAY-18T	00123931	3564' 8" Lux/Tamarack/Spruce	6	5	5	In Progress	2021	2021	3,560	1,300									x				Reduced scope to address immediate risk in time.	$1,919,232	$539		$0										
BAY-18U		2690' 8"PVC Barneson/Hobart	11	5	5		2021	Cancel	2690			x											Replaced with BAY-18XU.	$1,450,206	$539												
BAY-18V	0	5725' 8" PVC W. 25/26th/Lula Belle	9	5	5		2021	Cancel	5,700													x	Deferred due to GRC settlement footage restraint	$3,072,927	$539												
BAY-18W	0	2708' 8" Del Mar/Isabelle/Hacienda	1	5	4		2021	Defer	2,710													x	Deferred due to GRC settlement footage restraint	$1,460,988	$539												
BAY-18X	0	3471' 8" 26th/Mason	2	5	5		2021	Cancel	3,470													x	Deferred due to GRC settlement footage restraint	$1,870,712	$539												
BAY-18XK		4494' 12" DI Georgetown/Bucknell	8	5	4		0	Defer	2,980											x			Defer/cancel	$1,505,258	$505												
BAY-18XN	00121070	4200' 12" DI Polhemus Road	2	4	4	In Progress	0	2020	5,190															$2,621,573	$505												
BAY-18XT	00120143	3936' 8" PVC El Dorado/10th Ave	5	5	5	In Progress	2019	2019	3,940														No major change from GRC scope.	$1,990,173	$505												
BAY-18XU		178' 6'' De Anza Ct	0	4	4			Cancel	180			x											Defer/cancel	$90,922	$505												
BAY-18XU	00122571	2000' 8" DI Palomar Dr	10	5	5	Complete	2021	2020	2,000	1,989													No major change from GRC scope.	$1,078,220	$539	$1,134,148	$570										Spent less than Engineering Est. Cost
BAY-18XW	00124049	2200' 8" DI Porto Marino Ave	6	4	3		0	Defer	2,210											x			Defer/cancel	$1,116,315	$505												
BAY-18Y	0	1657' 8" PVC 42nd Ave	3	5	5		2021	Cancel	1,660											x			Defer/cancel	$894,923	$539												
BAY-18Z	0	356' 8" PVC Wooster/Newlands Ease.	1	5	4		2021	Cancel	360			x	x							x			Defer/cancel	$194,080	$539												
BG-18A	00118950	1510' 8" PVC Oakside/Northside	6	5	5	Complete	2019	2019	1,520	1,512													No major change from GRC scope.	$968,118	$637	$610,033	$403										Cost less than Engineering Est. Cost.
BG-18B	00118953	5790' 12" DI 5th/8th/Edison	15	5	5	Complete	2019	2020	5,790	6,035				x									Extended for better tie-in locations.	$3,687,767	$637	$5,102,765	$846	x	x	x	x	x					Extra expense during Tie-ins due to Covid precautions and keeping customers in water uninterruptly; extra paving requirements.
BG-18C	00118970	6284' 8" PVC Ringwood/Edge	21	5	5	Complete	2019	2019	6,284	5,935												x	Scope change 8" PVC to 12" DI for better flows; re-allocated a part of the scope to BG-18Q	$4,002,405	$637	$3,549,430	$598	x	x								Scope change 8" PVC to 12" DI for better flows.
BG-18D	00121071	7300' 8" PVC Maybury/Hercross	10	5	4	In Progress	2019	2020	7,300	5,423												x	BG-18D1 is separated into two phases, BG-18D1 and BG-18D2.	$4,649,516	$637		$0										
BG-18D2	00125267	1370' 8" PVC Fernside	x	x	x	In Progress		2020														x	Subproject of BG-18D2. Scope change from 121071 extended main from Harcross Rd. and include main along Fernside St.	$0												
BG-18E	00121074	3240' 8" PVC Woodside Dr	9	5	4	In Progress	2019	2020	3,237														Scope change to include Fernside St. to eliminate mains in easements;	$2,061,710	$637												
BG-18F	00118971	2980' 8" PVC Belleau/Rittenhouse	3	5	3	Complete	2019	2019	2,980	3,570													Extended main to address risky old CI mains in the neighbourhood; extended installation footage to avoid utility conflicts	$1,898,022	$637	$2,392,901	$670	x			x	x				x	Extended scope.
BG-18G	00118973	2830' 8" PVC Albion Ave	2	5	4	Complete	2019	2019	2,820	2,469													No major change from GRC scope.	$1,796,114	$637	$884,472	$358		x								Cost less than Engineering Est. Cost.
BG-18H	00118957	2290' 12" DI Lemon/American	8	5	3	Complete	2019	2019	2,290	2,416				x									Slightly extended main for better tie-in location.	$1,458,547	$637	$1,776,416	$735	x	x	x	x	x					Extra paving requirement on American way.
BG-18I	00121075	2050' 8" PVC Westridge Dr	6	5	4	Complete	2019	2020	2,060	1,712													Original scope was overestimated;	$1,312,055	$637	$1,373,443	$802		x		x	x	x			x	Extra cost working in an easement.
BG-18J	00121077	4990' 12" DI Stockbridge Ave	8	5	3	In Progress	2020	2020	4,970					x									Changed pipe size from 8" to 12" to provide better flow.	$3,295,856	$663												
BG-18K	00118976	2470' 8" PVC Miramontes Rd	14	5	3	Complete	2020	2019	2,440	2,407													No major change from GRC scope.	$1,618,086	$663	$1,016,362	$422		x			x					Cost less than Engineering Est. Cost.
BG-18L	00121078	4500' 8" PVC Roble/Live Oak	10	5	5		2020	Cancel	4,460											x			cancelled / deferred	$2,957,649	$663												
BG-18M	00118974	5230' 6" PVC Felton/Lennox	7	5	5	In Progress	2020	Defer	5,220				x										cancelled / deferred	$3,461,643	$663												
BG-18N	00121080	3870' 12" DI Middlefield	3	5	3	In Progress	2020	Defer	3,861											x		x	cancelled / deferred; footage restrained by GRC settlement;	$2,560,422	$663												
BG-18O	00121081	5840' 8" DI Encinal/Glenwood	2	5	5		2020	Cancel	5,840				x											$3,872,796	$663												
BG-18P	00123868	8170' 24" DI Woodside Rd	4	5	5	In Progress	2020	2021	8,160											x				$5,411,304	$663												
BG-18Q	00118975	4510' 8" PVC Ringwood/Menlo Oaks	9	5	5	Complete	2021	2019	4,490	4,619														$3,051,988	$680	$3,017,871	$653									x	Scope changed from 8" PVC to 12" DI for better flows, increasing cost.
BG-18R	00123866	5600' 12" DI Stockbridge Ave	7	5	3	In Progress	2021	2021	5,600														Changed pipe size from 8" to 12" to provide better flow.	$3,806,488	$680												
BG-18S	00124742	4330' 8" PVC Southgate Dr	24	5	3		2021	Cancel	4,330											x			Deffered due footage restrained by GRC settlement.	$2,943,231	$680												

2018 GRC
Main Replacement Program Project Summary

MID	WO (Project ID)	Description	# Leaks	Likelihood of Failure (LOF)	Consequence of Failure (COF)	Status	GRC Year	Actual Year	GRC Footage	Actual Footage	Replaced w/ higher LOF project	Replaced w/ higher COF project	Eng/Ops reprioritization	Extend to improved tie-in pont	Street Reconstruction/Relocation	Permit not available	Paving moratourium	Previously completed	Reduced footage w/ decision	Budget constraint	Recent leaks/property damage	Other - Scope	Scope Notes	Est. Cost	Est $/ft	Actual Cost	Actual $/ft	Paving	Restricted work hours	Extra depth	Utility conflicts	DDW seperation requirements	Rock Excavation	Import fill/soil remediation	Environmentally sensitive area	Limited work area/restricted access	Other Cost	Cost Notes
BG-18T	0	4050' 6" PVC 14th/15th/Encina	9	5	5		2021	Cancel	4,050				x										cancelled / deferred	$2,752,907	$680												
BG-18U	0	6650' 6" PVC Lorelei/Fredrick	13	5	4		2021	Cancel	6,650				x										cancelled / deferred	$4,520,205	$680												
BG-18V	00123861	5180' 12" DI Partridge/Harvard	5	5	2	initiated	2021	Cancel	5,179				x							x			cancelled / deferred	$3,520,322	$680												
BG-18W	00121083	4100' 6" PVC Oak/Bay Laurel	8	5	4		2021	Cancel	4,130				x										cancelled / deferred	$2,807,285	$680												
BG-18XX	00124740	4090' 8" DI Stockkbridge Ave	16	5	3		0	Defer	3,965				x									x	Restrained by GRC footage settlement.	$2,236,260	$564												
BG-ADD1	00117763	1077' 8" DI Old La Honda				Complete	2019	2019	1080	1266												x	Completed by non-MRP project.	$687,874	$637		$0		x			x				x	Installed earthquake resistent pipe; very rocky condition; restricted work hours.
BK-18A	00118923	2630' 12" DI Stockdale HWY	1	4	4	Complete	2019	2019	2,630	3,285				x								x	Original scope under estimated footage.	$1,000,313	$380	$1,893,451	$576		x		x					x	x	Larger pipe dia. and utility conflicts.
BK-18AA	00118928	4205' 8" PVC Columbus St	1	5	3	Complete	2019	2019	4,205	4,048				x									Extended for better tie-in locations.	$1,599,361	$380	$2,408,127	$595		x	x	x		x					Extra cost for depth and rocky soil
BK-18AB	00118986	3960' 12" DI Haley St	3	5	2	Complete	2019	2019	3,960	4,545				x									Extended for better tie-in locations.	$1,506,175	$380	$2,637,212	$580		x	x	x		x					Oil pipeline conflicts
BK-18AC	00118989	4040' 12" DI University Ave	1	4	2		2019	Defer	4,042		x	x											Reallocated to other projects with higher LOF and COF	$1,537,364	$380												
BK-18AD	00121084	2670' 8" PVC Panarama Dr	12	5	4	Complete	2020	2020	2,670	2,436									x				Original scope under estimated footage.	$1,057,259	$396	$1,185,504	$487		x				x					Extra cost for restricted work hours
BK-18AE	0	3325' 8" PVC Annapolis Dr	0	4	3		2020	Defer	3,325		x	x											Replaced with BK-18XAE	$1,316,624	$396												
BK-18AF	0	1960' 8" PVC Amherst St	0	4	1		2020	Defer	1,960		x	x											Replaced with BK-18XAF	$776,115	$396												
BK-18AG	0	4285' 8" PVC Bucknell St	1	4	2		2020	Defer	4,285		x	x											Replaced with BK-18XAG	$1,696,762	$396												
BK-18AH	00124401	3950' 6" PVC Shattuck Ave	1	5	2		2021	Defer	3,953											x			Deferred due to GRC settlement budget restraint	$1,604,525	$406												
BK-18AI	00124600	4095' 8" PVC Bryn Mawr Dr	1	5	2		2021	Defer	4,096											x			Deferred due to GRC settlement budget restraint	$1,662,569	$406												
BK-18AJ	00124602	2415' 6" PVC Princeton Ave	1	5	2		2021	Defer	2,417											x			Deferred due to GRC settlement budget restraint	$981,062	$406												
BK-18AK	00124604	2580' 8" PVC Panama Dr	1	5	2		2021	Defer	2,580											x			Deferred due to GRC settlement budget restraint	$1,047,224	$406												
BK-18B	00118980	3930' 8" PVC Trust Ave	43	5	5	Complete	2019	2019	3,310	3,245													No major change from GRC scope	$1,258,950	$380	$1,385,654	$427									x	Additional routing for reconnect of services
BK-18C	00118990	1890' 12" DI E Belle Ter	3	5	4	Complete	2019	2019	1,890	2,235				x								x	Original scope under estimated footage.	$718,856	$380	$1,217,997	$545									x	RR permit delay.
BK-18D	00118992	1950' 8" PVC Shamrock Way	10	5	4	Complete	2019	2019	1,950	1,997													No major change from GRC scope	$741,677	$380	$698,881	$350										No major change from Engineering Est. Cost.
BK-18E	0	2930' 6" PVC Bryant St	3	5	3		2019	Defer	2,760		x	x											Replaced with BK-18XE	$1,049,759	$380												
BK-18F	00121085	4220' 8" PVC Gage St	2	4	5	In Progress	2020	2020	3,450					x								x	Additional main added on parallel streets to alley.	$1,366,121	$396												
BK-18G	00121086	3350' 8" PVC E 18th St	4	5	5	In Progress	2020	2020	3,000					x								x	Additional main added on parallel streets to alley.	$1,187,931	$396												
BK-18H	00121087	3740' 8" PVC Haley St	4	5	5	In Progress	2020	2020	3,810														No major change from GRC scope	$1,508,673	$396												
BK-18I	00121088	4090' 8" PVC Dolores St	10	5	1	In Progress	2020	2020	4,090					x									Extended for better tie-in locations.	$1,619,547	$396												
BK-18J	0	2570' 8" PVC Sandra Dr	0	4	5		2020	Defer	2,570		x	x											Reallocated to other projects with higher LOF and COF	$1,017,661	$396												
BK-18K	0	3890' 8" PVC Planz Rd	2	4	5		2020	Defer	3,884		x	x											Replaced with BK-18XK	$1,537,975	$396												
BK-18L	00121089	3450' 12" DI Ridge Rd	10	5	5	In Progress	2020	2020	3,450														No major change from GRC scope	$1,366,121	$396												
BK-18M	00124606	3600' 8" PVC King St	1	5	3		2021	Defer	4,251											x			Deferred due to GRC settlement budget restraint	$1,725,483	$406												
BK-18N	00124608	3850' 12" DI 20th St	2	5	4		2021	Defer	4,507											x			Deferred due to GRC settlement budget restraint	$1,829,394	$406												
BK-18O	00124613	2130' 8" PVC 21st St	7	5	2		2021	Defer	2,217											x			Deferred due to GRC settlement budget restraint	$899,882	$406												
BK-18P	00124614	3110' 8" PVC Quincy St	1	4	3		2021	Defer	2,424											x			Deferred due to GRC settlement budget restraint	$983,903	$406												
BK-18Q	00124625	4120' 8" PVC Bank St	2	5	3		2021	Defer	4,113											x			Deferred due to GRC settlement budget restraint	$1,669,469	$406												
BK-18R	00124628	3880' 8" PVC N St	1	5	3		2021	Defer	3,841											x			Deferred due to GRC settlement budget restraint	$1,559,064	$406												
BK-18S	00124629	2590' 8" PVC Loch Lomond Dr	5	5	2		2021	Defer	2,581											x			Deferred due to GRC settlement budget restraint	$1,047,629	$406												
BK-18T1	00122031	2381' 8" PVC Palma Ln/Cerro Dr	0	3	3	In Progress	2021	2020	2,381															$966,449	$406												
BK-18T2	00122163	2381' 8" PVC Miminiani L/Hollady Av	2	5	3	In Progress	2021	2020	2,381															$966,449	$406												
BK-18U	00124630	3460' 12" DI Bernard St	7	5	3		2021	Defer	2,813											x			Deferred due to GRC settlement budget restraint	$1,141,798	$406												
BK-18V	00125733	2700' 8" PVC College Ave	14	5	4	In Progress	2021	2021	2,000														No major change from GRC scope	$811,801	$406												
BK-18XAE	00123230	2254' 8" PVC Chester Ave/K St	4	5	5	In Progress	2020	2021	2,254					x								x	Additional main added on parallel streets to alley.	$892,533	$396												
BK-18XAF	00124065	2797' 12" DI Chester Ave	0	3	5	In Progress	2020	2021	2,797					x								x	Additional main added at intersections	$1,107,548	$396												
BK-18XAG	00121979	560' 12" DI Wilson Rd Bridge	0	3	3	Complete	2020	2020	560	805				x									Extended for better tie-in locations.	$221,747	$396	$939,537	$1,167	x								x	Extended scope.
BK-18XE	00118993	2,855' 8" PVC California Ave/T St	5	5	3	Complete	2019	2019	2,930	3,845				x								x	Additional main added on parallel streets to alley.	$1,114,418	$380	$1,340,523	$349									x	Extended scope.
BK-18XK	00122151	1235' 8" PVC Oswell St	0	2	4	Complete	2020	2020	1,235	1,647				x									Extended for better tie-in locations.	$489,032	$396	$737,827	$448				x					x	Extended scope.
CH-18A	00118930	2826' 6" PVC Broadway/Los Robles Alley	3	5	5	Complete	2019	2019	2,820	2,558									x					$933,213	$331	$643,431	$252									x	No delays or conflicts with project.
CH-18B1	00118940	2670' 8" PVC Capay/Los Robles Alley	1	3	5	Complete	2019	2020	3,874	3,248									x					$1,282,010	$331	$1,089,816	$336					x				x	Transferred main from alley to street.
CH-18B2	00121091	2190' 8" PVC Broadway/Los Robles	1	5	4	In Progress	2019	Defer	3,145											x				$1,040,765	$331												
CH-18C	00118938	2400' 6" PVC Washington/Sacramento	1	4	5	Complete	2019	2019	2,490	2,646					x									$824,008	$331	$1,034,145	$391					x				x	Transferred main from alley to street.
CH-18D	00118945	500' 8" PVC 2nd Street	1	4	5		2019	Cancel	499				x							x				$165,132	$331												
CH-18E	00118944	1000' 8" PVC Walnut St	0	3	3		2019	Cancel	1,585				x							x				$524,519	$331												
CH-18F	124726	1330' 8" PVC Lupin Ave	4	5	2	In Progress	2020	Defer	1,327											x				$457,208	$345												
CH-18G	0	1620' 8" PVC Palmetto Ave	1	4	3		2020	Defer	1,615				x							x				$556,436	$345												
CH-18H	0	2830' 6"/8" PVC W 5th/ Ivy	1	4	5		2020	Defer	2,822				x							x				$972,299	$345												
CH-18I	0	3330' 8" PVC Cohasset Rd	1	4	5		2020	Defer	3,127				x							x				$1,077,384	$345												
CH-18J	0	1100' 8" PVC Cohasset Rd	2	4	5		2020	Defer	1,787				x							x				$615,697	$345												
CH-18K	124724	700' 8" PVC Olive/4th	0	5	2	In Progress	2020	Defer	695											x				$239,457	$345												
CH-18L	00119930	1260' 6" PVC San Jose St	3	5	3	Complete	2020	2019	1,300	1,292												x	Limited traffic control. Limited fittings.	$447,905	$345	$349,733	$271									x	No delays or conflicts with project.
CH-18M	0	730' 8" PVC W 4th St	0	3	3		2020	Defer	732				x							x				$252,205	$345												
CH-18N1	00121096	2440' 6" PVC Canal/Capay Alley	0	5	3	In Progress	2021	Defer	2,439											x				$861,379	$353												
CH-18N2	124727	540' 6" PVC Canal/Capay Alley	0	3	5		2021	Cancel	540						x					x				$190,711	$353												
CH-18O	0	590' 6" PVC E 22nd St	2	5	4		2021	Defer	582				x							x				$205,544	$353												
CH-18P	0	1960' 6"PVC Hazel/Chestnut Alley	0	3	4		2021	Defer	1,954				x							x				$690,092	$353												
CH-18Q	0	1670' 8" PVC W Sacramento Ave	0	3	5		2021	Defer	3,420				x							x				$1,207,838	$353												
CH-18R	0	2790' 8" PVC Cherry/Cedar/5th	0	3	3		2021	Defer	2,430				x							x				$858,201	$353												
CH-18S	00119915	1740' 8" PVC Arbutus/3rd	0	3	5	Complete	2021	2019	1,830	1,885				x										$646,299	$353	$632,604	$336	x		x						x	Customer side plumbing.
CH-18T	124723	830' 8" PVC E 3rd/Flume	1	5	2	In Progress	2021	Defer	829											x				$292,777	$353												
CH-18U	124722	3000' 6" PVC 12th Ave/Zuni Alley	2	5	3	In Progress	2021	Defer	2,139											x				$755,429	$353												
CH-18V	0	2200' 6" PVC Lakewood/Woodside	2	5	4		2021	Defer	2,200				x							x				$776,972	$353												
CH-18XQ	00119948	1600' 6" PVC Spruce Ave/2nd Ave	1	4	3	Complete	2019	2019	2,330	2,577				x										$771,059	$331	$591,678	$230									x	No delays or conflicts with project.
CH-18XV1	00121093	2622' 12" DI Esplanade	2	4	3	Complete	0	2020	3,540	3,614			x			x						x	Covid restrictions (line stops, etc.).	$1,250,218	$353	$2,171,725	$601	x	x	x						x	Expedited schedule, Covid restrictions.
CH-18XV2	00121094	2156' 12" DI Esplanade	1	4	5	Complete	0	2020	2,160	2,202			x			x						x	Covid restrictions (line stops, etc.).	$762,845	$353	$1,651,004	$750	x	x	x						x	Expedited schedule, Covid restrictions.
CH-18XV3	00121095	3021' 12" DI Esplanade	0	3	5	Complete	0	2020	2,695	2,584			x			x						x	Covid restrictions (line stops, etc.).	$951,791	$353	$1,702,292	$659	x	x	x						x	Expedited schedule, Covid restrictions.
DIX-18A	00118983	1230'-8" PVC Walnut Park Ave.	0	5	5	Complete	2019	2019	1,735	1,764				x										$842,600	$486	$1,015,832	$576	x								x	ADA ramps required by City.
DIX-18B	0	1650'-8" PVC N 5th St., E Creekside Cir, N 2nd St.	4	5	4		2020	Defer	572				x											$288,985	$505												
DIX-18C	0	930'-8" PVC E H St.	1	5	4		2021	Defer	930				x											$481,464	$518												
DIX-18XB	00121097	570' 8" PVC Washington St/E St	2	4	3	In Progress	0	Defer	570					x						x				$287,975	$505												

2018 GRC
Main Replacement Program Project Summary

MID	WO (Project ID)	Description	# Leaks	Likelihood of Failure (LOF)	Consequence of Failure (COF)	Status	GRC Year	Actual Year	GRC Footage	Actual Footage	Replaced w/ higher LOF project	Replaced w/ higher COF project	Eng/Ops reprioritization	Extend to improved tie-in pont	Street Reconstruction/Relocation	Permit not available	Paving moratourium	Previously completed	Reduced footage w/ decision	Budget constraint	Recent leaks/property damage	Other - Scope	Scope Notes	Est. Cost	Est $/ft	Actual Cost	Actual $/ft	Paving	Restricted work hours	Extra depth	Utility conflicts	DDW seperation requirements	Rock Excavation	Import fill/soil remediation	Environmentally sensitive area	Limited work area/restricted access	Other Cost	Cost Notes
DOM-18A	00119075	2,010'-12" DI Bonita St/E Calbas St	4	5	5	In Progress	2019	2020	2,040								X		X			X	All existing services and new FHs reconnected to existing 10" Transite at Bonita Street (made the actual footage shorter)	$891,418	$437													
DOM-18B	00119066	3,850'-8" PVC E Dominguez St/S Baltic Ave/S Santa Fe Ave	6	5	3	Complete	2019	2020	3,850	1,904									X			X	All existing services and new FHs reconnected to existing 12" AC at E. Dominguez Street (made the actual footage shorter)	$1,682,333	$437	$3,293,933	$1,730			X	X						X	Retirement of existing main on E. Dominguez Street
DOM-18C	00119076	3,080'-16" CL&C Pipe E 192nd St	1	4	4	In Progress	2019	Defer	3,080														As proposed in GRC, no changes with the scope	$1,345,866	$437													
DOM-18D	00119065	800'-6" PVC W 214th St and Jaffrey Ave	2	2	3	In Progress	2019	2020	800														As proposed in GRC, no changes with the scope	$349,576	$437													
DOM-18E	00121101	3,560'-8" PVC W 212th St/Royal Blvd/Berendo Ave/Broadwell Ave/W 211th St	4	5	4	In Progress	2020	Defer	3,560													X	Additional main replaced on Budlong Avenue	$1,619,723	$455													
DOM-18F	00121104	3,490'-8" PVC W 209th St/Greenhedge St/S Royal Blvd/Raymond Ave/Catalina St	3	5	4		2020	Defer	3,490											X			Due to budget constraint, project was deferred	$1,587,874	$455													
DOM-18G	00121106	6,205'-8" PVC W 234th Pl/W 235th St/Caroldale Ave/Moneta Ave/Mehden Ave	5	5	4	In Progress	2020	Defer	6,320														As proposed in GRC, no changes with the scope	$2,875,463	$455													
DOM-18H	0	1,140'-6" PVC E Kramer Dr/Craigjon Ave/S Wilmington Ave	2	5	4		2021	Defer	1,140														Due to GRC settlement, footages was cut	$531,536	$466													
DOM-18I	00124374	6,010'-8" PVC E Gladwick St/E Helmick St/S Camba Ave/Earlie Ave/Joplin Ave	3	5	4	In Progress	2021	Defer	6,010														As proposed in GRC, no changes with the scope	$2,802,220	$466													
DOM-18J	00124371	1,150'-6" PVC W 214th St/S Vermont Ave	3	5	5	In Progress	2021	Defer	1,150					X									Additional main extended to Clarion Drive	$536,199	$466													
DOM-18K	0	2,000'-8" PVC Halison St/Halison Pl	6	5	1		2021	Defer	2,000														Due to GRC settlement, footages was cut	$932,519	$466													
DOM-18L	00124481	1,970'-6" PVC on E 214th St/Catskill Ave/E Desford St	5	5	1	In Progress	2021	Defer	1,970														As proposed in GRC, no changes with the scope	$918,531	$466													
DOM-18M	0	3,360'-12" DI Main St/E 223rd St	1	4	5		2021	Defer	6,320														Due to GRC settlement, footages was cut	$2,946,761	$466													
ELA-18A	00119032	3,130' 8" PVC Via Val Verde	4	5	5	Complete	2019	2019	3,130	2,425												X	Existing main on W. Via Nina was not replaced.	$902,078	$288	$683,262	$282										X	Due to less amount of existing main replaced, the actual cost was less than estimated.
ELA-18B	00119033	2,590' 8" PVC Via Lucia/Acosta	6	5	4	Complete	2019	2019	2,590	2,670												X	Existing main on W. Via Acosta was replaced instead on the alley.	$746,448	$288	$837,443	$314										X	Due to more mains were installed (materials and contractor costs)
ELA-18C	00119035	3,160' 12" DI Telegraph Ave	9	5	3	In Progress	2019	2020	3,160														As proposed in GRC, no changes with the scope	$910,724	$288													
ELA-18D	00119034	780' 8" PVC Triumph St	4	5	1	Complete	2019	2019	780	812													No signed drawings in file	$224,799	$288	$253,024	$312											
ELA-18E	00121108	2,620' 12" DI Cesar Chavez Ave	7	5	5	In Progress	2020	Defer	2,620														As proposed in GRC, no changes with the scope	$780,717	$298													
ELA-18F	00121109	620' 12" DI Cesar Chavez/I-710	2	5	4	In Progress	2020	Defer	620														As proposed in GRC, no changes with the scope	$184,750	$298													
ELA-18G	00121111	1,690' 8" DI S Eastman Ave	2	5	5	Complete	2020	2020	1,690	1,790				X								X	Additional main installed on Whittier Blvd and portion changed pipe size from 8" to 12"	$503,593	$298	$826,247	$462				X							Due to materials, County of LA additional requirements and contractor costs
ELA-18H	00121115	3,700' 8" PVC Via Corona/Norte	14	5	3	Complete	2020	2020	3,700	3,620												X	As proposed GRC scope, no changes	$1,102,540	$298	$1,380,570	$381				X	X						Due to DDW and County of LA additional requirements, materials and contractor costs
ELA-18I	0	1,770' 8" PVC N Alma Ave	5	5	4		2020	Defer	1,770														Due to GRC settlement, footages was cut	$527,431	$298													
ELA-18J	0	1,570' 8" PVC Via Acosta	5	5	3		2021	Defer	1,570														Due to GRC settlement, footages was cut	$482,946	$308													
ELA-18K	0	4,890' 8" PVC Via San Delarro	9	5	4		2021	Defer	4,890														Due to GRC settlement, footages was cut	$1,504,209	$308													
ELA-18L	00124458	3,420' 8" PVC Rogers/Miller	7	5	2	In Progress	2021	Defer	3,420														As proposed in GRC, no changes with the scope	$1,052,024	$308													
ELA-18M	00124460	1,650' 8" PVC N Eastern Ave	4	4	5	In Progress	2021	Defer	1,650														As proposed in GRC, no changes with the scope	$507,555	$308													
ELA-18XI	00121107	2,600' 6" PVC Southside Dr	4	5	1	In Progress	2020	2021	2,600					X								X	Additional main replaced on Gloucester St and Southside Dr	$774,758	$298												X	Additional materials and contractor cost
HR-18A	00118965	5,260'-12" DI S Inglewood Ave	0	4	3	Complete	2019	2019	3,681	5,684				X								X	Additional main replaced on S Inglewood Ave (up to Artesia Blvd-1,500')	$1,748,995	$475	$2,607,691	$459			X							X	change of scope, additional materials and contractor cost
HR-18B	00119077	2,640'-8" PVC Ripley Ave/Ives Ln/Lilienthal Ln	1	4	1	Complete	2019	2019	2,620	1,680												X	Existing 6" & 2" mains were replaced and not the existing 8" pipe	$1,244,870	$475	$1,029,669	$613										X	Less actual footages were installed
HR-18C	00121116	1,090'-8" PVC Havemeyer Ln/Blossom Ln	1	4	5	In Progress	2020	2021	1,090														As proposed in GRC, no changes with the scope	$539,225	$495													
HR-18D	00121117	2,410'-8" DI Grant Ave	1	4	5	In Progress	2020	2021	2,410														As proposed in GRC, no changes with the scope	$1,192,232	$495													
HR-18E	00121118	2,570'-8" PVC Earle Ln/Earle Ct/Glick Ct/Mararet Ct/Hall Ct/Fisher Ct	0	4	5	In Progress	2020	Defer	2,570														As proposed in GRC, no changes with the scope	$1,271,384	$495													
HR-18F	00121119	850'-8" PVC Graham Ave	3	5	1		2020	Defer	850													X	Project cancel on 12/2020	$420,497	$495													
HR-18J	0	1,090'-8" DI Portofino Way	2	5	4		2021	Defer	1,090														Due to GRC settlement, footages was cut	$552,692	$507													
HR-18K	00124402	2,850'-8" PVC Dufor St/Warfield Ave/Rindge Ln/Vail Ave	1	4	1	In Progress	2021	2021	2,850								X		X			X	Due to moratourium, less main will be installed	$1,445,113	$507													
HR-18L	0	3,830'-8" PVC N Lucia Ave/N Maria Ave/N Pacific Coast Hwy	3	5	5		2021	Defer	3,830														Due to GRC settlement, footages was cut	$1,942,029	$507													
HR-18M	00124422	2,150'-8" PVC N Maria Ave	4	5	5	In Progress	2021	Defer	2,150														As proposed in GRC, no changes with the scope	$1,090,173	$507													
KC-18A	00118964	1190'-8" PVC Talbot/Luckett St. 4" Trans	0	4	5	Complete	2019	2019	1180	1786												x	Increased scope to address risky main nearby.	$544,009	$461	$821,013	$460	x	x		x							Had to slurry; complex utility conflicts; extended scope; restricted hours due to hospital nearby.
KC-18B	0	1080'-6" PVC Monte Vista/Reich St. 4" Trans	1	4	5		2020	Defer	1,079			x											Deferred and was replaced by KC-18XB	$518,182	$480													
KC-18C	0	920'-8" PVC Bassett St	0	4	5		2021	Defer	918			x											Deferred and was replaced by KC-18XB	$451,755	$492													
KC-18XB	00121120	1400' 8" DI Broadway Street	0	3	5	In Progress	0	2020	1,400														No major change in scope.	$672,340	$480													
KRV-18A1	00119087	850' 6" Elk St	3	5	4	In Progress	2019	2020	850														No major change from GRC scope	$208,213	$245													
KRV-18A2	00121735	580' 6" Elk/Columbus	1	5	4	In Progress	2019	2020	815														No major change from GRC scope	$199,640	$245													
KRV-18A3	00121737	870' 6" Columbus/North	4	5	4	Complete	2019	2020	890	880													No major change from GRC scope	$218,012	$245	$197,759	$225											No major change from Engineering Est. Cost.
KRV-18B	00124769	500' 6" PVC Tillie Creek/Studdard	0	2	4	In Progress	2020	2021	500														No major change from GRC scope	$126,497	$253													
KRV-18C	0	1760' 6" PVC HWY 155/Countrywood	4	5	4		2020	Defer	1,760		x	x											Replaced with KRV-18XC	$445,269	$253													
KRV-18D	00124770	800' 6" PVC Rembach/Bidfiss Easement	0	1	4		2020	Defer	800		x	x											Replaced with KRV-18XD	$202,395	$253													
KRV-18E	0	780' 6" PVC Kernville/Kern River Alley	3	5	4		2020	Defer	775		x	x											Replaced with KRV-18XE	$196,070	$253													
KRV-18F	0	4190' 6" PVC Wallace ln	2	5	4		2021	Defer	4,185		x	x											Reallocated to other projects with higher LOF and COF	$1,092,551	$261													
KRV-18X1	00119101	990' 6" PVC Evans/Adams Easement	0	2	4	Complete	2019	2019	990	1,105				x									Extended for better tie-in locations.	$242,507	$245	$264,346	$239										x	Extra cement work and additional engineering hours.
KRV-18XA	00124315	710' 6" PVC Easy Street	1	4	4	In Progress	2020	2021	710														No major change from GRC scope	$179,626	$253													
KRV-18XC	00121127	440' 6" PVC Rio Vista Dr.	0	4	4	Complete	2020	2020	680	405									x				Less footage do to using existing parallel main.	$172,036	$253	$138,718	$343	x										County requested additional paving.
KRV-18XD	00125468	250' 6" Jawbone Ave	2	5	4	Complete	2021	2021	320	332													No major change from GRC scope	$83,540	$261	$93,400	$281			x								Routing changes during installation
KRV-18XE	00121128	474' 6" PVC Cannell Dr.	1	4	4	Complete	2020	2020	600	585													No major change from GRC scope	$151,796	$253	$187,256	$320	x										County requested additional paving.
LAS-18A	00119096	3760 6" PVC Marich/Panchita	10	5	3	Complete	2019	2019	3,760	4,742													Added additional scope on Alvarado St. to address risky pipes.	$1,990,010	$529	$1,775,482	$374											
LAS-18B	00117408	3470 8" PVC Covington Rd	15	5	4	Complete	2019	2018	3,470	3,721													Extended 1179 ft on east Covington to eastwood place to address risky pipes nearby.	$1,836,526	$529		$0											

