


DATE: February 2, 2021

TO: Commissioner, Sophie Maxwell, President
Commissioner, Anson Moran, Vice President
Commissioner, Tim Paulson
Commissioner, Ed Harrington

FROM: Michael Carlin, Acting General Manager 

RE: Water Enterprise Capital Improvement Program
2nd Quarter / Fiscal Year 2020-2021

Enclosed is the Water Enterprise Capital Improvement Program Quarterly Report for the period ending on December 31, 2020. This quarterly report provides a summary update on both Regional and Local Capital projects.

The information in the report allows appropriate review of the scope, schedule, and budget of projects to ensure level of service (LOS) goals and objectives are met. Scope and schedule information show which projects are active, potentially newsworthy, or otherwise noticeable to the public due to improved service or impacts from construction. Quarterly updates allow for timely and proactive review of projects.

We would like to note that reported costs associated with Public Works Department (PW) support are not fully reconciled to PeopleSoft. Due to the PeopleSoft process PW utilizes for tracking their charges, costs are reported at a level that does not relate to a single SFPUC project. SFPUC staff have held numerous meetings with the Controller and the Public Works Accounting team in an effort to reach agreement on revised cost tracking procedures. As current projects utilizing the system put in place at PeopleSoft conversion are completed and being closed, SFPUC staff work closely with PW Accounting and the respective PW Manager to reconcile actual costs to work completed at the SFPUC project level of detail. This is a lengthy and complex process, but staff are making progress toward completion of the reconciliation.

London N. Breed
Mayor

Sophie Maxwell
President

Anson Moran
Vice President

Tim Paulson
Commissioner

Ed Harrington
Commissioner

Michael Carlin
Acting
General Manager



To ensure accurate and efficient cost reporting on future projects, SFPUC is currently drafting a Memorandum of Understanding (MOU) between SFPUC and PW. The MOU will outline estimating, tracking, and reporting processes for SFPUC capital projects where PW is providing design and/or construction management support; it will allow programmatic updates of PW costs into the SFPUC project controls system and monthly reconciliation of reported actual costs against the PeopleSoft financial system.

As mentioned last quarter, on March 16, 2020, the Department of Public Health issued a shelter-in-place order, Order No. C19-07, effective March 17, 2020. In compliance with this order, nearly 1,200 SFPUC employees have been working remotely. Employees who have been deemed essential to continue operations by reporting to SFPUC facilities are doing so to deliver water, power and sewer services to the communities we serve.

Following the shelter-in-place order, on March 18, 2020, SFPUC issued a memo to the construction contractors stating that public works construction projects are considered an “essential activity” and work is expected to continue, but contractors are required to stop work temporarily and submit a revised Site-Specific Health and Safety Plan to address COVID-19 safety and protective work practices for SFPUC review by close of business on March 20, 2020.

On March 20, 2020, a letter was issued to contractors from the City Administrator. The letter noted that The City was prepared to partner with contractors to take steps to make projects as safe as possible for employees to help keep projects moving forward and determine if Social Distancing Requirements can be met.

On March 31, 2020, the Health Officer issued Health Order No. C19-07b, replacing the earlier March 16, 2020 order. The order requires the City Administrator, in consultation with the Health Officer, to specifically designate certain public works projects as an Essential Government Function if they are to continue during this shelter-in-place order.

Additionally, contractors were provided with the Construction Safety Guidelines, dated April 1, 2020, developed by City representatives and the San Francisco Building and Construction Trades Council, with input from construction industry contractors’ associations. This document provides industry guidelines for safe practices at construction work sites. Accordingly, Contractors were required to prepare and submit updated Site-Specific Health and Safety Plan to address COVID-19 issues at each site.

Furthermore, on April 15, 2020, the City Administrator’s Office issued Procedures for Implementation and Enforcement of COVID-19 Field Safety Guidelines for Public Works Projects.

And, on April 29, 2020, the Health Officer issued Health Order No. C19-07c, extending the shelter-in-place through the end of May. This new order went into effect on May 4, 2020 and all construction was allowed to resume as long as specific safety measures are in place. The Health Order C19-07c also provides Safety protocols for both small and large construction projects. Lastly, on May 5, 2020, the Health Officer issued a directive requiring that each contractor for a City public works project to comply with all aspects of these safety protocols.

During the months following, staff coordinated with the Enterprises to implement worksite health screenings and communication plans. The SFPUC's construction management teams developed procedures and practices to fulfill the City's role as mandated by the "Public Works Project Safety Protocol for COVID-19" through inspection of worksites to assure worker compliance with the contractors' approved Health and Safety Plans.

Due to anticipated financial impacts from the pandemic, staff worked on revising the 10-year Capital Improvement Program (CIP) budget to ensure we can continue essential services to the public and maintain our financial sustainability. On July 14, 2020, a Revised CIP plan was submitted and approved by the Commission.

The highlights for this reporting period are as follows:

1. Regional Water Enterprise CIP:

- In general, there were minor schedule impacts to projects in planning, design and construction due to the need for consultants and contractors to submit revised site-specific Health and Safety Plans to address COVID-19 requirements.
- Technical memoranda were issued for ozone dosing strategy, solar panel and corrosion protection work, and geotechnical interpretive surveys for the Sunol Valley Water Treatment Plant Ozone project. Planning work continued on the treatability testing, plant design flow and hydraulics, electrical power demand, site surveying, and ozone contactor basin configuration.
- Construction on the San Andreas Pipeline No. 2 Lockbar Replacement project, located in San Bruno, was completed this quarter, and the pipeline was returned to Water Supply and Treatment Division (WSTD) for operation. During filling and disinfection procedures, WSTD discovered and repaired a leak on a segment of pipeline that was not part of the project. The pipeline is anticipated to be placed back into service the first quarter of 2021.
- Corrosion assessments were performed for the Crystal Springs Pipeline No. 2 Reaches 2, 3 and 5. For the project to rehabilitate Reach 5, located in San Bruno and South San Francisco, the Alternatives Analysis continued and will be completed in Q3.
- Planning work for Pilarcitos Dam continued, including the initiation of a spillway condition assessment and a dam embankment stability evaluation.
- The first administrative draft of the Response to Public Comments on the Draft Environmental Impact Report (EIR) for the Southern Skyline Blvd. Ridge Trail Extension was submitted to the San Francisco Planning Department on November 9.
- Architectural concrete walls were constructed this quarter for the Sunol Long Term Improvements (SLTI) Contract B - Alameda Creek Watershed Center. For Contract A, Sunol Yard, the contract closeout was approved by the SFPUC.
- A draft programming document was issued for the Millbrae Yard Lab and Shops, and the stakeholders attended workshops to clarify needs and objectives for the new facilities.

- This will be the last quarter that the Potable Reuse and Other Supplies project will be reported. Progress will be reported in the Alternative Water Supply Quarterly Report through the SFPUC Water Resources Division.

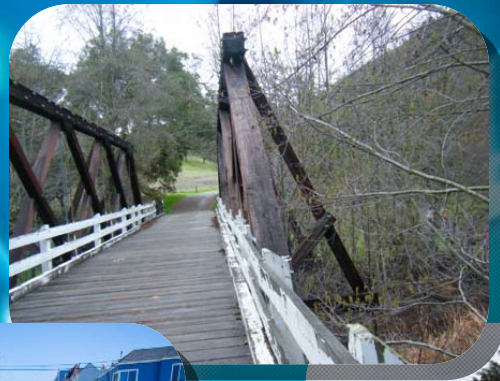
2. Local/In-City Water Enterprise Capital Improvement Program:

- The forecast mileage of San Francisco water distribution pipelines to be replaced in FY21 is 11.5 miles. A total of twelve water main replacement projects have construction underway within San Francisco city limits during the second quarter of FY21. During this quarter, all water work was installed on Geary between Presidio and Van Ness, and Green Street reached substantial completion. Projects planned to start construction during the third quarter of FY21 include work on Casitas Avenue.
- Daly City completed 100% design documents for the Vista Grande Drainage Basin Improvement Project, partially funded by the SFPUC's Lake Merced Water Level Restoration Project.
- Construction for the Recycled Water Treatment Facility at Oceanside Water Pollution Control Plant continued. Significant progress was made in the installation of treatment process equipment; mechanical, electrical, and plumbing; chemical tanks and piping; and fiberglass grating. Construction for the Distribution Pump Station and Reservoir in Golden Gate Park were focused on the forming and pouring of reservoir roof slab and beams and the pump station structure.
- Completion of the remaining and change order work, punchlist items and closeout documents continued for Phase 2 of the San Francisco Groundwater Supply project.

Enclosure



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission



QUARTERLY REPORT

Water Enterprise Capital Improvement Program
Q2 FY 2020 | 2021
October 2020 — December 2020

Quarterly Report

Water Enterprise Capital Improvement Program

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II. LOCAL CAPITAL IMPROVEMENT PROGRAM

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I. Regional Capital Improvement Program



1. CAPITAL IMPROVEMENT PROGRAM DESCRIPTION

The San Francisco Public Utilities Commission (SFPUC) Water Enterprise manages a complex water supply system stretching from the Sierra Nevada to San Francisco featuring a series of reservoirs, tunnels, pipelines, and treatment systems. Two unique features of this system stand out: the drinking water provided is among the highest quality in the world, and water deliveries are made to most customers without the use of power (gravity flow) while generating power at the same time.

The SFPUC is the third largest municipal utility in California, serving 2.7 million residential, commercial, and industrial customers in the Bay Area. Approximately one-third of the delivered water goes to retail customers in San Francisco, while wholesale deliveries to 26 suburban agencies in Alameda, Santa Clara, and San Mateo counties comprise the other two-thirds.