2018 GRC
Main Replacement Program Project Summary

MID	WO (Project ID)	Description	# Leaks	Likelihood of Failure (LOF)	Consequence of Failure (COF)	Status	GRC Year	Actual Year	GRC Footage	Actual Footage	Replaced w/ higher LOF project	Replaced w/ higher COF project	Eng/Ops reprioritization	Extend to improved tie-in pont	Street Reconstruction/Relocation	Permit not available	Paving moratourium	Previously completed	Reduced footage w/ decision	Budget constraint	Recent leaks/property damage	Other - Scope	Scope Notes	Est. Cost	Est $/ft	Actual Cost	Actual $/ft	Paving	Restricted work hours	Extra depth	Utility conflicts	DDW seperation requirements	Rock Excavation	Import fill/soil remediation	Environmentally sensitive area	Limited work area/restricted access	Other Cost	Cost Notes
LAS-18C	00119097	1970' 6" PVC Casita Way	0	5	3	Complete	2019	2019	1,960	2,206				x								x	Added additional scope to include risky mains in courts	$1,037,346	$529	$796,948	$361											
LAS-18D	00121129	2700' 8" PVC Flora Vista Ave	2	5	5		2020	Defer	2,710													x	Deferred to next GRC due to footage restraint.	$1,493,199	$551													
LAS-18E	00119100	3300' 8" PVC Parma/Fremont	2	5	4	Complete	2019	2019	3,300	4,244				x									Extensions for better tie-in locations.	$1,746,552	$529	$1,835,018	$432											
LAS-18F	00121130	3450' 8" PVC Ravensbury/Hillpark	3	5	4	Complete	2020	2020	3,950	3,978													No major change from GRC scope.	$2,176,434	$551	$2,115,886	$532				x	x					x	Installed multiple line stops to provide customers water without interruption; TNE applied to minimize interruptions.
LAS-18G	0	4160' 8" PVC Miramonte/Starr	4	5	4		2020	Cancel	4,155													x	Deferred to next GRC due to footage restraint.	$2,289,388	$551													
LAS-18H	0	3750' 8" PVC Brookdale/Castro	2	5	5		2020	Cancel	3,740													x	Deferred to next GRC due to footage restraint.	$2,060,725	$551													
LAS-18I	00119098	4000' 8" PVC Jones/Louise	3	5	4	Complete	2020	2019	3,970	4,240				x									Extended tie-in due to large tree in the wall.	$2,187,454	$551	$1,986,040	$468											
LAS-18J	00121132	3760' 8" PVC Martens/Carmelita	4	5	5	In Progress	2021	2020	2,420														Part done by other project;	$1,366,923	$565													
LAS-18K	00121144	3060' 8" PVC Grenola/Ann Arbor	1	5	5		2021	Defer	3,050											x		x	Deferred to next GRC due to footage restraint.	$1,722,775	$565													
LAS-18L	00121625	2390' 8" PVC S. Tantau Ave	4	5	3	Complete	2021	2020	2,390	2,973				x									Extended for better tie-in locations and to address risky mains in courts.	$1,349,978	$565	$1,948,618	$655				x	x						Installed line stops to provide customers water without interruption; increased potholing cost to locate fiberoptics; covid precaution; hydrant relocation; costly permit.
LAS-18M	00123869	2390' 8" PVC Bret Ave	3	5	3	In Progress	2021	2021	2,390														No major change from GRC scope.	$1,349,978	$565													
LAS-18N	00119099	1570' 8" PVC Gail/Duff/Anshen	7	5	3	Complete	2021	2019	1,570	1,563													No major change from GRC scope.	$886,805	$565	$797,542	$510				x	x						
LAS-18O	00121131	3220' 8" PVC Pauline/Arleen	5	5	5		2020	Cancel	3,220								x						Deferred due to paving mo	$1,774,207	$551													
LAS-18XB	00015631	4100' 8"PVC Grant	0	4	5		2021	Cancel	4,100									x					Risky addressed by other projects.	$2,315,861	$565													
LIV-18A	00119081	1460' 8" PVC in Locust	5	5	2	In Progress	2019	Defer	1,457											X				$684,906	$470													
LIV-18B	00119083	5390' 12" DI East Ave	4	5	5	Complete	2019	2019	3,650	3,612												X	No Change	$1,715,790	$470	$4,668,404	$1,292	X	X	X	X	X	X			X	Traffic control, Covid, Line stops, sweeping, temporary striping.
LIV-18C	00119082	305' 6" PVC N I St	2	5	1	Complete	2019	2019	310	305												X	No Change	$145,725	$470	$168,228	$552									X	Overhead.
LIV-18D	00121354	470' Las Positas/I-580 Crossing	0	4	4		2020	Cancel	470				X							X				$230,049	$489													
LIV-18E	00121145	1350' 6" PVC James Ave	1	4	1	Complete	2020	2020	2,630	1,551									X					$1,287,294	$489	$1,201,887	$775	X								X	Covid, line stops, traffic control.
LIV-18F		N/A	3	5	3			Defer														X	No information	$0	$489												
LIV-18G	00119945	2670' 8" PVC Walnut St	0	3	3	Complete	2020	2019	2,670	3,044				X										$1,306,873	$489	$2,098,089	$689		X			X				X	Traffic control and additional footage.
LIV-18H	0	2770' 12" DI Portola Ave.	7	5	5		2021	Defer	2,766				X							X				$1,387,784	$502													
LIV-18I	124730	720' 8" PVC in 2nd St	2	5	3	In Progress	2021	Defer	711											X				$356,730	$502													
LIV-18J	124736	2310' 8" PVC Park St	1	5	2	In Progress	2021	Defer	2,383											X				$1,195,622	$502													
LIV-18K	00119904	800' 12" DI S. Livermore Ave.	2	5	5	Complete	2021	2019	800	847				X										$401,384	$502	$572,308	$676		X									
LIV-18L	124737	1680' 8" PVC S L St				In Progress	2021	Defer	0											X				$0	$502													
LIV-18NS	0	0					0	Defer	0													X	No information	$0	$489													
LIV-18XF	00121678	1800' 12" DI S. Livermore	1	3	5	Complete	0	2020	1,785	2,132				X										$873,696	$489	$2,079,300	$975	X	X	X	X	X	X			X	Covid.
MRL-18A	00119438	1300' 8" PVC 12th	0	5	5	Complete	2019	2019	2,200	2,259				X										$763,675	$347	$1,052,739	$466	X		X						X	Cobble Stone.
MRL-18B	0	2,070' 12" DI Ellis Lake/14th St	0	5	5		2020	Defer	2,060				X							X				$744,911	$362													
MRL-18C	0	820' 6" PVC Ramirez St	0	3	5		2021	Defer	820				X							X				$304,325	$371													
MRL-18D	0	340' 6" PVC 11th	0	5	5		2021	Defer	331				X							X				$122,843	$371													
MRL-18E	00121146	1250' 8" PVC 5th St	1	4	5	Complete	2021	2020	1,970	2,177				X								X	Covid restrictions.	$731,122	$371	$1,301,558	$598	X	X	X						X	Traffic control, Covid.
ORO-18A	00118934	430'-8" PVC Faunce Way	2	5	1	Complete	2019	2019	646	646												X	No Change	$252,098	$390	$390,049	$604	X								X	Cobble in Oroville.
ORO-18B	00119019	1250'-8" PVC Burlington Ave.	0	3	5	Complete	2019	2019	2,638	2,638												X	No Change	$1,029,463	$390	$1,140,019	$432					X				X	Cobble in Oroville.
ORO-18C	00121356	1820'-6" in Alley, 4th, Safford St., and 3rd Ave	1	4	3	Complete	2020	2020	1,820	1,844				X								X	Covid restrictions.	$739,475	$406	$878,485	$476					X				X	Cobble in Oroville, Covid.
ORO-18D	0	650'-4" WI Mesa Ave.	0	3	3		2021	Defer	658				X							X				$273,903	$416													
ORO-18E	0	2430'-12" Myers St.	4	5	5		2021	Defer	2,059				X							X				$857,090	$416													
PV-18A1	00122150	4,770' 8" DI Sunnyridge Rd	10	5	4	In Progress	2019	2020	4,770													X	Additional main replaced (total=4,850')	$1,895,699	$397													
PV-18A2	00119080	8,940' 8" DI Eastvale Rd	6	5	4	In Progress	2019	2020	8,940													X	Additional main replaced (total=8,040')	$3,552,945	$397													
PV-18B	00121148	4,160' 8" DI Chuckwagon Rd/Chesterfield Rd	6	5	4	In Progress	2020	2021	4,160														As proposed in GRC, no changes with the scope	$1,721,650	$414													
PV-18C	00121150	4,840' 6" DI Vista Real Dr/Encanto Dr/Cerrito Pl/Dorado Pl	7	5	4	In Progress	2020	2020	4,840														As proposed in GRC, no changes with the scope	$2,003,073	$414													
PV-18D	0	3,140'-8" DI Avenida Elegante/Avenida Tranquila	2	4	5		2020	Defer	3,140														Due to GRC settlement, footages was cut	$1,299,514	$414													
PV-18E	00124484	4,940'-8" DI Georgeff Rd/Buckboard Ln/El Concho Ln/Reata Ln	6	5	4	In Progress	2021	Defer	4,940														As proposed in GRC, no changes with the scope	$2,095,341	$424													
PV-18F	0	5,330'-8" DI Saddle Rd/Estribo Dr/Portillo Rd/Carriage Dr/Sundown Dr	9	5	4		2021	Defer	5,330														Due to GRC settlement, footages was cut	$2,260,763	$424													
PV-18G	00124469	2,230'-8" DI Sugarhill Dr/Stagecoach Rd/Chalmette Ln/Hampshire Ln	6	5	2	In Progress	2021	Defer	2,230													X	Stagecoach road was replaced by extending the scope on Sugarhill Dr	$945,873	$424													
PV-18H	0	1,410'-6" DI Narcissa	0	3	4		2021	Defer	1,410														Due to GRC settlement, footages was cut	$598,063	$424													
PV-18XD	00120184	2,000' 12" DI S Western Ave	1	4	4	In Progress	2019	2021	2,000													X	Original project was replaced with S. Western Avenue project. (Total footage=1,313')	$794,842	$397													
RDV-18A	00119086	1360' 6" PVC Summers St., Park Ave. Project 1	6	5	4	In Progress	2019	Defer	1,360					X						X		X	Fusible PVC due to DDW.	$688,688	$506													
RDV-18AA	00126600	1360' 6" PVC Summers St., Park Ave. Project 2	6	5	4	In Progress	2019	Defer	1,360					X						X		X	Fusible PVC due to DDW.	$688,688	$506													
RDV-18B	0	1160' 6" PVC Ridge Road	3	5	4		2020	Defer	1,157				X							X				$609,655	$527													
RDV-18C	0	840' 6" PVC Country Club Dr., 1st Ave.	5	5	4		2021	Defer	840				X							X				$453,746	$540													
RDV-18XB	00121151	930' 6" Tunstall Dr Project 1	0	5	4	In Progress	0	2021	0													X	Jack and Bore under Caltrans highway.	$0	$540													
RDV-18XB1	00126601	930' 6" Tunstall Dr Project 2	0	5	4	In Progress	0	2021														X	Jack and Bore under Caltrans highway.	$0	$540													
SEL-18A	00119093	1600' 8" PVC Stillman St/Canal Xing	3	5	4	In Progress	2019	2019	2,200					x									Extended for better tie-in locations.	$596,035	$271													
SEL-18B	00119094	980' 8" PVC Evergreen St/Docker Ave	2	5	5	Complete	2019	2019	980	1,028													No major change from GRC scope	$265,507	$271	$410,827	$400		x	x	x	x				CL&C needed for crossing because of utility conflicts
SEL-18C	00121152	1391' 6" PVC B St/C St Alley	1	5	4		2020	Defer	3,468											x			Deferred due to GRC settlement budget restraint	$979,290	$282													
SEL-18D	00124275	McCall Ave, 2nd St and Alleys	1	4	2		2021	Defer	1,456											x			Deferred due to GRC settlement budget restraint	$421,406	$289													
SEL-18E	00124238	Alley Btwn Stillman St and Tulare St	1	4	5	In Progress	2021	2021	2,790														No major change from GRC scope	$807,502	$289													
SLN-18A1	00119029	2920'-8" DI El Rancho Way	4	5	5	Complete	2019	2020	2,930	2,016									x				Reduced scope since one part was not as critical.	$1,319,986	$451	$806,207	$400										Spent less than Engineering Est. Cost.
SLN-18A2	00119729	1700' 12 DI Calle De Adobe	4	5	5	Complete	2019	2019	1,700	1,927				x										$765,862	$451	$799,479	$415										No major change from Engineering Est. Cost.
SLN-18B	00119001	2200'-8" PVC Boronda Rd. Muroc to Virginia Ave.	4	5	5	Complete	2019	2019	2,200	2,982				x									Extended for better tie-in locations.	$991,116	$451	$1,418,186	$476	x									Extra paving requirement and associated traffice control.
SLN-18C	00119002	2630'-8" PVC Polk St / Polk cir. Monroe	7	5	4	Complete	2019	2019	2,630	1,324								x					A part was completed by previous projects.	$1,184,834	$451	$749,115	$566			x	x	x					Offset needed due to utility conflicts.
SLN-18D	00118999	2285'-8" PVC Magnolia/Garden/Meadow Dr	10	5	4	Complete	2019	2019	2,485	2,486													No major change in scope.	$1,119,511	$451	$752,906	$303										Spent less than Engineering Est. Cost.
SLN-18E	00121153	600'-6" PVC Miller Rd Easement	2	5	3	In Progress	2020	defer	890											x			Deferred due to budget constraint.	$417,498	$469													
SLN-18F	00121158	2450'-8" PVC Northridge Dr./Pierce	6	5	5	In Progress	2020	defer	2,446											x			Deferred due to budget constraint.	$1,147,416	$469													

2018 GRC
Main Replacement Program Project Summary

MID	WO (Project ID)	Description	# Leaks	Likelihood of Failure (LOF)	Consequence of Failure (COF)	Status	GRC Year	Actual Year	GRC Footage	Actual Footage	Replaced w/ higher LOF project	Replaced w/ higher COF project	Eng/Ops reprioritization	Extend to improved tie-in pont	Street Reconstruction/Relocation	Permit not available	Paving moratourium	Previously completed	Reduced footage w/ decision	Budget constraint	Recent leaks/property damage	Other - Scope	Scope Notes	Est. Cost	Est $/ft	Actual Cost	Actual $/ft	Paving	Restricted work hours	Extra depth	Utility conflicts	DDW seperation requirements	Rock Excavation	Import fill/soil remediation	Environmentally sensitive area	Limited work area/restricted access	Other Cost	Cost Notes
SLN-18G	00121160	1830'-8" PVC Kip/Shires dr.	1	5	5		2020	Cancel	1,830													x	Deferred due to GRC settlement footage restraint.	$858,451	$469													
SLN-18H	00121161	2780'-8" PVC San Fernando/San Miguel/Wilgart	3	5	5		2020	Cancel	2,780													x	Deferred due to GRC settlement footage restraint.	$1,304,096	$469													
SLN-18I	00121162	2830'-8" PVC Kern/Roosevelt/N. Madiera	5	5	4		2020	Cancel	2,840													x	Deferred due to GRC settlement footage restraint.	$1,332,241	$469													
SLN-18J	00121163	2600'-8" PVC N.Wood/Roosevelt/N. Pearl	0	5	4		2020	Cancel	2,600													x	Deferred due to GRC settlement footage restraint.	$1,219,658	$469													
SLN-18K	0	1630'-8" PVC Eucalyptus.	3	5	4		2020	Defer	1,630											x		x	Deferred due to GRC settlement footage restraint.	$764,632	$469													
SLN-18L	0	2690'-12" DI Mossy Oak/Arrow Leaf Trl.	3	5	4		2021	Cancel	2,690													x	Deferred due to GRC settlement footage restraint.	$1,293,444	$481													
SLN-18M	0	1830'-8" PVC E. Alvin Dr.	2	5	5		2021	Cancel	2,820													x	Deferred due to GRC settlement footage restraint.	$1,355,953	$481													
SLN-18N	0	2400'-12" DI E Laurel Dr.	3	5	5		2021	Cancel	2,400													x	Deferred due to GRC settlement footage restraint.	$1,154,002	$481													
SLN-18O	0	2410'-8" PVC Madison Ln. to Fontes Ln.	0	5	5		2021	Cancel	2,420													x	Deferred due to GRC settlement footage restraint.	$1,163,619	$481													
SLN-18P	00121166	2580'-12" DI Almeda/San Jose/ E. Romie Ln.	2	4	5		2021	Cancel	2,580													x	Deferred due to GRC settlement footage restraint.	$1,240,552	$481													
SLN-18Q	0	1920'-8" PVC California St.	1	4	5		2021	Cancel	1,920													x	Deferred due to GRC settlement footage restraint.	$923,202	$481													
SLN-18R	00119031	2310'-12" DI Charter Oak/Pampas Path	1	5	4	Complete	2019	2019	2,310	2,654				x									Extended for better tie-in locations.	$1,110,727	$481	$1,272,769	$480	x		x	x	x						Critical water supply that needs to be kept live during construction.
SLN-18S	00119020	2170'-8" PVC Swanner Dr.	1	5	5	Complete	2019	2020	2,170	2,895												x	Extended to include risky mains in courts.	$1,043,410	$481	$1,286,814	$444											Added scope; extra paving requirement; increased traffice control cost in heavily trafficked area.
SLN-18T	00119021	2670'-8" PVC Hoover/Lenny St./Authur	1	5	5	Complete	2019	2020	2,670	2,554												x	Reduced scope to be within tax bracket.	$1,283,828	$481	$1,292,463	$506										x	Multiple linestops were installed to keep customers in water during Covid; ADA ramps.
SLN-18U	00119022	1900'-8" PVC Linclon St. / W, Alisal St.	2	4	5	Complete	2019	2020	2,560	1,836													Reduced scope to exclude a less risky area.	$1,230,936	$481	$1,414,270	$770	x			x	x						City required concrete paving; caltrans permit application;
SLN-18V	0	2070'-8" PVC Columbine and Larkspur	2	5	4		2020	Cancel	2,230													x	Deferred due to GRC settlement footage restraint.	$1,072,260	$481													
SLN-18W	0	1790'-8" PVC Primrose / Lupin /Heather	1	5	5		2020	Cancel	1,610													x	Deferred due to GRC settlement footage restraint.	$774,143	$481													
SLN-18X	00121167	1790'-8" PVC Granada Dr.	0	5	4	In Progress	2021	2021	1,750														No major scope change.	$841,460	$481													
SLN-18Y	00121169	2240'-8" PVC Saint Francis Wy. / Sorentini Dr.	2	5	4	In Progress	2021	2021	2,360														No major scope change.	$1,134,769	$481													
STK-18A	00118931	5400' 6/8" PVC Essex/Downs	8	5	5	Complete	2019	2019	5,310	5,310												x	No Change	$2,496,403	$470	$1,901,174	$358										x	Phased with other projects, minimized paving cost.
STK-18AA	00118996	1530' 8" PVC Barrymore St	1	5	5	Complete	2019	2019	2,564	2,564												x	No Change	$1,205,420	$470	$917,505	$358										x	Phased with other projects, minimized paving cost.
STK-18AB1	00119147	2910' 6" PVC Worth/Milton (Alleys)	2	4	1	Complete	2019	2019	2,602	2,602												x	No Change	$1,223,285	$470	$915,613	$352										x	Alignment from street to dirt area reduced paving.
STK-18AB2	00118963	3780' 6" PVC Worth/Milton/Anderson	18	5	2	In Progress	2019	Defer	3,733											x				$1,755,005	$470													
STK-18AC	0	2510' 8" PVC 3rd St	7	5	3		2019	Defer	2,510								x							$1,180,033	$470													
STK-18AD	0	3500' 6" PVC Euclid	9	5	4		2019	Defer	3,498				x											$1,644,523	$470													
STK-18AE	00119018	2070' 6" PVC 6th St	11	5	5		2019	Cancel	752				x											$353,540	$470													
STK-18AF	00118997	2390' 8" PVC Scotts	22	5	4	Complete	2019	2019	2,750	2,615									x					$1,292,864	$470	$1,511,135	$578										x	Change in design.
STK-18AG	00119003	2500' 8" PVC Worth St	8	5	4	Complete	2019	2019	2,960	3,456				x										$1,391,592	$470	$2,371,461	$686		x	x	x	x					x	Covid, Line stops.
STK-18AH	00119006	2170' 8" PVC Lincoln St					2019	Cancel	0				x											$0	$470													
STK-18AI	00119007	3460' 8" PVC Jefferson & Anderson	6	5	5	Complete	2019	2019	2,600	1,603									x					$1,222,344	$470	$1,254,084	$782		x			x					x	Covid, line stops.
STK-18AJ	00119028	3240' 12" DI California (2 of 5)	34	5	5	Complete	2019	2019	4,615	5,220				x										$2,169,661	$470	$3,472,776	$665										x	Transferred main from alley to street.
STK-18AK	00119011	2830' 8" PVC American (1 of 5)	13	5	3	Complete	2019	2019	5,508	5,508												x	No Change	$2,589,490	$470	$2,483,328	$451										x	Transferred main from alley to street.
STK-18AL	00119027	2530' 12" DI California St	5	5	5	In Progress	2019	2020	2,825															$1,328,124	$470													
STK-18AM1	119017	2256' 8" PVC Roosevelt/Harding	4	5	2	In Progress	2019	Defer	4,485											x				$2,108,544	$470													
STK-18AM2	124685	2269' 8" PVC Pilgrim & Airport	14	5	2	In Progress	2019	Defer	4,485											x				$2,108,544	$470													
STK-18AN	00118995	2200' 8" PVC in Churchill St	4	5	5	Complete	2020	2019	2,130	2,130												x	No Change	$1,042,640	$490	$975,697	$458										x	Overhead.
STK-18AO	00121172	3374' 8" PVC E Poplar/Pleasant	21	5	2	In Progress	2020	Defer	3,374											x				$1,651,580	$490													
STK-18B	00121174	2510' 8" PVC S Harrison/S Lincoln	8	5	4	In Progress	2020	Defer	1,981											x				$969,704	$490													
STK-18C	00121176	4900' 8" PVC Bristol Ave/Oxford Way	26	5	4	In Progress	2020	2020	3,485													x	In Construction	$1,705,915	$490													
STK-18D	00121177	4350' 12" DI E Lafayette/Main	18	5	5	In Progress	2020	2020	4,320													x	In Construction	$2,114,649	$490													
STK-18E	00121178	5758' 12" DI E Weber Ave	10	5	5		2020	Cancel	5,758				x									x	Re-evaluated scope	$2,818,553	$490													
STK-18F	00121180	3139' 8" PVC S San Joaquin (4/5)	46	5	3	In Progress	2020	2020	4,587													x	In Construction	$2,245,346	$490													
STK-18G	00121182	3129' 8" PVC S Sutter (3/5)	21	5	5	In Progress	2020	2020	4,785													x	In Construction	$2,342,268	$490													
STK-18H	00120549	3142' 8" PVC E Magnolia/E Acacia	15	5	5	Complete	2020	2019	3,140	3,394				x										$1,537,037	$490	$2,195,602	$647	x	x	x	x	x	x				x	Covid, Line stops, T&E.
STK-18I	0	5111' 12" DI E Harding Way	15	5	5		2020	Defer	5,111				x											$2,501,845	$490													
STK-18J	124698	1385' 8" PVC Sunnyside Ave	9	5	3	In Progress	2020	Defer	1,827				x							x			In Construction	$894,320	$490													
STK-18K	0	2899' 12" DI Wilson Way	4	5	5		2020	Defer	2,899				x											$1,419,067	$490													
STK-18L	00121215	4899' 8" PVC W Euclid/Telegraph	21	5	4	In Progress	2020	2020	5,100													x	In Progress	$2,496,461	$490													
STK-18M	124701	4760' 12" DI Sonora/Hunter/California	29	5	4	In Progress	2021	Defer	4,890											x			In Construction	$2,453,545	$502													
STK-18N	124708	4677' 8" PVC Canal/Franklin/Country Club	12	5	2	In Progress	2021	Defer	4,521											x			In Construction	$2,268,401	$502													
STK-18O	0	3700' 8" PVC W Longview Ave	5	5	4		2021	Defer	3,700			x												$1,856,466	$502													
STK-18P	0	4480' 8" PVC E Swain Rd	4	5	5		2021	Defer	4,480			x												$2,247,829	$502													
STK-18Q	0	8th, 9th, 10th - Airport	11	5	4		2021	Defer	3,340			x												$1,675,837	$502													
STK-18R	0	Union & Sacramento	8	5	4		2021	Defer	4,980			x												$2,498,703	$502													
STK-18S	0	Ophir & Pilgrim	10	5	4		2021	Defer	4,530			x												$2,272,916	$502													
STK-18T	124704	4100' 8" PVC Michigan/Monterey Ave	19	5	3	In Progress	2021	Defer	5,175											x			In Construction	$2,596,543	$502													
STK-18U	124709	4610' 8" PVC W Jackson/W Clay St	20	5	4	In Progress	2021	Defer	5,494											x			In Construction	$2,756,601	$502													
STK-18V	0	4590' S Hunter/S El Dorado (5/5)	20	5	5		2021	Defer	4,590													x	Project broken into 3 different phases	$2,303,021	$502													
STK-18W	00120664	800' 6" PVC West Willow Street	27	5	5	Complete	2021	2019	490	490												x	No Change	$245,856	$502	$1,330,267	$2,715										x	Only services transferred to existing main. Paving cost increased.
STK-18X	00120552	4060' 8" PVC N Madison/N Commerce	6	5	5	In Progress	2021	2019	4,060													x	In Progress	$2,037,095	$502													
STK-18XAC1	00119012	1885' 8" PVC S. Pilgrim St	9	5	3	In Progress	0	2020	1,985													x	In Progress	$971,662	$490													
STK-18XAC2	00121529	2851' 8" PVC Pilgrim/Anderson	20	5	4	In Progress	0	2020	2,851													x	In Progress	$1,395,571	$490													
STK-18XAC3	00121527	2239' 8" PVC Pilgrim/Jackson	12	5	4	In Progress	0	2020	2,239													x	In Progress	$1,095,995	$490													
STK-18XAD	00120739	800' ABN 6" CI Bedford/Lexington	0	5	4	Complete	0	2019	800	800												x	No Change	$391,602	$490	$291,851	$365										x	Actual cost less due to overestimating.
STK-18Y	00120547	2171' 8" PVC E Vine St/Hunter St	14	5	5	Complete	2021	2019	2,150	2,645				x										$1,078,757	$502	$1,855,511	$702	x	x	x	x	x	x				x	Covid, Line stops, T&E.
STK-18Z	124712	3018' 8" PVC N Sierra Nevada St	14	5	3	In Progress	2021	Defer	3,029											x			In Construction	$1,519,793	$502													
VIS-18A	00119061	3470' 12" DI Walnut/Cain/Tracy	0	2	4	Complete	2019	2019	3,470	3,600				x									No major change from GRC scope	$940,834	$271	$1,389,413	$386	x	x		x							Additional restoration required by city and unknown utility's
VIS-18B	00119063	1160' 6" PVC Clover/Iris	1	4	5	Complete	2019	2019	1,160	1,245				x									No major change from GRC scope	$314,515	$271	$402,766	$324		x		x							Utility conflicts and night work.
VIS-18C	00119060	1500' 12" DI Riggin/Lark Alley	0	4	4	Complete	2019	2019	1,590	1,434									x				Over estimated footage in GRC scope	$431,103	$271	$443,834	$310								x			Additional traffic control for intersections

2018 GRC
Main Replacement Program Project Summary

MID	WO (Project ID)	Description	# Leaks	Likelihood of Failure (LOF)	Consequence of Failure (COF)	Status	GRC Year	Actual Year	GRC Footage	Actual Footage	Replaced w/ higher LOF project	Replaced w/ higher COF project	Eng/Ops reprioritization	Extend to improved tie-in pont	Street Reconstruction/Relocation	Permit not available	Paving moratourium	Previously completed	Reduced footage w/ decision	Budget constraint	Recent leaks/property damage	Other - Scope	Scope Notes	Est. Cost	Est $/ft	Actual Cost	Actual $/ft	Paving	Restricted work hours	Extra depth	Utility conflicts	DDW seperation requirements	Rock Excavation	Import fill/soil remediation	Environmentally sensitive area	Limited work area/restricted access	Other Cost	Cost Notes
VIS-18D	00121217	2710' 8" PVC Willis/West/Strawberry	2	5	2		2020	Defer	3,902											x			Deferred due to GRC settlement budget restraint	$1,101,224	$282													
VIS-18E	00121221	3910' 12" DI Goshen/Boyer	2	5	3		2020	Defer	3,909											x			Deferred due to GRC settlement budget restraint	$1,103,200	$282													
VIS-18F	00124235	1810' 8" PVC N. Garden St	4	5	5		2020	Defer	1,810											x			Deferred due to GRC settlement budget restraint	$510,819	$282													
VIS-18G	00123028	2080' 12" DI W/E Main St	4	4	5	In Progress	2020	2021	2,080														No major change from GRC scope	$587,019	$282													
VIS-18H	0	3060' 12" DI Shirk/Goshen	1	5	4		2021	Defer	3,058		x	x											Reallocated to other projects with higher LOF and COF	$884,634	$289													
VIS-18I	0	2420' 12" DI N Shirk Rd	1	5	4		2021	Defer	2,410		x	x											Reallocated to other projects with higher LOF and COF	$697,177	$289													
VIS-18J	0	2500' 8" PVC Myrtle/Linwood/Meadow	2	5	5		2021	Defer	2,497		x	x											Reallocated to other projects with higher LOF and COF	$722,345	$289													
VIS-18K	00125836	3130' 8" PVC Norman/Lovers	2	4	5		2021	Defer	3,125											x			Deferred due to GRC settlement budget restraint	$904,016	$289													
VIS-18L	00125837	4120' 8" PVC School/Crowley	1	4	3		2021	Defer	4,023											x			Deferred due to GRC settlement budget restraint	$1,163,794	$289													
VIS-18M	00125831	2200' 6" PVC Willis/Floral/Church	4	5	4		2021	Defer	2,169											x			Deferred due to GRC settlement budget restraint	$627,459	$289													
WIL-18A	00119435	2450'-8" PVC Pacific Ave, Glenwood Lane	11	5	4	Complete	2019	2019	2,880	2,725									X					$1,235,128	$429	$944,971	$347			X	X	X						
WIL-18B	00121363	1580'-8" N Lassen St., Green St.	6	5	1	Complete	2020	2020	1,570	1,976				X								X	Covid restrictions.	$700,937	$446	$891,819	$451		X								X	Increase footage, Covid restrictions.
WIL-18C	0	960'-8" PVC S Plumas St.	3	5	3		2021	Defer	956				X							X				$437,326	$457												
WLK-18A	00119085	1,630' 8" DI Valecroft Ave	1	4	4	Complete	2019	2019	1,630	1,830				X								X	Additional main replaced on Castleview Court	$706,519	$433	$1,916,007	$1,047	X									X	Due to City requirements, materials, contractor cost and additional footages made the higher cost.
WLK-18B	00121224	3,000' 8" PVC N Valley Dr	2	5	4		2020	Defer	3,000											X			Due to budget constraint, project was deferred	$1,357,679	$453												X	
WLK-18C	0	930' 6" PVC Royal St George Dr	3	5	4		2021	Defer	930											X			Due to budget constraint, project was deferred	$430,879	$463													
									923,425	**262,977**																											

Notes
1. GRC Year = Proposed 2018 GRC completion year. If GRC year is listed as "0" then project was not originally proposed in 2018 GRC. Original proposed projects are subject to revision based on current priorities when projects are completed.
2. GRC Footage = Project proposed 2018 GRC total feet of main to install based Cal Water 2018 GRC application.
3. Estimated Cost = Proposed 2018 GRC loaded cost.
4. Estimated $/ft = Proposed 2018 GRC estimated loaded cost/feet
5. Actual Cost = Actual completed loaded cost.
6. Actual Cost $/Ft = Actual completed loaded cost/foot of main installed.
7. Loaded costs are the expected final costs including direct costs, construction overhead, and AFDUC.