The Regional Water System consists of water treatment facilities; water transmission infrastructure; and watersheds and Rights-of-Way (ROW) lands in San Mateo, Santa Clara, and Alameda Counties as well as western San Joaquin County. The Regional Water System also includes numerous assets in San Francisco that are operated in conjunction with the regional system. The Regional Water System Capital Improvement Program (Regional Water CIP) is a 10-year plan of projects and activities to physically improve the system, updated each year and integrated with the SFPUC's Financial Plan and rate-setting.

Annual updates to the Regional CIP also account for post-Water System Improvement Program (post-WSIP) conditions and include deferred projects not included in WSIP and new projects which are needed to continue meeting level of service goals.

The capital planning process is used to inform the CIP with updates to master plans, asset

condition assessment, and review of levels of service.

There are five programs in the CIP in addition to a separate set of programmatic projects used for feasibility planning, for future capital projects, and for implementation of permit compliance activities. The programs are:

- Water Treatment Program
- Water Transmission Program
- Water Supply & Storage Program
- Watershed & Lands Management Program
- Buildings and Grounds Program

A project is formally initiated (**Project Initiation**) when the planning process begins, a project manager is assigned, and the project's initial **Approved Budget** consistent with the most recently adopted Regional Water CIP is established.

A project moves from the planning, design, and environmental review stage to implementation when **Project Approval** occurs through an action by the Commission, usually at the same time CEQA findings are adopted. The Commission may also make decisions about a project's scope, budget, schedule, or necessity during annual review and approval of the CIP.

While a project is active, additional budget modifications outside of the annual CIP process require approval of the Assistant General Manager for the Water Enterprise. When and if these budget modifications occur, the modified budget becomes the new **Current Approved Budget**.

Outside of formal budget adjustments, the project manager regularly estimates and records the anticipated final project cost as the **Forecasted Cost**.

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Modifications to scope or schedule must be approved by the Assistant General Manager for Water Enterprise with input from the project's **Technical Oversight Committee** which generally consists of managers within the Water Enterprise and Infrastructure Division. Final **Project Closeout** must be approved by the Assistant General Manager for Water Enterprise.

2. CAPITAL IMPROVEMENT PROGRAM STATUS

This Quarterly Report presents the progress made on Regional Water projects between October 1, 2020 and December 31, 2020. This document serves as the second (2nd) Quarterly Report in Fiscal Year 2020-2021 (FY21) published for the Water Enterprise Capital Improvement Program.

On December 11, 2018, SFPUC approved the Water Enterprise 2018 Proposed Baseline budget of \$631.0 million for Regional projects and \$1,602.1 million for Local projects (2018 Approved Baseline). The 2018 Approved Baseline is a subset of the Regional and Local Water Enterprise 10-year CIP for FY2019-2028 and includes individual projects over \$5 million that were then currently active or intended to be active by June 30, 2020 at the time proposed to the Commission on December 11, 2018. The status of projects included in the 2018 Approved Baseline are discussed in this quarterly report.

Figure 2.1 shows the total Current Approved Budget for the 17 Regional projects in each phase of the program as of December 31, 2020. The number of projects currently active in each phase is shown in parentheses.

Figure 2.2 shows the number of Regional projects in the following stages as of December 31, 2020: Pre-construction, Construction, and Post-construction.

Figure 2.3 summarizes the environmental review status of the 17 Regional projects as of December 31, 2020.

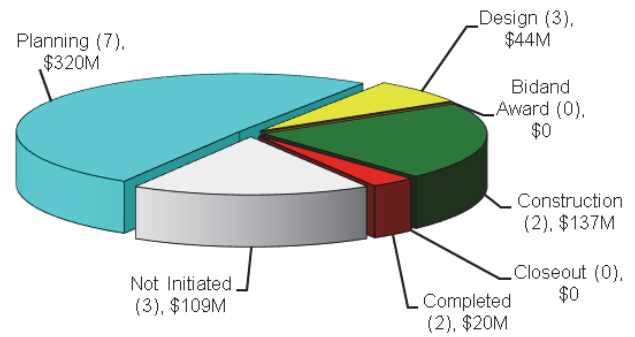


Figure 2.1 Total Current Approved Budget for Regional Projects Active in Each Phase

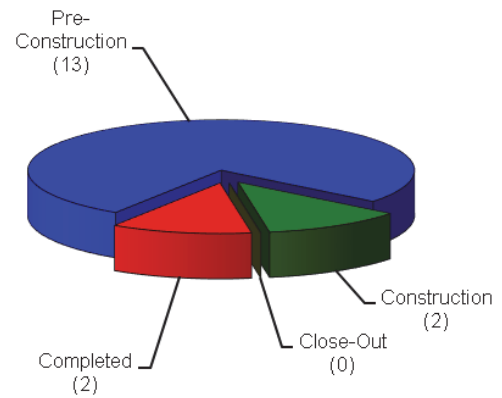


Figure 2.2 Number of Regional Projects in Pre-construction, Construction, and Post-construction

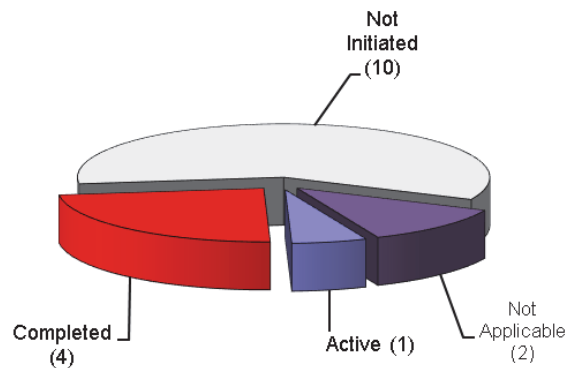


Figure 2.3 Regional Program Environmental Review

3. CAPITAL IMPROVEMENT PROGRAM COST SUMMARY

Table 3.1 provides an overall cost summary of the Regional Water CIP. It shows the Expenditures to Date; 2018 Approved Budget, Current Approved Budget and Current Forecasted Cost; and the Cost Variance between

the Current Approved Budget and Forecasted Cost.

The total Current Approved Budget is \$631.0 million, and the Current Forecasted Cost at completion is \$952.2 million (\$321.2 million over the Current Approved Budget).

Table 3.1 Regional Water CIP Cost Summary

Cost Categories	Expenditures To Date (\$ Million) (A)	2018 Approved Budget (\$ Million) (C)	Current Approved Budget (\$ Million) (D)	Current Forecasted Costs (\$ Million) (E)	Cost Variance (\$ Million) (F = D - E)
Regional Water CIP	\$143.29	\$630.99	\$630.99	\$952.15	(\$321.16)
Water Treatment	\$9.73	\$123.60	\$123.60	\$173.16	(\$49.56)
Construction Costs ⁽¹⁾	\$6.56	\$91.56	\$91.56	\$125.63	(\$34.07)
Delivery Costs ⁽²⁾	\$3.17	\$32.04	\$32.04	\$45.81	(\$13.77)
Other Costs ⁽³⁾	-	-	-	\$1.72	(\$1.72)
Water Transmission	\$53.40	\$133.26	\$133.26	\$137.85	(\$4.59)
Construction Costs ⁽¹⁾	\$39.32	\$98.72	\$98.72	\$102.90	(\$4.18)
Delivery Costs ⁽²⁾	\$13.85	\$34.29	\$34.31	\$33.73	\$0.58
Other Costs ⁽³⁾	\$0.23	\$0.24	\$0.22	\$1.22	(\$1.00)
Water Supply & Storage	\$4.44	\$220.86	\$220.86	\$338.39	(\$117.53)
Construction Costs ⁽¹⁾	-	\$165.01	\$165.01	\$123.99	\$41.02
Delivery Costs ⁽²⁾	\$4.44	\$55.85	\$55.85	\$214.41	(\$158.56)
Other Costs ⁽³⁾	-	-	-	-	-
Watershed & Lands Management	\$4.22	\$19.34	\$19.34	\$21.81	(\$2.47)
Construction Costs ⁽¹⁾	-	\$15.40	\$15.40	\$14.30	\$1.10
Delivery Costs ⁽²⁾	\$4.22	\$3.94	\$3.94	\$7.47	(\$3.53)
Other Costs ⁽³⁾	\$0.01	-	-	\$0.03	(\$0.03)
Buildings and Grounds	\$71.49	\$133.94	\$133.94	\$280.93	(\$146.99)
Construction Costs ⁽¹⁾	\$42.52	\$88.27	\$88.27	\$190.00	(\$101.73)
Delivery Costs ⁽²⁾	\$28.96	\$44.69	\$45.49	\$82.30	(\$36.81)
Other Costs ⁽³⁾	-	\$0.98	\$0.18	\$8.63	(\$8.45)
Local Water CIP	\$769.22	\$1,602.12	\$1,602.12	\$1,420.44	\$181.68
Construction Costs ⁽¹⁾	\$440.11	\$1,043.31	\$1,049.67	\$907.64	\$142.03
Delivery Costs ⁽²⁾	\$327.72	\$555.58	\$549.33	\$508.22	\$41.11
Other Costs ⁽³⁾	\$1.39	\$3.22	\$3.12	\$4.58	(\$1.46)
Overall Water CIP	\$912.51	\$2,233.11	\$2,233.11	\$2,372.59	(\$139.48)

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Notes:

1. Construction Costs include the Construction Base Bid and owner-provided equipment/material for all projects. Those costs include any construction contingency.
2. Delivery Costs include project management, planning, environmental (CEQA, permitting, construction compliance), design, construction management, and engineering support during construction.
3. Other Costs include environmental mitigation, art enrichment, security improvements, and real estate expenses.

4. CAPITAL IMPROVEMENT PROGRAM SCHEDULE SUMMARY

Figure 4.1 and Table 4.1 compare the 2018 Approved Schedule and the Current Forecast Schedule for the Regional Water CIP. Refer to the “Cost and Schedule Status” notes in Section 5 for the criteria associated with the three color-coded Forecast Status levels in Figure 4.1 – Meet Requirements, Need Attention, and Exceed Limits.

As shown in Table 4.1, the 2018 Approved and Forecasted Schedule completion for the overall Water CIP (including Regional and Local Programs) are in March 2029 and June 2035, respectively (75 months behind schedule). The 2018 Approved and Forecasted Schedule completion for the Regional CIP alone are also March 2029 and June 2035, respectively (75 months behind schedule).

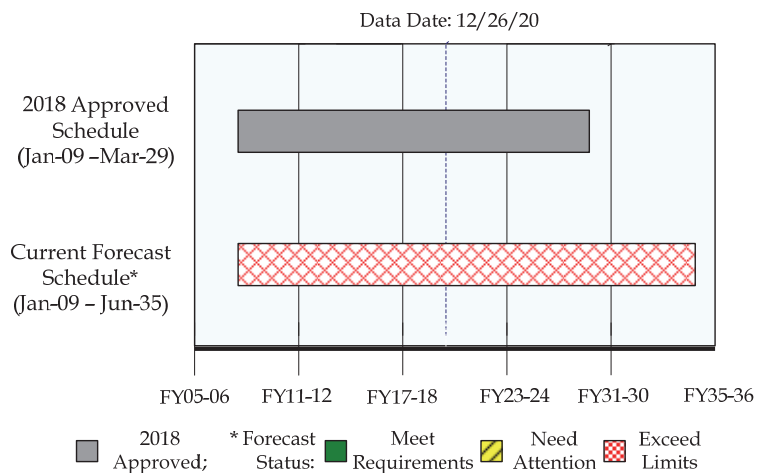


Figure 4.1 Program Schedule Summary

Table 4.1 2018 Approved vs. Current Forecast Schedule Dates

Sub-Program	2018 Approved Project Start	Actual Start	2018 Approved Completion	Current Forecast Completion	Schedule Variance (Months)
Regional Projects	01/01/09	01/01/09✓	03/20/29	06/29/35	75.4 (Late)
Local Projects	03/03/03	03/03/03✓	06/30/28	06/30/28	-
Overall Water Enterprise CIP	03/03/03	03/03/03✓	03/20/29	06/29/35	75.4 (Late)

5. PROJECT PERFORMANCE SUMMARY*

All costs are shown in \$1,000s as of 12/26/20

Project Name	Active Phase (**)	Appropriated Budget To Date (a)	Current Approved Budget (b)	Current Forecasted Cost (c)	Expenditures To Date (d)	Cost Variance (e= b - c)	Cost Status (+)	Current Approved Completion (g)	Current Forecasted Completion (h)	Schedule Variance (i = g - h)	Schedule Status (+)	Project Data Sheet
Water Treatment												
10033123 - SVWTP Ozone (CUW27202)	PL	\$ 5,519	\$ 115,000	\$ 165,130	\$ 2,321	(\$50,130)	●	09/09/24	06/30/27	33.7 mo. Late	●	See Section 6
Water Transmission												
10034578 - CSPL2 Reach 5 Rehabilitation	PL	\$ 2,031	\$ 12,840	\$ 13,031	\$ 357	(\$191)	⚠	11/30/22	09/19/25	33.7 mo. Late	●	See Section 6
CUW2730404 - SAPS Motor Control Centers	DS	\$ 3,347	\$ 7,200	\$ 12,500	\$ 481	(\$5,300)	●	01/27/23	03/19/25	25.7 mo. Late	●	See Section 6
CUW2730504 - SAPL2 Lockbar Replacement	CN	\$ 45,542	\$ 45,642	\$ 45,642	\$ 40,176	-	★	12/08/21	12/08/21	-	★	See Section 10
CUW2730505 - CSPL2 Reaches 2 and 3 Rehabilitation	PL	\$ 2,520	\$ 55,920	\$ 55,028	\$ 1,193	\$ 892	★	10/10/23	06/12/26	32.1 mo. Late	●	See Section 6
Water Supply & Storage												
CUW2740102 - Pilarcitos Dam and Reservoir Improvements	PL	\$ 6,680	\$ 25,676	\$ 30,087	\$ 3,016	(\$4,411)	●	09/05/25	06/29/29	45.8 mo. Late	●	See Section 6
CUW2740103 - San Andreas Dam Facility Improvements	PL	\$ 5,144	\$ 26,795	\$ 32,195	\$ 582	(\$5,400)	●	04/20/27	12/30/33	80.4 mo. Late	●	See Section 6
CUW2740600 - Potable Reuse & Other Supplies	PL	\$ 2,170	\$ 59,400	\$ 171,500	\$ 750	(\$112,100)	●	06/30/26	07/30/30	49.0 mo. Late	●	See Section 6

* Excludes projects with completed construction and projects that are no longer active (i.e., deleted projects, closed projects, and projects combined with other projects).

**** Phase Status Legend**

- PL Planning DS Design BA Bid & Award
- CN Construction NA Not Applicable MP Multi-Phases

For projects active in multiple phases, the table shows the phase in which a majority of the work is taking place.

+ Cost and Schedule Status

- ★ Meet Requirements: Forecasted Cost/Schedule is within Approved Budget/Schedule.
- ⚠ Need Attention: Forecasted Cost is over Approved Budget by greater than 1% and less than 10%. Or Forecasted Schedule is over Approved Schedule by greater than 2 months and both less than 6 months and less than 10%.
- Exceed Limits: Forecasted Cost is over Approved Budget by 10% or more. Or Forecasted Schedule is over Approved Schedule by greater than 6 months or 10% or more.

All costs are shown in \$1,000s as of 12/26/20

Project Name	Active Phase (**)	Appropriated Budget To Date (a)	Current Approved Budget (b)	Current Forecasted Cost (c)	Expenditures To Date (d)	Cost Variance (e= b - c)	Cost Status (+)	Current Approved Completion (g)	Current Forecasted Completion (h)	Schedule Variance (i = g - h)	Schedule Status (+)	Project Data Sheet
Watershed & Lands Management												
CUW2751801 - Southern Skyline Blvd Ridge Trail Extension	DS	\$ 5,846	\$ 19,340	\$ 21,805	\$ 4,224	(\$2,465)	●	01/21/22	09/11/23	19.7 mo. Late	●	See Section 6
Buildings and Grounds												
10033555 - Rollins Road Building Renovations (CUW27703)	DS	\$ 2,800	\$ 17,878	\$ 5,192	\$ 1,851	\$ 12,686	★	01/31/22	06/30/22	4.9 mo. Late	⚠	See Section 6
CUW27701 - Sunol Long Term Improvements	CN	\$ 101,572	\$ 91,684	\$ 106,178	\$ 68,405	(\$14,494)	●	09/01/21	09/13/22	12.4 mo. Late	●	See Section 6
CUW2770304 - Millbrae Yard Laboratory and Shop Improvements	PL	\$ 2,487	\$ 24,376	\$ 169,563	\$ 1,231	(\$145,187)	●	05/03/23	03/31/28	59.0 mo. Late	●	See Section 6

* Excludes projects with completed construction and projects that are no longer active (i.e., deleted projects, closed projects, and projects combined with other projects).

**** Phase Status Legend**

- PL Planning DS Design BA Bid & Award
- CN Construction NA Not Applicable MP Multi-Phases

For projects active in multiple phases, the table shows the phase in which a majority of the work is taking place.







+ Cost and Schedule Status

- ★ Meet Requirements: Forecasted Cost/Schedule is within Approved Budget/Schedule.
- ⚠ Need Attention: Forecasted Cost is over Approved Budget by greater than 1% and less than 10%. Or Forecasted Schedule is over Approved Schedule by greater than 2 months and both less than 6 months and less than 10%.
- Exceed Limits: Forecasted Cost is over Approved Budget by 10% or more. Or Forecasted Schedule is over Approved Schedule by greater than 6 months or 10% or more.

6. PROJECTS NOT WITHIN BUDGET AND/OR SCHEDULE

10033123 - SVWTP Ozone (CUW27202)

Project Description: The project intent is to build an ozonation system that will provide a long-term solution to control taste and odor (T&O) events encountered in the raw water supply from both the San Antonio and Calaveras Reservoir sources. The work will include installation of cryogenic oxygen tanks, liquid oxygen vaporizers, ozone generators, ozone injectors, an ozone contactor, an ozone building, an ozone destruct system, associated pumping/valving/piping/appurtenances, associated automatic controls, related facilities, an electrical building, site improvements, and offset power generation consisting of solar panels atop the treated water reservoir.

Program: Water Treatment		Project Status: Planning		Environmental Status: Not Initiated (CatEx)	
Project Cost:			Project Schedule:		
Approved		\$115.00 M	Approved Jun-17		Sep-24
Forecast*		\$165.13 M	Forecast* Jun-17		Jun-27
Actual		\$2.32 M	Project Percent Complete: 2.0%		
					
Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion	
Current Forecast	06/02/23	08/17/23	01/02/24	12/31/26	

Progress and Status:

The planning work continued on treatability testing, plant design flow and hydraulics, electrical power demand, site surveying, and geotechnical investigation. The peer review panel submitted a technical memorandum on the approach to identifying the design ozone dosage for review. The technical memoranda for the solar panel and corrosion protection work and geotechnical interpretive surveys were completed. The second round of treatability testing was completed, and a workshop was held to discuss the results. The ozone contactor basin configuration was evaluated for the various benefits, drawbacks, and costs for arrangements of 2 vs. 4 contactor basins.