California Water Service Company

Common Plant Issues Project Justification Book
2021 General Rate Case

www.calwater.com

Attachment 9-2:
CWS's Response to DR KN3-011

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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From: **California Water Service**

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Date: **December 23, 2024** **Partial Response #1 sent December 19, 2024** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #2 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**
  - **Attachment #2 – KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan**

- **Attachment #3 – KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test**
- **Attachment #4 – KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted**
- **Attachment #5 – KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo**
- **Attachment #6 – KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices**
- **Attachment #7 – KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test**
- **Attachment #8 – CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email**
- **Attachment #9 – KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report**
- **Attachment #10 – KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test**
- **Attachment #11 – KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report**
- **Attachment #12 – CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District**
- **Attachment #13 – KN3-011 Attachment 13_2.a**
- **Attachment #14 – KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan**
- **Attachment #15 – KN3-11 Attachment 15_3.a_Control Valve Asset Data**
- **Attachment #16 – KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement**
- **Attachment #17 – KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors**
- **Attachment #18 – KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **Attachment #19 – KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **Attachment #20 – KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **Attachment #21 – KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **Attachment #22 – KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **Attachment #23 – KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **Attachment #24 – KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **Attachment #25 – KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **Attachment #26 – KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **Attachment #27 – KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **Attachment #28 – KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **Attachment #29 – KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **Attachment #30 – KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **Attachment #31 – KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **Attachment #32 – Attachment #17 – KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **Attachment #33 – KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **Attachment #34 – KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **Attachment #35 – KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **Attachment #36 – KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **Attachment #37 – KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **Attachment #38 – KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **Attachment #39 – KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **Attachment #40 – KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **Attachment #41 – KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **Attachment #42 – KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **Attachment #43 – KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **Attachment #44 – KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **Attachment #45 – KN3-011 Attachment 45_1.k_C.7-2 111-134065**

- **Attachment #46 – KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **Attachment #47 – KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **Attachment #48 – KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **Attachment #49 – KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **Attachment #50 – KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **Attachment #51 – KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **Attachment #52 – KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **Attachment #53 – KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **Attachment #54 – KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **Attachment #55 – KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **Attachment #56 – KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **Attachment #57 – KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **Attachment #58 – KN3-011 Attachment 58_1.k_C.7-3 111-162062**
- **Attachment #59 – KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data**
- **Attachment #60 – KN3-011 Attachment 60_1.k_C.7-3 114-152172**
- **Attachment #61 – KN3-011 Attachment 61_1.k_C.7-3 116-134003**
- **Attachment #62 – KN3-011 Attachment 62_1.k_C.7-3 116-152438A**
- **Attachment #63 – KN3-011 Attachment 63_1.k_C.7-3 116-152438B**
- **Attachment #64 – KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data**
- **Attachment #65 – KN3-011 Attachment 65_1.k_C.7-3 123-158159**
- **Attachment #66 – KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data**
- **Attachment #67 – KN3-011 Attachment 67_1.k_C.7-4 101-161192**
- **Attachment #68 – KN3-011 Attachment 68_1.k_C.7-4 103-139232**
- **Attachment #69 – KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data**
- **Attachment #70 – KN3-011 Attachment 70_1.k_C.7-4 108-133173**
- **Attachment #71 – KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data**
- **Attachment #72 – KN3-011 Attachment 72_1.k_C.7-4 111-153636**
- **Attachment #73 – KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data**
- **Attachment #74 – KN3-011 Attachment 74_1.k_C.7-4 114-152770**
- **Attachment #75 – KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data**
- **Attachment #76 – KN3-011 Attachment 76_1.k_C.7-4 116-145345**
- **Attachment #77 – KN3-011 Attachment 77_1.k_C.7-4 118-163640**
- **Attachment #78 – KN3-011 Attachment 78_1.k_C.7-4 119-136664**
- **Attachment #79 – KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data**
- **Attachment #80 – KN3-011 Attachment 80_1.k_C.7-4 128-159233**
- **Attachment #81 – KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data**
- **Attachment #82 – KN3-011 Attachment 82_1.k_C.7-5 102-137283**
- **Attachment #83 – KN3-011 Attachment 83_1.k_C.7-5 113-150270**
- **Attachment #84 – KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data**
- **Attachment #85 – KN3-011 Attachment 85_1.k_C.7-5 114-150819**
- **Attachment #86 – KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data**
- **Attachment #87 – KN3-011 Attachment 87_1.k_C.7-6 101-157160**
- **Attachment #88 – KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data**
- **Attachment #89 – KN3-011 Attachment 89_1.k_C.7-6 102-153268**
- **Attachment #90 – KN3-011 Attachment 90_1.k_C.7-7 102-148376**
- **Attachment #91 – KN3-011 Attachment 91_1.k_C.5 Well Pump**
- **Attachment #92 – KN3-011 Attachment 92_1.k_C.5-11 120-137793**
- **Attachment #93 – KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data**

- **Attachment #94 – KN3-011 Attachment 94_1.k_C.5-11 120-143709**
- **Attachment #95 – KN3-011 Attachment 95_1.k_C.5-11 120-143711**
- **Attachment #96 – KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data**
- **Attachment #97 – KN3-011 Attachment 97_1.k_C.5-11 120-163217**
- **Attachment #98 – KN3-011 Attachment 98_1.k_C.5-11 120-165911**
- **Attachment #99 – KN3-011 Attachment 99_1.k_C.5-11 120-169118**
- **Attachment #100 – KN3-011 Attachment 100_1.k_C.5-11 128-145221**
- **Attachment #101 – KN3-011 Attachment 101_1.k_C.5-13 104-136978**
- **Attachment #102 – KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data**
- **Attachment #103 – KN3-011 Attachment 103_1.k_C.5-13 111-140907**
- **Attachment #104 – KN3-011 Attachment 104_1.k_C.5-14 120-132879**
- **Attachment #105 – KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data**
- **Attachment #106 – KN3-011 Attachment 106_1.k_C.5-14 120-159181**
- **Attachment #107 – KN3-011 Attachment 107_1.k_C.5-14 120-149719**
- **Attachment #108 – KN3-011 Attachment 108_1.k_C.5-15 120-150618**
- **Attachment #109 – KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data**
- **Attachment #110 – KN3-011 Attachment 110_1.k_C.5-15 134-160056**
- **Attachment #111 – KN3-011 Attachment 111_1.k_C.5-16 128-141937**
- **Attachment #112 – KN3-011 Attachment 112_1.k_C.5-2 101-138075**
- **Attachment #113 – KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data**
- **Attachment #114 – KN3-011 Attachment 114_1.k_C.5-2 120-143426**
- **Attachment #115 – KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data**
- **Attachment #116 – KN3-011 Attachment 116_1.k_C.5-3 120-152749**
- **Attachment #117 – KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data**
- **Attachment #118 – KN3-011 Attachment 118_1.k_C.5-4 120-147114**
- **Attachment #119 – KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data**
- **Attachment #120 – KN3-011 Attachment 120_1.k_C.5-5 114-132921**
- **Attachment #121 – KN3-011 Attachment 121_1.k_C.5-5 117-136325**
- **Attachment #122 – KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data**
- **Attachment #123 – KN3-011 Attachment 123_1.k_C.5-5 119-142076**
- **Attachment #124 – KN3-011 Attachment 124_1.k_C.5-5 120-144864**
- **Attachment #125 – KN3-011 Attachment 125_1.k_C.5-5 120-152746**
- **Attachment #126 – KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data**
- **Attachment #127 – KN3-011 Attachment 127_1.k_C.5-5 120-152747**
- **Attachment #128 – KN3-011 Attachment 128_1.k_C.5-5 120-152748**
- **Attachment #129 – KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data**
- **Attachment #130 – KN3-011 Attachment 130_1.k_C.5-5 120-153531**
- **Attachment #131 – KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data**
- **Attachment #132 – KN3-011 Attachment 132_1.k_C.5-5 120-156680**
- **Attachment #133 – KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data**
- **Attachment #134 – KN3-011 Attachment 134_1.k_C.5-5 120-159180**
- **Attachment #135 – KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data**
- **Attachment #136 – KN3-011 Attachment 136_1.k_C.5-5 120-160355**
- **Attachment #137 – KN3-011 Attachment 137_1.k_C.5-5 120-163022**
- **Attachment #138 – KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data**
- **Attachment #139 – KN3-011 Attachment 139_1.k_C.5-5 120-163642**
- **Attachment #140 – KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data**
- **Attachment #141 – KN3-011 Attachment 141_1.k_C.5-5 120-163648**

- **Attachment #142 – KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data**
- **Attachment #143 – KN3-011 Attachment 143_1.k_C.5-6 120-152160**
- **Attachment #144 – KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data**
- **Attachment #145 – KN3-011 Attachment 145_1.k_C.5-8 120-143244**
- **Attachment #146 – KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data**
- **Attachment #147 – KN3-011 Attachment 147_1.k_C.5-8 120-152745**
- **Attachment #148 – KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data**
- **Attachment #149 – KN3-011 Attachment 149_1.k_C.5-9 102-151068**
- **Attachment #150 – KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **Attachment #151 – KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **Attachment #152 – KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **Attachment #153 – KN3-011 Attachment 153_1.k_C.5-9 120-144028**
- **Attachment #154 – KN3-011 Attachment 154_4.a._Active Services & Survivor Curves**
- **Attachment #155 – KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material**
- **Attachment #156 – KN3-011 Attachment 156_4.a._Service Program Cost Estimate**
- **Attachment #157 – KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis**
- **Attachment #158 – KN3-011 Attachment 158_5.a_BG-002 2021**
- **Attachment #159 – KN3-011 Attachment 159_5.a_BG-040 2020**
- **Attachment #160 – KN3-011 Attachment 160_5.a_BG-040 2022**
- **Attachment #161 – KN3-011 Attachment 161_5.a_CH-005 2016**
- **Attachment #162 – KN3-011 Attachment 162_5.a_CH-005 2019**
- **Attachment #163 – KN3-011 Attachment 163_5.a_CH-005 2023**
- **Attachment #164 – KN3-011 Attachment 164_5.a_CH-018 2015**
- **Attachment #165 – KN3-011 Attachment 165_5.a_CH-018 2019**
- **Attachment #166 – KN3-011 Attachment 166_5.a_CH-065 2016**
- **Attachment #167 – KN3-011 Attachment 167_5.a_CH-065 2024**
- **Attachment #168 – KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
- **Attachment #169 – KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
- **Attachment #170 – KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
- **Attachment #171 – KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
- **Attachment #172 – KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
- **Attachment #173 – KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
- **Attachment #174 – KN3-011 Attachment 174_5.a_DOM-279 well 2018**
- **Attachment #175 – KN3-011 Attachment 175_5.a_DOM-279 well 2024**
- **Attachment #176 – KN3-011 Attachment 176_5.a_KRV-009 2015**
- **Attachment #177 – KN3-011 Attachment 177_5.a_KRV-009 2022**
- **Attachment #178 – KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
- **Attachment #179 – KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
- **Attachment #180 – KN3-011 Attachment 180_5.a_LAS-013 2017**
- **Attachment #181 – KN3KN3-011 Attachment 181_5.a_LAS-013 2022**
- **Attachment #182 – KN3KN3-011 Attachment 182_5.a_LAS-017 2018**
- **Attachment #183 – KN3KN3-011 Attachment 183_5.a_LAS-017 2022**
- **Attachment #184 – KN3KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
- **Attachment #185 – KN3KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
- **Attachment #186 – KN3KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
- **Attachment #187 – KN3KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
- **Attachment #188 – KN3KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**

- Attachment #189 – KN3KN3-011 Attachment 189_5.a_LAS-104-PB01 2022
- Attachment #190 – KN3KN3-011 Attachment 190_5.a_LAS-104-PB02 2018
- Attachment #191 – KN3KN3-011 Attachment 191_5.a_LAS-104-PB02 2022
- Attachment #192 – KN3KN3-011 Attachment 192_5.a_LAS-113 2019
- Attachment #193 – KN3-011 Attachment 193_5.a_LAS-113 2022
- Attachment #194 – KN3-011 Attachment 194_5.a_LAS-121 2016
- Attachment #195 – KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021
- Attachment #196 – KN3-011 Attachment 196_5.a_LAS-121 WELL 2021
- Attachment #197 – KN3-011 Attachment 197_5.a_LIV-020 2017 2
- Attachment #198 – KN3-011 Attachment 198_5.a_LIV-020 2017
- Attachment #199 – KN3-011 Attachment 199_5.a_LIV-020 2023
- Attachment #200 – KN3-011 Attachment 200_5.a_LIV-024 2017
- Attachment #201 – KN3-011 Attachment 201_5.a_LIV-024 2021
- Attachment #202 – KN3-011 Attachment 202_5.a_MRL-015 2017
- Attachment #203 – KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023
- Attachment #204 – KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023
- Attachment #205 – KN3-011 Attachment 205_5.a_MSHA-004 2024
- Attachment #206 – KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018
- Attachment #207 – KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018
- Attachment #208 – KN3-011 Attachment 208_5.a_MSHA-006 1 2016
- Attachment #209 – KN3-011 Attachment 209_5.a_MSHA-006 2 2016
- Attachment #210 – KN3-011 Attachment 210_5.a_MSHA-006 2020
- Attachment #211 – KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023
- Attachment #212 – KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023
- Attachment #213 – KN3-011 Attachment 213_5.a_SC-114 2015
- Attachment #214 – KN3-011 Attachment 214_5.a_SC-114 2018
- Attachment #215 – KN3-011 Attachment 215_5.a_SC-114 2023
- Attachment #216 – KN3-011 Attachment 216_5.a_SLN-019 2020
- Attachment #217 – KN3-011 Attachment 217_5.a_SLN-060 2019
- Attachment #218 – KN3-011 Attachment 218_5.a_SLN-060 2023
- Attachment #219 – KN3-011 Attachment 219_5.a_SLN-106 2019
- Attachment #220 – KN3-011 Attachment 220_5.a_SM-029 2015
- Attachment #221 – KN3-011 Attachment 221_5.a_SM-029 2019
- Attachment #222 – KN3-011 Attachment 222_5.a_SM-029 2021
- Attachment #223 – KN3-011 Attachment 223_5.a_SM-029 2024
- Attachment #224 – KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016
- Attachment #225 – KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016
- Attachment #226 – KN3-011 Attachment 226_5.a_SMTN-015 2023
- Attachment #227 – KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016
- Attachment #228 – KN3-011 Attachment 228_5.a_STK-036 2016
- Attachment #229 – KN3-011 Attachment 229_5.a_STK-036 2019
- Attachment #230 – KN3-011 Attachment 230_5.a_STK-036 2023
- Attachment #231 – KN3-011 Attachment 231_5.a_STK-060 2017
- Attachment #232 – KN3-011 Attachment 232_5.a_STK-060 2023
- Attachment #233 – KN3-011 Attachment 233_5.a_WLK-001 2017
- Attachment #234 – KN3-011 Attachment 234_5.a_WLK-001 2020
- Attachment #235 – KN3-011 Attachment 235_5.a_WLK-001 2023
- Attachment #236 – KN3-011 Attachment 236_5.a_WLK-010 2016

- **Attachment #237 – KN3-011 Attachment 237_5.a_WLK-010 2019**
- **Attachment #238 – KN3-011 Attachment 238_5.a_WLK-010 2024**
- **Attachment #239 – KN3-011 Attachment 239_6.a_Generator Condition Assessment**
- **Attachment #240 – KN3-011 Attachment 240_6.a_ BK 162 2013**
- **Attachment #241 – KN3-011 Attachment 241_6.a_ BK 162 Gen service**
- **Attachment #242 – KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
- **Attachment #243 – KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
- **Attachment #244 – KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
- **Attachment #245 – KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
- **Attachment #246 – KN3-011 Attachment 246_6.a_ BK 162 PM**
- **Attachment #247 – KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
- **Attachment #248 – KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
- **Attachment #249 – KN3-011 Attachment 249_6.a_ BK162Genset**
- **Attachment #250 – KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
- **Attachment #251 – KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
- **Attachment #252 – KN3-011 Attachment 252_6.a_ BK176 Gen PM**
- **Attachment #253 – KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
- **Attachment #254 – KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
- **Attachment #255 – KN3-011 Attachment 255_6.a_ CH 032 2019 service**
- **Attachment #256 – KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
- **Attachment #257 – KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
- **Attachment #258 – KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
- **Attachment #259 – KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
- **Attachment #260 – KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
- **Attachment #261 – KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
- **Attachment #262 – KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
- **Attachment #263 – KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
- **Attachment #264 – KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
- **Attachment #265 – KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
- **Attachment #266 – KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
- **Attachment #267 – KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
- **Attachment #268 – KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
- **Attachment #269 – KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**
- **Attachment #270 – KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019**
- **Attachment #271 – KN3-011 Attachment 271_6.a_ CH 032 Genset**
- **Attachment #272 – KN3-011 Attachment 272_6.a_ CH 032 Genset2021services**
- **Attachment #273 – KN3-011 Attachment 273_6.a_ CH 032 inspection GE**
- **Attachment #274 – KN3-011 Attachment 274_6.a_ CH 032 load bank GE**
- **Attachment #275 – KN3-011 Attachment 275_6.a_ CH 032 oil sample GE**
- **Attachment #276 – KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023**
- **Attachment #277 – KN3-011 Attachment 277_6.a_ CH 032 PM**
- **Attachment #278 – KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018**

- Attachment #279 – KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- Attachment #280 – KN3-011 Attachment 280_6.a_ CH 032 waste
- Attachment #281 – KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- Attachment #282 – KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- Attachment #283 – KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- Attachment #284 – KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- Attachment #285 – KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- Attachment #286 – KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- Attachment #287 – KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- Attachment #288 – KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- Attachment #289 – KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- Attachment #290 – KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- Attachment #291 – KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- Attachment #292 – KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- Attachment #293 – KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- Attachment #294 – KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- Attachment #295 – KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- Attachment #296 – KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- Attachment #297 – KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- Attachment #298 – KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- Attachment #299 – KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- Attachment #300 – KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- Attachment #301 – KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- Attachment #302 – KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- Attachment #303 – KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- Attachment #304 – KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- Attachment #305 – KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- Attachment #306 – KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- Attachment #307 – KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- Attachment #308 – KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- Attachment #309 – KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- Attachment #310 – KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- Attachment #311 – KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- Attachment #312 – KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- Attachment #313 – KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- Attachment #314 – KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- Attachment #315 – KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- Attachment #316 – KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- Attachment #317 – KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- Attachment #318 – KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024

- **Attachment #319 – KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **Attachment #320 – KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **Attachment #321 – KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **Attachment #322 – KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **Attachment #323 – KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **Attachment #324 – KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **Attachment #325 – KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **Attachment #326 – KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **Attachment #327 – KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **Attachment #328 – KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **Attachment #329 – KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **Attachment #330 – KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **Attachment #331 – KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **Attachment #332 – KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **Attachment #333 – KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **Attachment #334 – KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **Attachment #335 – KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**
- **Attachment #336 – KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC**
- **Attachment #337 – KN3-011 Attachment 337_6.d.ii_Chico Generators**
- **Attachment #338 – KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator**
- **Attachment #339 – KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

vibrations typically indicate problems with the pump downhole. If not addressed, this will eventually lead to premature equipment failure.

- **132243 – SLN 067-01 has a known motor overheating issue. Excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. [See "CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District"]**

g. Does Cal Water have warranties with pumping equipment vendors or manufacturers that potentially apply in cases where the pump fails while still in "excellent" or "good" condition?
Response: Manufacturer typically provide only a 1 year warranty if the pump was pit tested prior to release. The warranty only covers manufacturing defects such as the pump not meeting specification parameters. Operational failures in which efficiency falls are not covered by warranty.

h. For any pump replacement projects (e.g.,PID 132161, PID 132151, PID 132112, PID 132223, PID 133256, PID 132248, PID 132251, PID 132254) with a Last Pump Date before 2022 why does the pumping equipments need to be replaced in the 2024 GRC if it has not been pumped since 2022?
Response: 'Last Pump Date' refers to the year in which the hydraulic performance test was performed, not when the pump was last operated. Cal Water's Hydraulic Testing Program performs test pumps on an annual or bi-annual basis depending on horsepower. Refer to Section 4 – 'Failure Modes and Condition Assessment - Low OPE' on page 9 of 12 of "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan".

i. Are any of the 88 pump units listed in Attachment B associated with "standby" or "inactive" stations?
Response: None of the pump units listed in Attachment B are designated as "standby" or "inactive." However, VIS 201-01 (132255) is actually a typo, and the correct location should be VIS 201-02, which is active and requires replacement due to low operational efficiency (OPE).

j. Has Cal Water experienced a supply chain and/or labor issues with pump and motor replacements for planned and unplanned projects? If so, what is the purchase order lead time?
Response: Current market conditions do not indicate supply chains issues with procuring new pump and motor equipment. Typical lead times on new pumping equipment range from 4-to- 22 weeks depending on the style of pump.
Contactor labor availability is limited but not unusual due to the high impact market of this industry.

k. For the 88 pumps to be replaced, please populate the attached Excel file labeled "Attachment 1-Pumps and Motor", Tab "Requested Replacement." Please provide a breakdown of the average cost of the replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: See filled out "Requested Replacement" Tab under "KN3-011

Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors". Cal Water has also provided the cost catalog supporting documentation for its unit costs for well pumps and booster pumps. Please refer to the following attachments:

- **KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **KN3-011 Attachment 58_1.k_C.7-3 111-162062**

- KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data
- KN3-011 Attachment 60_1.k_C.7-3 114-152172
- KN3-011 Attachment 61_1.k_C.7-3 116-134003
- KN3-011 Attachment 62_1.k_C.7-3 116-152438A
- KN3-011 Attachment 63_1.k_C.7-3 116-152438B
- KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data
- KN3-011 Attachment 65_1.k_C.7-3 123-158159
- KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data
- KN3-011 Attachment 67_1.k_C.7-4 101-161192
- KN3-011 Attachment 68_1.k_C.7-4 103-139232
- KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data
- KN3-011 Attachment 70_1.k_C.7-4 108-133173
- KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data
- KN3-011 Attachment 72_1.k_C.7-4 111-153636
- KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data
- KN3-011 Attachment 74_1.k_C.7-4 114-152770
- KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data
- KN3-011 Attachment 76_1.k_C.7-4 116-145345
- KN3-011 Attachment 77_1.k_C.7-4 118-163640
- KN3-011 Attachment 78_1.k_C.7-4 119-136664
- KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data
- KN3-011 Attachment 80_1.k_C.7-4 128-159233
- KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data
- KN3-011 Attachment 82_1.k_C.7-5 102-137283
- KN3-011 Attachment 83_1.k_C.7-5 113-150270
- KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data
- KN3-011 Attachment 85_1.k_C.7-5 114-150819
- KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data
- KN3-011 Attachment 87_1.k_C.7-6 101-157160
- KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data
- KN3-011 Attachment 89_1.k_C.7-6 102-153268
- KN3-011 Attachment 90_1.k_C.7-7 102-148376
- KN3-011 Attachment 91_1.k_C.5 Well Pump
- KN3-011 Attachment 92_1.k_C.5-11 120-137793
- KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data
- KN3-011 Attachment 94_1.k_C.5-11 120-143709

- KN3-011 Attachment 95_1.k_C.5-11 120-143711
- KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data
- KN3-011 Attachment 97_1.k_C.5-11 120-163217
- KN3-011 Attachment 98_1.k_C.5-11 120-165911
- KN3-011 Attachment 99_1.k_C.5-11 120-169118
- KN3-011 Attachment 100_1.k_C.5-11 128-145221
- KN3-011 Attachment 101_1.k_C.5-13 104-136978
- KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data
- KN3-011 Attachment 103_1.k_C.5-13 111-140907

- KN3-011 Attachment 104_1.k_C.5-14 120-132879
- KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data
- KN3-011 Attachment 106_1.k_C.5-14 120-159181
- KN3-011 Attachment 107_1.k_C.5-14 120-149719
- KN3-011 Attachment 108_1.k_C.5-15 120-150618
- KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data
- KN3-011 Attachment 110_1.k_C.5-15 134-160056
- KN3-011 Attachment 111_1.k_C.5-16 128-141937
- KN3-011 Attachment 112_1.k_C.5-2 101-138075
- KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data
- KN3-011 Attachment 114_1.k_C.5-2 120-143426
- KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data
- KN3-011 Attachment 116_1.k_C.5-3 120-152749
- KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data
- KN3-011 Attachment 118_1.k_C.5-4 120-147114
- KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data
- KN3-011 Attachment 120_1.k_C.5-5 114-132921
- KN3-011 Attachment 121_1.k_C.5-5 117-136325
- KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data
- KN3-011 Attachment 123_1.k_C.5-5 119-142076
- KN3-011 Attachment 124_1.k_C.5-5 120-144864
- KN3-011 Attachment 125_1.k_C.5-5 120-152746
- KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data
- KN3-011 Attachment 127_1.k_C.5-5 120-152747
- KN3-011 Attachment 128_1.k_C.5-5 120-152748
- KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data
- KN3-011 Attachment 130_1.k_C.5-5 120-153531
- KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data
- KN3-011 Attachment 132_1.k_C.5-5 120-156680
- KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data
- KN3-011 Attachment 134_1.k_C.5-5 120-159180
- KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data
- KN3-011 Attachment 136_1.k_C.5-5 120-160355
- KN3-011 Attachment 137_1.k_C.5-5 120-163022
- KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data
- KN3-011 Attachment 139_1.k_C.5-5 120-163642
- KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data
- KN3-011 Attachment 141_1.k_C.5-5 120-163648
- KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data
- KN3-011 Attachment 143_1.k_C.5-6 120-152160
- KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data
- KN3-011 Attachment 145_1.k_C.5-8 120-143244
- KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data
- KN3-011 Attachment 147_1.k_C.5-8 120-152745
- KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data
- KN3-011 Attachment 149_1.k_C.5-9 102-151068

- **KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **KN3-011 Attachment 153_1.k_C.5-9 120-144028**

An explanation of how to read the cost catalog workbook was provided on slide 4 of the common plant tour presentation to Cal Advocates on Sept 3rd, 2024.
~~**To be provided in a subsequent response.**~~

l. Please use the attached Excel file Attachment 1-Pump and Motor, Tab "Historical Replacement" to assist in providing the historical replacements from 2014 to November 30th, 2024. Please provide a breakdown of the average cost of the replacements, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as the general ledger, vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: Please find "Historical Replacement" Tab under "KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors"
~~**To be provided in a subsequent response.**~~

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    To be provided in a subsequent response.

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    To be provided in a subsequent response.

    g. Are any of the CPS to be replaced associated with "standby" or "inactive" stations?
    Response: No.

3. Refer to project justification book "Common Plant Overview_2024_Final" Section Control Valve Overhaul and Replacement (p. 304-306).

   a. Please populate the risk assessment matrix using attached Excel file Attachment 3-Control Valve Overhaul and Replacement," tabs "Overhaul Rating" and "Replacement Rating" to provide the detailed breakdown.
   Response: Cal Water has modified its criticality analysis from what was submitted in the 2018 GRC filing and no longer records and analyzes the criticality of assets using the list shown in the "Overhaul Rating" and "Replacement Rating" tabs. The results from that analysis were recorded in Cal Water's Asset Management database; however, they are not consistent with our current practice as defined in the Strategic Asset Management Plan. For the valves where we have recorded the data, we have adjusted the criticality scores to be in line with our current program as defined in the Strategic Asset Management Plan. Please see "KN3-11 Attachment 15_3.a_Control Valve Asset Data". Cal Water is actively working on updating its criticality scores for all assets.
   Cal Water has not developed its list of valves that are planned for overhaul or replacement in the 2025 to 2027 years. Those are normally issued at the beginning of the year from Cal Water's asset management system based on the schedule shown in the asset plan.

   b. Using Cal Water's Control Valve risk assessment matrix, what is the lowest possible ranking score?
   Response: In terms of risk of failure, or criticality, 5.

   c. Using Cal Water's Control Valve risk assessment matrix, what is the highest possible ranking score?
   Response: In terms of risk of failure, or criticality, 1

   d. Is risk of failure to critical customers considered in the control valve risk assessment matrix?
   Response: No.

   e. If risk of failure to critical customers is considered in the control valve risk assessment matrix, please describe how that risk is factored into the final risk score. Please describe in detail (numerically and in words), where applicable.
   Response: Please refer to the response to 3.d.

   f. Provide a breakdown of the total number of control valves in each ranking across Cal Water's entire water system, from highest possible rank to lowest possible rank in Excel file "DR KN3-011 Attachment 3," tab "Total Ranking."
   Response: The condition scoring records are not available and are being built in Q1 2025. The 5-year overhaul cycle is used to assess the serviceability of the valves and they are replaced as necessary.

   g. Provide the annual number of control valve replacements and overhauls performed for each district for the past five years (2020-2024) in Excel file "DR KN3-011 Attachment 3." Please use tab "Historical Overhaul" for control valve overhauls and tab "Historical

Replacement" for control valve replacements.
Response : Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

h. Provide the annual number of control valve replacements and overhauls performed for each district between 2025-2027 in Excel file "DR KN3-011 Attachment 3." Please use tab "Future Overhaul" for control valve overhauls and tab "Future Replacement" for control valve replacements.
Response: Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

i. Refer to the project description concerning "Payback Period" under the category "Financial Efficiency." Page Common Plant PJ – 305 states "[i]f the old valve was to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures."

i. Describe the methodology Cal Water used to calculate the potential cost of a control valve failure event.
Response: Typically, Cal Water does not track the cost of repair for each incident. However, there have been incidents where Cal Water paid damage claims due to control valve failures. While not typical, one claim was as high as $1.9M due to a control valve failure that flooded a building.

ii. Is the potential cost of a control valve failure event assumed to be the same for every control valve?
Response: In our current model, yes.

iii. If the estimated potential cost is not the same for every potential control valve failure, please describe in detail the factors that influence the estimated cost.
Response: Please refer to the response to 3.i.ii.

iv. In the last five years (2019- 2023), please provide the actual recorded cost of control valve failures.
Response: Cal Water does not track the costs for control valve failures in any one account. Damage claims are also not normally classified by the cause of failure; however, Cal Water has attributed the event above to a control valve failure.

v. Please explain in detail how Cal Water determines the cost of overhaul and replacement of control valve failures is less cost effective than performing a regular overhaul and replacing older control valves. Please also provide evidence to support the analysis. This includes but is not limited to any vendor invoices, as-built, bids, proposal, or internal communications.
Response: Cal Water determines if a valve can be overhauled first prior to planning a replacement. In the common plant justification on page 306, Cal Water states "*Cal Water will try to overhaul all valves where the body of*

the valve is in good condition, the valve meets certain minimum requirements such as being epoxy coated, the valve is in a suitable location where it can be easily maintained, and the vault is sized properly where it can be maintained. If the valve does not meet these requirements and is in need of repair, Cal Water will evaluate if a replacement project will improve these conditions significantly before planning a replacement project. Otherwise, Cal Water will plan to overhaul the valve and plan for a future redesign of the system to more permanently resolve the issues." **It is the valve's condition that determines if it can be overhauled, not the cost effectiveness.**

j. Are any of the control valve overhaul and replacement associated with "standby" or "inactive" stations?
Response: No.

4. Refer to project justification book "Common Plant Overview_2024_Final" Service Line Replacement Program (pp. 370-380):

   a. Please provide the Excel file for all figures and tables in the referenced section for Service Line Replacement Program.
   Partial Response #2: Please see "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves" , "KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material" , and "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for all figures and tables and supporting documents referenced in the Service Line Replacement Program justification.

   Please note the estimated number of services in the final Common Plant justification on page Common Plant PJ-381 was revised slightly down in the year 2027 from the originally analyzed numbers and costs for 2027 presented in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve", which was compiled in December 2023. Originally, the analysis in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve" in tab "Forecast & Alt Comparison" had assumed $6,747,425 (2023 dollars) in the year 2027 amounting to 392 services replaced at $17,200 each (in 2023 dollars). This was ultimately revised down in the final filing to $6,582,697 (2023 dollars) or $7,266,066 (escalated to 2027 dollars at 2.5%), amounting to approximately 383 service replacements at $17,200 each (in 2023 dollars).
   ~~**To be provided in a subsequent response.**~~

   b. Reference Figure 7 on Common Plant PJ-377. Please provide the estimated work schedule for the number of annual service line replacements from 2025-2027. Please provide supporting documents for the proposed replacement schedule, such as any vendor invoices, bids, proposal, or internal communications.
   Partial Response #2: Cal Water is proposing to complete 387, 384, and 383 services in years 2025, 2026, and 2027 respectively. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE), see "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for additional details.
   ~~**To be provided in a subsequent response.**~~

   c. Cal Water states that its Bakersfield District "owns and is responsible for approximately 76,100 services within its service boundaries" (p. 370). Please explain why Cal Water considers the Service Line Replacement Program to be a common plant project, given that it is limited to the Bakersfield How does Cal Water define common plant project when it affects only one district?
   Partial Response #2: Cal Water considers this to be a program appropriately covered in Common Plant because this program will continue over time and may be needed in other districts in the future.

   Similar to other programs in the Common Plant book, the success of this program will be evaluated based on overall system metrics, specifically break rate of service lines. If those metrics change over time, the program could be ramped up or down in Bakerfield, or expanded to other districts, in response.
   .

~~**To be provided in a subsequent response.**~~

i. Does Cal Water have any other proposed annual service line replacement for other districts besides Bakersfield?
Partial Response #2: Not at this time.

~~**To be provided in a subsequent response.**~~

d. Cal Water states that "[to] offset this increase in program cost, the [Bakersfield] District will be reducing its pipeline replacement program from 0.7% during the 2021 GRC period to 0.5% for the 2024 GRC period only" (p. 370).

i. Please show how this reduction is done in the RO model and provide supporting analysis for this cost calculation.
Partial Response #2: This reduction was done by simply entering in the dollars for replacing 0.5% of Bakersfield's pipelines into the ROM instead of 0.7% For example, in 2025 Cal Water proposes to replace 25,643 lineal feet of main at a cost of about $595/LF, and the proposed direct cost is the product of these two values plus contingency. Had Cal Water proposed a rate of 0.7% instead, the total footage would have been closer to 36,000 LF at a cost of $595/LF plus contingency. This difference (36,000 – 25,600) x $595 x (1 + 10%) is roughly $6.8M. The proposed direct cost of the 2025 Service Line replacements is $6.99M.

~~**To be provided in a subsequent response.**~~

ii. Has Cal Water performed a cost-benefit analysis of the reduction in its Pipeline Replacement Program to account for the Service Replacement Program?
Partial Response #2: Yes, Cal Water conducted a cost-benefit analysis which demonstrated that reducing the MRP program and increasing the Service Replacement Program would result in net savings of $1.8 million in capital investment. Therefore, this was determined to be the most prudent course of action for customers and the district. Please see "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details.

~~**To be provided in a subsequent response.**~~

e. Cal Water states that Alternative 2: Replace Services Reactively & Ad hoc includes managing the service line as customers experience an issue (pp. 377-378).

Please provide a cost benefit analysis comparing Alternative 2's management of service lines as customers experience issues to the proposed Alternative 3: Programmatic Service Line Replacement annual replacement method.
Partial Response #2: This analysis was presented in Table 1 on page Common Plant PJ-380 which compared the total cost over the next 25 years between Alternative # 2 and Alternative # 3. It was ultimately determined that Alternative # 3 had a reduced capital investment cost, which would save customers approximately $ 28.3 million dollars over the next 25 years, demonstrating the value of proactively planned replacement over deferred and reactive management. Additional details on this cost analysis are presented in the Excel Workbook entitled "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves".
~~**To be provided in a subsequent response.**~~

f. Cal Water states that there has been an increase in plastic service line failures (p. 373). Please provide a list of plastic service line failures in the Bakersfield District from 2015-2024, with supporting documentation such as vendor invoices, as-built, bids, proposals, or internal communications.

   i. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks involving plastic service lines in the last five years (2020-2024).
   To be provided in a subsequent response.

   ii. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks NOT involving plastic service lines in the last five years (2020-2024).
   To be provided in a subsequent response.

   iii. Please provide 1) the average concentration of chlorine disinfectant to which plastic service lines in the Bakersfield District would have ongoing exposure, and 2) if known, average seasonal temperature range of water flowing to Bakersfield District service lines.
   To be provided in a subsequent response.

g. Please provide the historical service line replacement and cost data for the Bakersfield District from 2014 – 2024, as requested in Attachment 5, Service Replacement, tabs "Summary of Service Replaced" and "Plastic Service Replaced"
To be provided in a subsequent response.

h. Of the 76,100 service connections in the Bakersfield District, how many or what percentage of the service lines does Cal Water propose to replace in its Alternative 3 Programmatic Replacement from 2025-2027? For each year, please provide the number of services to be replaced, cost per replacement, and total cost.
Partial Response #2: Please see the following table.