Issues and Challenges:

The variance between the Approved and Forecast completion dates is due to the extension of the planning phase to allow a more detailed planning process and extended design and construction durations as recommended by the consultant based on recently constructed ozone facilities at other locations. The variance between the Approved Budget and the Forecast cost is primarily due to the increased construction estimate based on the design progression, with detailing of the ozone system components, layout, and configuration since the Alternative Analysis Report.









Geotech fault trenching across the site

I. Regional WECIP Quarterly Report

10034578 - CSPL2 Reach 5 Rehabilitation

Project Description: Crystal Springs Pipeline No. 2 (CSPL2) runs from Crystal Springs Pump Station to University Mound Reservoir. It delivers potable and emergency water supply to San Francisco and to several cities along the Peninsula. Reach 5 of CSPL2 in the cities of South San Francisco and San Bruno is over 80 years old and has extensive lining failures. This project would replace the coal tar lining and would also improve access and shutdown flexibility for maintenance by installing manway structures and valves on CSPL2 and San Andreas Pipeline No. 1 (SAPL1) near Baden Pump Station.

Program: Water Transmission		Project Status: Planning		Environmental Status: Not Initiated	
Project Cost:			Project Schedule:		
Approved		\$12.84 M	Approved Dec-18		Nov-22
Forecast*		\$13.03 M	Forecast* Feb-19		Sep-25
Actual		\$0.36 M	Project Percent Complete: 1.5%		
					
Key Milestones:	Environmental** Approval	Bid Advertisement	Construction NTP	Construction Final Completion	
Current Forecast	N/A	04/24/23	10/02/23	03/21/25	

** Environmental CatEx was obtained under project CUW2730504 - SAPL2 Lockbar Replacement on 06/20/17.

Progress and Status:

The JOC contractor completed excavation of four locations to verify the structural integrity of the pipeline as part of the corrosion assessment, and will be excavating one additional location early next quarter for additional corrosion assessment. The draft Alternatives Analysis Report is close to completion and anticipated to be issued for review early next quarter.

Issues and Challenges:

The variance between the Approved and Forecast cost is due to the need to perform a corrosion assessment. The variance between the Approved and Forecast completion dates is due the need for a field corrosion assessment, delays in procuring a contractor to perform excavations for the corrosion assessment, and time to procure the design consultant.













Excavated pipe for corrosion assessment

CUW2730404 - SAPS Motor Control Centers

Project Description: The San Antonio Pump Station (SAPS) is one of the key facilities in the Sunol Valley; it was constructed in 1965 and modified in 1990. The existing motor control centers MCC-A, MCC-B, and MCC-C have been in service since the 1960’s and they are approaching the end of their useful life. In order to maintain reliable operation at SAPS, the existing MCCs are being replaced and facility walls are being seismically retrofitted. In order to accommodate the retrofit work, the communications system is being relocated to an adjacent room and the HVAC will be replaced in affected rooms.

Program: Water Transmission	Project Status: Design	Environmental Status: Not Initiated (CatEx)
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Project Cost:		Project Schedule:	
Approved 	\$7.20 M	Approved May-16 	Jan-23
Forecast* 	\$12.50 M	Forecast* May-16 	Mar-25
Actual 	\$0.48 M	Project Percent Complete: 6.3%	
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits			

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	04/14/22	12/07/22	06/05/23	10/09/24

Progress and Status:

The project team has obtained additional resources for a qualified engineering consultant to complete the design for this project and to provide engineering support during construction. The design was placed on hold during the 65% design phase after a major scope change requested by Operations required that the existing Main Control Panel (MCP) be demolished and that all MCP functions be field verified, relocated, and either incorporated into the MCC or programmed into SCADA. Operations also requested that the existing diesel generator system be removed from inside the SAPS and replaced with a new propane-fueled generator to be installed outside of the building. Design is anticipated to resume in January 2021 after the consultant contract has been awarded.



San Antonio Pump Station building looking southeast

Issues and Challenges:






The variance between the Approved Budget and Forecast Cost is due to the updated cost estimate that includes the addition of the major scope change, and the cost of escalation. The variance between the Approved and Forecast completion dates results from the additional time required to obtain engineering consultant resources, as well as from the scope addition.

I. Regional WECIP Quarterly Report

CUW2730505 - CSPL2 Reaches 2 and 3 Rehabilitation

Project Description: Crystal Springs Pipeline No. 2 (CSPL2) spans from Crystal Springs Pump Station to University Mound Reservoir. It delivers potable and emergency water supply to San Francisco and several cities along the Peninsula. Reaches 2 and 3 of CSPL2 in the Town of Hillsborough, unincorporated areas of San Mateo County, the City of San Mateo, and the City of Burlingame are over 80 years old and deteriorated, with Reach 2 located on slopes that are eroding and Reach 3 containing extensive lining failures. This project would realign Reach 2 to the existing abandoned CSPL1 alignment, replace the coal tar lining of Reach 3, and improve access to the pipeline.

Program: Water Transmission	Project Status: Planning	Environmental Status: Not Initiated (MND)
------------------------------------	---------------------------------	--------------------------------------------------

Project Cost:	Project Schedule:
Approved  \$55.92 M	Approved Sep-16  Oct-23
Forecast*  \$55.03 M	Forecast* Sep-16  Jun-26
Actual  \$1.19 M	Project Percent Complete: 2.5%

 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	04/27/23	07/11/23	12/18/23	12/16/25

Progress and Status:

Work on procurement of consultant support services for final design continued. The Request for Proposals is anticipated to be advertised next quarter. Support was procured from San Francisco Public Works for surveying and geotechnical evaluation. Corrosion assessments also continued.

Issues and Challenges:

The variance between the Approved and Forecast completion dates is due to the delay in procurement of consultant design support services, anticipated to be available mid-2021, to complete the design phase.













Corrosion Investigation Site in Hillsborough

CUW2740102 - Pilarcitos Dam and Reservoir Improvements

Project Description: This project is to address concerns regarding the seismic stability of the Pilarcitos Dam and Reservoir facilities and to perform necessary upgrades identified during the Planning Phase. The primary objectives are to perform a condition and needs assessment of the dam and forebay outlet structure, outlet tunnel, and outlet pipeline as requested by the California Division of Safety of Dams (DSOD); to develop retrofit options if required; and to implement the chosen option. Secondary objectives are to perform the same evaluation and implementation for the spillway.

Program: Water Supply & Storage	Project Status: Planning	Environmental Status: Not Initiated (MND)
----------------------------------------	---------------------------------	--------------------------------------------------

Project Cost:		Project Schedule:	
Approved 	\$25.68 M	Approved Apr-14 	Sep-25
Forecast* 	\$30.09 M	Forecast* Apr-14 	Jun-29
Actual 	\$3.02 M	Project Percent Complete: 1.1%	
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits			

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	06/30/25	07/09/25	01/02/26	12/31/28

Progress and Status:

The design consultant started work on a spillway condition assessment and a dam embankment stability evaluation. The results for the hydraulic analysis of the spillway were presented to the project team. Once the dam embankment stability evaluation is completed, anticipated by mid-2021, the team will prepare an overall condition assessment report for the entire facility.

Issues and Challenges:

The variance between the Approved Budget and Forecast Cost and the Approved Schedule and Forecast Schedule are both due to the more extensive than originally planned efforts for the geotechnical exploration during the pre-planning phase, and additional work that will be needed to complete the planning phase. The project budget and schedule will be re-forecasted once the scope of work for the entire project is fully defined during the alternative analysis phase of the project.









Pilarcitos spillway inspection

I. Regional WECIP Quarterly Report

CUW2740103 - San Andreas Dam Facility Improvements

Project Description: This project is to address concerns regarding the condition of the San Andreas Dam facility and to perform necessary upgrades identified during the Planning Phase. This project includes CUW2740103 (10015092) San Andreas Dam Facility Improvements (DFI), San Andreas Dam (SAD) Spillway 1003237, and a new project to assess the SAD embankment. San Andreas DFI project addresses the emergency drawdown outlets, as directed by the California Division of Safety of Dams (DSOD). The SAD Spillway project performs a spillway condition assessment mandated by DSOD and also budgets for the spillway replacement, if that should be required. The third project is the SAD embankment assessment for seismic stability associated with potential alluvium underneath the embankment. Construction of the emergency drawdown outlets will precede any potential upgrades to the spillway and/or embankment.

Program: Water Supply & Storage	Project Status: Planning	Environmental Status: Not Initiated (Various)		
Project Cost:		Project Schedule:		
Approved 	\$26.80 M	Approved Dec-13 	Apr-27	
Forecast* 	\$32.20 M	Forecast* Dec-13 	Dec-33	
Actual 	\$0.58 M	Project Percent Complete: 12.8%		
				
Key Milestones:	Environmental** Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	(A) 07/02/24 (B) 12/31/26	01/04/27 01/02/29	07/01/27 07/02/29	06/29/29 06/30/33

** (A) CatEx; (B) MND

Progress and Status:

The first task order for this project was issued to the design consultant. The design consultant is currently reviewing all the existing background information, including the nine alternatives identified and evaluated for the emergency drawdown outlet structures. Following this review, a work plan will be developed to provide implementation strategies to retrofit the emergency drawdown outlet structures, spillway, dam, and other ancillary facilities.

Issues and Challenges:










The variance between the Approved and Forecast completion dates and the variance between the Approved Budget and Forecast Cost, are both due to the additional work that will be needed to complete the planning phase and anticipated extended construction schedule based on the potential project scope. The project schedule and budget will be re-forecasted once the scope for the entire project is fully defined, at the end of the planning phase.



San Andreas Dam and Spillway

CUW2740600 - Potable Reuse & Other Supplies

Project Description: The SFPUC is identifying opportunities and investigating the potential for purified water projects through direct and indirect potable reuse (DPR and IPR) processes. The SFPUC is participating in research and regulatory review statewide and is working with other Bay Area water agencies to develop potential project opportunities for up to 15 mgd of drinking water with advanced treatment technologies for water needs anticipated within the planning horizon. Feasibility analyses and pilot efforts are anticipated to promote further development of purified water as a source of drinking water. The feasibility studies currently underway include the Bay Area Regional Reliability (BARR), Potable Reuse Exploratory Plan (PREP) Study Silicon Valley Clean Water, Evaluation of Purified Water Alternatives, and Los Vaqueros Expansion Opportunities. Additional opportunities are also being identified under this portfolio. Once one or more projects have been identified for planning to continue to move forward, pilot testing, environmental review, design, and construction phases will follow. The current funding will carry this work through the bid and award phase and cover a portion of construction.

Program: Water Supply & Storage	Project Status: Planning	Environmental Status: Not Initiated (EIR)
Project Cost: Approved  \$59.40 M Forecast*  \$171.50 M Actual \$0.75 M		Project Schedule: Approved Jan-17  Jun-26 Forecast* Jan-17  Jul-30 Project Percent Complete: 0.7%
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	TBD	TBD	TBD	TBD

Progress and Status:

This project is part of the Alternative Water Supply Program and is currently in the planning phase. Updates on this project are being reported in the Alternative Water Supply Quarterly Report through the SFPUC Water Resources Division

Issues and Challenges:

Because this project is performing planning on multiple potential water supply projects, progress on the planning will be reported in the Alternative Water Supply Quarterly Report through the SFPUC Water Resources Division. As infrastructure projects are selected, defined, and funded for construction in the future, they will be reported in this WECIP Quarterly Report.



Proposed project service area

I. Regional WECIP Quarterly Report

CUW2751801 - Southern Skyline Blvd Ridge Trail Extension

Project Description: The Bay Area Ridge Trail project was started in 1987 by the Bay Area Ridge Trail Council to create an approximately 550-mile long continuous trail for hikers, mountain bicyclists, and equestrians along the ridgelines overlooking San Francisco Bay. This proposed extension project would construct a 6-mile-long trail on the Peninsula Watershed in San Mateo County between Highway 92 and the Golden Gate National Recreation Area's (GGNRA) Phleger Estate. The project would consist of 10 to 12-foot wide, all-weather surface trails; retaining structures to stabilize cut and/or fill slopes; drainage facilities; a 15,000-square-foot parking lot accommodating up to 14 cars; two to three pre-fabricated restrooms along the trail; site security features; and landscape restoration. In addition, trailhead improvements on SFPUC lands will be analyzed with the goals to support trail users, enhance educational opportunities, and ensure watershed protection.

Program: Watershed & Lands Management	Project Status: Design	Environmental Status: Active (EIR)		
Project Cost:		Project Schedule:		
Approved	█ \$19.34 M	Approved Oct-12	█	Jan-22
Forecast*	▨ \$21.81 M	Forecast* Oct-12	▨	Sep-23
Actual	▬ \$4.22 M	Project Percent Complete: 13.6%		
█ Approved; ▬ Actual Cost; * Forecast Status: █ Meet Requirements ▨ Need Attention ▨ Exceed Limits				
Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	07/15/21	07/20/21	12/20/21	03/15/23

Progress and Status:

During the quarter, on November 9, the Environmental Consultant submitted to the San Francisco Planning Department for review the first administrative draft of the Response to Public Comments on the Draft EIR. Revisions to the geotechnical report were submitted to Caltrans for an encroachment permit. Project design was completed to the extent possible, pending any revisions to the project design in response to public comments on the Draft EIR. Next quarter, the final Response to Public Comments is anticipated to be under preparation, and the project plans and specifications will be prepared for bid advertisement.

Issues and Challenges:

The variance between the Approved Budget and Forecast Cost is due to the complexity of environmental issues associated with the project, the increased duration of the overall project and related escalation of construction costs. The overall schedule variance results from the large volume of public comments on the DEIR and the extended Planning Department review periods, which may further delay certification of the EIR beyond the previously forecast date. In addition, the schedule variance results from an extension to the construction duration from 12-months to 16-months based upon feedback from the construction management team related to potential delays due to weather-related events (e.g., red flag








Section of Proposed Trail Alignment

days and winter rains).

10033555 - Rollins Road Building Renovations (CUW27703)

Project Description: The SFPUC purchased a property on Rollins Road in September 2017, securing an additional 10,000 square feet of office space for the SFPUC Water Enterprise (WE). The project is to perform tenant improvements, facilitating the consolidation of WE work groups and the elimination of trailers at the SFPUC WE Administration Building. Renovation of the facility is required to create useable office space, a limnology laboratory, conference rooms, additional showers, and a workshop and library for Natural Resources Division (NRD). In addition, the project will address deferred building maintenance, replace the roof, upgrade security, HVAC, phone, and electrical systems, and build storage space.

Program: Buildings and Grounds	Project Status: Design	Environmental Status: Completed (CatEx)
---------------------------------------	-------------------------------	------------------------------------------------

Project Cost:	Project Schedule:
Approved  \$17.88 M	Approved Mar-18  Jan-22
Forecast*  \$5.19 M	Forecast* Mar-18  Jun-22
Actual  \$1.85 M	Project Percent Complete: 9.5%

 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	10/30/20✓	09/18/20✓	12/08/20✓	12/30/21

Progress and Status:

During this quarter, EMB completed the 100% design of the fencing work. In addition, the security and electrical design reached 95% design completion. NTP was issued on December 8, 2020. Mobilization is expected shortly after the start of the new year. Next quarter, a supplemental task order will be issued for the exterior security, lighting and related electrical scope of work. The project scope reported herein has been reduced to include design and construction of exterior fencing, lighting, security hardware and related electrical with a project budget of \$3.3M. Water Enterprise is managing the remaining \$1.8M, which will be used for interior improvements, under the R&R program. This will be the last quarterly update for the Rollins Road Building Renovation Project.

Issues and Challenges:

The variance between the Approved and Forecast completion dates is due to project scope reduction and the additional time required to re-design the security, electrical and civil scope. The variance between the Approved Budget and Forecast Cost is due to deleted scope resulting from the decision to move staff to the new Millbrae Yard Lab and Shops rather than long-term occupancy at Rollins Road.









View of rear parking lot where lights and cameras will be added

I. Regional WECIP Quarterly Report

CUW27701 - Sunol Long Term Improvements

Project Description: The project includes general redevelopment of the existing Sunol Yard and construction of a Watershed Center near the Sunol Water Temple. Replacement structures will be constructed for existing maintenance shops and equipment storage. New structures to be built include a fueling center, a new administration building, four new pre-fabricated shop buildings, approximately 40,000 square feet of covered storage for vehicles and materials, and a re-surfaced area for vehicle traffic. To create space and lower maintenance costs, six existing dilapidated structures will be demolished. Near the Sunol Water Temple, a 13,000-square foot Watershed Center will be constructed. Additionally, work will be completed on the main gate and road to the Sunol Water Temple. This project is comprised of the following related projects: CUW27701, Sunol Long Term Improvements, and CUW2630601, Sunol Master Plan Support.

Program: Buildings and Grounds	Project Status: Construction	Environmental Status: Completed (MND)		
Project Cost:		Project Schedule:		
Approved	 \$91.68 M	Approved Jan-09		Sep-21
Forecast*	 \$106.18 M	Forecast* Jan-09		Sep-22
Actual	 \$68.40 M	Project Percent Complete: 75.1%		
				
Key Milestones:	Environmental Approval	Bid+ Advertisement	Construction+ NTP	Construction+ Final Completion
Current Forecast	12/02/15✓	(A) 03/01/16✓ (B) 08/30/19✓	(A) 01/17/17✓ (B) 03/09/20✓	09/15/20✓ 03/16/22

+ Project includes multiple construction contracts: (A) Sunol Yard; and (B) Watershed Center

Progress and Status:

Sunol Yard (Contract A): The closeout documents were completed in the reporting quarter. The SFPUC approved the contract closeout.

Watershed Center (Contract B): The installation of architectural concrete walls started in the reporting quarter. Site utility trenching work continued. Additional Native American burials and features were discovered this quarter during the excavation and trenching work and were removed and handled appropriately. The public art piece design and revised exhibit design work continued.

Issues and Challenges:

The variance between the Approved Budget and Forecast Cost is for the Sunol Yard construction (Contract A) and is due to unforeseen archaeological findings, changes to excavation methods due to those findings, unsuitable soil conditions, additional landscaping work, contractor extended overhead, and additional construction management and support services costs resulting from delays.

The variance between the Approved and Forecast completion dates is due to several factors that delayed the issuance of contract NTP: the Watershed Center (Contract B) was redesigned to incorporate approved













Architectural Concrete Walls at Building Entrance

value engineering changes; the RFQ required additional time to complete; and bids received were higher than the Engineer's Estimate, necessitating a rebid of construction. In addition, the construction duration was changed to account for revised excavation methods related to the high potential for additional archaeological discoveries in the area and work stoppage due to COVID-19 shelter-in-place orders.

CUW2770304 - Millbrae Yard Laboratory and Shop Improvements

Project Description: Additional laboratory space is needed to meet current water regulations and to provide WSTD operations improvements. There are four major components to this project: (1) the construction of a new 13,500 square-foot shop building for WSTD; (2) the construction of a new 2,000 square-foot WQD Lab addition; (3) conversion of the existing WSTD Operations Supervisor wing of the existing Administration Building into a WQD laboratory; and (4) Tenant Improvements to the existing Administration Building laboratory. The scope includes remodeling a portion of the Administration Building with WQ sample receiving room upgrades, reconfiguring a conference and flavor profile room, lab additions with extraction lab, a calibration room, relocating and reconfiguring WSTD space, adding two offices for WSTD, server room renovation, a new south shop with WSTD office space, security upgrades and site improvements.