Year	Number of Services to be Replaced	Cost Per Replacement (Escalated)	Total Costs (Escalated)
2025	387	$18,058.38	$6,988,592.52
2026	384	$18,539.90	$7,119,321.72
2027	383	$18,971.45	$7,266,065.84

~~**To be provided in a subsequent response.**~~

i. For responses to questions 4.h and 4.i, please provide a cost breakdown that includes cost of materials, labor, and equipment. Please provide evidence supporting the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
Partial Response #2: Please see Excel Workbook entitled "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details prepared by our profession engineering consultant. This estimate is based on a unit costs estimate of $17,200

(2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE).
~~**Response to be provided.**~~

j. Please provide a detailed explanation for any increase or decrease in the cost-of-service line replacement between the periods 2021-2024 and 2025-2027.
Partial Response #2: Unit costs for proactive replacement of services in the 2024 GRC were based on 2023 estimated costs and escalated to the applicable year.
~~**To be provided in a subsequent response.**~~

5. Regarding the Motor Control Center (MCC)/panelboard replacements Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pp. 423-424):

   a. Provide the inspection and maintenance records in Excel format for the existing panelboards for the past 10 years (2015 - November 30, 2024). If inspection/maintenance records are not available, provide an explanation.
   Partial Response #2: Please see list of inspection records available for the MCCs proposed for replacement:
      - **KN3-011 Attachment 158_5.a_BG-002 2021**
      - **KN3-011 Attachment 159_5.a_BG-040 2020**
      - **KN3-011 Attachment 160_5.a_BG-040 2022**
      - **KN3-011 Attachment 161_5.a_CH-005 2016**
      - **KN3-011 Attachment 162_5.a_CH-005 2019**
      - **KN3-011 Attachment 163_5.a_CH-005 2023**
      - **KN3-011 Attachment 164_5.a_CH-018 2015**
      - **KN3-011 Attachment 165_5.a_CH-018 2019**
      - **KN3-011 Attachment 166_5.a_CH-065 2016**
      - **KN3-011 Attachment 167_5.a_CH-065 2024**
      - **KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
      - **KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
      - **KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
      - **KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
      - **KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
      - **KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
      - **KN3-011 Attachment 174_5.a_DOM-279 well 2018**
      - **KN3-011 Attachment 175_5.a_DOM-279 well 2024**
      - **KN3-011 Attachment 176_5.a_KRV-009 2015**
      - **KN3-011 Attachment 177_5.a_KRV-009 2022**
      - **KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
      - **KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
      - **KN3-011 Attachment 180_5.a_LAS-013 2017**
      - **KN3-011 Attachment 181_5.a_LAS-013 2022**
      - **KN3-011 Attachment 182_5.a_LAS-017 2018**
      - **KN3-011 Attachment 183_5.a_LAS-017 2022**
      - **KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
      - **KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
      - **KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
      - **KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
      - **KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
      - **KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
      - **KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
      - **KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
      - **KN3-011 Attachment 192_5.a_LAS-113 2019**
      - **KN3-011 Attachment 193_5.a_LAS-113 2022**
      - **KN3-011 Attachment 194_5.a_LAS-121 2016**
      - **KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
      - **KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
      - **KN3-011 Attachment 197_5.a_LIV-020 2017 2**
      - **KN3-011 Attachment 198_5.a_LIV-020 2017**

- **KN3-011 Attachment 199_5.a_LIV-020 2023**
- **KN3-011 Attachment 200_5.a_LIV-024 2017**
- **KN3-011 Attachment 201_5.a_LIV-024 2021**
- **KN3-011 Attachment 202_5.a_MRL-015 2017**
- **KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **KN3-011 Attachment 213_5.a_SC-114 2015**
- **KN3-011 Attachment 214_5.a_SC-114 2018**
- **KN3-011 Attachment 215_5.a_SC-114 2023**
- **KN3-011 Attachment 216_5.a_SLN-019 2020**
- **KN3-011 Attachment 217_5.a_SLN-060 2019**
- **KN3-011 Attachment 218_5.a_SLN-060 2023**
- **KN3-011 Attachment 219_5.a_SLN-106 2019**
- **KN3-011 Attachment 220_5.a_SM-029 2015**
- **KN3-011 Attachment 221_5.a_SM-029 2019**
- **KN3-011 Attachment 222_5.a_SM-029 2021**
- **KN3-011 Attachment 223_5.a_SM-029 2024**
- **KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **KN3-011 Attachment 228_5.a_STK-036 2016**
- **KN3-011 Attachment 229_5.a_STK-036 2019**
- **KN3-011 Attachment 230_5.a_STK-036 2023**
- **KN3-011 Attachment 231_5.a_STK-060 2017**
- **KN3-011 Attachment 232_5.a_STK-060 2023**
- **KN3-011 Attachment 233_5.a_WLK-001 2017**
- **KN3-011 Attachment 234_5.a_WLK-001 2020**
- **KN3-011 Attachment 235_5.a_WLK-001 2023**
- **KN3-011 Attachment 236_5.a_WLK-010 2016**
- **KN3-011 Attachment 237_5.a_WLK-010 2019**
- **KN3-011 Attachment 238_5.a_WLK-010 2024**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance and repair costs (general ledger in Excel format) for the past 10 years (2015 - November 30, 2024) including all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not track maintenance and repair costs associated solely with the electrical equipment. Those costs are combined with other

pumping equipment repair work in a single account.
~~**To be provided in a subsequent response.**~~

6. Regarding the proposed Generator Replacement Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pg. PJ-453 to PJ-454):

   a. In Excel format, provide the inspection and maintenance records, including the CPUC ranking and assement matrix, for the existing generators for the past 10 years (2015-November 30, 2024). If inspection/maintenance records are not available, provide an explanation. Please identify the proposed generator replacement in 2024 GRC with their PID.
   Partial Response #2: Please see below the list of inspection and maintenance records for the generators proposed for replacement. Please see the "KN3-011 Attachment 239_6.a_Generator Condition Assessment" spreadsheet for generators condition assessment.
      - **KN3-011 Attachment 240_6.a_ BK 162 2013**
      - **KN3-011 Attachment 241_6.a_ BK 162 Gen service**
      - **KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
      - **KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
      - **KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
      - **KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
      - **KN3-011 Attachment 246_6.a_ BK 162 PM**
      - **KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
      - **KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
      - **KN3-011 Attachment 249_6.a_ BK162Genset**
      - **KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
      - **KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
      - **KN3-011 Attachment 252_6.a_ BK176 Gen PM**
      - **KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
      - **KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
      - **KN3-011 Attachment 255_6.a_ CH 032 2019 service**
      - **KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
      - **KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
      - **KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
      - **KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
      - **KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
      - **KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
      - **KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
      - **KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
      - **KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
      - **KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
      - **KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
      - **KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
      - **KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
      - **KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**
      - **KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019**
      - **KN3-011 Attachment 271_6.a_ CH 032 Genset**
      - **KN3-011 Attachment 272_6.a_ CH 032 Genset2021services**

- KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- KN3-011 Attachment 277_6.a_ CH 032 PM
- KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- KN3-011 Attachment 280_6.a_ CH 032 waste
- KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024

- **KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance, repair, and replacement costs (general ledger) of Cal Water's generators for the past 10 years (2015 - November 30, 2024). This includes all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not separately track maintenance and repair costs for generators. These costs are combined with other pumping equipment.
~~**To be provided in a subsequent response.**~~

c. For the following projects, if Cal Water is proposing a fixed generator. Please provide a detailed cost-benefit analysis and explanation for the replacement to be a fixed generator rather than a portable generator for the following projects and any new proposed generator projects.
Partial Response #2: Cal Water did not perform a detailed cost-benefit analysis for the generator replacements.

The generator at BK 162 is proposed as a permanent replacement because the facility is critical to the operation of the system. The station is used to pump purchased water from KCWA into multiple zones in the northeast part of the BK system. The current permanent generator failed in 2024.

The generator at BK 176 is proposed as a permanent replacement because the facility serves a pressure system. Backup power needs to be readily available in order to continually supply the pressure system. Cal Water could not stage a portable booster pump at that location permanently.

The generator at CH 032 is proposed as a permanent generator to replace the existing permanent fixed generator due to its current condition. This well supplies a pressure system and in the event of a widespread power outage, permanent generators are needed to supply water to the system to avoid low pressure and boil water notices.

The generator at CH 66 is proposed as a permanent generator because the facility supplies a pressure system. In the event of a power failure, backup power needs to be immediately available to avoid a loss of pressure to the system. Cal Water could not permanently stage a portable.
~~**To be provided in a subsequent response.**~~

PID	District	Project Name	Project Locations	Direct Costs
132561	Bakersfield	BK 2026 - Genset Replacements	BK 162 Genset Replacement	$2,307,426.75
			BK 176 Genset Replacement	
132564	Chico	CH 2026 - Genset Replacement	CH 032 Genset Replacement	$1,413,512.48
			CH 066 Genset Replacement	

d. Please provide a list of all proposed generator replacements in each district, in Excel format. Please include the following information:

i. Detailed explanation of the need for the proposed generator or MCC replacement.
Partial Response #2: Please see attached spreadsheet "KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC".

~~**To be provided in a subsequent response.**~~

ii. Whether the proposed generator is in a High Fire Threat District, and if so, a map showing the location of the proposed generator.
Partial Response #2: See attachments "KN3-011 Attachment 337_6.d.ii_Chico Generators", "KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator", and "KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator" for the map of generators in high fire threat areas. Note that Salinas Hills is a high fire threat area; however, the Salinas system is not in a high fire threat area.

~~**To be provided in a subsequent response.**~~

iii. Schedule for generator purchase and completion of installation.
Partial Response #2:

	Purchase		Install	
Project	**Month**	**Year**	**Month**	**Year**
BK 162	8	2025	4	2027
BK 176	8	2025	4	2027
Ch 032	8	2025	5	2027
CH 066	8	2025	5	2027
DOM 232	9	2025	6	2027
SLN 016	8	2025	5	2027
SLN 033	8	2025	5	2027

WLK 001	8	2025	4	2027

~~**To be provided in a subsequent response.**~~

e. Please refer to D. 24-03-042 for the following questions:

i. Cal Water proposed to install a permanent generator at Station 23 in the Visalia District under PID 123954. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is in the construction phase. All permits have been approved, and equipment has been procured. Project is estimated to be complete in the first quarter of 2025.

~~**To be provided in a subsequent response.**~~

ii. Cal Water proposed to replace a generator at Station 71 in the Stockton District under PID 124311. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is currently in preliminary design. Equipment will be procured at a later date.

~~**To be provided in a subsequent response.**~~

END PARTIAL RESPONSE #2

District	2019	2020	2021	2022	2023	2024
AV						
BAR						
BAY	18	18	12	2	12	4
BG	23	26	8	7	14	4
BK	17	9	4	3	8	11
CH	4			7	10	10
CSS						
DIX						
DOM	12	4	2	4		
ELA				2	4	5
HR				6		
KC						
KRV				5	10	14
LAS	12	22	19	15	7	7
LAR						
LIV	1			6	5	
MRL						
ORO						
PV				108	150	
RDV						
SEL						
SLN	23	27	11	11	12	13
STK						
SVR						
VIS						
WIL						
WLK				4	7	6
Total	110	106	56	180	239	74

LIST OF ATTACHMENTS FOR CHAPTER 11

	Attachment #	Description
1	Attachment 11-1	ESRB-8
2	Attachment 11-2	CWS Partial Response #3 FINAL to DR KN3-011
3	Attachment 11-3	KN3-004
4	Attachment 11-4	Apple Valley Technical Report Excerpt

Attachment 11-1:
Resolution ESRB-8

Date of Issuance: July 16, 2018

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

SAFETY AND ENFORCEMENT DIVISION **Resolution ESRB-8**
Electric Safety and Reliability Branch **July 12, 2018**

R E S O L U T I O N

RESOLUTION EXTENDING DE-ENERGIZATION REASONABLENESS, NOTIFICATION, MITIGATION AND REPORTING REQUIREMENTS IN DECISION 12-04-024 TO ALL ELECTRIC INVESTOR OWNED UTILITIES.

PROPOSED OUTCOME:

This Resolution extends the de-energization reasonableness, public notification, mitigation and reporting requirements in Decision (D.) 12-04-024 to all electric Investor Owned Utilities (IOUs) and adds new requirements. It also places a requirement on utilities to make all feasible and appropriate attempts to notify customers of a de-energization event prior to performing de-energization.

SAFETY CONSIDERATIONS:

De-energizing electric facilities during dangerous conditions can save lives and property and can prevent wildfires. This resolution provides guidelines that IOUs must follow and strengthens public safety requirements when an IOU decides to de-energize its facilities during dangerous conditions.

ESTIMATED COST: Costs of compliance with the new requirements are unknown.

SUMMARY

Commission Decision (D.) 12-04-024 established requirements for reasonableness, notification, mitigation and reporting by San Diego Gas & Electric Company (SDG&E) for its de-energization events.

This resolution extends the requirements established in D.12-04-024 to all electric IOUs, requires that the utilities meet with the local communities that may be impacted by a future de-energization event before putting the practice in effect in a particular area, requires feasible and appropriate customer notifications prior to a de-energization event, and requires notification to the Safety and Enforcement Division (SED) as soon as practicable after a decision to de-energize facilities and within 12 hours after the last service is restored.

BACKGROUND

California Public Utilities Code (PU Code) Sections 451 and 399.2(a) give electric utilities authority to shut off electric power in order to protect public safety. This authority includes shutting off power for the prevention of fires caused by strong winds.

Application (A.) 08-12-021 filed by SDG&E on December 22, 2008, requested specific authority to shut off power as a fire-prevention measure against severe Santa Ana winds and a review of SDG&E's proactive de-energization measures. SDG&E also requested that such power shut-offs would qualify for an exemption from liability under SDG&E's Tariff Rule 14.

Decision (D.) 12-04-024 issued on April 19, 2012 provided guidance on SDG&E's authority to shut off power under the PU Code and also established factors the Commission may consider in determining whether or not a decision by SDG&E to shut off power was reasonable. The decision ruled that SDG&E has the authority under Public Utilities Code, Sections 451 and 399.2(a) to shut off power in emergency situations when necessary to protect public safety. It also ruled that a decision to shut off power by SDG&E under its statutory authority, including the adequacy of any notice given and any mitigation measures implemented, may be reviewed by the Commission to determine if SDG&E's actions were reasonable. The decision requires SDG&E to take appropriate and feasible steps to provide notice and mitigation to its customers whenever it shuts off power. The decision also requires SDG&E to notify the Commission's Consumer Protection and Safety Division, now the Safety and Enforcement Division (SED), of the shut-off within 12 hours and submit a report to SED with a detailed explanation of its decision to shut off the power.

Southern California Edison Company (SCE) and Pacific Gas and Electric Company (PG&E) both currently exercise their authority to shut off power during dangerous fire conditions. However, there are currently no established standards on reasonableness, notification, mitigation and reporting by IOUs other than SDG&E.

DISCUSSION

The 2017 California wildfire season was the most destructive wildfire season on record, and saw multiple wildfires burning across California, including five of the 20 most destructive wildland-urban interface fires in the state's history. Devastating fires raged in Santa Rosa, Los Angeles, and Ventura, and the Thomas Fire proved to be the largest wildfire in California history. These fires further demonstrated the fire risk in California. As a result of the fires and critical fire weather conditions, both the President of the United States and the Governor of California issued State of Emergency declarations.

SDG&E exercised its statutory authority under Public Utilities Code Sections 451 and 399.2(a), to de-energize specific circuits in December of 2017. The first group of de-energization events occurred during the period of December 4 through 12, 2017. There were 55 individual circuit de-energization events involving 28 circuits (some circuits had multiple de-energization events) in various eastern San Diego County communities. A total of approximately 14,000 customers were affected.

A second group of de-energization events occurred on December 14 and 15, 2017. There were six individual circuit de-energization events involving three circuits in various eastern San Diego County communities. A total of approximately 650 customers were affected.

In 2017, SCE also used de-energization as a measure to protect its system against fire safety hazards. The de-energization event occurred on December 7, 2017 and affected customers in the community of Idyllwild. Approximately 8,061 total customers were affected in SCE's and nearby Anza Co-Op's service territories. The de-energization event occurred in response to a Red Flag Warning in effect, SCE meteorological forecasting, field-validated extreme high winds and associated fire risks in the area.

According to SCE, during such an event, the company typically attempts to notify customers who could be affected prior to de-energization if timing allows. For the December 7, 2017 event, SCE notified city, county and government officials prior to de-energizing but was not able to notify affected customers prior to the outage occurring. SCE also utilizes other wildfire mitigation practices, such as blocking of distribution reclosers in High Fire Areas, prior to de-energization. According to SCE, de-energization of circuits would be the last line of defense to protect public safety due to extreme fire weather conditions. SCE requires that such an event must be authorized by its activated Incident Management Team.

PG&E reports that prior to 2018, it did not have a policy to de-energize lines as a fire prevention measure. PG&E reported that it did not proactively de-energize lines due to extreme fire weather conditions in 2017. However, in March 2018 PG&E announced that it is developing a program to de-energize lines during periods of extreme fire conditions and has been meeting with local communities to gather feedback.

I. Current De-Energization Policies Applicable to SDG&E

D.12-04-024 established de-energization policies applicable to SDG&E addressing reporting, reasonableness review and customer notification.

A. Reporting

Under D.12-04-024, SDG&E is required to provide the following notifications:

- A notification to the Director of SED provided no later than 12 hours after the power shut-off.
- A report to the Director of SED provided no later than 10 business days after the shut-off event ends that includes (i) an explanation of the decision to shut off power; (ii) all factors considered in the decision to shut off power, including wind speed, temperature, humidity, and moisture in the vicinity of the de-energized circuits; (iii) the time, place, and duration of the shut-off event; (iv) the number of affected customers, broken down by residential, medical baseline, commercial/industrial, and other; (v) any wind-related damage to SDG&E's overhead power-line facilities in the areas where power is shut off; (vi) a description of the notice to customers and any other mitigation provided by

SDG&E; and (vii) any other matters that SDG&E believes are relevant to the Commission's assessment of the reasonableness of SDG&E's decision to shut off power.

As other electric IOUs shut off power in a similar manner and in similar situations, such notifications are important to allow safety oversight by SED, and it would be appropriate to have these reporting requirements apply to all electric IOUs' de-energization events.

B. Reasonableness Review

D.12-04-024 identified several factors that the Commission may consider in assessing whether an SDG&E decision to de-energize "was reasonable and qualifies for an exemption from liability under SDG&E's Electric Tariff Rule 14."[1] These factors are summarized below:

- SDG&E has the burden of demonstrating that its decision to shut off power is necessary to protect public safety.
- SDG&E must rely on other measures, to the extent available, as alternatives to shutting off power.
- SDG&E must reasonably believe that there is an imminent and significant risk that strong winds will topple its power lines onto tinder dry vegetation during periods of extreme fire hazard.
- SDG&E must consider efforts to mitigate the adverse impacts on the customers and communities in areas where it shuts off power. This includes steps to warn and protect its customers whenever it shuts off power.
- Other additional factors, as appropriate, to assess whether the decision to shut off power is reasonable.

As other electric IOUs are developing and/or instituting de-energization plans, it is important that these factors be used to assess the reasonableness of all electric IOU de-energization events in order to ensure that the power shut off is executed only as a last resort and for a good reason. However, we modify the third factor listed above by adding the phrase underlined below:

- [The IOU] must reasonably believe that there is an imminent and significant risk that strong winds will topple its power lines onto tinder dry vegetation or will cause major vegetation-related impacts on its facilities during periods of extreme fire hazard.

C. Public Outreach, Notification, and Mitigation

D.12-04-024 requires that SDG&E provide notice and mitigation to its customers, to the extent feasible and appropriate, whenever SDG&E shuts off power pursuant to its statutory authority.

[1] D.12-04-024, page 30.

As other electric IOUs are developing and/or instituting de-energization plans, it is important that this requirement for public outreach, notification, and mitigation apply to all electric IOUs in order to ensure that customers are impacted to the least extent necessary. We recognize that it is not practicable to have an absolute requirement that electric IOUs provide advance notification to customers prior to a de-energization event.

II. Strengthened Requirements Applicable to all Electric IOUs

Recent California experience with wildfires demands that we enhance existing de-energization policy and procedures. In order to ensure that the public and local officials are prepared for power shut off and aware of an IOU de-energization policy, and in order to ensure proper safety oversight by SED, we adopt the following:

1. The guidelines in D.12-04-024, currently applicable to SDG&E only, shall apply to all electric IOUs.
2. The guidelines shall be strengthened as described in the following sections and the strengthened guidelines shall apply to all electric IOUs.

A. Reporting

IOUs shall submit a report to the Director of SED within 10 business days after each de-energization event, as well as after high-threat events where the IOU provided notifications to local government, agencies, and customers of possible de-energization though no de-energization occurred. Reports to the Director of SED must include at a minimum the following information:

- The local communities' representatives the IOU contacted prior to de-energization, the date on which they were contacted, and whether the areas affected by the de-energization are classified as Zone 1, Tier 2, or Tier 3 as per the definition in General Order 95, Rule 21.2-D.
- If an IOU is not able to provide customers with notice at least 2 hours prior to the de-energization event, the IOU shall provide an explanation in its report.
- The IOU shall summarize the number and nature of complaints received as the result of the de-energization event and include claims that are filed against the IOU because of de-energization.
- The IOU shall provide detailed description of the steps it took to restore power.
- The IOU shall identify the address of each community assistance location during a de-energization event, describe the location (in a building, a trailer, etc.), describe the assistance available at each location, and give the days and hours that it was open.

B. Reasonableness Review

The reasonableness review discussion in D.12-04-024 and detailed above shall apply to all electric IOUs. At this time, we are not adding additional requirements and, while we recognize that this issue along with financial liability are important ongoing discussions, this resolution is not the venue for that discussion.

C. Public Outreach, Notification, and Mitigation

Increased coordination, communication and public education can be effective measures to increase public safety and minimize adverse impact from de-energization.

- The IOU shall notify the Director of SED, as soon as practicable, once it decides to de-energize its facilities. If the notification was not prior to the de-energization event, the IOU shall explain why a pre-event notification was not possible. The notification shall include the area affected, an estimate of the number of customers affected, and an estimated restoration time. The IOU shall also notify the Director of SED of full restoration within 12 hours from the time the last service is restored.
- Within 90 days of the effective date of this resolution, each IOU shall convene De-Energization Informational Workshops with representatives of entities that may be affected by a de-energization event, including but not limited to: state agencies, tribal governments, local agencies and representatives from local communities. Workshops should be inclusive of, but not limited to, representatives of customers who are low-income, have limited English, have disabilities, or are elderly. The purpose of these workshops is to explain, and receive feedback on, the IOU's de-energization policies and procedures. The workshops should be supplemented by focused working sessions, upon request by specific groups such as communications providers or Community Choice Aggregators that might have notification needs different than those of the general public.
- Within 30 days of the effective date of this resolution, each IOU shall submit a report to the Director of SED outlining its public outreach, notification, and mitigation plan. The plan must include at a minimum, the following information:
  - Names of communities that will be invited to De-Energization Informational Workshops.
  - Names of state agencies and tribal governments that the IOU will coordinate with in developing its de-energization plan and will invite to De-Energization Informational Workshops.
  - Names of local agencies the IOU will coordinate with in developing its de-energization plan and will invite to De-Energization Informational Workshops.
  - Proposed communication methods for publicizing and convening the De-Energization Informational Workshops.
  - Details regarding its plans for notification in advance of, and during, a de-energization event, and its plans for mitigation when de-energization occurs.
- The IOU shall ensure that de-energization policies and procedures are well-communicated and made publicly available, including the following:
  - Make available and post a summary of de-energization policies and procedures on its website.
  - Meet with representatives from local communities that may be affected by

de-energization events, before putting the practice in effect in a particular area.

- Provide its de-energization and restoration policy in full, and in summary form, to the affected community officials before de-energizing its circuits.
- Discuss the details of any potential shut-off and mitigation measures that the communities should consider putting in place, including information about any assistance that the IOU may be able to provide during events.

- In anticipation of a specific de-energization event, the IOU shall:
  - Notify customers of planned de-energization as soon as practicable before the event.
  - As practicable and operationally feasible, notify and communicate with representatives from the fire departments, first responders, local communities, government, communications providers, and Community Choice Aggregators that may be affected by the de-energization event.
  - Discuss with local government and community representatives the details of any potential shut-off and mitigation measures the IOU can provide to lessen the negative impacts of the power outage (e.g., cooling centers).
  - Ensure that critical facilities such as hospitals, emergency centers, fire departments, and water plants are aware of the planned de-energization event.
- The IOU shall retain documentation of community meetings and information provided in electronic form, and make that information available to SED upon request. The information shall be retained for a minimum of one year after the de-energization event or five years after the community meetings, whichever comes first.
- After the de-energization event, IOUs shall assist critical facility customers to evaluate their needs for backup power and determine whether additional equipment is needed. To address public safety impacts of a de-energization event, the IOU may provide generators to critical facilities that are not well prepared for a power shut off.
- The IOU shall retain records of customer notifications and make that information available to SED upon request. The information shall be retained for a minimum of one year after the de-energization event.

COMMENTS ON DRAFT RESOLUTION

PU Code Section 311(g)(1) provides that a resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding or in other specified situations.

The draft resolution was mailed to parties for comment on May 30, 2018, and was noticed on the Commission's Daily Calendar on June 8, 2018. The 30-day comment period for the draft resolution was neither waived nor reduced. Parties submitted comments by June 28, 2018, and reply comments by July 6, 2018.

Based on parties' comments, several modifications were made to the draft resolution, including the following:

- One of the factors specified in D.12-04-024 for consideration during reasonableness reviews was expanded for use when applied to all IOUs.
- The requirements for reporting events that do not eventually trigger de-energization were clarified.
- The full restoration reporting period to the SED was increased from 30 minutes to 12 hours.
- The period for convening De-Energization Informational Workshops was increased from 60 days to 90 days.
- The guidance for meeting with local communities was made a general requirement, rather than tied to specific de-energization events.
- Low-income, limited English, and disability communities were added to the list of parties to include in the De-Energization Informational Workshops.
- Communications providers were added to the list of representatives to be notified in anticipation of a de-energization event.
- The requirement to provide generators and/or batteries to critical facilities was removed since most critical facilities are required to have their own back-up power resources.

Also in response to comments by the parties, we clarify that the requirements adopted in this resolution are not in conflict with IOU authority to de-energize power lines to ensure public safety provided under the PU Code. We expect an IOU to use its best judgment on a case-by-case basis to determine whether de-energization is needed for public safety. We hold this expectation even if an IOU has not complied fully with each of the requirements in this resolution, for example, if a need for de-energization arises before an IOU has meet with the impacted local communities. If an IOU did not fulfill one or more of the requirements in this resolution prior to a de-energization, the IOU shall identify the missed requirement(s) and provide an explanation in its report submitted to the Director of SED after the de-energization event.

FINDINGS

1. Under PU Code Sections 451 and 399.2(a), electric IOUs have the authority to shut off power in order to protect public safety.
2. The decision to de-energize electric facilities for public safety is complex and dependent on many factors including and not limited to fuel moisture; aerial and ground firefighting capabilities; active fires that indicate fire conditions; situational awareness provided by fire agencies, the National Weather Service and the United States Forest Service; and local meteorological conditions of humidity and winds.
3. The decision to shut off power may be reviewed by the Commission pursuant to its broad jurisdiction over public safety and utility operations.

4. The requirements for reporting, public outreach, notification, mitigation and reasonableness review in D.12-04-024 are effective, but are only applicable to SDG&E.
5. All electric IOUs may face similar safety situations requiring power shut-off in emergencies and de-energization events in their service territory.
6. De-energization of electric facilities could save lives, protect property, and prevent fires.
7. The measures in D.12-04-024 should be strengthened to further ensure that the public and local officials are prepared for de-energization events and to ensure the proper safety oversight by the Commission's Safety and Enforcement Division.

THEREFORE, IT IS ORDERED THAT:

1. All electric IOUs shall take appropriate and feasible steps to provide notice and mitigation to their customers in accordance with the guidelines in D.12-04-024 whenever they shut off power pursuant to their statutory authority.
2. All electric IOUs shall follow the notification requirements to SED established in D.12-04-024.
3. All electric IOUs shall comply with the additional guidelines stated in the section of this resolution titled "**Strengthened Requirements Applicable to all Electric IOUs."**

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on July 12, 2018; the following Commissioners voting favorably thereon:

/s/ *ALICE STEBBINS*
ALICE STEBBINS
Executive Director

MICHAEL PICKER
President
CARLA J. PETERMAN
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
Commissioners

Attachment 11-2:
CWS's Response to DR KN3-011 Response #3

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Date: **December 31, 2024** **Partial Response #2 sent December 23, 2024** **Partial Response #2 sent December 19, 2924** Re: **KN3-011** Subj: **Common Plant**	Request Received from CPUC: **December 12, 2024** Requested Due Date: **December 19, 2024**

Comments:

- **Partial response #3 attached.**
- **Response provided by Engineering.**
- **Supporting documents contain Category 2 and 4 confidential information.**
- **This response refers to the following attachments included separately:**
  - **Attachment #1 – KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List**

- **Attachment #2 – KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan**
- **Attachment #3 – KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test**
- **Attachment #4 – KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted**
- **Attachment #5 – KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo**
- **Attachment #6 – KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices**
- **Attachment #7 – KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test**
- **Attachment #8 – CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email**
- **Attachment #9 – KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report**
- **Attachment #10 – KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test**
- **Attachment #11 – KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report**
- **Attachment #12 – CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District**
- **Attachment #13 – KN3-011 Attachment 13_2.a**
- **Attachment #14 – KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan**
- **Attachment #15 – KN3-11 Attachment 15_3.a_Control Valve Asset Data**
- **Attachment #16 – KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement**
- **Attachment #17 – KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors**
- **Attachment #18 – KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **Attachment #19 – KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **Attachment #20 – KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **Attachment #21 – KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **Attachment #22 – KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **Attachment #23 – KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **Attachment #24 – KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **Attachment #25 – KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **Attachment #26 – KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **Attachment #27 – KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **Attachment #28 – KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **Attachment #29 – KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **Attachment #30 – KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **Attachment #31 – KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **Attachment #32 – Attachment #17 – KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **Attachment #33 – KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **Attachment #34 – KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **Attachment #35 – KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **Attachment #36 – KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **Attachment #37 – KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **Attachment #38 – KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **Attachment #39 – KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **Attachment #40 – KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **Attachment #41 – KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **Attachment #42 – KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **Attachment #43 – KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **Attachment #44 – CONFIDENTIAL KN3-011 Attachment 44_1.k_C.7-2 111-134005**

- **Attachment #45 – KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **Attachment #46 – KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **Attachment #47 – KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **Attachment #48 – KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **Attachment #49 – KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **Attachment #50 – KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **Attachment #51 – KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **Attachment #52 – KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **Attachment #53 – KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **Attachment #54 – KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **Attachment #55 – KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **Attachment #56 – KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **Attachment #57 – KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **Attachment #58 – KN3-011 Attachment 58_1.k_C.7-3 111-162062**
- **Attachment #59 – KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data**
- **Attachment #60 – KN3-011 Attachment 60_1.k_C.7-3 114-152172**
- **Attachment #61 – KN3-011 Attachment 61_1.k_C.7-3 116-134003**
- **Attachment #62 – KN3-011 Attachment 62_1.k_C.7-3 116-152438A**
- **Attachment #63 – KN3-011 Attachment 63_1.k_C.7-3 116-152438B**
- **Attachment #64 – KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data**
- **Attachment #65 – KN3-011 Attachment 65_1.k_C.7-3 123-158159**
- **Attachment #66 – KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data**
- **Attachment #67 – KN3-011 Attachment 67_1.k_C.7-4 101-161192**
- **Attachment #68 – KN3-011 Attachment 68_1.k_C.7-4 103-139232**
- **Attachment #69 – KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data**
- **Attachment #70 – CONFIDENTIAL KN3-011 Attachment 70_1.k_C.7-4 108-133173**
- **Attachment #71 – KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data**
- **Attachment #72 – KN3-011 Attachment 72_1.k_C.7-4 111-153636**
- **Attachment #73 – KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data**
- **Attachment #74 – KN3-011 Attachment 74_1.k_C.7-4 114-152770**
- **Attachment #75 – KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data**
- **Attachment #76 – KN3-011 Attachment 76_1.k_C.7-4 116-145345**
- **Attachment #77 – KN3-011 Attachment 77_1.k_C.7-4 118-163640**
- **Attachment #78 – KN3-011 Attachment 78_1.k_C.7-4 119-136664**
- **Attachment #79 – KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data**
- **Attachment #80 – KN3-011 Attachment 80_1.k_C.7-4 128-159233**
- **Attachment #81 – KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data**
- **Attachment #82 – KN3-011 Attachment 82_1.k_C.7-5 102-137283**
- **Attachment #83 – KN3-011 Attachment 83_1.k_C.7-5 113-150270**
- **Attachment #84 – KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data**
- **Attachment #85 – KN3-011 Attachment 85_1.k_C.7-5 114-150819**
- **Attachment #86 – KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data**
- **Attachment #87 – KN3-011 Attachment 87_1.k_C.7-6 101-157160**
- **Attachment #88 – KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data**
- **Attachment #89 – KN3-011 Attachment 89_1.k_C.7-6 102-153268**
- **Attachment #90 – KN3-011 Attachment 90_1.k_C.7-7 102-148376**
- **Attachment #91 – KN3-011 Attachment 91_1.k_C.5 Well Pump**
- **Attachment #92 – KN3-011 Attachment 92_1.k_C.5-11 120-137793**

- **Attachment #93 – KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data**
- **Attachment #94 – KN3-011 Attachment 94_1.k_C.5-11 120-143709**
- **Attachment #95 – KN3-011 Attachment 95_1.k_C.5-11 120-143711**
- **Attachment #96 – KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data**
- **Attachment #97 – KN3-011 Attachment 97_1.k_C.5-11 120-163217**
- **Attachment #98 – KN3-011 Attachment 98_1.k_C.5-11 120-165911**
- **Attachment #99 – KN3-011 Attachment 99_1.k_C.5-11 120-169118**
- **Attachment #100 – KN3-011 Attachment 100_1.k_C.5-11 128-145221**
- **Attachment #101 – KN3-011 Attachment 101_1.k_C.5-13 104-136978**
- **Attachment #102 – KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data**
- **Attachment #103 – KN3-011 Attachment 103_1.k_C.5-13 111-140907**
- **Attachment #104 – KN3-011 Attachment 104_1.k_C.5-14 120-132879**
- **Attachment #105 – KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data**
- **Attachment #106 – KN3-011 Attachment 106_1.k_C.5-14 120-159181**
- **Attachment #107 – KN3-011 Attachment 107_1.k_C.5-14 120-149719**
- **Attachment #108 – KN3-011 Attachment 108_1.k_C.5-15 120-150618**
- **Attachment #109 – KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data**
- **Attachment #110 – KN3-011 Attachment 110_1.k_C.5-15 134-160056**
- **Attachment #111 – KN3-011 Attachment 111_1.k_C.5-16 128-141937**
- **Attachment #112 – KN3-011 Attachment 112_1.k_C.5-2 101-138075**
- **Attachment #113 – KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data**
- **Attachment #114 – KN3-011 Attachment 114_1.k_C.5-2 120-143426**
- **Attachment #115 – KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data**
- **Attachment #116 – KN3-011 Attachment 116_1.k_C.5-3 120-152749**
- **Attachment #117 – KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data**
- **Attachment #118 – KN3-011 Attachment 118_1.k_C.5-4 120-147114**
- **Attachment #119 – KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data**
- **Attachment #120 – KN3-011 Attachment 120_1.k_C.5-5 114-132921**
- **Attachment #121 – KN3-011 Attachment 121_1.k_C.5-5 117-136325**
- **Attachment #122 – KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data**
- **Attachment #123 – KN3-011 Attachment 123_1.k_C.5-5 119-142076**
- **Attachment #124 – KN3-011 Attachment 124_1.k_C.5-5 120-144864**
- **Attachment #125 – KN3-011 Attachment 125_1.k_C.5-5 120-152746**
- **Attachment #126 – KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data**
- **Attachment #127 – KN3-011 Attachment 127_1.k_C.5-5 120-152747**
- **Attachment #128 – KN3-011 Attachment 128_1.k_C.5-5 120-152748**
- **Attachment #129 – KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data**
- **Attachment #130 – KN3-011 Attachment 130_1.k_C.5-5 120-153531**
- **Attachment #131 – KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data**
- **Attachment #132 – KN3-011 Attachment 132_1.k_C.5-5 120-156680**
- **Attachment #133 – KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data**
- **Attachment #134 – KN3-011 Attachment 134_1.k_C.5-5 120-159180**
- **Attachment #135 – KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data**
- **Attachment #136 – KN3-011 Attachment 136_1.k_C.5-5 120-160355**
- **Attachment #137 – KN3-011 Attachment 137_1.k_C.5-5 120-163022**
- **Attachment #138 – KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data**
- **Attachment #139 – KN3-011 Attachment 139_1.k_C.5-5 120-163642**
- **Attachment #140 – KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data**