Program: Buildings and Grounds	Project Status: Planning	Environmental Status: Not Initiated (MND)
Project Cost: Approved  \$24.38 M Forecast*  \$169.56 M Actual  \$1.23 M		Project Schedule: Approved Nov-15  May-23 Forecast* Nov-15  Mar-28 Project Percent Complete: 4.4%
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	07/27/23	11/06/24	04/15/25	N/A

Progress and Status:

The project is currently in the Planning Phase. The draft programming document has been issued for the project team’s internal review. The programming document will provide details of the new additional scope, which is the construction of an additional floor on top of the proposed two-story laboratory building. Workshops with the Water Enterprise divisions were held to discuss the divisions’ goals and needs for the proposed facilities. The project team continued to prepare the staff, vehicle, equipment, shop and warehouse program, and materials inventory. The business reviewers continued to review and provide comments to the draft Request for Proposal (RFP) for engineering services for this project.

Issues and Challenges:

The variances between the Approved and Forecasted cost and schedule are the result of the revision to the scope of work. The baseline scope of work associated with the approved cost and schedule consisted of a limited retrofit to the existing administration building. The revised scope consists of a three-phased approach to the work. Phase 1 includes a new laboratory and new south shop building intended both to alleviate problems with Water Enterprise undersized and outdated workspaces and to relocate mission-critical



Existing Administration Building

functions to code-compliant structures. The new laboratory will provide additional space to accommodate the relocation of all personnel from the Rollins Road Facility. Phase 2 includes demolition of the existing Administration Building and construction of a new consolidated Administration Building adjacent to the new laboratory building to accommodate other Water Enterprise staff personnel. Phase 3 includes new covered storage for materials and equipment. Only the scope of work for Phase 1 is being implemented under this project.

7. On-Going Construction*

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion**	Current Forecasted Construction Final Completion	Approved Contract Cost	Current Forecasted Cost**	Schedule (Cal. Days)	Cost	
Water Transmission								
CUW2730504 - WD-2829R SAPL2 Lockbar Replacement	04/15/19	04/29/21	04/29/21	\$ 32,821,922	\$ 32,968,156	-	(\$146,234)	96.1%
Buildings and Grounds								
CUW27701 - WD-2794B Sunol Long Term Improvements - Watershed Center	03/09/20	01/28/22	03/16/22	\$ 27,778,972	\$ 27,570,972	(47)	\$ 208,000	3.7%

Program Total for On-Going Construction	Approved	Current	Variance	
	Contract Cost	Forecasted Cost	Cost	Percent
	\$ 60,600,894	\$ 60,539,128	+\$61,766	+0.1%

Note: * This table reflects Active Construction Contracts with an original contract amount greater than \$1M.

** The Forecasted Cost includes all approved, pending, and potential change orders; and Final Completion includes all approved, pending, and potential change orders, and trends.

8. PROJECTS IN CLOSE-OUT

There are no active projects currently in closeout phase

I. Regional WECIP Quarterly Report

9. COMPLETED PROJECTS






Project Title	Approved Project Completion	Actual Project Completion	Approved Project Budget	Project Expenditures To Date
Water Treatment				
10032938 - SVWTP Powdered Activated Carbon Feed Units (CUW27202)	12/18/19	12/18/19	\$ 8,600,000	\$ 7,410,861
Water Transmission				
CUW2730503 - Peninsula Pipelines Seismic Upgrade Phase III	02/27/19	10/28/20	\$ 11,653,000	\$ 11,194,160
TOTAL			\$ 20,253,000	\$ 18,605,021

10. PROJECTS WITHIN BUDGET AND SCHEDULE

CUW2730504 - SAPL2 Lockbar Replacement

Project Description: San Andreas Pipeline No. 2 (SAPL2) provides key water supply redundancy from the Harry Tracy Water Treatment Plant (HTWTP) to the Sunset Reservoir. The lock-bar steel sections of 54" diameter SAPL2 between the HTWTP and the Golden Gate National Cemetery are almost 90 years old, pitted, deteriorated, and in need of replacement. This project will replace/rehabilitate approximately 6,500 linear feet of SAPL2 in the City of San Bruno.

Program: Water Transmission	Project Status: Construction	Environmental Status: Completed (EIR Addendum)
------------------------------------	-------------------------------------	-------------------------------------------------------

Project Cost:		Project Schedule:	
Approved	 \$45.64 M	Approved Mar-16	 Dec-21
Forecast*	 \$45.64 M	Forecast* Mar-16	 Dec-21
Actual	 \$40.18 M	Project Percent Complete: 85.1%	

 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	05/17/17✓	10/09/18✓	05/01/19✓	04/29/21

Progress and Status:

The contractor completed all pipeline replacement work. The contractor is continuing with site restoration work and has started to demobilize.

Issues and Challenges:

None at this time.



Site restoration work at Segment 1

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II. Local Capital Improvement Program



1. CAPITAL IMPROVEMENT PROGRAM DESCRIPTION

The San Francisco Public Utilities Commission (SFPUC) Water Enterprise manages a complex water supply system stretching from the Sierra to San Francisco featuring a series of reservoirs, tunnels, pipelines, and treatment systems. Two unique features of this system stand out: the drinking water provided is among the highest quality in the world, and water deliveries are made to most customers without the use of power (gravity flow) while generating power at the same time.

The SFPUC is the third largest municipal utility in California, serving 2.7 million residential, commercial, and industrial customers in the Bay Area. Approximately one-third of the delivered water goes to retail customers in San Francisco, while wholesale deliveries to 26 suburban agencies in Alameda, Santa Clara, and San Mateo counties comprise the other two-thirds.

The Local Water System consists of water storage, treatment, and pumping facilities; water transmission and distribution infrastructure; and various lands in the City and County of San Francisco as well as several other small retail systems in Alameda, Santa Clara and San Mateo Counties where the SFPUC directly retails to various customers. Groundwater in San Francisco is under the jurisdiction of the SFPUC. The Westside Basin is the only viable aquifer for municipal use. Additionally, the Local Water System includes the Emergency Firefighting Water System used for fire suppression in San Francisco and developer-funded assets that have been conveyed to the SFPUC. Several large assets located in San Francisco are not included in the Local Water System because these assets are considered Regional Water System assets. The Local Water System Capital Improvement Program (Local Water CIP) is a 10-year plan of projects and activities to physically improve the system and to maintain levels of service. This CIP is updated each year and integrated with the SFPUC's Financial Plan and rate-setting.

The local water supply projects that were originally managed within the WSIP are included here to produce a comprehensive Local Water CIP report (the schedule for these projects extends beyond WSIP).

The capital planning process is used to inform the CIP with updates to master plans, asset condition assessment, and review of levels of service. There are seven programs in the CIP in addition to a separate set of programmatic projects used for feasibility planning, for future capital projects, and for implementation of permit compliance activities. The programs are:

- Local Water Conveyance/Distribution System Program
- Local Water Supply Program
- Local Tanks/Reservoir Improvements Program
- Pump Stations Program
- Buildings and Grounds Program
- Automated Water Meter Program
- Emergency Firefighting Water System Program

A project is formally initiated (**Project Initiation**) when the planning process begins, a project manager is assigned, and the project's initial **Approved Budget** consistent with the most recently adopted Local Water CIP is established.

A project moves from the planning, design, and environmental review stage to implementation when **Project Approval** occurs through an action by the Commission, usually at the same time CEQA findings are adopted. The Commission may also make decisions about a project's scope, budget, schedule, or necessity during annual review and approval of the CIP.

While a project is active, additional budget modifications outside of the annual CIP process require approval of the Assistant General Manager for the Water Enterprise. When and if

II. Local WECIP Quarterly Report

these budget modifications occur, the modified budget becomes the **Current Approved Budget**. Outside of formal budget adjustments, the project manager regularly estimates and records the anticipated final project cost as the **Forecasted Cost**.

Modifications to scope or schedule must be approved by the Assistant General Manager for Water Enterprise with input from the project's **Technical Oversight Committee** which generally consists of managers within the Water Enterprise and Infrastructure Division. Final **Project Closeout** must be approved by the Assistant General Manager for Water Enterprise.

2. CAPITAL IMPROVEMENT PROGRAM STATUS

This Quarterly Report presents the progress made on Local Water projects between October 1, 2020 and December 31, 2020. This document serves as the second (2nd) Quarterly Report in Fiscal Year 2020-2021 (FY21) published for the Water Enterprise Capital Improvement Program.

On December 11, 2018, SFPUC approved the Water Enterprise 2018 Proposed Baseline budget of \$631.0 million for Regional projects and \$1,602.1 million for Local projects (2018 Approved Baseline). The 2018 Approved Baseline is a subset of the Regional and Local Water Enterprise 10-year CIP for FY2019-2028 and includes individual projects over \$5 million that were then currently active or intended to be active by June 30, 2020 at the time proposed to the Commission on December 11, 2018. The status of projects included in the 2018 Approved Baseline are discussed in this quarterly report.

Figure 2.1 shows the total Current Approved Budget for the Local projects in each phase of the program as of December 31, 2020. The number of projects currently active in each phase is shown in parentheses.

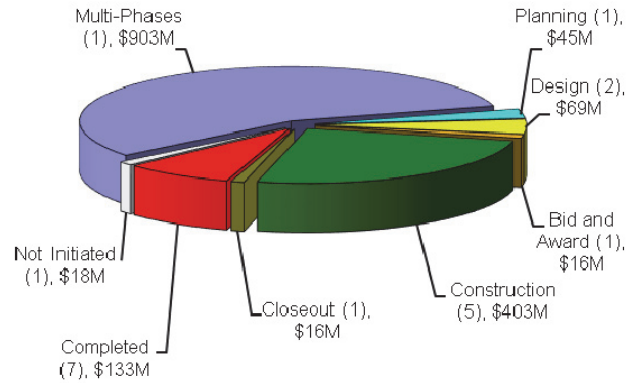


Figure 2.1 Total Current Approved Budget for Local Projects Active in Each Phase

Figure 2.2 shows the number of Local projects in the following stages as of December 31, 2020: Pre-construction, Construction, and Post-construction.

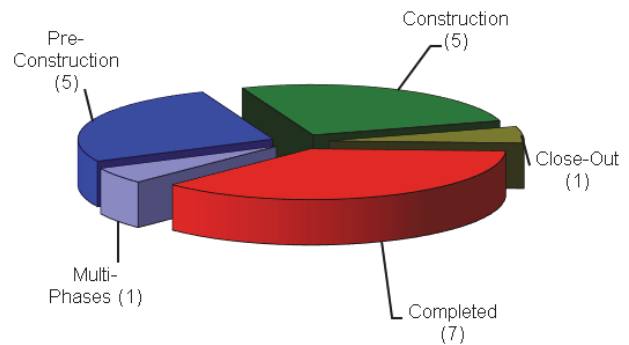


Figure 2.2 Number of Local Projects in Pre-construction, Construction, and Post-construction

Figure 2.3 summarizes the environmental review status of the Local projects as of December 31, 2020.

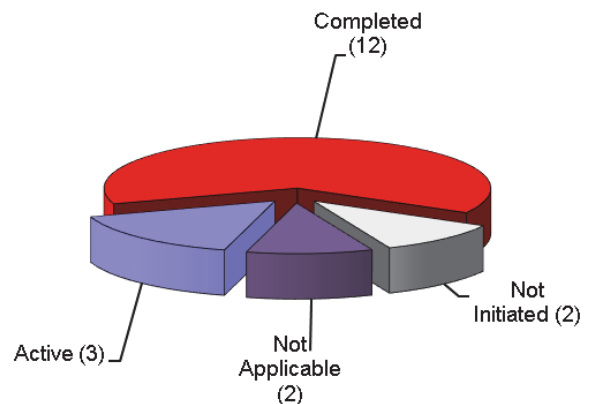
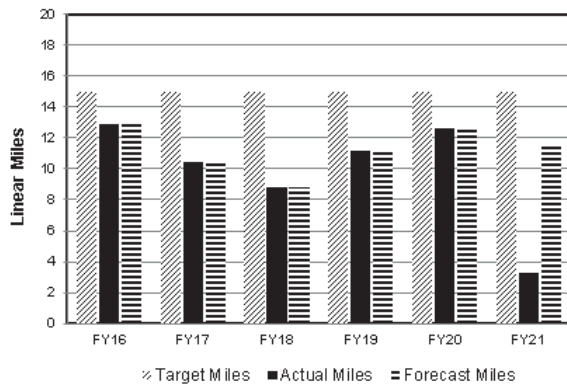


Figure 2.3 Local Program Environmental Status

The Local Water Conveyance/Distribution System Program has an annual goal to replace or improve a target of 15 miles of water mains in San Francisco. Figure 2.4 shows the planned and actual miles of pipeline projects that have reached substantial completion since FY16. At the end of FY21, 11.5 miles of pipe are anticipated to have been replaced and their construction to have achieved substantial completion.



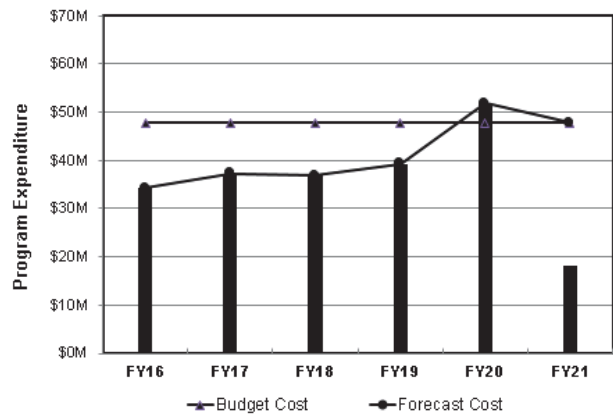
	FY16	FY17	FY18	FY19	FY20	FY21
Target Miles	15.0	15.0	15.0	15.0	15.0	15.0
Actual Miles	12.9	10.4	8.8	11.2	12.6	3.3
Forecast Miles						11.5

Figure 2.4 Water Conveyance/Distribution System Program - Linear Miles by Fiscal Year

In FY12, the Commission approved annual increases to the program budget for three years to increase the pipeline replacement rate from 6 miles per year to 15 miles per year by FY16. The program expansion has required additional staff resources and inter-agency coordination to implement. While the City Distribution Division (CDD) has increased staffing in various trades to accommodate the expansion, additional resources will be needed to sustainably construct 15 miles of pipeline per year.

Water main replacement projects with construction underway in the 2nd quarter of FY21 included the City streets of Geary between 36th and 48th Avenues, Geary between Presidio and Van Ness, Geary between Van Ness and Kearny, L-Taraval between Sunset and SF Zoo, 22nd Street, Green Street, Pierce Street, Castro

Street, 21 Street, 17th Street, Baker Street, and 19th Avenue. Pipelines were replaced and water work was completed during the 2nd quarter of FY21 on Geary between Presidio and Van Ness. Projects achieving substantial completion, including all paving restoration and curb ramp improvements, during this quarter include Green Street. Projects anticipated to start replacement of water pipelines in the 3rd quarter of FY21 include Casitas Avenue. Construction had been anticipated to start in the second quarter of FY21 on Casitas Avenue but was delayed due to the additional time needed for contract certification and construction funding as well as to COVID-19 related impacts.



	FY16	FY17	FY18	FY19	FY20	FY21
Budget	\$47.7M	\$47.7M	\$47.7M	\$47.7M	\$47.7M	\$47.7M
Actual Expenditure	\$34.2M	\$37.3M	\$36.8M	\$39.2M	\$51.7M	\$18.1M
Forecast Expenditure						\$47.7M

Figure 2.5 Water Conveyance/Distribution System Program - Expenditure by Fiscal Year

Figure 2.5 shows the annual total program expenditure by fiscal year for the pipeline replacement program. Program expenditures are forecast to be higher than the budgeted amount of \$47.7M over the next three years to account for the delayed start of several large streetscape improvement projects mentioned above. Additionally, future program expenditure may exceed the budgeted amount of \$3.18 million per mile of pipeline replaced due to the following factors:

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- The program has previously focused on replacing smaller, less expensive distribution mains to coordinate with San Francisco Public Works' (SFPW) Paving Program.
- Higher bid prices associated with water pipeline replacement for the larger streetscape projects are attributed to a shortage of local contracting labor force; high risks for water subcontractors, including the potential for liquated damages as high as \$50,000 per day (i.e. VNBRT Project); and decreased competition amongst the local contractors, as there are many projects to bid on within San Francisco and the greater Bay Area.
- Projects will increasingly include more expensive and/or larger diameter pipe replacement for larger distribution mains as well as special earthquake-resistant pipe installation to increase seismic reliability of the City's local water distribution.
- Projects along designated state highway routes such as Van Ness Avenue, 19th Avenue, and Lombard Street are significantly more expensive due to CalTrans permitting requirements, which include costly utility protection requirements and restricted work hours.
- Changes in SFPW's pavement restoration, ADA curb ramps, and permitting requirements in the City continue to increase the cost of pipe replacement projects over earlier estimations.

3. CAPITAL IMPROVEMENT PROGRAM COST SUMMARY

Table 3.1 provides an overall cost summary of the Local Water CIP. It shows the Expenditures to Date; 2018 Approved Budget, Current Approved Budget and Current Forecasted Cost; and the Cost Variance between the Current Approved Budget and Forecasted Cost.

The total Current Approved Budget is \$1,602.1 million, and the Current Forecasted Cost is \$1,420.4 million (\$181.7 million under the Current Approved Budget).