- **Attachment #141 – KN3-011 Attachment 141_1.k_C.5-5 120-163648**
- **Attachment #142 – KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data**
- **Attachment #143 – KN3-011 Attachment 143_1.k_C.5-6 120-152160**
- **Attachment #144 – KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data**
- **Attachment #145 – KN3-011 Attachment 145_1.k_C.5-8 120-143244**
- **Attachment #146 – KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data**
- **Attachment #147 – KN3-011 Attachment 147_1.k_C.5-8 120-152745**
- **Attachment #148 – KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data**
- **Attachment #149 – KN3-011 Attachment 149_1.k_C.5-9 102-151068**
- **Attachment #150 – KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **Attachment #151 – KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **Attachment #152 – KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **Attachment #153 – KN3-011 Attachment 153_1.k_C.5-9 120-144028**
- **Attachment #154 – KN3-011 Attachment 154_4.a._Active Services & Survivor Curves**
- **Attachment #155 – KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material**
- **Attachment #156 – KN3-011 Attachment 156_4.a._Service Program Cost Estimate**
- **Attachment #157 – KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis**
- **Attachment #158 – KN3-011 Attachment 158_5.a_BG-002 2021**
- **Attachment #159 – KN3-011 Attachment 159_5.a_BG-040 2020**
- **Attachment #160 – KN3-011 Attachment 160_5.a_BG-040 2022**
- **Attachment #161 – KN3-011 Attachment 161_5.a_CH-005 2016**
- **Attachment #162 – KN3-011 Attachment 162_5.a_CH-005 2019**
- **Attachment #163 – KN3-011 Attachment 163_5.a_CH-005 2023**
- **Attachment #164 – KN3-011 Attachment 164_5.a_CH-018 2015**
- **Attachment #165 – KN3-011 Attachment 165_5.a_CH-018 2019**
- **Attachment #166 – KN3-011 Attachment 166_5.a_CH-065 2016**
- **Attachment #167 – KN3-011 Attachment 167_5.a_CH-065 2024**
- **Attachment #168 – KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
- **Attachment #169 – KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
- **Attachment #170 – KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
- **Attachment #171 – KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
- **Attachment #172 – KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
- **Attachment #173 – KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
- **Attachment #174 – KN3-011 Attachment 174_5.a_DOM-279 well 2018**
- **Attachment #175 – KN3-011 Attachment 175_5.a_DOM-279 well 2024**
- **Attachment #176 – KN3-011 Attachment 176_5.a_KRV-009 2015**
- **Attachment #177 – KN3-011 Attachment 177_5.a_KRV-009 2022**
- **Attachment #178 – KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
- **Attachment #179 – KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
- **Attachment #180 – KN3-011 Attachment 180_5.a_LAS-013 2017**
- **Attachment #181 – KN3KN3-011 Attachment 181_5.a_LAS-013 2022**
- **Attachment #182 – KN3KN3-011 Attachment 182_5.a_LAS-017 2018**
- **Attachment #183 – KN3KN3-011 Attachment 183_5.a_LAS-017 2022**
- **Attachment #184 – KN3KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
- **Attachment #185 – KN3KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
- **Attachment #186 – KN3KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
- **Attachment #187 – KN3KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**

- **Attachment #188 – KN3KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
- **Attachment #189 – KN3KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
- **Attachment #190 – KN3KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
- **Attachment #191 – KN3KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
- **Attachment #192 – KN3KN3-011 Attachment 192_5.a_LAS-113 2019**
- **Attachment #193 – KN3-011 Attachment 193_5.a_LAS-113 2022**
- **Attachment #194 – KN3-011 Attachment 194_5.a_LAS-121 2016**
- **Attachment #195 – KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
- **Attachment #196 – KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
- **Attachment #197 – KN3-011 Attachment 197_5.a_LIV-020 2017 2**
- **Attachment #198 – KN3-011 Attachment 198_5.a_LIV-020 2017**
- **Attachment #199 – KN3-011 Attachment 199_5.a_LIV-020 2023**
- **Attachment #200 – KN3-011 Attachment 200_5.a_LIV-024 2017**
- **Attachment #201 – KN3-011 Attachment 201_5.a_LIV-024 2021**
- **Attachment #202 – KN3-011 Attachment 202_5.a_MRL-015 2017**
- **Attachment #203 – KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **Attachment #204 – KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **Attachment #205 – KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **Attachment #206 – KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **Attachment #207 – KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **Attachment #208 – CONFIDENTIAL KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **Attachment #209 – CONFIDENTIAL KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **Attachment #210 – KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **Attachment #211 – KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **Attachment #212 – KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **Attachment #213 – KN3-011 Attachment 213_5.a_SC-114 2015**
- **Attachment #214 – KN3-011 Attachment 214_5.a_SC-114 2018**
- **Attachment #215 – KN3-011 Attachment 215_5.a_SC-114 2023**
- **Attachment #216 – KN3-011 Attachment 216_5.a_SLN-019 2020**
- **Attachment #217 – KN3-011 Attachment 217_5.a_SLN-060 2019**
- **Attachment #218 – KN3-011 Attachment 218_5.a_SLN-060 2023**
- **Attachment #219 – KN3-011 Attachment 219_5.a_SLN-106 2019**
- **Attachment #220 – KN3-011 Attachment 220_5.a_SM-029 2015**
- **Attachment #221 – KN3-011 Attachment 221_5.a_SM-029 2019**
- **Attachment #222 – KN3-011 Attachment 222_5.a_SM-029 2021**
- **Attachment #223 – KN3-011 Attachment 223_5.a_SM-029 2024**
- **Attachment #224 – CONFIDENTIAL KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **Attachment #225 – CONFIDENTIAL KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **Attachment #226 – KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **Attachment #227 – CONFIDENTIAL KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **Attachment #228 – KN3-011 Attachment 228_5.a_STK-036 2016**
- **Attachment #229 – KN3-011 Attachment 229_5.a_STK-036 2019**
- **Attachment #230 – KN3-011 Attachment 230_5.a_STK-036 2023**
- **Attachment #231 – KN3-011 Attachment 231_5.a_STK-060 2017**
- **Attachment #232 – KN3-011 Attachment 232_5.a_STK-060 2023**
- **Attachment #233 – KN3-011 Attachment 233_5.a_WLK-001 2017**

- Attachment #234 – KN3-011 Attachment 234_5.a_WLK-001 2020
- Attachment #235 – KN3-011 Attachment 235_5.a_WLK-001 2023
- Attachment #236 – KN3-011 Attachment 236_5.a_WLK-010 2016
- Attachment #237 – KN3-011 Attachment 237_5.a_WLK-010 2019
- Attachment #238 – KN3-011 Attachment 238_5.a_WLK-010 2024
- Attachment #239 – KN3-011 Attachment 239_6.a_Generator Condition Assessment
- Attachment #240 – **CONFIDENTIAL** KN3-011 Attachment 240_6.a_ BK 162 2013
- Attachment #241 – **CONFIDENTIAL** KN3-011 Attachment 241_6.a_ BK 162 Gen service
- Attachment #242 – KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults
- Attachment #243 – **CONFIDENTIAL** KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131
- Attachment #244 – **CONFIDENTIAL** KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162
- Attachment #245 – **CONFIDENTIAL** KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)
- Attachment #246 – **CONFIDENTIAL** KN3-011 Attachment 246_6.a_ BK 162 PM
- Attachment #247 – KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024
- Attachment #248 – **CONFIDENTIAL** KN3-011 Attachment 248_6.a_ BK-162-GEN1PM
- Attachment #249 – **CONFIDENTIAL** KN3-011 Attachment 249_6.a_ BK162Genset
- Attachment #250 – **CONFIDENTIAL** KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827
- Attachment #251 – **CONFIDENTIAL** KN3-011 Attachment 251_6.a_ BK176 Gen PM 2
- Attachment #252 – **CONFIDENTIAL** KN3-011 Attachment 252_6.a_ BK176 Gen PM
- Attachment #253 – **CONFIDENTIAL** KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2
- Attachment #254 – **CONFIDENTIAL** KN3-011 Attachment 254_6.a_BK176 GeneratorPM
- Attachment #255 – KN3-011 Attachment 255_6.a_ CH 032 2019 service
- Attachment #256 – KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL
- Attachment #257 – KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT
- Attachment #258 – KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL
- Attachment #259 – KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE
- Attachment #260 – KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023
- Attachment #261 – KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023
- Attachment #262 – KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024
- Attachment #263 – KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE
- Attachment #264 – KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20
- Attachment #265 – KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20
- Attachment #266 – **CONFIDENTIAL** KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0
- Attachment #267 – **CONFIDENTIAL** KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0
- Attachment #268 – KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE
- Attachment #269 – KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023
- Attachment #270 – **CONFIDENTIAL** KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019

- Attachment #271 – **CONFIDENTIAL** KN3-011 Attachment 271_6.a_ CH 032 Genset
- Attachment #272 – KN3-011 Attachment 272_6.a_ CH 032 Genset2021services
- Attachment #273 – **CONFIDENTIAL** KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- Attachment #274 – KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- Attachment #275 – KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- Attachment #276 – KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- Attachment #277 – **CONFIDENTIAL** KN3-011 Attachment 277_6.a_ CH 032 PM
- Attachment #278 – **CONFIDENTIAL** KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- Attachment #279 – **CONFIDENTIAL** KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- Attachment #280 – **CONFIDENTIAL** KN3-011 Attachment 280_6.a_ CH 032 waste
- Attachment #281 – KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- Attachment #282 – KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- Attachment #283 – KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- Attachment #284 – KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- Attachment #285 – **CONFIDENTIAL** KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- Attachment #286 – **CONFIDENTIAL** KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- Attachment #287 – **CONFIDENTIAL** KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- Attachment #288 – **CONFIDENTIAL** KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- Attachment #289 – **CONFIDENTIAL** KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- Attachment #290 – **CONFIDENTIAL** KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- Attachment #291 – KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- Attachment #292 – KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- Attachment #293 – KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- Attachment #294 – KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- Attachment #295 – KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- Attachment #296 – KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- Attachment #297 – KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- Attachment #298 – KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- Attachment #299 – KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- Attachment #300 – KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- Attachment #301 – KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- Attachment #302 – KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- Attachment #303 – KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- Attachment #304 – **CONFIDENTIAL** KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- Attachment #305 – **CONFIDENTIAL** KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_A
- Attachment #306 – KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- Attachment #307 – KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)

- Attachment #308 – KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- Attachment #309 – KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- Attachment #310 – **CONFIDENTIAL** KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- Attachment #311 – **CONFIDENTIAL** KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- Attachment #312 – KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- Attachment #313 – KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791
- Attachment #314 – **CONFIDENTIAL** KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1
- Attachment #315 – KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24
- Attachment #316 – KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020
- Attachment #317 – **CONFIDENTIAL** KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23
- Attachment #318 – **CONFIDENTIAL** KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024
- Attachment #319 – KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020
- Attachment #320 – KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24
- Attachment #321 – KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22
- Attachment #322 – KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22
- Attachment #323 – KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22
- Attachment #324 – **CONFIDENTIAL** KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024
- Attachment #325 – KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST
- Attachment #326 – **CONFIDENTIAL** KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1
- Attachment #327 – KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020
- Attachment #328 – **CONFIDENTIAL** KN3-011 Attachment 328_6.a_ WLK 001 122035IR
- Attachment #329 – KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190
- Attachment #330 – **CONFIDENTIAL** KN3-011 Attachment 330_6.a_ WLK 001 150957ir
- Attachment #331 – **CONFIDENTIAL** KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322
- Attachment #332 – **CONFIDENTIAL** KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231
- Attachment #333 – **CONFIDENTIAL** KN3-011 Attachment 333_6.a_ WLK 001.PDF
- Attachment #334 – **CONFIDENTIAL** KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021
- Attachment #335 – **CONFIDENTIAL** KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023
- Attachment #336 – KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC
- Attachment #337 – **CONFIDENTIAL** KN3-011 Attachment 337_6.d.ii_Chico Generators
- Attachment #338 – **CONFIDENTIAL** KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator
- Attachment #339 – **CONFIDENTIAL** KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator

- **Attachment #340 – KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS**
- **Attachment #341 – KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost**
- **Attachment #342 – CONFIDENTIAL KN3-011 Attachment 342_4.f**
- **Attachment #343 – CONFIDENTIAL KN3-011 Attachment 343_4.f.i**
- **Attachment #344 – CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK**
- **Attachment #345 – CONFIDENTIAL KN3-011 Attachment 345_4.f.iii_BKNG**
- **Attachment #346 – KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement**

Data Requests and Responses

1. In the Common Plant Overview_2024_Final, Cal Water proposes replacement of 88 pumping equipment units at a rate of 29 pumps per year (p. 207).

   a. The 88 pumping units are listed in Attachment B-2024 GRC Pump Replacement Project List (pp. 211-213). Please provide Attachment B in Excel format.
   Response: Please see "KN3-011 Attachment 1_1.a_GRC Pump Replacement Project List" in Excel format.

   b. Please provide Attachment D-Pumping Equipment Asset Plan in a searchable PDF format.
   Response: Please see "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan" in a searchable PDF format.

   c. Please explain in detail why the PID 132252 pump ranked as still in "good" condition requires replacement (p. 213).
   Response:
   VIS 023-01 was replaced in 2016 and has been showing progressive decline in efficiency as shown below:
   2017 – 71.4% - Excellent
   2020 – 69.9% - Excellent
   2022 – 67.5% - Good
   2023 – 62.4% - Fair
   2024 – 60.3% - Fair

   Recent data confirms OPE falling has been continuously falling with the 2023 and 2024 report as shown above. We are projecting that this rate of decline, efficiency will fall under 'Poor' Rating during its 2027 proposed replacement year. Please refer to "KN3-011 Attachment 3_1.c_132252–VIS 023-01–Pump Test" for the energy efficiency test results of this pump.

   d. Please explain in detail why the PID 132249 pump was ranked as fair in 2021 and excellent in 2022, but now requires replacement (p. 213).
   Response: A pump test represents a snapshot of the pump's operational conditions at the time of testing. These operational parameters may vary annually due to fluctuations in water levels or system pressure. In 2020, the pump operated further to the right of the best efficiency point on the pump efficiency curve, resulting in a lower efficiency rating. By 2022, the pump operated closer to the best efficiency point, leading to a higher Overall Pump Efficiency (OPE) and an improved efficiency ranking. However, both points are below the pump curve, indicating wear on the pump equipment (refer to "KN3-11 Attachment 4_1.d_132249–STK 059-01 Pump Efficiency Plotted").
   It is important to note that PID 132249 was submitted as part of a Non-OPE replacement due to excessive sand. For further details, please refer to "KN3-011 Attachment 5_1.d_132249 – STK 059-01 Sand Memo" submitted to the District regarding our well assessment on sanding.

e. Does Cal Water have an established method for removal of excessive sand from equipment that can improve the ranking of a pump (e.g., from fair to excellent)?
Response: Sand is an abrasive material that can lead to accelerated wear on pump components. Sand production from a well is commonly the result of unstable water producing formation. To combat this, it is possible to utilize isolation tools to remove the unstable sand from the formation, followed by re-testing the well at a lower or the same production rate. Based on the success of the in-well work and results of re-testing, new operating conditions are established. Cal Water will then replace the pumping equipment based on the newly established conditions of the well. In addition, it is in our method when selecting a new pump that it operates as close to the best efficiency point on the pump curve which is intended to improve the ranking of the pump.

f. Please explain in detail and provide documentation to support the "Failure Mode" notation "FUNC-Equipment Failure" associated with PIDs 132105, 132236, 132239, and 132243. Documentation may include but is not limited to pump readings and images.
Response:

- **132105 - This booster pump failed on 06/2023. Due to its criticality to the District and time of year, June – High Summer Demands, the decision was made to quickly pull equipment for inspection and have partially rebuilt to bring it back in-service as opposed to a complete replacement. [See "KN3-011 Attachment 6_1.f_132105-SSF 002-C Invoices"] The pump was retested in the field in October of 2023 and found that flow has dramatically decreased operating at 310 gpm as opposed to its original design of 800 gpm. This reduction of flow does not meet system demand and recommend new equipment to meet system requirements [See "KN3-011 Attachment 7_1.f_132105-SSF 002-C Field Pump Test"]**
- **132236 – This booster pump failed on 06/2023. Due to its criticality to the treatment plant and time of year, June- High Summer Demands, the decision was made to quickly pull equipment for inspection and have it partially repaired to bring it back in-service as opposed to a complete replacement. The inspection report found considerable damage to the impeller and pumps bowls that would warrant a complete replacement. [See "CONFIDENTIAL KN3-011 Attachment 8_1.f_132236-ORO 015-E Justification Email" and "KN3-011 Attachment 9_1.f_132236–ORO 015-E Teardown Report"]**
- **132239 – This pump is experiencing motor overloading and vibration issues which will lead to eventual equipment failure.**
    - **Motor Overloading and Overheating: The pump is operating at over 100% motor load, as indicated by the pump test reports [See "KN3-011 Attachment 10_1.f_132239-SLN 027-01 Pump Test"]. The manufacturer recommends maintaining a motor load of 90%. Exceeding this limit causes excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. A redesign of the pump is necessary to either reduce the design flow or upsize the motor to prevent overloading.**
    - **Vibration Issues: The district has reported moderate vibrations from the pump, noticeable when standing next to it. A vibration test confirmed this issue [See "KN3-011 Attachment 11_1.f- 132239 – SLN 027-01 – Vibration Report"]. Such**

vibrations typically indicate problems with the pump downhole. If not addressed, this will eventually lead to premature equipment failure.

- **132243 – SLN 067-01 has a known motor overheating issue. Excessive heat, leading to accelerated wear on the motor windings and potential equipment failure. [See "CONFIDENTIAL KN311 Attachment 12_1.f_132243–SLN 067-01 Email from District"]**

g. Does Cal Water have warranties with pumping equipment vendors or manufacturers that potentially apply in cases where the pump fails while still in "excellent" or "good" condition?
Response: Manufacturer typically provide only a 1 year warranty if the pump was pit tested prior to release. The warranty only covers manufacturing defects such as the pump not meeting specification parameters. Operational failures in which efficiency falls are not covered by warranty.

h. For any pump replacement projects (e.g.,PID 132161, PID 132151, PID 132112, PID 132223, PID 133256, PID 132248, PID 132251, PID 132254) with a Last Pump Date before 2022 why does the pumping equipments need to be replaced in the 2024 GRC if it has not been pumped since 2022?
Response: 'Last Pump Date' refers to the year in which the hydraulic performance test was performed, not when the pump was last operated. Cal Water's Hydraulic Testing Program performs test pumps on an annual or bi-annual basis depending on horsepower. Refer to Section 4 – 'Failure Modes and Condition Assessment - Low OPE' on page 9 of 12 of "KN3-011 Attachment 2_1.b_Pumping Equipment Asset Plan".

i. Are any of the 88 pump units listed in Attachment B associated with "standby" or "inactive" stations?
Response: None of the pump units listed in Attachment B are designated as "standby" or "inactive." However, VIS 201-01 (132255) is actually a typo, and the correct location should be VIS 201-02, which is active and requires replacement due to low operational efficiency (OPE).

j. Has Cal Water experienced a supply chain and/or labor issues with pump and motor replacements for planned and unplanned projects? If so, what is the purchase order lead time?
Response: Current market conditions do not indicate supply chains issues with procuring new pump and motor equipment. Typical lead times on new pumping equipment range from 4-to- 22 weeks depending on the style of pump.
Contactor labor availability is limited but not unusual due to the high impact market of this industry.

k. For the 88 pumps to be replaced, please populate the attached Excel file labeled "Attachment 1-Pumps and Motor", Tab "Requested Replacement." Please provide a breakdown of the average cost of the replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: See filled out "Requested Replacement" Tab under "KN3-011

Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors". Cal Water has also provided the cost catalog supporting documentation for its unit costs for well pumps and booster pumps. Please refer to the following attachments:

- **KN3-011 Attachment 18_1.k_C.7 Booster Pumps**
- **KN3-011 Attachment 19_1.k_C.7-1 102-150576 tech data**
- **KN3-011 Attachment 20_1.k_C.7-1 102-150576**
- **KN3-011 Attachment 21_1.k_C.7-1 109-143768**
- **KN3-011 Attachment 22_1.k_C.7-1 110-150838 tech data**
- **KN3-011 Attachment 23_1.k_C.7-1 110-150838**
- **KN3-011 Attachment 24_1.k_C.7-1 111-147657**
- **KN3-011 Attachment 25_1.k_C.7-1 111-160611 pump data**
- **KN3-011 Attachment 26_1.k_C.7-1 111-160611**
- **KN3-011 Attachment 27_1.k_C.7-1 111-168040 pump data**
- **KN3-011 Attachment 28_1.k_C.7-1 111-168040**
- **KN3-011 Attachment 29_1.k_C.7-1 114-137286 tech data**
- **KN3-011 Attachment 30_1.k_C.7-1 114-137286**
- **KN3-011 Attachment 31_1.k_C.7-1 114-137498 tech data**
- **KN3-011 Attachment 32_1.k_C.7-1 114-137498**
- **KN3-011 Attachment 33_1.k_C.7-1 114-151044 tech data**
- **KN3-011 Attachment 34_1.k_C.7-1 114-151044**
- **KN3-011 Attachment 35_1.k_C.7-1 118-165892 tech data**
- **KN3-011 Attachment 36_1.k_C.7-1 118-165892**
- **KN3-011 Attachment 37_1.k_C.7-2 102-136817 tech data**
- **KN3-011 Attachment 38_1.k_C.7-2 102-136817**
- **KN3-011 Attachment 39_1.k_C.7-2 102-137083 tech data**
- **KN3-011 Attachment 40_1.k_C.7-2 102-137083**
- **KN3-011 Attachment 41_1.k_C.7-2 102-139357 tech data**
- **KN3-011 Attachment 42_1.k_C.7-2 102-139357**
- **KN3-011 Attachment 43_1.k_C.7-2 111-134005 tech data**
- **CONFIDENTIAL KN3-011 Attachment 44_1.k_C.7-2 111-134005**
- **KN3-011 Attachment 45_1.k_C.7-2 111-134065**
- **KN3-011 Attachment 46_1.k_C.7-2 111-137079 tech data**
- **KN3-011 Attachment 47_1.k_C.7-2 111-137079**
- **KN3-011 Attachment 48_1.k_C.7-2 113-168703**
- **KN3-011 Attachment 49_1.k_C.7-2 116-147443**
- **KN3-011 Attachment 50_1.k_C.7-2 116-156335 pump data**
- **KN3-011 Attachment 51_1.k_C.7-2 116-156335**
- **KN3-011 Attachment 52_1.k_C.7-2 116-156700 pump data**
- **KN3-011 Attachment 53_1.k_C.7-2 116-156700**
- **KN3-011 Attachment 54_1.k_C.7-2 119-142641 tech data**
- **KN3-011 Attachment 55_1.k_C.7-2 119-142641**
- **KN3-011 Attachment 56_1.k_C.7-2 121-168779**
- **KN3-011 Attachment 57_1.k_C.7-3 104-132993**
- **KN3-011 Attachment 58_1.k_C.7-3 111-162062**

- KN3-011 Attachment 59_1.k_C.7-3 114-152172 tech data
- KN3-011 Attachment 60_1.k_C.7-3 114-152172
- KN3-011 Attachment 61_1.k_C.7-3 116-134003
- KN3-011 Attachment 62_1.k_C.7-3 116-152438A
- KN3-011 Attachment 63_1.k_C.7-3 116-152438B
- KN3-011 Attachment 64_1.k_C.7-3 123-158159 pump data
- KN3-011 Attachment 65_1.k_C.7-3 123-158159
- KN3-011 Attachment 66_1.k_C.7-4 101-161192 pump data
- KN3-011 Attachment 67_1.k_C.7-4 101-161192
- KN3-011 Attachment 68_1.k_C.7-4 103-139232
- KN3-011 Attachment 69_1.k_C.7-4 108-133173 tech data
- **CONFIDENTIAL** KN3-011 Attachment 70_1.k_C.7-4 108-133173
- KN3-011 Attachment 71_1.k_C.7-4 111-153636 pump data
- KN3-011 Attachment 72_1.k_C.7-4 111-153636
- KN3-011 Attachment 73_1.k_C.7-4 114-152770 pump data
- KN3-011 Attachment 74_1.k_C.7-4 114-152770
- KN3-011 Attachment 75_1.k_C.7-4 116-145345 tech data
- KN3-011 Attachment 76_1.k_C.7-4 116-145345
- KN3-011 Attachment 77_1.k_C.7-4 118-163640
- KN3-011 Attachment 78_1.k_C.7-4 119-136664
- KN3-011 Attachment 79_1.k_C.7-4 128-159233 pump data
- KN3-011 Attachment 80_1.k_C.7-4 128-159233
- KN3-011 Attachment 81_1.k_C.7-5 102-137283 tech data
- KN3-011 Attachment 82_1.k_C.7-5 102-137283
- KN3-011 Attachment 83_1.k_C.7-5 113-150270
- KN3-011 Attachment 84_1.k_C.7-5 114-150819 tech data
- KN3-011 Attachment 85_1.k_C.7-5 114-150819
- KN3-011 Attachment 86_1.k_C.7-6 101-157160 pump data
- KN3-011 Attachment 87_1.k_C.7-6 101-157160
- KN3-011 Attachment 88_1.k_C.7-6 102-153268 pump data
- KN3-011 Attachment 89_1.k_C.7-6 102-153268
- KN3-011 Attachment 90_1.k_C.7-7 102-148376
- KN3-011 Attachment 91_1.k_C.5 Well Pump
- KN3-011 Attachment 92_1.k_C.5-11 120-137793
- KN3-011 Attachment 93_1.k_C.5-11 120-143709 pump data
- KN3-011 Attachment 94_1.k_C.5-11 120-143709

- KN3-011 Attachment 95_1.k_C.5-11 120-143711
- KN3-011 Attachment 96_1.k_C.5-11 120-163217 pump data
- KN3-011 Attachment 97_1.k_C.5-11 120-163217
- KN3-011 Attachment 98_1.k_C.5-11 120-165911
- KN3-011 Attachment 99_1.k_C.5-11 120-169118
- KN3-011 Attachment 100_1.k_C.5-11 128-145221
- KN3-011 Attachment 101_1.k_C.5-13 104-136978
- KN3-011 Attachment 102_1.k_C.5-13 111-140907 pump data
- KN3-011 Attachment 103_1.k_C.5-13 111-140907

- KN3-011 Attachment 104_1.k_C.5-14 120-132879
- KN3-011 Attachment 105_1.k_C.5-14 120-159181 pump data
- KN3-011 Attachment 106_1.k_C.5-14 120-159181
- KN3-011 Attachment 107_1.k_C.5-14 120-149719
- KN3-011 Attachment 108_1.k_C.5-15 120-150618
- KN3-011 Attachment 109_1.k_C.5-15 134-160056 pump data
- KN3-011 Attachment 110_1.k_C.5-15 134-160056
- KN3-011 Attachment 111_1.k_C.5-16 128-141937
- KN3-011 Attachment 112_1.k_C.5-2 101-138075
- KN3-011 Attachment 113_1.k_C.5-2 120-143426 pump data
- KN3-011 Attachment 114_1.k_C.5-2 120-143426
- KN3-011 Attachment 115_1.k_C.5-3 120-152749 pump data
- KN3-011 Attachment 116_1.k_C.5-3 120-152749
- KN3-011 Attachment 117_1.k_C.5-4 120-147114 pump data
- KN3-011 Attachment 118_1.k_C.5-4 120-147114
- KN3-011 Attachment 119_1.k_C.5-5 114-132921 pump data
- KN3-011 Attachment 120_1.k_C.5-5 114-132921
- KN3-011 Attachment 121_1.k_C.5-5 117-136325
- KN3-011 Attachment 122_1.k_C.5-5 119-142076 tech data
- KN3-011 Attachment 123_1.k_C.5-5 119-142076
- KN3-011 Attachment 124_1.k_C.5-5 120-144864
- KN3-011 Attachment 125_1.k_C.5-5 120-152746
- KN3-011 Attachment 126_1.k_C.5-5 120-152747 pump data
- KN3-011 Attachment 127_1.k_C.5-5 120-152747
- KN3-011 Attachment 128_1.k_C.5-5 120-152748
- KN3-011 Attachment 129_1.k_C.5-5 120-153531 pump data
- KN3-011 Attachment 130_1.k_C.5-5 120-153531
- KN3-011 Attachment 131_1.k_C.5-5 120-156680 pump data
- KN3-011 Attachment 132_1.k_C.5-5 120-156680
- KN3-011 Attachment 133_1.k_C.5-5 120-159180 pump data
- KN3-011 Attachment 134_1.k_C.5-5 120-159180
- KN3-011 Attachment 135_1.k_C.5-5 120-160355 pump data
- KN3-011 Attachment 136_1.k_C.5-5 120-160355
- KN3-011 Attachment 137_1.k_C.5-5 120-163022
- KN3-011 Attachment 138_1.k_C.5-5 120-163642 pump data
- KN3-011 Attachment 139_1.k_C.5-5 120-163642
- KN3-011 Attachment 140_1.k_C.5-5 120-163648 pump data
- KN3-011 Attachment 141_1.k_C.5-5 120-163648
- KN3-011 Attachment 142_1.k_C.5-6 120-152160 pump data
- KN3-011 Attachment 143_1.k_C.5-6 120-152160
- KN3-011 Attachment 144_1.k_C.5-8 120-143244 pump data
- KN3-011 Attachment 145_1.k_C.5-8 120-143244
- KN3-011 Attachment 146_1.k_C.5-8 120-152745 pump data
- KN3-011 Attachment 147_1.k_C.5-8 120-152745
- KN3-011 Attachment 148_1.k_C.5-9 102-151068 tech data
- KN3-011 Attachment 149_1.k_C.5-9 102-151068

- **KN3-011 Attachment 150_1.k_C.5-9 114-158939 pump data**
- **KN3-011 Attachment 151_1.k_C.5-9 114-158939**
- **KN3-011 Attachment 152_1.k_C.5-9 120-144028 pump data**
- **KN3-011 Attachment 153_1.k_C.5-9 120-144028**

An explanation of how to read the cost catalog workbook was provided on slide 4 of the common plant tour presentation to Cal Advocates on Sept 3rd, 2024.
~~**To be provided in a subsequent response.**~~

l. Please use the attached Excel file Attachment 1-Pump and Motor, Tab "Historical Replacement" to assist in providing the historical replacements from 2014 to November 30th, 2024. Please provide a breakdown of the average cost of the replacements, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as the general ledger, vendor invoices, as-built, bids, proposal documents, or internal communications.
Partial Response #2: Please find "Historical Replacement" Tab under "KN3-011 Attachment 17_1.k_ A2407003Cal Advocates DR KN3-011 Attachment 1 Pump and Motors"
~~**To be provided in a subsequent response.**~~

2. The Common Plant Overview_2024_Final (p. 289) states that Cal Water has identified CPS improvement projects that range from major component replacement to complete replacement of the entire system.

    a. Please provide Attachment A-Breakdown Per District and B-List of Projects and Assets to be Replaced in Excel format.
    Response: Please refer to "KN3-011 Attachment 13_2.a", sheet Attachment A for Attachment A-Breakdown Per District, and sheet Attachment B for Attachment B-List of Projects and Assets.

    b. Please provide Attachment C-Cathodic Protection Systems in searchable PDF format.
    Response: Please see "KN3-011 Attachment 14_2.b_Attachment C Cathodic Protection Asset Plan".

    c. Historically, what is the timeframe from the planning to construction for a major component replacement (such as a rectifier or anodes)? What is the timeframe for a complete replacement of the entire system?
    Response: The design, procurement, and construction of a CP system in part or in whole can be executed within 4 months. The rectifier typically has the longest lead time, up to 3 months.

    d. Has Cal Water experienced a supply chain and/or labor issues with CPS replacements for planned and unplanned projects? If so, what is the purchase order lead time?
    Response: There haven't been any major supply chain issues regarding Cathodic Protection equipment. There are a limited number of contractors that can do this work but the inherent flexibility in the scheduling of the work typically accommodates any issues with lead times.

    e. Please use the attached Excel file labeled "Attachment 2- Tab Historical CPS Replacement" to assist in providing the general ledger of historical replacements from January 2021 to November 30th, 2024. Please provide the breakdown of the average cost of each of the CPS projects replacement, including cost of material, labor, and equipment. Additionally, please provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: Please see tab Historical CPC Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS".
    ~~**To be provided in a subsequent response.**~~

    f. Please populate the attached Excel file labeled "Attachment 2- Tab Future CPS Replacement". Please provide a breakdown of the average cost of each of the CPS replacement projects, including cost of material, labor, and equipment. Please also provide evidence to support the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
    Partial response #3: The unit costs for the proposed cathodic protection projects in this rate case were derived from a vendor quote. Please see tab Future CPS Replacement under "KN3-011 Attachment 340_2.f_ A2407003Cal Advocates DR KN3-011 Attachment 2 CPS". Please refer to "KN3-011 Attachment 341_2.f _2022-2024_CP Contractor Cost" for supporting evidence.
    ~~**To be provided in a subsequent response.**~~

g. Are any of the CPS to be replaced associated with “standby” or “inactive” stations?
Response: No.

3. Refer to project justification book "Common Plant Overview_2024_Final" Section Control Valve Overhaul and Replacement (p. 304-306).

   a. Please populate the risk assessment matrix using attached Excel file Attachment 3-Control Valve Overhaul and Replacement," tabs "Overhaul Rating" and "Replacement Rating" to provide the detailed breakdown.
   Response: Cal Water has modified its criticality analysis from what was submitted in the 2018 GRC filing and no longer records and analyzes the criticality of assets using the list shown in the "Overhaul Rating" and "Replacement Rating" tabs. The results from that analysis were recorded in Cal Water's Asset Management database; however, they are not consistent with our current practice as defined in the Strategic Asset Management Plan. For the valves where we have recorded the data, we have adjusted the criticality scores to be in line with our current program as defined in the Strategic Asset Management Plan. Please see "KN3-11 Attachment 15_3.a_Control Valve Asset Data". Cal Water is actively working on updating its criticality scores for all assets.
   Cal Water has not developed its list of valves that are planned for overhaul or replacement in the 2025 to 2027 years. Those are normally issued at the beginning of the year from Cal Water's asset management system based on the schedule shown in the asset plan.

   b. Using Cal Water's Control Valve risk assessment matrix, what is the lowest possible ranking score?
   Response: In terms of risk of failure, or criticality, 5.

   c. Using Cal Water's Control Valve risk assessment matrix, what is the highest possible ranking score?
   Response: In terms of risk of failure, or criticality, 1

   d. Is risk of failure to critical customers considered in the control valve risk assessment matrix?
   Response: No.

   e. If risk of failure to critical customers is considered in the control valve risk assessment matrix, please describe how that risk is factored into the final risk score. Please describe in detail (numerically and in words), where applicable.
   Response: Please refer to the response to 3.d.

   f. Provide a breakdown of the total number of control valves in each ranking across Cal Water's entire water system, from highest possible rank to lowest possible rank in Excel file "DR KN3-011 Attachment 3," tab "Total Ranking."
   Response: The condition scoring records are not available and are being built in Q1 2025. The 5-year overhaul cycle is used to assess the serviceability of the valves and they are replaced as necessary.

   g. Provide the annual number of control valve replacements and overhauls performed for each district for the past five years (2020-2024) in Excel file "DR KN3-011 Attachment 3." Please use tab "Historical Overhaul" for control valve overhauls and tab "Historical

Replacement" for control valve replacements.
Response : Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

h. Provide the annual number of control valve replacements and overhauls performed for each district between 2025-2027 in Excel file "DR KN3-011 Attachment 3." Please use tab "Future Overhaul" for control valve overhauls and tab "Future Replacement" for control valve replacements.
Response: Please see "KN3-011 Attachment 16_3.g_ A2407003Cal Advocates DR KN3-011 Attachment 3 Control Valve Overhaul and Replacement".

i. Refer to the project description concerning "Payback Period" under the category "Financial Efficiency." Page Common Plant PJ – 305 states "[i]f the old valve was to fail and cause leaks or main breaks, the cost can be in the millions of dollars. The cost of the new valve and installation would be paid back many times over by avoiding system failures."

i. Describe the methodology Cal Water used to calculate the potential cost of a control valve failure event.
Response: Typically, Cal Water does not track the cost of repair for each incident. However, there have been incidents where Cal Water paid damage claims due to control valve failures. While not typical, one claim was as high as $1.9M due to a control valve failure that flooded a building.

ii. Is the potential cost of a control valve failure event assumed to be the same for every control valve?
Response: In our current model, yes.

iii. If the estimated potential cost is not the same for every potential control valve failure, please describe in detail the factors that influence the estimated cost.
Response: Please refer to the response to 3.i.ii.

iv. In the last five years (2019- 2023), please provide the actual recorded cost of control valve failures.
Response: Cal Water does not track the costs for control valve failures in any one account. Damage claims are also not normally classified by the cause of failure; however, Cal Water has attributed the event above to a control valve failure.

v. Please explain in detail how Cal Water determines the cost of overhaul and replacement of control valve failures is less cost effective than performing a regular overhaul and replacing older control valves. Please also provide evidence to support the analysis. This includes but is not limited to any vendor invoices, as-built, bids, proposal, or internal communications.
Response: Cal Water determines if a valve can be overhauled first prior to planning a replacement. In the common plant justification on page 306, Cal Water states "*Cal Water will try to overhaul all valves where the body of*

the valve is in good condition, the valve meets certain minimum requirements such as being epoxy coated, the valve is in a suitable location where it can be easily maintained, and the vault is sized properly where it can be maintained. If the valve does not meet these requirements and is in need of repair, Cal Water will evaluate if a replacement project will improve these conditions significantly before planning a replacement project. Otherwise, Cal Water will plan to overhaul the valve and plan for a future redesign of the system to more permanently resolve the issues." **It is the valve's condition that determines if it can be overhauled, not the cost effectiveness.**

j. Are any of the control valve overhaul and replacement associated with "standby" or "inactive" stations?
Response: No.

4. Refer to project justification book "Common Plant Overview_2024_Final" Service Line Replacement Program (pp. 370-380):

   a. Please provide the Excel file for all figures and tables in the referenced section for Service Line Replacement Program.
   Partial Response #2: Please see "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves" , "KN3-011 Attachment 155_4.a._Historical Service Line Replacement by Material" , and "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for all figures and tables and supporting documents referenced in the Service Line Replacement Program justification.

   Please note the estimated number of services in the final Common Plant justification on page Common Plant PJ-381 was revised slightly down in the year 2027 from the originally analyzed numbers and costs for 2027 presented in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve", which was compiled in December 2023. Originally, the analysis in "KN3-011 Attachment 154_4.a._Active Services & Survivor Curve" in tab "Forecast & Alt Comparison" had assumed $6,747,425 (2023 dollars) in the year 2027 amounting to 392 services replaced at $17,200 each (in 2023 dollars). This was ultimately revised down in the final filing to $6,582,697 (2023 dollars) or $7,266,066 (escalated to 2027 dollars at 2.5%), amounting to approximately 383 service replacements at $17,200 each (in 2023 dollars).
   ~~**To be provided in a subsequent response.**~~

   b. Reference Figure 7 on Common Plant PJ-377. Please provide the estimated work schedule for the number of annual service line replacements from 2025-2027. Please provide supporting documents for the proposed replacement schedule, such as any vendor invoices, bids, proposal, or internal communications.
   Partial Response #2: Cal Water is proposing to complete 387, 384, and 383 services in years 2025, 2026, and 2027 respectively. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE), see "KN3-011 Attachment 156_4.a._Service Program Cost Estimate" for additional details.
   ~~**To be provided in a subsequent response.**~~

   c. Cal Water states that its Bakersfield District "owns and is responsible for approximately 76,100 services within its service boundaries" (p. 370). Please explain why Cal Water considers the Service Line Replacement Program to be a common plant project, given that it is limited to the Bakersfield How does Cal Water define common plant project when it affects only one district?
   Partial Response #2: Cal Water considers this to be a program appropriately covered in Common Plant because this program will continue over time and may be needed in other districts in the future.

   Similar to other programs in the Common Plant book, the success of this program will be evaluated based on overall system metrics, specifically break rate of service lines. If those metrics change over time, the program could be ramped up or down in Bakerfield, or expanded to other districts, in response.
   .

~~**To be provided in a subsequent response.**~~

i. Does Cal Water have any other proposed annual service line replacement for other districts besides Bakersfield?
Partial Response #2: Not at this time.

~~**To be provided in a subsequent response.**~~

d. Cal Water states that "[to] offset this increase in program cost, the [Bakersfield] District will be reducing its pipeline replacement program from 0.7% during the 2021 GRC period to 0.5% for the 2024 GRC period only" (p. 370).

i. Please show how this reduction is done in the RO model and provide supporting analysis for this cost calculation.
Partial Response #2: This reduction was done by simply entering in the dollars for replacing 0.5% of Bakersfield's pipelines into the ROM instead of 0.7% For example, in 2025 Cal Water proposes to replace 25,643 lineal feet of main at a cost of about $595/LF, and the proposed direct cost is the product of these two values plus contingency. Had Cal Water proposed a rate of 0.7% instead, the total footage would have been closer to 36,000 LF at a cost of $595/LF plus contingency. This difference (36,000 – 25,600) x $595 x (1 + 10%) is roughly $6.8M. The proposed direct cost of the 2025 Service Line replacements is $6.99M.

~~**To be provided in a subsequent response.**~~

ii. Has Cal Water performed a cost-benefit analysis of the reduction in its Pipeline Replacement Program to account for the Service Replacement Program?
Partial Response #2: Yes, Cal Water conducted a cost-benefit analysis which demonstrated that reducing the MRP program and increasing the Service Replacement Program would result in net savings of $1.8 million in capital investment. Therefore, this was determined to be the most prudent course of action for customers and the district. Please see "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details.

~~**To be provided in a subsequent response.**~~

e. Cal Water states that Alternative 2: Replace Services Reactively & Ad hoc includes managing the service line as customers experience an issue (pp. 377-378).

Please provide a cost benefit analysis comparing Alternative 2's management of service lines as customers experience issues to the proposed Alternative 3: Programmatic Service Line Replacement annual replacement method.
Partial Response #2: This analysis was presented in Table 1 on page Common Plant PJ-380 which compared the total cost over the next 25 years between Alternative # 2 and Alternative # 3. It was ultimately determined that Alternative # 3 had a reduced capital investment cost, which would save customers approximately $ 28.3 million dollars over the next 25 years, demonstrating the value of proactively planned replacement over deferred and reactive management. Additional details on this cost analysis are presented in the Excel Workbook entitled "KN3-011 Attachment 154_4.a._Active Services & Survivor Curves".
~~**To be provided in a subsequent response.**~~

f. Cal Water states that there has been an increase in plastic service line failures (p. 373). Please provide a list of plastic service line failures in the Bakersfield District from 2015-2024, with supporting documentation such as vendor invoices, as-built, bids, proposals, or internal communications.
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 342_4.f" for the list of service line failures under the tab "Service Leaks BK". This list includes all plastic service lines which can be filtered in Column I by selecting FX, HDPE, PE, PL, PP, and PVC materials.

5. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks involving plastic service lines in the last five years (2020-2024).
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 343_4.f.i" for all the service line leak claim data which represents customers who experienced flooding or other property damage due to a leak between 2020-2024. Cal Water does not track the service line leak claims by material type. All service line failures shown in "CONFIDENTIAL KN3-011 Attachment 342_4.f" represent situations where customers experienced the inconvenience of having their water shut off so Cal Water could repair an unplanned service leak.

~~**To be provided in a subsequent response.**~~

6. Please provide evidence of all customers who have experienced water loss, flooding, and/or other property damage due to service line leaks NOT involving plastic service lines in the last five years (2020-2024).
Partial response #3: Please refer to the response to 4.f.i. Cal Water does not track the service line leak claims by material type. All service line failures shown in "CONFIDENTIAL KN3-011 Attachment 342_4.f" represent situations where customers experienced the inconvenience of having their water shut off so Cal Water could repair an unplanned service leak. This list includes all non-plastic service lines which can be filtered in Column I by selecting AC, BR, CI, CU, DI, GALV, OD STL, OTH, SS GALV, STL, UNK materials.

~~**To be provided in a subsequent response.**~~

7. Please provide 1) the average concentration of chlorine disinfectant to which plastic service lines in the Bakersfield District would have ongoing exposure, and 2) if known, average seasonal temperature range of water flowing to Bakersfield District service lines.
Partial response #3: Please see "CONFIDENTIAL KN3-011 Attachment 344_4.f.iii_BK" and "CONFIDENTIAL KN3-011 Attachment 345_4f.iii_BKNG" for the free chlorine residual and temperature results of all the distribution sample points for the past 10 years in the Bakersfield and Bakersfield North Garden Systems. Cal Water does not track the nearby sample point water qualities upon each failure and cannot correlate the service line failures to a specific sample point.

~~**To be provided in a subsequent response.**~~

a. Please provide the historical service line replacement and cost data for the Bakersfield District from 2014 – 2024, as requested in Attachment 5, Service Replacement, tabs "Summary of Service Replaced" and "Plastic Service Replaced"
Partial response #3: Please refer to "KN3-011 Attachment 346_4.g_ A2407003Cal Advocates DR KN3-011 Attachment 4 Service Replacement" for the summary of all service lines replaced under the tab "Summary of Service Replaced". Cal Water does not track the cost and number of services replaced by material type.
To be provided in a subsequent response.

b. Of the 76,100 service connections in the Bakersfield District, how many or what percentage of the service lines does Cal Water propose to replace in its Alternative 3 Programmatic Replacement from 2025-2027? For each year, please provide the number of services to be replaced, cost per replacement, and total cost.
Partial Response #2: Please see the following table.

Year	Number of Services to be Replaced	Cost Per Replacement (Escalated)	Total Costs (Escalated)
2025	387	$18,058.38	$6,988,592.52
2026	384	$18,539.90	$7,119,321.72
2027	383	$18,971.45	$7,266,065.84

~~**To be provided in a subsequent response.**~~

c. For responses to questions 4.h and 4.i, please provide a cost breakdown that includes cost of materials, labor, and equipment. Please provide evidence supporting the cost breakdown, such as any vendor invoices, as-built, bids, proposals, or internal communications.
Partial Response #2: Please see Excel Workbook entitled "KN3-011 Attachment 157_4.d.ii_BK Services Cost-Benefit Analysis" for details prepared by our profession engineering consultant. This estimate is based on a unit costs estimate of $17,200 (2023 dollars) per copper service replacement assuming Mueller Blue Plastic Streamline Plumbshield Type k soft copper (25 mil LDPE).
~~**Response to be provided.**~~

d. Please provide a detailed explanation for any increase or decrease in the cost-of-service line replacement between the periods 2021-2024 and 2025-2027.
Partial Response #2: Unit costs for proactive replacement of services in the 2024 GRC were based on 2023 estimated costs and escalated to the applicable year.
~~**To be provided in a subsequent response.**~~

8. Regarding the Motor Control Center (MCC)/panelboard replacements Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pp. 423-424):

    a. Provide the inspection and maintenance records in Excel format for the existing panelboards for the past 10 years (2015 - November 30, 2024). If inspection/maintenance records are not available, provide an explanation.
    Partial Response #2: Please see list of inspection records available for the MCCs proposed for replacement:
        - **KN3-011 Attachment 158_5.a_BG-002 2021**
        - **KN3-011 Attachment 159_5.a_BG-040 2020**
        - **KN3-011 Attachment 160_5.a_BG-040 2022**
        - **KN3-011 Attachment 161_5.a_CH-005 2016**
        - **KN3-011 Attachment 162_5.a_CH-005 2019**
        - **KN3-011 Attachment 163_5.a_CH-005 2023**
        - **KN3-011 Attachment 164_5.a_CH-018 2015**
        - **KN3-011 Attachment 165_5.a_CH-018 2019**
        - **KN3-011 Attachment 166_5.a_CH-065 2016**
        - **KN3-011 Attachment 167_5.a_CH-065 2024**
        - **KN3-011 Attachment 168_5.a_CH-066-PB01 2015**
        - **KN3-011 Attachment 169_5.a_CH-066-PB02 2017**
        - **KN3-011 Attachment 170_5.a_DOM-279 BOOSTER 2015**
        - **KN3-011 Attachment 171_5.a_DOM-279 booster 2018**
        - **KN3-011 Attachment 172_5.a_DOM-279 booster 2024**
        - **KN3-011 Attachment 173_5.a_DOM-279 WELL 2015**
        - **KN3-011 Attachment 174_5.a_DOM-279 well 2018**
        - **KN3-011 Attachment 175_5.a_DOM-279 well 2024**
        - **KN3-011 Attachment 176_5.a_KRV-009 2015**
        - **KN3-011 Attachment 177_5.a_KRV-009 2022**
        - **KN3-011 Attachment 178_5.a_KRV-009 BOOSTER A 2019**
        - **KN3-011 Attachment 179_5.a_KRV-009 BOOSTER B 2019**
        - **KN3-011 Attachment 180_5.a_LAS-013 2017**
        - **KN3-011 Attachment 181_5.a_LAS-013 2022**
        - **KN3-011 Attachment 182_5.a_LAS-017 2018**
        - **KN3-011 Attachment 183_5.a_LAS-017 2022**
        - **KN3-011 Attachment 184_5.a_LAS-017 BOOSTER 2017**
        - **KN3-011 Attachment 185_5.a_LAS-017 BOOSTER 2024**
        - **KN3-011 Attachment 186_5.a_LAS-017 WELL 2017**
        - **KN3-011 Attachment 187_5.a_LAS-017 WELL 2024**
        - **KN3-011 Attachment 188_5.a_LAS-104-PB01 2018**
        - **KN3-011 Attachment 189_5.a_LAS-104-PB01 2022**
        - **KN3-011 Attachment 190_5.a_LAS-104-PB02 2018**
        - **KN3-011 Attachment 191_5.a_LAS-104-PB02 2022**
        - **KN3-011 Attachment 192_5.a_LAS-113 2019**
        - **KN3-011 Attachment 193_5.a_LAS-113 2022**
        - **KN3-011 Attachment 194_5.a_LAS-121 2016**
        - **KN3-011 Attachment 195_5.a_LAS-121 BOOSTER 2021**
        - **KN3-011 Attachment 196_5.a_LAS-121 WELL 2021**
        - **KN3-011 Attachment 197_5.a_LIV-020 2017 2**
        - **KN3-011 Attachment 198_5.a_LIV-020 2017**

- **KN3-011 Attachment 199_5.a_LIV-020 2023**
- **KN3-011 Attachment 200_5.a_LIV-024 2017**
- **KN3-011 Attachment 201_5.a_LIV-024 2021**
- **KN3-011 Attachment 202_5.a_MRL-015 2017**
- **KN3-011 Attachment 203_5.a_MRL-015 BOOSTER a 2023**
- **KN3-011 Attachment 204_5.a_MRL-015 BOOSTER B 2023**
- **KN3-011 Attachment 205_5.a_MSHA-004 2024**
- **KN3-011 Attachment 206_5.a_MSHA-004 PUMP1 2018**
- **KN3-011 Attachment 207_5.a_MSHA-004 PUMP2 2018**
- **CONFIDENTIAL KN3-011 Attachment 208_5.a_MSHA-006 1 2016**
- **CONFIDENTIAL KN3-011 Attachment 209_5.a_MSHA-006 2 2016**
- **KN3-011 Attachment 210_5.a_MSHA-006 2020**
- **KN3-011 Attachment 211_5.a_MSHA-006 BOOSTER A 2023**
- **KN3-011 Attachment 212_5.a_MSHA-006 BOOSTER B 2023**
- **KN3-011 Attachment 213_5.a_SC-114 2015**
- **KN3-011 Attachment 214_5.a_SC-114 2018**
- **KN3-011 Attachment 215_5.a_SC-114 2023**
- **KN3-011 Attachment 216_5.a_SLN-019 2020**
- **KN3-011 Attachment 217_5.a_SLN-060 2019**
- **KN3-011 Attachment 218_5.a_SLN-060 2023**
- **KN3-011 Attachment 219_5.a_SLN-106 2019**
- **KN3-011 Attachment 220_5.a_SM-029 2015**
- **KN3-011 Attachment 221_5.a_SM-029 2019**
- **KN3-011 Attachment 222_5.a_SM-029 2021**
- **KN3-011 Attachment 223_5.a_SM-029 2024**
- **CONFIDENTIAL KN3-011 Attachment 224_5.a_SMTN-015 15HP BOOSTER 2016**
- **CONFIDENTIAL KN3-011 Attachment 225_5.a_SMTN-015 20HP BOOSTER 2016**
- **KN3-011 Attachment 226_5.a_SMTN-015 2023**
- **CONFIDENTIAL KN3-011 Attachment 227_5.a_SMTN-015 WELL 2016**
- **KN3-011 Attachment 228_5.a_STK-036 2016**
- **KN3-011 Attachment 229_5.a_STK-036 2019**
- **KN3-011 Attachment 230_5.a_STK-036 2023**
- **KN3-011 Attachment 231_5.a_STK-060 2017**
- **KN3-011 Attachment 232_5.a_STK-060 2023**
- **KN3-011 Attachment 233_5.a_WLK-001 2017**
- **KN3-011 Attachment 234_5.a_WLK-001 2020**
- **KN3-011 Attachment 235_5.a_WLK-001 2023**
- **KN3-011 Attachment 236_5.a_WLK-010 2016**
- **KN3-011 Attachment 237_5.a_WLK-010 2019**
- **KN3-011 Attachment 238_5.a_WLK-010 2024**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance and repair costs (general ledger in Excel format) for the past 10 years (2015 - November 30, 2024) including all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not track maintenance and repair costs associated solely with the electrical equipment. Those costs are combined with other

pumping equipment repair work in a single account.
~~**To be provided in a subsequent response.**~~

9. Regarding the proposed Generator Replacement Cal Water requests in Attachment B-List of Projects and Assets to be Replaced (pg. PJ-453 to PJ-454):

    a. In Excel format, provide the inspection and maintenance records, including the CPUC ranking and assement matrix, for the existing generators for the past 10 years (2015-November 30, 2024). If inspection/maintenance records are not available, provide an explanation. Please identify the proposed generator replacement in 2024 GRC with their PID.
    Partial Response #2: Please see below the list of inspection and maintenance records for the generators proposed for replacement. Please see the "KN3-011 Attachment 239_6.a_Generator Condition Assessment" spreadsheet for generators condition assessment.
        - **CONFIDENTIAL KN3-011 Attachment 240_6.a_ BK 162 2013**
        - **CONFIDENTIAL KN3-011 Attachment 241_6.a_ BK 162 Gen service**
        - **KN3-011 Attachment 242_6.a_ BK 162 GeneratorBK162LoadTestResults**
        - **CONFIDENTIAL KN3-011 Attachment 243_6.a_ BK 162 GeneratorPM20241714675791131**
        - **CONFIDENTIAL KN3-011 Attachment 244_6.a_ BK 162 GeneratorPMBK162**
        - **CONFIDENTIAL KN3-011 Attachment 245_6.a_ BK 162 LB18113CAWATERSERVICE162 (1)**
        - **CONFIDENTIAL KN3-011 Attachment 246_6.a_ BK 162 PM**
        - **KN3-011 Attachment 247_6.a_ BK162 CALWATERBK162GEN1200KWLoadBank2024**
        - **CONFIDENTIAL KN3-011 Attachment 248_6.a_ BK-162-GEN1PM**
        - **CONFIDENTIAL KN3-011 Attachment 249_6.a_ BK162Genset**
        - **CONFIDENTIAL KN3-011 Attachment 250_6.a_ BK176 181776_pl_20210623_154827**
        - **CONFIDENTIAL KN3-011 Attachment 251_6.a_ BK176 Gen PM 2**
        - **CONFIDENTIAL KN3-011 Attachment 252_6.a_ BK176 Gen PM**
        - **CONFIDENTIAL KN3-011 Attachment 253_6.a_BK176 GeneratorPM 2**
        - **CONFIDENTIAL KN3-011 Attachment 254_6.a_BK176 GeneratorPM**
        - **KN3-011 Attachment 255_6.a_ CH 032 2019 service**
        - **KN3-011 Attachment 256_6.a_ CH 032 CAL WATER CHICO_100815_ FUEL**
        - **KN3-011 Attachment 257_6.a_ CH 032 CAL WATER CHICO_100815_COOLANT**
        - **KN3-011 Attachment 258_6.a_ CH 032 CAL WATER CHICO_100815_OIL**
        - **KN3-011 Attachment 259_6.a_ CH 032 CAT Inspect-GE**
        - **KN3-011 Attachment 260_6.a_ CH 032 CAT Inspect-GE2023**
        - **KN3-011 Attachment 261_6.a_ CH 032 coolant sample GE 2023**
        - **KN3-011 Attachment 262_6.a_ CH 032 coolant sample GE 2024**
        - **KN3-011 Attachment 263_6.a_ CH 032 coolant sample GE**
        - **KN3-011 Attachment 264_6.a_ CH 032 CWS 8-4-20**
        - **KN3-011 Attachment 265_6.a_ CH 032 CWS LOAD TEST 8-4-20**
        - **CONFIDENTIAL KN3-011 Attachment 266_6.a_ CH 032 D-S-268221-Sev0**
        - **CONFIDENTIAL KN3-011 Attachment 267_6.a_ CH 032 E-S-268274-Sev0**
        - **KN3-011 Attachment 268_6.a_ CH 032 fuel sample GE**
        - **KN3-011 Attachment 269_6.a_ CH 032 fuel sample GE2023**

- **CONFIDENTIAL** KN3-011 Attachment 270_6.a_ CH 032 generatormaintenance2019
- **CONFIDENTIAL** KN3-011 Attachment 271_6.a_ CH 032 Genset
- KN3-011 Attachment 272_6.a_ CH 032 Genset2021services
- **CONFIDENTIAL** KN3-011 Attachment 273_6.a_ CH 032 inspection GE
- KN3-011 Attachment 274_6.a_ CH 032 load bank GE
- KN3-011 Attachment 275_6.a_ CH 032 oil sample GE
- KN3-011 Attachment 276_6.a_ CH 032 oil sample GE2023
- **CONFIDENTIAL** KN3-011 Attachment 277_6.a_ CH 032 PM
- **CONFIDENTIAL** KN3-011 Attachment 278_6.a_ CH 032 PMdocs2018
- **CONFIDENTIAL** KN3-011 Attachment 279_6.a_ CH 032 TANK MONITORING
- **CONFIDENTIAL** KN3-011 Attachment 280_6.a_ CH 032 waste
- KN3-011 Attachment 281_6.a_ CH 066 2741073 - CWS Annual Certification
- KN3-011 Attachment 282_6.a_ CH 066 2741073 -CWS Recycling receipt
- KN3-011 Attachment 283_6.a_ CH 066 2741079 - Annual Cert Report #2
- KN3-011 Attachment 284_6.a_ CH 066 2741079 - Recycling Receipt #2
- **CONFIDENTIAL** KN3-011 Attachment 285_6.a_ CH 066 A&B-DF-S-263120-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 286_6.a_ CH 066 A&B-E-S-263612-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 287_6.a_ CH 066 A&D-D-S-263667-Sev0
- **CONFIDENTIAL** KN3-011 Attachment 288_6.a_ CH 066 AB_alarms
- **CONFIDENTIAL** KN3-011 Attachment 289_6.a_ CH 066 AB_PM
- **CONFIDENTIAL** KN3-011 Attachment 290_6.a_ CH 066 AB_waste
- KN3-011 Attachment 291_6.a_ CH 066 AB-2019 service
- KN3-011 Attachment 292_6.a_ CH 066 CAL WATER CHICO_100815_AB COOLANT
- KN3-011 Attachment 293_6.a_ CH 066 CAL WATER CHICO_100815_AB FUEL
- KN3-011 Attachment 294_6.a_ CH 066 CAL WATER CHICO_100815_AB OIL
- KN3-011 Attachment 295_6.a_ CH 066 CAT Inspect GEN 1 (1)
- KN3-011 Attachment 296_6.a_ CH 066 coolant sample GEN 1 (1)
- KN3-011 Attachment 297_6.a_ CH 066 coolant sample -GEN2
- KN3-011 Attachment 298_6.a_ CH 066 CWS #1 8-11-20
- KN3-011 Attachment 299_6.a_ CH 066 CWS #1 LBT 8-11-20
- KN3-011 Attachment 300_6.a_ CH 066 CWS #2 8-11-20
- KN3-011 Attachment 301_6.a_ CH 066 CWS#2LOAD TEST 8-11-20
- KN3-011 Attachment 302_6.a_ CH 066 fuel sample GEN 1 (1)
- KN3-011 Attachment 303_6.a_ CH 066 fuel sample GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 304_6.a_ CH 066 inspection GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 305_6.a_ CH 066 Invoice 34252_ A
- KN3-011 Attachment 306_6.a_ CH 066 load bank GEN 2
- KN3-011 Attachment 307_6.a_ CH 066 oil sample GEN 1 (2)
- KN3-011 Attachment 308_6.a_ CH 066 oil sample GEN 2
- KN3-011 Attachment 309_6.a_ CH 066 tank monitoring GEN 2
- **CONFIDENTIAL** KN3-011 Attachment 310_6.a_ DOM 232 208487_tr_20230718_131206
- **CONFIDENTIAL** KN3-011 Attachment 311_6.a_ DOM 232 Generator_PM2024_Dutie_223598_jl_20240723_085628
- KN3-011 Attachment 312_6.a_ DOM 232 GeneratorPM2321622828867938
- KN3-011 Attachment 313_6.a_ DOM 232 rd1595276316791

- **CONFIDENTIAL KN3-011 Attachment 314_6.a_ SLN 016 CAWaterService -GEN1**
- **KN3-011 Attachment 315_6.a_ SLN 016 Coolant Analysis Sample #10-10-24**
- **KN3-011 Attachment 316_6.a_ SLN 016 Inspection report 10-23-2020**
- **CONFIDENTIAL KN3-011 Attachment 317_6.a_ SLN 016 Inspection Report11-22-23**
- **CONFIDENTIAL KN3-011 Attachment 318_6.a_ SLN 016 Load Bank Test 10-10-2024**
- **KN3-011 Attachment 319_6.a_ SLN 016 LoadBankTestSheet10-23-2020**
- **KN3-011 Attachment 320_6.a_ SLN 016 Oil Analysis Sample #10-10-24**
- **KN3-011 Attachment 321_6.a_ SLN 016-GEN1CoolantSample4-19-22**
- **KN3-011 Attachment 322_6.a_ SLN 016-GEN1FuelSample-4-19-22**
- **KN3-011 Attachment 323_6.a_ SLN 016-GEN1OilSample4-19-22**
- **CONFIDENTIAL KN3-011 Attachment 324_6.a_ SLN 016 Full Service Report 10-10-2024**
- **KN3-011 Attachment 325_6.a_ SLN 33 2020 LOADTEST**
- **KN3-011 Attachment 326_6.a_ SLN 33 CAWaterServiceSLNH-033-GEN1**
- **KN3-011 Attachment 327_6.a_ SLN 33 Inspection Report 10-16-2020**
- **CONFIDENTIAL KN3-011 Attachment 328_6.a_ WLK 001 122035IR**
- **KN3-011 Attachment 329_6.a_ WLK 001 122-053-GensetPM-20221653323535190**
- **CONFIDENTIAL KN3-011 Attachment 330_6.a_ WLK 001 150957ir**
- **CONFIDENTIAL KN3-011 Attachment 331_6.a_ WLK 001 223616_jl_20240730_080322**
- **CONFIDENTIAL KN3-011 Attachment 332_6.a_ WLK 001 223616_jl_20240730_0803221722359224231**
- **CONFIDENTIAL KN3-011 Attachment 333_6.a_ WLK 001.PDF**
- **CONFIDENTIAL KN3-011 Attachment 334_6.a_ WLK 001-GEN-PM-EXT-2021**
- **CONFIDENTIAL KN3-011 Attachment 335_6.a_ WLK 001-GensetPM-2023**

~~**To be provided in a subsequent response.**~~

b. Provide the annual maintenance, repair, and replacement costs (general ledger) of Cal Water's generators for the past 10 years (2015 - November 30, 2024). This includes all supporting documentation (e.g., invoices). If the records are not available, please explain.
Partial Response #2: Cal Water does not separately track maintenance and repair costs for generators. These costs are combined with other pumping equipment.
~~**To be provided in a subsequent response.**~~

c. For the following projects, if Cal Water is proposing a fixed generator. Please provide a detailed cost-benefit analysis and explanation for the replacement to be a fixed generator rather than a portable generator for the following projects and any new proposed generator projects.
Partial Response #2: Cal Water did not perform a detailed cost-benefit analysis for the generator replacements.

The generator at BK 162 is proposed as a permanent replacement because the facility is critical to the operation of the system. The station is used to pump purchased water from KCWA into multiple zones in the northeast part of the BK system. The current permanent generator failed in 2024.

The generator at BK 176 is proposed as a permanent replacement because the facility serves a pressure system. Backup power needs to be readily available in order to continually supply the pressure system. Cal Water could not stage a portable booster pump at that location permanently.

The generator at CH 032 is proposed as a permanent generator to replace the existing permanent fixed generator due to its current condition. This well supplies a pressure system and in the event of a widespread power outage, permanent generators are needed to supply water to the system to avoid low pressure and boil water notices.

The generator at CH 66 is proposed as a permanent generator because the facility supplies a pressure system. In the event of a power failure, backup power needs to be immediately available to avoid a loss of pressure to the system. Cal Water could not permanently stage a portable.
~~**To be provided in a subsequent response.**~~

PID	District	Project Name	Project Locations	Direct Costs
132561	Bakersfield	BK 2026 - Genset Replacements	BK 162 Genset Replacement	$2,307,426.75
			BK 176 Genset Replacement	
132564	Chico	CH 2026 - Genset Replacement	CH 032 Genset Replacement	$1,413,512.48
			CH 066 Genset Replacement	

d. Please provide a list of all proposed generator replacements in each district, in Excel format. Please include the following information:

i. Detailed explanation of the need for the proposed generator or MCC replacement.
Partial Response #2: Please see attached spreadsheet "KN3-011 Attachment 336_6.d.i_Generator Replacements for 2024 GRC".

~~**To be provided in a subsequent response.**~~

ii. Whether the proposed generator is in a High Fire Threat District, and if so, a map showing the location of the proposed generator.
Partial Response #2: See attachments "CONFIDENTIAL KN3-011 Attachment 337_6.d.ii_Chico Generators", "CONFIDENTIAL KN3-011 Attachment 338_6.d.ii_Salinas 33 Generator", and "CONFIDENTIAL KN3-011 Attachment 339_6.d.ii_Westlake 001 Generator" for the map of generators in high fire threat areas. Note that Salinas Hills is a high fire threat area; however, the Salinas system is not in a high fire threat area.

~~**To be provided in a subsequent response.**~~

iii. Schedule for generator purchase and completion of installation.
Partial Response #2:

	Purchase		Install	
Project	Month	Year	Month	Year
BK 162	8	2025	4	2027
BK 176	8	2025	4	2027
Ch 032	8	2025	5	2027
CH 066	8	2025	5	2027
DOM 232	9	2025	6	2027
SLN 016	8	2025	5	2027
SLN 033	8	2025	5	2027
WLK 001	8	2025	4	2027

~~**To be provided in a subsequent response.**~~

e. Please refer to D. 24-03-042 for the following questions:

i. Cal Water proposed to install a permanent generator at Station 23 in the Visalia District under PID 123954. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is in the construction phase. All permits have been approved, and equipment has been procured. Project is estimated to be complete in the first quarter of 2025.

~~**To be provided in a subsequent response.**~~

ii. Cal Water proposed to replace a generator at Station 71 in the Stockton District under PID 124311. Please provide record of completion. The records includes but not limited to receipts, vendor invoices, as-built, or internal communications.
Partial Response #2: This project is currently in preliminary design. Equipment will be procured at a later date.

~~**To be provided in a subsequent response.**~~

END PARTIAL RESPONSE #3

Attachment 11-3:
CWS's Response to DR KN3-004 Cost Estimate

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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From: **California Water Service**

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Patrick Alexander (408) 367-8230
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Melody Singh (916) 329-1856
Manager, Revenue msingh@calwater.com

Date: **Aug 27, 2024** Re: **KN3-004** Subj: **Under-Threshold Projects**	Request Received from CPUC: **August 20, 2024** Requested Due Date: **August 27, 2024** Extension for Q1.f.: **August 30, 2024**

Comments:

- **Partial response #2 attached. Cal Water requested an extension for Q1.f. to 8/30/2024**
- **Response provided by Engineering.**
- **Multiple supporting documents contain Category 4 confidential information.**
- **Documents identified as confidential include "CONFIDENTIAL" in the file name.**
- **This response refers to the following attachments included separately:**
  - **KN3-004 Attachment 1**

- **Link to OneDrive folder KN3-004 (Under Threshold Projects)**

Data Requests and Responses

1. Reference "DIX_2024_GRC_PJ_Book", Section M-Under Threshold Projects as an example definition to under threshold projects. Please provide, in Microsoft Excel Format, a list of all under threshold projects Cal Water is proposing in A.24-07-003. The list should include the following:

a. Project Name and a brief description matching the PID.

Response: Please reference KN3-004 Attachment 1

b. The date the project is scheduled to be completed.

Response: Please reference KN3-004 Attachment 1

c. The total project cost in dollars.

Response: Please reference KN3-004 Attachment 1

d. The total project contingency in dollars.

Response: Please reference KN3-004 Attachment 1

e. The contingency factor in percent.

Response: Please reference KN3-004 Attachment 1

f. Please provide detailed support to substantiate Cal Water's responses above form 1b to 1e, including but not limited to:

   i. Internal communications and memorandums,
   ii. Vendor quotes and estimates,
   iii. Engineering reports, and calculations.

   Please provide calculations in Microsoft Excel format with links and formulas intact.

Response: Cal Water's cost tables typically include a combination of four cost bases: (1) Cost Catalog, (2) Labor SKU, (3) Additional Factors, (4) engineer's estimate. The first three cost bases are discussed in the Common Plant Project Justification Book. The fourth basis is typically developed by the engineer using best judgement, vendor quotes, or third party consultant estimates. In some instances where a third party consultant estimate is provided, the individual line items to may not sum to the same amount due to differences between vendor software and Cal Water's Powerplan calculations. Generally, detailed documentation is not gathered for engineers' estimates below $15,000.

Due to the number of files, folders and subfolders included in the response, supporting materials are being provided via the OneDrive link below. Response files stored in the OneDrive folder can be accessed by the Cal Advocates addressees to this response and copied to a new file location at Cal Advocates convenience.

Link to OneDrive Folder KN3-004 (Under Threshold Projects)

Capital Project Cost Estimate

Project No. : 133031
Description CH 064 New Generator
District / Department: Chico
Project Start Date: 01/02/2025
Project Completion Date: 06/29/2027
Prepared By: jagraham
Date Initiated: 11/24/2023
Base Year: 2023
Sub-Total: $425,509
Direct Cost: $456,045

Cost Table:

Item	Description [units]	Qty	Unit Cost	Total	Cost Basis
_ELECTRICAL, INSTRUMENTATION, AND CONTROLS SUBCONTRACT(LS)	[EA]	1	$60,722.00	$60,722.00	RS Means
_ELECTRICAL, INSTRUMENTATION, AND CONTROLS SUBCONTRACT(LS)	[EA]	1	$113,840.00	$113,840.00	RS Means
_SLAB 15' X 10' X 12" THICK GENERATOR(CY)	[EA]	5.5	$688.36	$3,786.00	Engineers Estimate
_SLAB 3.5' X 3.5' X 12" THICK PAD ATS(CY)	[EA]	0.5	$620.00	$310.00	Engineers Estimate
TRENCHING AND BACKFILL(LS)	[EA]	1	$20,000.00	$20,000.00	Engineers Estimate
10% CONTINGENCY	[EA]	1	$38,682.61	$38,682.61	Additional Factors
15% CM/SI	[EA]	1	$46,010.15	$46,010.15	Additional Factors
CAPITAL BUDGET TECHNICIAN	CW-Eng Tech LABOR [HR]	4	$108.96	$435.84	Labor SKU
COST ENGINEER	CW-Civil Eng LABOR [HR]	52	$139.41	$7,249.32	Labor SKU
ELECT ENG	CW-Elect Eng LABOR [HR]	296	$139.41	$41,265.36	Labor SKU
EMT	CW-EMT LABOR [HR]	51	$112.12	$5,718.12	Labor SKU
ENG TECH	CW-Eng Tech LABOR [HR]	209	$108.96	$22,772.64	Labor SKU
ENVIRONMENTAL PM	CW-EA Proj MGR LABOR [HR]	56	$139.41	$7,806.96	Labor SKU
FIELD LBR	CW-LABOR-FIELD LABOR [HR]	49	$88.12	$4,317.88	Labor SKU
FIELD MGR	CW-LABOR-FIELD MGR/SUPV [HR]	60	$115.92	$6,955.20	Labor SKU
LABOR	CW-Civil Eng LABOR [HR]	53	$139.41	$7,388.73	Labor SKU
SCADA TECH	CW-SCADA Tech LABOR [HR]	35	$108.96	$3,813.60	Labor SKU
SIMILAR PROJECTS	CW-EA Proj MGR LABOR [HR]	247	$139.41	$34,434.27	Labor SKU

Sub-total = $425,508.68
Direct Cost = $456,044.85

Notes:
1. Sub-Total is defined as the summation of all project estimated materials, labor, and markups costs
2. Direct Cost is the escalate Sub-Total from the base year of 2023 to the project completion year assuming a 2.5% inflation rate
3. See Common Plant Book for additional details on cost estimating methodology and justification

Attachment 11-4:
Apple Valley Technical Report Excerpt

Apple Valley Ranchos Water Company

Technical Report

Analysis of Source and Storage Capacity

2013 Update

June 2013

Prepared by:

Rick Dalton

Corporate Chief Engineer

And Pat Kearns

Consulting Engineer Emeritus

Park Water Company

the high potential for a permanent loss of some well source capacity, such as a casing failure, makes the necessity for a buffer more pressing.

Storage Analysis

Table 6 analyzes storage capacity. Storage volume consists of three components: operational storage, fire-fighting storage, and emergency storage. The storage requirements are well within the existing system storage capacity for two primary reasons. The first is that the system has enough source capacity to meet MDD, even with the largest well out of service. The second is the emergency generators located at various wells and the natural gas powered engines at Wells 4 and 19. These emergency/alternate power sources provide access to ground water even in an emergency that includes a power outage. This reduces the amount of storage needed for emergencies.

The operational storage is the larger of that amount of storage needed to supplement pumping during peak demands or that amount of storage used to maintain water quality. Typically, the amount of storage used to maintain water quality (which can vary seasonally) is the larger volume. Care and planning based on land use and customer water use profiles must be considered when projecting the operational storage. The total projected operational storage will vary in the range of 20% to 50% of total storage. In **Table 6**, operational storage was based on 30% of total zone storage.

Firefighting storage has been determined by using the fire flow data provided by the Apple Valley Fire District. One complete maximum fire flow should be stored in each zone. If the fire flow is 3500gpm for 4 hours, the total volume stored is 3500 x 4 x 60 or 840,000 gals as shown. A 4000 GPM fire flow or 4 hours equates to 960,000 gallons of storage.

The emergency storage requirement would normally be at least one average day demand (ADD) or 15.1 MG for the entire system. However, AVRWC can reduce its storage demand because of its emergency source capacity. This capability is provided by the permanent diesel engine driven electric generators that automatically provide power to some of the more critical wells during a power outage. In addition, AVRWC has a fleet of mobile generators capable of powering wells or booster pump stations as needed. AVRWC also has two natural gas powered wells. This emergency source capacity exceeds the ADD (see **Table 4**) and allows for a reduction in calculating the emergency storage requirement. Because it will take some time to distribute all the mobile generators and get the entire emergency source online, a twelve-hour time period is provided for that purpose. In **Table 6**, emergency storage capacity was calculated by taking 12 hours of the ADD less the pumping capacity of the wells equipped with automatic starting generators. The emergency storage calculations for

the Main Zone are based on the demands of the complete system (including Jess Ranch) in all cases because the storage in the Main Zone and the storage at higher elevations are capable of supplying all zones in the system.

Adding storage as a means of reducing the need for source capacity to meet the MDD is not practical. Three maximum day demands in a row is the typical design criterion for this situation. For example: it would take 4.32 million gallons of elevated storage to make up for a 1000 GPM source capacity shortfall below the MDD. Having adequate source capacity to reliably meet the MDD at all times is essential. In addition, the strategic use of emergency generators on key sources of supply is a cost effective and sustainable means to ensure source availability at all times.

Demand Projections and Source of Supply Analysis

Table 7 summarizes growth projections and compares the resulting demands to various scenarios of source capacities. In the table, the total number of customers is 19,098 for end of year 2012. The projected number of customers for future years is calculated by assuming a growth percentage. For 2013 a 0.5% assumed growth is used and for future years a 1% assumed growth rate is used. The average day demands (ADD) and maximum day demands (MDD) are then calculated based on the demand per customer, which were derived previously in the report.

Because the sole source of water for the AVRWC system is well water, the primary requirement for determining the source of supply pumping capacity is that the source of supply pumping capacity must be able to reliably meet the MDD at all times. In order to reliably meet the MDD at all times, it is essential to have enough source capacity to meet the MDD with a certain amount of well capacity unavailable. This additional well capacity above and beyond the MDD is needed for many reasons, which include:

- Wells can often un-expectantly be out of service for extended periods.
- Permanent failure can occur at any time on aging wells.
- Well capacities typically decrease over the long term.
- Demands can vary considerably from year to year.
- Adding a well to make up for a shortfall takes a considerable amount of time.

While it is not possible to predict exactly how pumping capacity and demands will vary, it is prudent to account for the fact that pumping capacity will decrease and demands have potential to increase.

Table 7 compares pumping capacity to the MDD under various conditions starting with the column labeled "Normal", which signifies that all wells are available. The table then compares various reduced pumping capacities to the MDD. In each case the pumping capacity less the MDD is tabulated. While there are a wide range of combinations of

LIST OF ATTACHMENTS FOR CHAPTER 12

	Attachment #	Description
1	Attachment 12-1	DR KN3-008

Attachment 12-1:
CWS's Response to DR KN3-008 Land Held for Future Use

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Date: **October 31, 2024** Re: **KN3-008** Subj: **Land Held for Future Use**	Request Received from CPUC: **October 24, 2024** Requested Due Date: **October 31, 2024**

Comments:

- **Partial Response #1 attached.**
- **Response provided by Rates and Engineering.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **KN3-008 Attachment #1**

Data Requests and Responses

1. Please refer to the RO model "CH07_RO_RB_PLT", Tab "Budget (ACB) Adjustments WS -2.1," Colum H "Land." In column F, "Project Justification" shows non-specific projects and projects with justification:

a. Using the columns in the table below in Microsoft Excel format, please provide a complete list of all land/property acquired but currently not in use and land currently held for future use.
Response: Please see KN3-008 Attachment 1 for a listing of Cal Water's properties by district that were acquired but are not currently included in rate base. For those properties, Column F contains information that was entered into Cal Water's PowerPlan system and may indicate the proposed purpose at the time of purchase.

Cal Water did not include fields for the last three Columns listed in the table below. The cost of maintaining land is responded to below, and the other fields are not applicable as these are properties that are not included in Cal Water's rate base for this GRC period.

Please note that Cal Water is in the process of evaluating whether there is any land currently in rate base that is not being used and has requested an extension to November 7.

District	Location	Project ID/Work Order#	Date Purchased	Purpose at time of Purchase	Current use of land in GRC A.24-07-001	Annual cost of maintaining land since purchase	RO Model Reference
1							
2							
3							
4							
…							

b. For the land held for future use, please provide O&M and A&G expenses for the last five years (June 2019-June 2024) in Microsoft Excel format.
Response: Any O&M and A&G expenses pertaining to land that isn't actively being used would be largely limited to landscaping services (in order to prevent fire from breaking out), or in some limited cases security monitoring should the station have assets on it and is temporarily out of service. Landscaping expenses are not bid to contractors nor invoiced per location. Furthermore, any security monitoring would also be packaged as a lump sum, and any individual site would not provide an incremental cost associated with this. Landscaping and security monitoring expenses are predominantly included in Accounts 725000, 730000, 743000, and 756000. Please see tab "Rec O&M WS-1" in the Y_CH05_OM_SD_Rec OM Exp file for all accounts and recorded expenses.

RESPONSE TO DATA REQUEST

2024 GENERAL RATE CASE, A.24-07-003

To: **Public Advocates Office**

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Melody Singh (916) 329-1856
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Date: **November 6, 2024** Re: **KN3-008** Subj: **Land Held for Future Use**	Request Received from CPUC: **October 24, 2024** Requested Due Date: **October 31, 2024**

Comments:

- **Response #2 attached. See material in blue font.**
- **Response provided by Rates and Engineering.**
- **Does not contain confidential information.**
- **This response refers to the following attachments included separately:**
  - **KN3-008 Attachment #1**
  - **KN3-008 Attachment #2**

Data Requests and Responses

1. Please refer to the RO model "CH07_RO_RB_PLT", Tab "Budget (ACB) Adjustments WS -2.1," Colum H "Land." In column F, "Project Justification" shows non-specific projects and projects with justification:

a. Using the columns in the table below in Microsoft Excel format, please provide a complete list of all land/property acquired but currently not in use and land currently held for future use.
Partial Response #1: Please see KN3-008 Attachment 1 for a listing of Cal Water's properties by district that were acquired but are not currently included in rate base. For those properties, Column F contains information that was entered into Cal Water's PowerPlan system and may indicate the proposed purpose at the time of purchase.

Cal Water did not include fields for the last three Columns listed in the table below. The cost of maintaining land is responded to below, and the other fields are not applicable as these are properties that are not included in Cal Water's rate base for this GRC period.

Please note that Cal Water is in the process of evaluating whether there is any land currently in rate base that is not being used and has requested an extension to November 7.

Response #2: Please see KN3-008 Attachment 2 for a listing of Cal Water's properties by district that are included in rate base and are currently inactive.

- **Any information about each property currently available is provided.**
- **The cost of maintaining land is responded to below.**
- **For RO Model reference: Land assets as of 12/31/2023 are included in Cal Water's beginning plant balances located in "Rec PLT Net Adds WS-1.1" (Asset account # 103061) in the CH07_RO_RB_PLT file.**

District	Location	Project ID/Work Order#	Date Purchased	Purpose at time of Purchase	Current use of land in GRC A.24-07-001	Annual cost of maintaining land since purchase	RO Model Reference
1							
2							
3							
4							
…							

b. For the land held for future use, please provide O&M and A&G expenses for the last five years (June 2019-June 2024) in Microsoft Excel format.
Response: Any O&M and A&G expenses pertaining to land that isn't actively being used would be largely limited to landscaping services (in order to prevent fire from breaking out), or in some limited cases security monitoring should the station have assets on it and is temporarily out of service. Landscaping expenses are not bid to contractors nor invoiced per location. Furthermore, any security monitoring would also be packaged as a lump sum, and any individual site would not provide an incremental cost associated with this. Landscaping and

security monitoring expenses are predominantly included in Accounts 725000, 730000, 743000, and 756000. Please see tab "Rec O&M WS-1" in the Y_CH05_OM_SD_Rec OM Exp file for all accounts and recorded expenses.

Dist. ID	District Name	long_description	work_order_number	eng_in_service_year	purpose (if known)
101	Bakersfield	Default Location (BAKERSFIELD)	00009389	12/1/2005	STA#220
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1941	Terrace Way E/O N St. Sta.
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1947	Station #69-01 well site
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1948	2nd Sta. w/o T St. 70
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1954	Station 104-01 well site
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1957	Sta. 121
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1962	PR#1-133 Portion of active wellsite
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	10/30/1969	Louise Ave & Rodney, wells
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	12/30/1975	Old Olcese System Area St
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	10/30/1977	South garden system, Morel
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	11/30/1978	Hughes Lane Well Site at S
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1981	Phyllis Ave wellsite, at M
101	Bakersfield	Default Location (BAKERSFIELD)	CONV	1/30/1989	Southern Breeze Drive well
101	Bakersfield	STA. 049-3333 STOCKDALE HIGHWAY <BAKERSFIELD>	BKD0100	1/1/1940	A3186, 1-40
102	Bear Gulch	STA. 049-503 5TH AVE <BEAR GULCH>	00097750	4/1/2017	Land
104	North Valley Region	Default Location (CHICO)	2409	1/1/1979	PR1-57
104	North Valley Region	Default Location (CHICO)	CONV	9/30/1972	PR#1-47 Chico Airport, Liberator St
104	North Valley Region	Default Location (CHICO)	CONV	9/30/1972	PR#1-49 Airport System Sta.45
104	North Valley Region	STA. 034-EAST FIRST AVE. & SHERIDAN <CHICO>	1415	1/1/1962	PRI-35
104	North Valley Region	STA. 034-EAST FIRST AVE. & SHERIDAN <CHICO>	1573	1/1/1965	
105	Dixon	STA. 001-STATE HIGHWAY & A STREET <DIXON>	DIX0600	1/1/1927	ACQ, PRI-1
106	East Los Angeles	Default Location (EAST LOS ANGELES)	CONV	12/30/1954	Olympic Blvd. And Downey Rd
106	East Los Angeles	STA. 010-EAST WASHINGTON W/O AVERS <EAST LOS ANGELES>	ELA0100	1/1/1926	
109	Salinas Valley Region	KING CITY-KING CITY <KING CITY>	00016698	6/1/2008	
109	Salinas Valley Region	STA. 002-COLLINS STREET <KING CITY>	0013	12/1/1963	COLLINS - CURB
109	Salinas Valley Region	STA. 002-COLLINS STREET <KING CITY>	0073	8/1/1968	COLLINS (SIDEWALK)
109	Salinas Valley Region	STA. 002-COLLINS STREET <KING CITY>	KCD0600	7/1/1962	PR1-2 COLLINS ACQ
110	Livermore	Default Location (LIVERMORE)	CONV	1/30/1926	Diversion Dam site on Arroy
110	Livermore	Default Location (LIVERMORE)	CONV	1/30/1926	Macho Wellsite, Mines Rd S/O
111	Los Altos	Default Location (LOS ALTOS SUBURBAN)	0315	1/1/1952	1-113
111	Los Altos	Default Location (LOS ALTOS SUBURBAN)	CONV	10/30/1982	Knapp wellsite (North Los
111	Los Altos	Default Location (LOS ALTOS SUBURBAN)	CONV	10/30/1982	Portola Wellsite
112	Marysville	Default Location (MARYSVILLE)	CONV	1/30/1941	J Street Sta. 6
112	Marysville	STA. 016-CHESNUT STREET <MARYSVILLE>	00014011	10/1/2008	Property - Station 16
113	North Valley Region	Default Location (OROVILLE)	CONV	1/30/1927	Reservoir site, Cherokee Rd
113	North Valley Region	Default Location (OROVILLE)	CONV	1/30/1956	Virginia Ave. S/O Mill St.
114	Salinas Valley Region	Default Location (SALINAS)	CONV	7/30/1962	N Corner of the PG&E substation on
114	Salinas Valley Region	Default Location (SALINAS)	CONV	1/30/1971	Clark Street Sta. 14
114	Salinas Valley Region	Default Location (SALINAS)	CONV	7/30/1982	Portola and Polou Dr. Boost
114	Salinas Valley Region	Default Location (SALINAS)	CONV	1/30/1991	Charter Oak Blvd. tanksite
114	Salinas Valley Region	Default Location (SALINAS)	CONV	1/30/1991	Wellsite at Pampas path, S/
114	Salinas Valley Region	STA. 015-EAST JOHN STREET <SALINAS>	SLN0600	7/1/1962	
114	Salinas Valley Region	STA. 028-3 HOMESTEAD AVE. <SALINAS>	0981	1/1/1977	PR1-29
114	Salinas Valley Region	STA. 028-3 HOMESTEAD AVE. <SALINAS>	1727	1/1/1989	ASSESSMENT
114	Salinas Valley Region	STA. 102-CORWALL STREET E/O BELLINZONA <SALINAS>	SLN0100	1/1/1988	BOLSA KNOLLS
116	Bay Area Region	Default Location (SAN CARLOS)	CONV	12/30/1947	San Mateo TR FR Plant Sta.
117	Selma	STA. 005-ARRANTS & ORANGE <SELMA>	SEL0600	7/1/1962	PR1-2
117	Selma	STA. 009-THOMPSON & HIGHWAY 99 <SELMA>	SEL0600	7/1/1962	PR1-6
117	Selma	STA. 010-SYLVIA & NORTH <SELMA>	SEL0600	7/1/1962	PR1-8
118	Bay Area Region	Default Location (Broadmoor)	CONV	12/30/1949	4.7 Acres land, portion of
118	Bay Area Region	Default Location (Broadmoor)	CONV	11/30/1973	small piece for neighbor pa
118	Bay Area Region	Default Location (Broadmoor)	CONV	12/30/1992	Southwest Corner of Chestnut
119	Stockton	Default Location (STOCKTON)	CONV	1/30/1975	Greensboro Ct. wellsite, E/
119	Stockton	Default Location (STOCKTON)	CONV	1/30/1977	89 El Pinal Dr. wellsite, E/O

119	Stockton	STA. 010-SCOTTS & MCDONELL <STOCKTON>	0321	1/1/1943	
120	Visalia	Default Location (VISALIA)	CONV	12/30/1967	Portion of active wellsite
120	Visalia	Default Location (VISALIA)	CONV	1/30/1972	Midvalley wellsite, W/O Moo
120	Visalia	Default Location (VISALIA)	CONV	12/30/1985	County Center Drive and Packw
120	Visalia	Default Location (VISALIA)	VIS0600	12/1/2001	LAND-RALSTON ACQ
120	Visalia	STA. 028-BURKE STREET N/O PARADISE STRE <VISALIA>	1179	1/1/1962	BURKE ST WELL SITE
120	Visalia	STA. 028-BURKE STREET N/O PARADISE STRE <VISALIA>	1179	1/1/1963	SUPP
120	Visalia	STA. 049-PINKHAM ROAD & REGINA DRIVE <VISALIA>	2194	1/1/1977	
120	Visalia	STA. 060-AVE. 264 & MULNAX <VISALIA>	3499	8/1/1990	FAIRWAY WATER - ACQUISI
122	Los Angeles County Region	Default Location (PALOS VERDES)	CONV	1/30/1972	Golf course booster site Sta
128	South Bay Region	Default Location (DOMINGUEZ WATER COMPANY)	00119727	12/19/2019	Land
128	South Bay Region	STA. 301-6157 LONG BEACH BLVD <LONG BEACH>	00100482	9/1/2018	Land, APN: 7307-008-053
134	Kern River Valley	Default Location (SOUTH LAKE)	KRV0600	1/1/1997	Golden Ranch Meadow Well Site
147	Bay Area Region	Default Location (LUCERNE)	LUC0600	1/2/1998	Land
392	Customer Support Services	Default Location (Facilities)	CONV	8/1/1963	4th St Property (.71 acres)

KN3-008 Attachment #2_CORRECTION

major_loca	District	Station Name	long_description	description	eng_in_service	description	retirement_unit_id	asset_id	depr_group	long_description	year	work_order_number	Accum Cost
101	BK	223	BAKERSFIELD-BAKERSFIELD <BAKERSFIELD>	Land,Sta#223	3/13/2008	103061-Land	30610000	18763007	2070	Purchase Land, Sta#223 APN-387-010-42 & 387-060-25	2008	00018434	84,210.76
128	DOM		Default Location (DOMINGUEZ WATER COMPANY)	ELEVATED TANK SITE	12/1/1959	103061-Land	30610000	11501364	2093	ELEVATED TANK SITE	1959		50.00
109	KC	11	Default Location (KING CITY)	PRI-3 RESERVOIR (ELEVATED) - AC	7/1/1962	103061-Land	30610000	11500532	2078	PRI-3 RESERVOIR (ELEVATED) - ACQ	1962		396.00
112	MRL	013	Default Location (MARYSVILLE)	1-13	1/1/1975	103061-Land	30610000	11500741	2081	1-13	1975	0588	13,368.00
112	MRL	004	9.3061.112.STA4.1973.224614.01-JAN-	9.3061.112.STA4.1973.224614.01-JAN-	1/1/1973	103061-Land	30610000	11500747	2081	9.3061.112.STA4.1973.224614.01-JAN-73	1973	0563	270.60
112	MRL	004	Default Location (MARYSVILLE)	ACQ, PR1-1	1/1/1929	103061-Land	30610000	11500746	2081	ACQ, PR1-1	1929		2,573.89
118	BAY	010	Default Location (SO. SAN FRANCISCO)	PR1-15, STERLING TERRACE	1/1/1951	103061-Land	30610000	11501028	2087	PR1-15, STERLING TERRACE	1951	0425	35.52
117	SEL	009	Default Location (SELMA)	PUMPED STORAGE SITE-STILLMAN SITE	12/1/1995	103061-Land	30610000	11501005	2086	PUMPED STORAGE SITE-STILLMAN SITE	1995	0655	79,736.81
119	STK	83	Default Location (STOCKTON)	PR 1-44	1/1/1947	103061-Land	30610000	11501150	2088	PR 1-44	1947	0738	1,676.43
120	VIS	29	Default Location (VISALIA)	1-32	1/1/1966	103061-Land	30610000	11501223	2089	1-32	1966		2,500.00
120	VIS	071	Default Location (VISALIA)	PR1-84, 12-91	1/1/1963	103061-Land	30610000	11501300	2089	PR1-84, 12-91	1963		7,040.00
111	LAS	002	STA. 002-GRANT ROAD & PORTLAND AVE. <LOS ALT(	1-3	1/1/1939	103061-Land	30610000	11500591	2080	1-3	1939		500.00
111	LAS	002	STA. 002-GRANT ROAD & PORTLAND AVE. <LOS ALT(	9.3061.111.0002.1964.76010.01-JAN-6	1/1/1964	103061-Land	30610000	11500592	2080	9.3061.111.0002.1964.76010.01-JAN-64	1964	1329	8,713.05
105	DIX	003	STA. 003-ADAMS S/O WESTMINISTER <DIXON>	9.3061.105.0003.1966.42292.01-DEC-6	12/1/1966	103061-Land	30610000	11500343	2074	9.3061.105.0003.1966.42292.01-DEC-66	1966	0252	57.62
105	DIX	003	STA. 003-ADAMS S/O WESTMINISTER <DIXON>	PR1-4	12/1/1956	103061-Land	30610000	11500342	2074	PR1-4	1956	0145	2,212.72
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	12-49	1/1/1927	103061-Land	30610000	11501161	2089	12-49	1927		14.24
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	9.3061.120.0003.1964.140548.01-JAN-	1/1/1964	103061-Land	30610000	11501165	2089	9.3061.120.0003.1964.140548.01-JAN-64	1964	1267	98.58
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	9.3061.120.0003.1965.140549.01-JAN-	1/1/1965	103061-Land	30610000	11501166	2089	9.3061.120.0003.1965.140549.01-JAN-65	1965	1335	219.42
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	A 400	1/1/1929	103061-Land	30610000	11501162	2089	A 400	1929		36.03
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	A 400	1/1/1930	103061-Land	30610000	11501163	2089	A 400	1930		383.28
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	A 400	1/1/1936	103061-Land	30610000	11501164	2089	A 400	1936		36.03
120	VIS	003	STA. 003-NORTH COURT & NORTH EAST 4TH <VISALI	ACQ, PR 1-3	1/1/1926	103061-Land	30610000	11501160	2089	ACQ, PR 1-3	1926		250.00
116	BAY	003	STA. 003-SAN MATEO <SAN MATEO>	PR1-8 ACQ	12/1/1931	103061-Land	30610000	11500935	2085	PR1-8 ACQ	1931		2,075.00
119	STK	004	STA. 004-ELLIS & COMMERCE <STOCKTON>	PR 1-7	1/1/1942	103061-Land	30610000	11501042	2088	PR 1-7	1942	0215	342.76
104	CH	004	STA. 004-SEVENTH STREET & SYCAMORE <CHICO>	9.3061.104.0004.1927.30819.01-DEC-4	12/1/1927	103061-Land	30610000	11500232	2073	9.3061.104.0004.1927.30819.01-DEC-49	1927		32.04
104	CH	004	STA. 004-SEVENTH STREET & SYCAMORE <CHICO>	9.3061.104.0004.1960.30820.01-JAN-6	1/1/1960	103061-Land	30610000	11500233	2073	9.3061.104.0004.1960.30820.01-JAN-60	1960	1251	826.80
104	CH	004	STA. 004-SEVENTH STREET & SYCAMORE <CHICO>	PRI-4 ACQ	1/1/1926	103061-Land	30610000	11500231	2073	PRI-4 ACQ	1926		600.00
111	LAS	004	STA. 004-SUNSHINE DRIVE S/O SPRINGER <LOS ALT(	1-4	1/1/1947	103061-Land	30610000	11500594	2080	1-4	1947		1,510.34
111	LAS	004	STA. 004-SUNSHINE DRIVE S/O SPRINGER <LOS ALT(	9.3061.111.0004.1966.76015.01-JAN-6	1/1/1966	103061-Land	30610000	11500596	2080	9.3061.111.0004.1966.76015.01-JAN-66	1966	1482	669.70
111	LAS	004	STA. 004-SUNSHINE DRIVE S/O SPRINGER <LOS ALT(	9.3061.111.0004.1968.76016.01-JAN-6	1/1/1968	103061-Land	30610000	11500597	2080	9.3061.111.0004.1968.76016.01-JAN-68	1968	1706	635.80
111	LAS	004	STA. 004-SUNSHINE DRIVE S/O SPRINGER <LOS ALT(	VR1	1/1/1948	103061-Land	30610000	11500595	2080	VR1	1948		20.75
117	SEL	004	STA. 004-TUCKER & ORANGE <SELMA>	PR1-14	7/1/1962	103061-Land	30610000	11500981	2086	PR1-14	1962		80.00
117	SEL	004	STA. 004-TUCKER & ORANGE <SELMA>	PR1-14	8/1/1983	103061-Land	30610000	11500982	2086	PR1-14	1983	0362	35,128.12
117	SEL	004	STA. 004-TUCKER & ORANGE <SELMA>	SUPP	12/1/1983	103061-Land	30610000	11500983	2086	SUPP	1983	0362	958.65
109	KC	005	STA. 005-MILDRED STREET <KING CITY>	PR1-5	11/1/1970	103061-Land	30610000	11500535	2078	PR1-5	1970	0089	6,580.00
114	SLN	005	STA. 005-NOICE DRIVE <SALINAS>	1-5	7/1/1962	103061-Land	30610000	11500795	2083	1-5	1962		1,490.00
110	LIV	005	STA. 005-PALM & LIVERMORE <LIVERMORE>	9.3061.110.0005.1946.69387.01-JAN-4	1/1/1946	103061-Land	30610000	11500548	2079	9.3061.110.0005.1946.69387.01-JAN-46	1946	0058	108.15
110	LIV	005	STA. 005-PALM & LIVERMORE <LIVERMORE>	9.3061.110.0005.1961.69388.01-JAN-6	1/1/1961	103061-Land	30610000	11500549	2079	9.3061.110.0005.1961.69388.01-JAN-61	1961	0704	534.31
110	LIV	005	STA. 005-PALM & LIVERMORE <LIVERMORE>	PR1-3	1/1/1944	103061-Land	30610000	11500547	2079	PR1-3	1944	0028	515.01
120	VIS	006	STA. 006-KAWEAH & JACOB <VISALIA>	12-49	1/1/1927	103061-Land	30610000	11501175	2089	12-49	1927		24.92
120	VIS	006	STA. 006-KAWEAH & JACOB <VISALIA>	9.3061.120.0006.1964.140559.01-JAN-	1/1/1964	103061-Land	30610000	11501176	2089	9.3061.120.0006.1964.140559.01-JAN-64	1964	1275	53.00
120	VIS	006	STA. 006-KAWEAH & JACOB <VISALIA>	9.3061.120.0006.1976.140560.01-JAN-	1/1/1976	103061-Land	30610000	11501177	2089	9.3061.120.0006.1976.140560.01-JAN-76	1976	1959	64.23
120	VIS	006	STA. 006-KAWEAH & JACOB <VISALIA>	ACQ, PR 1-6	1/1/1926	103061-Land	30610000	11501174	2089	ACQ, PR 1-6	1926		450.00
113	ORO	007	STA. 007-OROVILLE <OROVILLE>	PR1-9	1/1/1945	103061-Land	30610000	11500770	2082	PR1-9	1945	0087	267.02
106	ELA	007	STA. 007-SOUTH LAVERNE N/O WHITTIER <EAST LOS	A400	1/1/1927	103061-Land	30610000	11500370	2075	A400	1927		83.76
106	ELA	007	STA. 007-SOUTH LAVERNE N/O WHITTIER <EAST LOS	ACQ, PR 1-27	1/1/1926	103061-Land	30610000	11500369	2075	ACQ, PR 1-27	1926		750.00
117	SEL	007	STA. 007-STILLMAN & ORANGE <SELMA>	PR1-4	7/1/1962	103061-Land	30610000	11500987	2086	PR1-4	1962		60.00
117	SEL	007	STA. 007-STILLMAN & ORANGE <SELMA>	PR1-4	7/1/1965	103061-Land	30610000	11500988	2086	PR1-4	1965	67	4,772.49
117	SEL	008	STA. 008-MCCALL & NEBRASKA <SELMA>	PR1-5	7/1/1962	103061-Land	30610000	11500989	2086	PR1-5	1962		240.00
117	SEL	008	STA. 008-MCCALL & NEBRASKA <SELMA>	PR1-5	3/1/1966	103061-Land	30610000	11500990	2086	PR1-5	1966	83	115.50
119	STK	009	STA. 009-FREMONT & EAST D <STOCKTON>	9.3061.119.0009.1953.127043.01-JAN-	1/1/1953	103061-Land	30610000	11501052	2088	9.3061.119.0009.1953.127043.01-JAN-53	1953	1973	466.74
119	STK	009	STA. 009-FREMONT & EAST D <STOCKTON>	PR 1-10	1/1/1943	103061-Land	30610000	11501051	2088	PR 1-10	1943	0249	153.90
120	VIS	009	STA. 009-HOUSTON STREET E/O LESLIE <VISALIA>	9.3061.120.0009.1964.140567.01-JAN-	1/1/1964	103061-Land	30610000	11501184	2089	9.3061.120.0009.1964.140567.01-JAN-64	1964	1258	112.78
120	VIS	009	STA. 009-HOUSTON STREET E/O LESLIE <VISALIA>	PR1-9	1/1/1945	103061-Land	30610000	11501183	2089	PR1-9	1945	0159	431.88
120	VIS	009	STA. 009-HOUSTON STREET E/O LESLIE <VISALIA>	SIDEWALK	1/1/1978	103061-Land	30610000	11501185	2089	SIDEWALK	1978	2198	160.27
114	SLN	011	STA. 011-LAUREL DRIVE <SALINAS>	1-11	7/1/1962	103061-Land	30610000	11500805	2083	1-11	1962		1,130.00
119	STK	011	STA. 011-STOCKTON <STOCKTON>	9.3061.119.0011.1949.127046.01-JAN-	1/1/1949	103061-Land	30610000	11501055	2088	9.3061.119.0011.1949.127046.01-JAN-49	1949	1233	140.23
119	STK	011	STA. 011-STOCKTON <STOCKTON>	PR 1-20	1/1/1944	103061-Land	30610000	11501054	2088	PR 1-20	1944	0322	623.15
117	SEL	012	STA. 012-E/S MITCHELL S/O NEBRASKA <SELMA>	PR1-9	7/1/1962	103061-Land	30610000	11500993	2086	PR1-9	1962		2,213.77
110	LIV	012	STA. 012-FOURTH STREET W/O WOOD STREET <LIVI	9.3061.110.0012.1966.69401.01-JAN-6	1/1/1966	103061-Land	30610000	11500561	2079	9.3061.110.0012.1966.69401.01-JAN-66	1966	0927	632.63
110	LIV	012	STA. 012-FOURTH STREET W/O WOOD STREET <LIVI	PR1-14	1/1/1956	103061-Land	30610000	11500560	2079	PR1-14	1956	0430	3,253.18
114	SLN	012	STA. 012-ORANGE DRIVE <SALINAS>	1-12	7/1/1962	103061-Land	30610000	11500806	2083	1-12	1962		2,230.00
104	CH	013	STA. 013-12TH STREET & CHESTNUT STREET <CHIC(	9.3061.104.0013.1949.30841.01-JAN-4	1/1/1949	103061-Land	30610000	11500253	2073	9.3061.104.0013.1949.30841.01-JAN-49	1949	423	63.94
104	CH	013	STA. 013-12TH STREET & CHESTNUT STREET <CHIC(	PRI-13	1/1/1947	103061-Land	30610000	11500252	2073	PRI-13	1947	276	663.46
104	CH	014	STA. 014-SPRUCE AVENUE NEAR EIGHTH AVEN <CH	PRI-14	1/1/1947	103061-Land	30610000	11500254	2073	PRI-14	1947	290	957.47
102	BG	015	STA. 015-BEAR GULCH <BEAR GULCH>	9.3061.102.0015.1956.20199.01-JAN-5	12/1/1956	103061-Land	30610000	11500194	2071	9.3061.102.0015.1956.20199.01-JAN-58	1956	1266	11.95
119	STK	015	STA. 015-WILLOW W/O SARGENT STREET <STOCKT(	PR 1-14	1/1/1945	103061-Land	30610000	11501060	2088	PR 1-14	1945	0475	405.21
106	ELA	016	STA. 016-EAST LOS ANGELES <EAST LOS ANGELES>	9.3061.106.0016.1970.44652.01-DEC-7	12/1/1970	103061-Land	30610000	11500389	2075	9.3061.106.0016.1970.44652.01-DEC-70	1970		160.44
106	ELA	016	STA. 016-EAST LOS ANGELES <EAST LOS ANGELES>	ACQ, PR 1-35, PR 1-36	1/1/1926	103061-Land	30610000	11500386	2075	ACQ, PR 1-35, PR 1-36	1926		8.53
114	SLN	017	STA. 017-ABBOTT STREET <SALINAS>	1-17	1/1/1963	103061-Land	30610000	11500814	2083	1-17	1963	0084	5,775.19
114	SLN	017	STA. 017-ABBOTT STREET <SALINAS>	9.3061.114.0017.1966.92222.01-JAN-6	1/1/1966	103061-Land	30610000	11500815	2083	9.3061.114.0017.1966.92222.01-JAN-66	1966	0301	3,241.77
120	VIS	017	STA. 017-GIDDINGS NEAR TULARE <VISALIA>	9.3061.120.0017.1966.140588.01-JAN-	1/1/1966	103061-Land	30610000	11501204	2089	9.3061.120.0017.1966.140588.01-JAN-66	1966	1362	126.67
120	VIS	017	STA. 017-GIDDINGS NEAR TULARE <VISALIA>	PR1-16	1/1/1953	103061-Land	30610000	11501203	2089	PR1-16	1953	0738	1,933.90

KN3-008 Attachment #2_CORRECTION

major_loca	District	Station Name	long_description	description	eng_in_service	description	retirement_unit_id	asset_id	depr_group	long_description	year	work_order_number	Accum Cost
119	STK	017	STA. 017-SCRIBNER & JULIAN <STOCKTON>	PR 1-38	1/1/1947	103061-Land	30610000	11501062	2088	PR 1-38	1947	0642	51.14
120	VIS	018	STA. 018-WOODLAND S/O VASSAR <VISALIA>	-01, SIDEWALK	1/1/1974	103061-Land	30610000	11501206	2089	-01, SIDEWALK	1974	1968	142.66
120	VIS	018	STA. 018-WOODLAND S/O VASSAR <VISALIA>	PR1-20	1/1/1955	103061-Land	30610000	11501205	2089	PR1-20	1955	0850	1,641.24
119	STK	019	STA. 019-EAST WORTH E/O BEIGHLE <STOCKTON>	PR 1-28	1/1/1947	103061-Land	30610000	11501064	2088	PR 1-28	1947	0872	828.20
119	STK	020	STA. 020-ORO AVE. N/O EAST MAIN STREET <STOCK	PR 1-16	1/1/1948	103061-Land	30610000	11501065	2088	PR 1-16	1948	1031	924.12
120	VIS	021	STA. 021-WEST IRIS & LINDA VISTA <VISALIA>	PR1-23	1/1/1959	103061-Land	30610000	11501210	2089	PR1-23	1959	1014	3,954.76
101	BK	022	STA. 022-ESPEE & Q STREETS <BAKERSFIELD>	22-01	2/1/1984	103061-Land	30610000	11499957	2070	22-01	1984	5508	1,980.00
101	BK	022	STA. 022-ESPEE & Q STREETS <BAKERSFIELD>	A943, 1-17	12/1/1929	103061-Land	30610000	11499956	2070	A943, 1-17	1929		466.44
114	SLN	024	STA. 024-E/O OLD LAMESA <SALINAS>	1-22, LA MESA DR	1/1/1967	103061-Land	30610000	11500825	2083	1-22, LA MESA DR	1967	0349	7,453.07
111	LAS	024	STA. 024-GREENLEAF DRIVE E/O BEARDON <LOS AL	1-26	1/1/1958	103061-Land	30610000	11500639	2080	1-26	1958	0487	1,809.50
104	CH	025	STA. 025-COHASSET ROAD N/O EAST STREET <CHIC	50' CURB & GUTTER	1/1/1965	103061-Land	30610000	11500268	2073	50' CURB & GUTTER	1965	1618	384.25
104	CH	025	STA. 025-COHASSET ROAD N/O EAST STREET <CHIC	9.3061.104.0025.1962.30855.01-JAN-6	1/1/1962	103061-Land	30610000	11500267	2073	9.3061.104.0025.1962.30855.01-JAN-62	1962	1335	58.25
104	CH	025	STA. 025-COHASSET ROAD N/O EAST STREET <CHIC	PRI-26	1/1/1956	103061-Land	30610000	11500266	2073	PRI-26	1956	941	631.74
114	SLN	026	STA. 026-1006 UNIVERSITY @ PALMA <SALINAS>	PR1-27	1/1/1973	103061-Land	30610000	11500826	2083	PR1-27	1973	0718	8,052.03
119	STK	026	STA. 026-COMMERCE & WAYANDOTTE <STOCKTON>	PR 1-24	1/1/1950	103061-Land	30610000	11501073	2088	PR 1-24	1950	1316	3,270.88
119	STK	027	STA. 027-TELEGRAPH W/O PERSHING <STOCKTON>	PR 1-22	1/1/1950	103061-Land	30610000	11501074	2088	PR 1-22	1950	1320	3,145.79
119	STK	028	STA. 028-FREMONT & SIERRA NEVADA <STOCKTON>	9.3061.119.0028.1951.127068.01-JAN-	1/1/1951	103061-Land	30610000	11501076	2088	9.3061.119.0028.1951.127068.01-JAN-51	1951	1612	1,042.88
119	STK	028	STA. 028-FREMONT & SIERRA NEVADA <STOCKTON>	PR 1-23	1/1/1950	103061-Land	30610000	11501075	2088	PR 1-23	1950	1410	1,817.70
111	LAS	029	STA. 029-E/S WOLFE ROAD S/O STEVENS CRE <LOS	1-37	1/1/1962	103061-Land	30610000	11500648	2080	1-37	1962	1120	8,782.63
114	SLN	029	STA. 029-N. DAVIS ROAD N/END OF K-MART <SALINA	-01, SUPP	1/1/1980	103061-Land	30610000	11500831	2083	-01, SUPP	1980	1033	211.90
114	SLN	029	STA. 029-N. DAVIS ROAD N/END OF K-MART <SALINA	PR1-30, W-LAUREL DRIVE	1/1/1979	103061-Land	30610000	11500830	2083	PR1-30, W-LAUREL DRIVE	1979	1033	15.75
114	SLN	031	STA. 031-COLTON DRIVE & FLINT WAY <SALINAS>	PR1-33	1/1/1979	103061-Land	30610000	11500833	2083	PR1-33	1979	1038	16,168.93
119	STK	031	STA. 031-LAJOLLA & GRANGE <STOCKTON>	9.3061.119.0031.1952.127071.01-JAN-	1/1/1952	103061-Land	30610000	11501079	2088	9.3061.119.0031.1952.127071.01-JAN-52	1952	1790	863.22
119	STK	031	STA. 031-LAJOLLA & GRANGE <STOCKTON>	PR 1-27	1/1/1951	103061-Land	30610000	11501078	2088	PR 1-27	1951	1615	3,644.42
101	BK	033	STA. 033-33RD STREET E/O SAN DIMAS <BAKERSFIE	A2214, 1-26	1/1/1936	103061-Land	30610000	11499971	2070	A2214, 1-26	1936		397.56
101	BK	034	STA. 034-34TH STREET W/O S.P.R.R. <BAKERSFIELD>	A2322, 1-27	1/1/1937	103061-Land	30610000	11499972	2070	A2322, 1-27	1937		783.44
101	BK	034	STA. 034-34TH STREET W/O S.P.R.R. <BAKERSFIELD>	CURB GUTTER WALK	1/1/1992	103061-Land	30610000	11499973	2070	CURB GUTTER WALK	1992	6993	1,182.25
119	STK	034	STA. 034-SONORA STREET NEAR LOCUST STRE <ST	PR 1-29	1/1/1952	103061-Land	30610000	11501083	2088	PR 1-29	1952	1765	1,208.70
101	BK	035	STA. 035-BRUNDAGE LANE W/O T STREET <BAKERSI	9.3061.101.0035.1968.99.01-JAN-68	1/1/1968	103061-Land	30610000	11499975	2070	9.3061.101.0035.1968.99.01-JAN-68	1968	8106	100.00
101	BK	035	STA. 035-BRUNDAGE LANE W/O T STREET <BAKERSI	A2323, 1-28	1/1/1937	103061-Land	30610000	11499974	2070	A2323, 1-28	1937		574.80
111	LAS	035	STA. 035-LOS ALTOS SUBURBAN <LOS ALTOS SUBUI	1-40	1/1/1977	103061-Land	30610000	11500658	2080	1-40	1977	2232	15,712.26
111	LAS	035	STA. 035-LOS ALTOS SUBURBAN <LOS ALTOS SUBUI	9.3061.111.0035.1978.76090.01-JAN-7	1/1/1978	103061-Land	30610000	11500659	2080	9.3061.111.0035.1978.76090.01-JAN-78	1978	2232	293.61
111	LAS	035	STA. 035-LOS ALTOS SUBURBAN <LOS ALTOS SUBUI	-A	1/1/1979	103061-Land	30610000	11500660	2080	-A	1979	2232	648.08
114	SLN	035	STA. 035-N. OF PORTOLA DRIVE E. OF MANO <SALIN	PR1-37, SLN HILLS #3	7/1/1982	103061-Land	30610000	11500836	2083	PR1-37, SLN HILLS #3	1982		5,082.31
114	SLN	036	STA. 036-CREEKSIDE TERRACE DRIVE E/O PO <SALI	PR1-39, MERRILL TRANS	1/1/1984	103061-Land	30610000	11500837	2083	PR1-39, MERRILL TRANS	1984	1268	10,000.00
114	SLN	036	STA. 036-CREEKSIDE TERRACE DRIVE E/O PO <SALI	RE-CLOSE - NEW STORAGE SITE-LAND, S	12/1/2006	103061-Land	30610000	11500838	2083	RE-CLOSE - NEW STORAGE SITE-LAND, STA#69	2006	00012548	566.80
119	STK	037	STA. 037-CENTER STREET N/O ANDERSON <STOCKT	PR 1-31	1/1/1953	103061-Land	30610000	11501086	2088	PR 1-31	1953	1826	1,671.67
106	ELA	037	STA. 037-EAST OLYMPIC E/O FERRIS <EAST LOS ANG	9.3061.106.0037.1951.44681.01-JAN-5	1/1/1951	103061-Land	30610000	11500418	2075	9.3061.106.0037.1951.44681.01-JAN-51	1951	1165	10.40
106	ELA	037	STA. 037-EAST OLYMPIC E/O FERRIS <EAST LOS ANG	PR 1-11	1/1/1945	103061-Land	30610000	11500417	2075	PR 1-11	1945	0350	1,130.16
101	BK	037	STA. 037-GOODMAN & INYO <BAKERSFIELD>	9.3061.101.0037.1952.102.01-JAN-52	1/1/1952	103061-Land	30610000	11499978	2070	9.3061.101.0037.1952.102.01-JAN-52	1952	2333	175.22
101	BK	037	STA. 037-GOODMAN & INYO <BAKERSFIELD>	A2408, 1-30	1/1/1937	103061-Land	30610000	11499977	2070	A2408, 1-30	1937		401.80
101	BK	039	STA. 039-14TH STREET E/O S STREET <BAKERSFIELI	9.3061.101.0039.1968.107.01-OCT-68	10/1/1968	103061-Land	30610000	11499981	2070	9.3061.101.0039.1968.107.01-OCT-68	1968		91.90
101	BK	039	STA. 039-14TH STREET E/O S STREET <BAKERSFIELI	A2509, 1-32	1/1/1937	103061-Land	30610000	11499980	2070	A2509, 1-32	1937		517.21
119	STK	039	STA. 039-SONORA & LAUREL AVE. <STOCKTON>	1-34	7/1/1959	103061-Land	30610000	11501088	2088	1-34	1959		1,314.64
119	STK	040	STA. 040-LAFAYETTE E/O LOCUST <STOCKTON>	PR 1-35	1/1/1953	103061-Land	30610000	11501089	2088	PR 1-35	1953	1912	1,350.03
101	BK	041	STA. 041-CALIFORNIA BET. Q & R <BAKERSFIELD>	9.3061.101.0041.1952.111.01-JAN-52	1/1/1952	103061-Land	30610000	11499985	2070	9.3061.101.0041.1952.111.01-JAN-52	1952	2638	261.12
101	BK	041	STA. 041-CALIFORNIA BET. Q & R <BAKERSFIELD>	9.3061.101.0041.1977.112.01-JAN-77	1/1/1977	103061-Land	30610000	11499986	2070	9.3061.101.0041.1977.112.01-JAN-77	1977	9411	81.00
101	BK	041	STA. 041-CALIFORNIA BET. Q & R <BAKERSFIELD>	A2509, 1-34	1/1/1937	103061-Land	30610000	11499984	2070	A2509, 1-34	1937		1,023.80
119	STK	043	STA. 043-B STREET N/O 6TH <STOCKTON>	PR 1-47	1/1/1954	103061-Land	30610000	11501092	2088	PR 1-47	1954	2200	1,285.69
120	VIS	043	STA. 043-BOLLINGER ROAD S/O MONTE VISTA <VISA	PR1-49	10/1/1974	103061-Land	30610000	11501241	2089	PR1-49	1974		1,208.16
120	VIS	044	STA. 044-220' E/O MOONEY, 440' N/O AVE. <VISALIA>	PR1-48	10/1/1974	103061-Land	30610000	11501242	2089	PR1-48	1974		446.86
120	VIS	044	STA. 044-220' E/O MOONEY, 440' N/O AVE. <VISALIA>	PR1-53	1/1/1976	103061-Land	30610000	11501243	2089	PR1-53	1976	1965	5,361.51
119	STK	044	STA. 044-9TH STREET & D STREET <STOCKTON>	9.3061.119.0044.1978.127087.01-JAN-	1/1/1978	103061-Land	30610000	11501095	2088	9.3061.119.0044.1978.127087.01-JAN-78	1978	8770	405.00
119	STK	044	STA. 044-9TH STREET & D STREET <STOCKTON>	PR 1-48	1/1/1955	103061-Land	30610000	11501093	2088	PR 1-48	1955	2289	1,272.28
119	STK	044	STA. 044-9TH STREET & D STREET <STOCKTON>	PR 1-80	1/1/1971	103061-Land	30610000	11501094	2088	PR 1-80	1971	4758	2,444.45
101	BK	044	STA. 044-DRURY STREET & ORANGE DRIVE <BAKER	A2701, 1-86	1/1/1939	103061-Land	30610000	11499990	2070	A2701, 1-86	1939		672.13
119	STK	046	STA. 046-4TH E/O B STREET <STOCKTON>	PR 1-50	1/1/1955	103061-Land	30610000	11501097	2088	PR 1-50	1955	2366	1,311.41
119	STK	047	STA. 047-BIANCHI ROAD & BROOKSIDE <STOCKTON>	PR 1-51	1/1/1956	103061-Land	30610000	11501098	2088	PR 1-51	1956	2435	3,657.39
119	STK	049	STA. 049-BROOKSIDE NEAR PERSHING <STOCKTON>	PR 1-53	1/1/1957	103061-Land	30610000	11501100	2088	PR 1-53	1957	2499	2,767.95
119	STK	050	STA. 050-JACKSON BET. PILGRIM & OPHIR S <STOCK	PR 1-54	1/1/1958	103061-Land	30610000	11501101	2088	PR 1-54	1958	2614	1,183.33
106	ELA	051	STA. 051-ATLANTIC - AMALIA ALLEY BET. 6 <EAST LO	PR 1-18	1/1/1951	103061-Land	30610000	11500437	2075	PR 1-18	1951	1133	3,268.42
119	STK	051	STA. 051-NIGHTINGALE @ 7TH, NIGHTINGALE <STOC	1-55	1/1/1958	103061-Land	30610000	11501102	2088	1-55	1958	2710	2,521.49
106	ELA	052	STA. 052-SUNOL & OLYMPIC <EAST LOS ANGELES>	9.3061.106.0052.1954.44706.01-DEC-5	12/1/1954	103061-Land	30610000	11500439	2075	9.3061.106.0052.1954.44706.01-DEC-54	1954	1792	195.70
106	ELA	052	STA. 052-SUNOL & OLYMPIC <EAST LOS ANGELES>	PR 1-54	12/1/1954	103061-Land	30610000	11500438	2075	PR 1-54	1954		2,279.07
106	ELA	053	STA. 053-AUGUSTA & SANTA ANA FREEWAY <EAST L	PR 1-55	12/1/1954	103061-Land	30610000	11500440	2075	PR 1-55	1954		2,186.91
106	ELA	053	STA. 053-AUGUSTA & SANTA ANA FREEWAY <EAST L	PR 1-60 -01	1/1/1970	103061-Land	30610000	11500441	2075	PR 1-60 -01	1970	3534	7,638.72
120	VIS	054	STA. 054-PARKWOOD NEAR WOODLAND <VISALIA>	PR1-67 (SUNSET VISTA W	12/1/1985	103061-Land	30610000	11501256	2089	PR1-67 (SUNSET VISTA WATER ACQUISITION	1985	2965	856.00
120	VIS	054	STA. 054-PARKWOOD NEAR WOODLAND <VISALIA>	SURVEY (STA#54) / (REF: 12/85 JE6	6/1/1986	103061-Land	30610000	11501257	2089	SURVEY (STA#54) / (REF: 12/85 JE65 FORACQ.- SUN	1986	2965	2,462.76
104	CH	055	STA. 055-WEST END OF WILLOWBROOK WAY <CHIC	PR1-56	1/1/1978	103061-Land	30610000	11500311	2073	PR1-56	1978	2400	14,541.00
114	SLN	056	STA. 056-1220 SAN FERNANDO DR. <SALINAS>	Aquire land	12/31/2003	103061-Land	30610000	11500851	2083	Aquire land	2003	00000689	74,936.86
119	STK	056	STA. 056-CRESENDA AVE. & GLENDORA <STOCKTON	1-60	9/1/1959	103061-Land	30610000	11501107	2088	1-60	1959		90.00
106	ELA	056	STA. 056-WASHINGTON BLVD. W/O GARFIELD <EAST	9.3061.106.0056.1957.44714.01-JAN-5	1/1/1957	103061-Land	30610000	11500446	2075	9.3061.106.0056.1957.44714.01-JAN-57	1957	2028	452.35
106	ELA	056	STA. 056-WASHINGTON BLVD. W/O GARFIELD <EAST	PR 1-19	1/1/1952	103061-Land	30610000	11500445	2075	PR 1-19	1952	1332	1,708.01

KN3-008 Attachment #2_CORRECTION

major_loca	District	Station Name	long_description	description	eng_in_service	description	retirement_unit_id	asset_id	depr_group	long_description	year	work_order_number	Accum Cost
119	STK	057	STA. 057-HEMET DRIVE OPPOSITE LAMESA <STOCK	1-61	9/1/1959	103061-Land	30610000	11501108	2088	1-61	1959		2,860.80
104	CH	058	STA. 058-MORSEMAN AVE. & SANDI DRIVE <CHICO>	PR1-59 MORSEMAN AVE WELLSITE	1/1/1980	103061-Land	30610000	11500313	2073	PR1-59 MORSEMAN AVE WELLSITE	1980	2543	17,725.05
104	CH	060	STA. 060-MULBERRY N/O EAST 22ND STREET <CHIC	PR1-63 MULBERRY WATER WORKS	12/1/1981	103061-Land	30610000	11500314	2073	PR1-63 MULBERRY WATER WORKS	1981		2,101.02
120	VIS	063	STA. 063-12739 AVENUE 320 <VISALIA>	PR1-77 MITTS SYSTEM	6/1/1991	103061-Land	30610000	11501263	2089	PR1-77 MITTS SYSTEM	1991		21,675.00
120	VIS	063	STA. 063-12739 AVENUE 320 <VISALIA>	SURVEY	11/1/1992	103061-Land	30610000	11501264	2089	SURVEY	1992		1,902.00
101	BK	064	STA. 064-21ST STREET BET. Q & R <BAKERSFIELD>	1-55	1/1/1945	103061-Land	30610000	11500010	2070	1-55	1945	0709	2,112.87
120	VIS	065	STA. 065-AVE. 308 E/O ROBINSON DRIVE <VISALIA>	ACQ, PR1-26, 11-91 GOSHEN	1/1/1960	103061-Land	30610000	11501265	2089	ACQ, PR1-26, 11-91 GOSHEN	1960		1,600.00
101	BK	066	STA. 066-BERNITA & TERRACE WAY <BAKERSFIELD>	1-57	1/1/1946	103061-Land	30610000	11500012	2070	1-57	1946	0946	678.44
120	VIS	067	STA. 067-CAMP DRIVE & AVE. 305 <VISALIA>	ACQ, PR1-56 1-59, 11-91 GOSHEN	1/1/1978	103061-Land	30610000	11501267	2089	ACQ, PR1-56 1-59, 11-91 GOSHEN	1978		8,200.00
119	STK	067	STA. 067-FARMINGTON ROAD E/O OLIVE AVE. <STOC	PR 1-72	1/1/1967	103061-Land	30610000	11501122	2088	PR 1-72	1967	4069	4,475.49
104	CH	068	STA. 068-CHICO <CHICO>	(PR1-73) AQUIRE WELLSITE STA#68	12/1/1997	103061-Land	30610000	11500322	2073	(PR1-73) AQUIRE WELLSITE STA#68-01	1997	4199	80,102.70
120	VIS	068	STA. 068-EFFIE DRIVE & ROY DRIVE <VISALIA>	ACQ, PR1-62 1-65, 11-91 GOSHEN	1/1/1984	103061-Land	30610000	11501268	2089	ACQ, PR1-62 1-65, 11-91 GOSHEN	1984		13,000.00
119	STK	072	STA. 072-STOCKTON <STOCKTON>	1-78	1/1/1970	103061-Land	30610000	11501128	2088	1-78	1970	4395	395.31
119	STK	072	STA. 072-STOCKTON <STOCKTON>	1-78	6/1/1977	103061-Land	30610000	11501129	2088	1-78	1977		1,170.51
119	STK	072	STA. 072-STOCKTON <STOCKTON>	93-CURB & GUTTER	1/1/1987	103061-Land	30610000	11501130	2088	93-CURB & GUTTER	1987	9680	2,357.55
120	VIS	073	STA. 073-N/W CORNER DOE AVE. & SHIRK RO <VISAL	PR1-85, 10-93	10/1/1993	103061-Land	30610000	11501272	2089	PR1-85, 10-93	1993		1,211.25
120	VIS	074	STA. 074-N/W CORNER OF DOE AVE. & CLANC <VISA	PR1-86	10/1/1993	103061-Land	30610000	11501273	2089	PR1-86	1993		1,450.00
101	BK	075	STA. 075-BELLE TERRACE E/O UNION AVENUE <BAKI	1-63	1/1/1948	103061-Land	30610000	11500020	2070	1-63	1948	1573	1,528.84
120	VIS	075	STA. 075-N/E AVE. 304 & KELSEY STREET - <VISALIA>	PR1-87	10/1/1993	103061-Land	30610000	11501274	2089	PR1-87	1993		1,300.00
120	VIS	076	STA. 076-N/E AVE. 304 & ROAD 76 <VISALIA>	PR1-88	10/1/1993	103061-Land	30610000	11501275	2089	PR1-88	1993		1,600.00
101	BK	078	STA. 078-LAKE & SACRAMENTO STREETS <BAKERSF	1-66	1/1/1948	103061-Land	30610000	11500023	2070	1-66	1948	1587	2,122.78
119	STK	078	STA. 078-STEWART STREET @ SANGUINETTI <STOC	PR 1-85, -01	1/1/1974	103061-Land	30610000	11501138	2088	PR 1-85, -01	1974	8151	21,217.75
119	STK	081	STA. 081-STOCKTON <STOCKTON>	(STA#81 / TANK 2)	1/1/1949	103061-Land	30610000	11501142	2088	(STA#81 / TANK 2)	1949	1233	259.22
119	STK	081	STA. 081-STOCKTON <STOCKTON>	A2959, PR 1-53 (STA#81 / TANK	1/1/1940	103061-Land	30610000	11501141	2088	A2959, PR 1-53 (STA#81 / TANK 2)	1940		1,162.25
101	BK	083	STA. 083-CLYDE N/O WILKINS <BAKERSFIELD>	1-69	1/1/1948	103061-Land	30610000	11500028	2070	1-69	1948	1598	1,263.26
101	BK	086	STA. 086-CASTRO LANE & BELLE TERRACE <BAKERS	1-72	1/1/1950	103061-Land	30610000	11500031	2070	1-72	1950	1913	1,542.04
101	BK	087	STA. 087-RIVER BLVD. AT SKYLINE TANK <BAKERSFI	A2699, 1-91 SKYLINE TANKS	1/1/1939	103061-Land	30610000	11500032	2070	A2699, 1-91 SKYLINE TANKS	1939		6,385.87
120	VIS	092	STA. 092-4140 EAST FOUR CREEKS COURT <VISALIA	PURCHASE PROPERTY 4 NEW WELL PR#107	11/30/2004	103061-Land	30610000	11501282	2089	PURCHASE PROPERTY 4 NEW WELL PR#107	2004	00006132	43,353.90
101	BK	092	STA. 092-DRACENA W/O H STREET <BAKERSFIELD>	1-76	1/1/1951	103061-Land	30610000	11500037	2070	1-76	1951	2471	2,985.25
101	BK	094	STA. 094-JEFFERY STREET & RIVER BLVD. <BAKERS	1-78	1/1/1952	103061-Land	30610000	11500039	2070	1-78	1952	2666	2,188.72
101	BK	095	STA. 095-CASA LOMA DRIVE W/O P STREET <BAKER	1-79	1/1/1953	103061-Land	30610000	11500040	2070	1-79	1953	2728	2,287.80
101	BK	098	STA. 098-TRUXTON AVENUE W/O KERN <BAKERSFIE	1-81	1/1/1953	103061-Land	30610000	11500043	2070	1-81	1953	2775	2,428.97
101	BK	099	STA. 099-NINTH STREET W/O TULARE <BAKERSFIELD	1-82	1/1/1953	103061-Land	30610000	11500044	2070	1-82	1953	2821	2,056.95
114	SLN	105	STA. 105-SAN JUAN GRADE & VAN BUREN STR <SALI	ACQ 88, PR 1-46, BOLSA KNOLLS	1/1/1988	103061-Land	30610000	11500862	2083	ACQ 88, PR 1-46, BOLSA KNOLLS	1988		4,000.33
101	BK	106	STA. 106-STOCKDALE HWY. W/O MCDONALD WA <BA	1-100	1/1/1955	103061-Land	30610000	11500051	2070	1-100	1955	3140	1,444.95
101	BK	107	STA. 107-HALEY STREET & NOBLE AVENUE <BAKERS	1-102	1/1/1955	103061-Land	30610000	11500052	2070	1-102	1955	3129	2,475.50
101	BK	108	STA. 108-JEFFERY & BURGER STREETS <BAKERSFIE	1-104	1/1/1955	103061-Land	30610000	11500053	2070	1-104	1955	3181	1,703.71
101	BK	111	STA. 111-CUNHA STREET E/O HALEY STREET <BAKE	1-106	1/1/1955	103061-Land	30610000	11500056	2070	1-106	1955	3230	2,596.42
101	BK	112	STA. 112-HUGHES LANE & WILSON ROAD <BAKERSF	1-114 COLLEGE HEIGHTS TANKS	1/1/1957	103061-Land	30610000	11500057	2070	1-114 COLLEGE HEIGHTS TANKS	1957	3521	3,066.78
101	BK	113	STA. 113-CASTRO LANE S/O MING ROAD <BAKERSFI	1-109	1/1/1956	103061-Land	30610000	11500058	2070	1-109	1956	3323	1,875.21
101	BK	114	STA. 114-HENDRICKS LANE W/O H STREET <BAKERS	1-110	1/1/1955	103061-Land	30610000	11500059	2070	1-110	1955	3224	1,529.19
101	BK	115	STA. 115-NELSON STREET & CRAWFORD STREE <BA	1-111	1/1/1956	103061-Land	30610000	11500060	2070	1-111	1956	3370	5,325.04
101	BK	117	STA. 117-IRENE STREET & TULARE STREET <BAKER	1-112	1/1/1956	103061-Land	30610000	11500063	2070	1-112	1956	3402	3,029.24
101	BK	118	STA. 118-ILEY BET. JEWETT & PANAMA <BAKERSFIEL	1-113	1/1/1956	103061-Land	30610000	11500064	2070	1-113	1956	3415	1,828.95
101	BK	119	STA. 119-CHESTER AVENUE & TERRACE WAY <BAKE	1-94	7/1/1959	103061-Land	30610000	11500065	2070	1-94	1959		2,898.91
101	BK	120	STA. 120-CHESTNUT STREET N/O 24TH STREE <BAKI	1-118	2/1/1958	103061-Land	30610000	11500066	2070	1-118	1958	3590	4,771.60
101	BK	127	STA. 127-L STREET BET. 34TH & 36TH <BAKERSFIELD	1-122	1/1/1959	103061-Land	30610000	11500073	2070	1-122	1959	3872	4,145.32
101	BK	136	STA. 136-3716 WILSON <BAKERSFIELD>	1-131	12/1/1960	103061-Land	30610000	11500082	2070	1-131	1960	4179	3,222.17
101	BK	136	STA. 136-3716 WILSON <BAKERSFIELD>	SUPP	9/1/1961	103061-Land	30610000	11500083	2070	SUPP	1961	4179	13.02
101	BK	137	STA. 137-N.W. AGATE & PLANZ ROAD <BAKERSFIELD	I-133	1/1/1962	103061-Land	30610000	11500084	2070	I-133	1962	4358	2,039.84
101	BK	138	STA. 138-N.E. CORNER UNION AVE. & S.P.R <BAKERS	1-134	1/1/1962	103061-Land	30610000	11500085	2070	1-134	1962	4364	16,807.37
101	BK	139	STA. 139-1204 KELLY <BAKERSFIELD>	1-135	12/1/1962	103061-Land	30610000	11500086	2070	1-135	1962	4406	6,077.91
101	BK	153	STA. 153-DOBRUSKY DRIVE W/O N STREET <BAKERS	PR1-156	7/1/1972	103061-Land	30610000	11500099	2070	PR1-156	1972		1,676.26
101	BK	159	STA. 159-TEXAS AND BLISS <BAKERSFIELD>	PR1-169	2/1/1974	103061-Land	30610000	11500104	2070	PR1-169	1974	8659	3,417.90
101	BK	160	STA. 160-SHELLMACHER AND PLANZ <BAKERSFIELD	PR1-165	12/1/1972	103061-Land	30610000	11500105	2070	PR1-165	1972		1,485.82
101	BK	161	STA. 161-SE CORNER OLIVER & PLANZ <BAKERSFIEL	PR166	12/1/1972	103061-Land	30610000	11500106	2070	PR166	1972		5,209.40
101	BK	163	STA. 163-REXLAND <BAKERSFIELD>	5-11-67 1-183	10/1/1977	103061-Land	30610000	11500108	2070	5-11-67 1-183	1977		1,364.64
101	BK	167	STA. 167-PACHECO <BAKERSFIELD>	1-177	10/1/1977	103061-Land	30610000	11500111	2070	1-177	1977		2,522.21
101	BK	169	STA. 169-CRANBROOK <BAKERSFIELD>	1-179	10/1/1977	103061-Land	30610000	11500113	2070	1-179	1977		4,752.94
101	BK	172	STA. 172-6231 NORRIS (WEST) <BAKERSFIELD>	1-187 3-6-53	10/1/1977	103061-Land	30610000	11500116	2070	1-187 3-6-53	1977		81.52
101	BK	173	STA. 173-5529 NORRIS (EAST) <BAKERSFIELD>	1-184 1-185	10/1/1947	103061-Land	30610000	11500117	2070	1-184 1-185	1947		1,282.19
101	BK	175	STA. 175-OLIVE DRIVE W/O KEITH STREET <BAKERSI	1-181	1/1/1977	103061-Land	30610000	11500119	2070	1-181	1977	9120	13,083.87
101	BK	179	STA. 179-6017 CARTER AVE. <BAKERSFIELD>	PR 1-192 TOWN & COUNTRY ESTATES MUT	2/1/1979	103061-Land	30610000	11500123	2070	PR 1-192 TOWN & COUNTRY ESTATES MUTUAL WTE	1979		1,600.00
101	BK	187	STA. 187-WATTS DRIVE E. OF UNION AVE. <BAKERSF	PR 1-206 WATTS DR.	11/1/1982	103061-Land	30610000	11500133	2070	PR 1-206 WATTS DR.	1982	5135	1,089.15
101	BK	193	STA. 193-FAIRVIEW RD., 990' W/O UNION A <BAKERSI	PR #1-213	12/1/1988	103061-Land	30610000	11500143	2070	PR #1-213	1988	6262	61,650.46
101	BK	200	STA. 200-PUMPKIN CENTER - N/O HOLLADAY <BAKEF	9.3061.101.0200.1989.368.01-NOV-89	11/1/1989	103061-Land	30610000	11500151	2070	9.3061.101.0200.1989.368.01-NOV-89	1989		1,000.00
101	BK	204	STA. 204-8908 QUAIL BROOK COURT <BAKERSFIELD>	ACQUIRE PROPERTY-FOR WELL SITE (ST	10/1/1998	103061-Land	30610000	11500153	2070	ACQUIRE PROPERTY-FOR WELL SITE (STA#204/ TR/	1998	7779	59,978.19
114	SLN	301	STA. 301-HALL COUNTY ROAD W/O WILLOW RO <SAI	ACQ 88, WELL STATION 301-01, LAS LO	1/1/1991	103061-Land	30610000	11500871	2083	ACQ 88, WELL STATION 301-01, LAS LOMAS R1-56	1991		299.64