Table 3.1 Local Water CIP Cost Summary

Cost Categories	Expenditures To Date (\$ Million) (A)	2018 Approved Budget (\$ Million) (C)	Current Approved Budget (\$ Million) (D)	Current Forecasted Costs (\$ Million) (E)	Cost Variance (\$ Million) (F = D - E)
Local Water CIP	\$769.22	\$1,602.12	\$1,602.12	\$1,420.44	\$181.68
Local Water Conveyance / Distribution System	\$349.23	\$958.84	\$958.84	\$817.12	\$141.72
Construction Costs ⁽¹⁾	\$164.77	\$633.78	\$633.78	\$494.77	\$139.01
Delivery Costs ⁽²⁾	\$184.47	\$325.05	\$325.05	\$322.35	\$2.70
Other Costs ⁽³⁾	-	-	-	-	-
Local Water Supply	\$207.68	\$315.54	\$315.54	\$312.54	\$3.00
Construction Costs ⁽¹⁾	\$132.82	\$214.38	\$214.16	\$207.12	\$7.04
Delivery Costs ⁽²⁾	\$73.47	\$97.93	\$98.25	\$100.84	(\$2.59)
Other Costs ⁽³⁾	\$1.39	\$3.22	\$3.12	\$4.58	(\$1.46)
Local Tanks/Reservoir Improvements	\$0.80	\$16.32	\$16.32	\$19.28	(\$2.96)
Construction Costs ⁽¹⁾	-	\$14.28	\$12.38	\$14.80	(\$2.42)
Delivery Costs ⁽²⁾	\$0.80	\$2.03	\$3.94	\$4.49	(\$0.55)
Other Costs ⁽³⁾	-	-	-	-	-
Pump Stations	-	\$18.00	\$18.00	\$18.00	-
Construction Costs ⁽¹⁾	-	\$12.10	\$12.10	\$12.10	-
Delivery Costs ⁽²⁾	-	\$5.90	\$5.90	\$5.90	-
Other Costs ⁽³⁾	-	-	-	-	-
Buildings and Grounds	\$21.73	\$66.44	\$66.44	\$25.42	\$41.02
Construction Costs ⁽¹⁾	\$11.79	\$16.94	\$16.94	\$13.00	\$3.94
Delivery Costs ⁽²⁾	\$9.94	\$49.50	\$49.50	\$12.42	\$37.08
Other Costs ⁽³⁾	-	-	-	-	-
Automated Water Meter Program	\$69.41	\$70.24	\$70.24	\$71.34	(\$1.10)
Construction Costs ⁽¹⁾	\$59.81	\$61.72	\$61.72	\$61.74	(\$0.02)
Delivery Costs ⁽²⁾	\$9.60	\$8.51	\$8.51	\$9.60	(\$1.09)
Other Costs ⁽³⁾	-	-	-	-	-
Auxiliary Water Supply System	\$120.38	\$156.75	\$156.75	\$156.75	-
Construction Costs ⁽¹⁾	\$70.92	\$90.10	\$98.58	\$104.12	(\$5.54)

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Cost Categories	Expenditures To Date (\$ Million) (A)	2018 Approved Budget (\$ Million) (C)	Current Approved Budget (\$ Million) (D)	Current Forecasted Costs (\$ Million) (E)	Cost Variance (\$ Million) (F = D - E)
Delivery Costs ⁽²⁾	\$49.46	\$66.65	\$58.17	\$52.63	\$5.54
Other Costs ⁽³⁾	\$0.00	-	\$0.00	\$0.00	-
Regional Water CIP	\$143.29	\$630.99	\$630.99	\$952.15	(\$321.16)
Construction Costs ⁽¹⁾	\$88.41	\$458.97	\$458.97	\$556.83	(\$97.86)
Delivery Costs ⁽²⁾	\$54.64	\$170.81	\$171.63	\$383.73	(\$212.10)
Other Costs ⁽³⁾	\$0.24	\$1.22	\$0.40	\$11.60	(\$11.20)
Overall Water CIP	\$912.51	\$2,233.11	\$2,233.11	\$2,372.59	(\$139.48)

Notes:

- Construction Costs** include the Construction Base Bid and owner-provided equipment/material for all projects. Those costs include any construction contingency.
- Delivery Costs** include project management, planning, environmental (CEQA, permitting, construction compliance), design, construction management, and engineering support during construction.
- Other Costs** include environmental mitigation, art enrichment, security improvements, and real estate expenses.

4. CAPITAL IMPROVEMENT PROGRAM SCHEDULE SUMMARY

Figure 4.1 and Table 4.1 compare the 2018 Approved Schedule and the Current Forecast Schedule for the Local Water CIP. Refer to the “Cost and Schedule Status” notes in Section 5 for the criteria associated with the three color-coded Forecast Status levels in Figure 4.1 – Meet Requirements, Need Attention, and Exceed Limits.

As shown in Table 4.1, the 2018 Approved and Forecasted Schedule completion for the overall Water CIP (including Regional and Local Programs) are in March 2029 and June 2035, respectively (75 months behind schedule). The 2018 Approved and Forecasted Schedule completion for the Local CIP are both in June 2028.

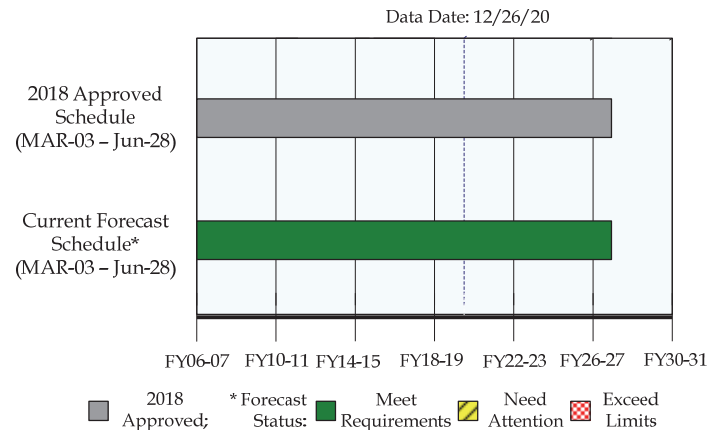


Figure 4.1 Program Schedule Summary

Table 4.1 2018 Approved vs. Current Forecast Schedule Dates

Sub-Program	2018 Approved Project Start	Actual Start	2018 Approved Completion	Current Forecast Completion	Schedule Variance (Months)
Local Projects	03/03/03	03/03/03✓	06/30/28	06/30/28	-
Regional Projects	01/01/09	01/01/09✓	03/20/29	06/29/35	75.4 (Late)
Overall Water Enterprise CIP	03/03/03	03/03/03✓	03/20/29	06/29/35	75.4 (Late)

5. PROJECT PERFORMANCE SUMMARY*

All costs are shown in \$1,000s as of 12/26/20

Project Name	Active Phase (**)	Appropriated Budget To Date (a)	Current Approved Budget (b)	Current Forecasted Cost (c)	Expenditures To Date (d)	Cost Variance (e= b - c)	Cost Status (+)	Current Approved Completion (g)	Current Forecasted Completion (h)	Schedule Variance (i = g - h)	Schedule Status (+)	Project Data Sheet
Local Water Conveyance/ Distribution System												
10033816 - Westside Potable Auxiliary Water Supply System	PL	\$ 12,000	\$ 44,782	\$ 55,000	\$ 275	(\$10,218)	●	06/30/28	06/30/28	-	★	See Section 6
CUW28000 - Local Water Conveyance/Distribution System	MP	\$ 406,545	\$ 902,664	\$ 750,581	\$ 338,228	\$ 152,083	★	06/30/28	06/30/28	-	★	See Section 10
Local Water Supply												
CUW30101 - Lake Merced Water Level Restoration	DS	\$ 32,868	\$ 32,668	\$ 32,668	\$ 4,350	-	★	10/31/23	01/30/26	27.0 mo. Late	●	See Section 6
CUW30102 - San Francisco Groundwater Supply	CN	\$ 68,701	\$ 66,552	\$ 66,552	\$ 61,785	-	★	03/30/21	06/30/22	15.0 mo. Late	●	See Section 6
CUW30201 - San Francisco Westside Recycled Water	CN	\$ 133,048	\$ 216,317	\$ 213,316	\$ 141,544	\$ 3,001	★	03/28/22	07/27/23	16.0 mo. Late	●	See Section 6
Local Tanks/Reservoir Improvements												
CUW28301 - College Hill Reservoir Outlet	BA	\$ 2,183	\$ 16,317	\$ 19,283	\$ 796	(\$2,966)	●	09/28/21	12/27/23	27.0 mo. Late	●	See Section 6
Automated Water Meter												
CUW68601 - Automated Water Meter Program	CN	\$ 66,432	\$ 70,238	\$ 71,336	\$ 69,410	(\$1,098)	⚠	03/17/21	03/17/21	-	★	See Section 6

* Excludes projects with completed construction and projects that are no longer active (i.e., deleted projects, closed projects, and projects combined with other projects).

**** Phase Status Legend**

- PL Planning DS Design BA Bid & Award
- CN Construction NA Not Applicable MP Multi-Phases

For projects active in multiple phases, the table shows the phase in which a majority of the work is taking place.

+ Cost and Schedule Status

- ★ Meet Requirements: Forecasted Cost/Schedule is within Approved Budget/Schedule.
- ⚠ Need Attention: Forecasted Cost is over Approved Budget by greater than 1% and less than 10%. Or Forecasted Schedule is over Approved Schedule by greater than 2 months and both less than 6 months and less than 10%.
- Exceed Limits: Forecasted Cost is over Approved Budget by 10% or more. Or Forecasted Schedule is over Approved Schedule by greater than 6 months or 10% or more.

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Q2-FY2020-2021 (10/01/20 - 12/31/20)

All costs are shown in \$1,000s as of 12/26/20

Project Name	Active Phase (**)	Appropriated Budget To Date (a)	Current Approved Budget (b)	Current Forecasted Cost (c)	Expenditures To Date (d)	Cost Variance (e= b - c)	Cost Status (+)	Current Approved Completion (g)	Current Forecasted Completion (h)	Schedule Variance (i = g - h)	Schedule Status (+)	Project Data Sheet
Auxiliary Water Supply System												
Physical Plant												
CUWAWS WD-2687 - Pump Station #2	CN	\$ 28,765	\$ 28,716	\$ 28,716	\$ 17,225	-	★	06/30/22	06/30/22	-	★	See Section 10
Pipelines												
CUWAW2AW29-44 - ESER 2014 Pipelines	DS	\$ 35,071	\$ 34,643	\$ 34,643	\$ 22,075	-	★	12/30/22	12/30/22	-	★	See Section 10
CUWAWSAW11-19 - ESER 2010 Pipes/Tunnels Construction	CN	\$ 7,505	\$ 18,870	\$ 18,870	\$ 7,215	-	★	03/31/21	03/31/21	-	★	See Section 10

* Excludes projects with completed construction and projects that are no longer active (i.e., deleted projects, closed projects, and projects combined with other projects).

** Phase Status Legend

PL Planning DS Design BA Bid & Award
CN Construction NA Not Applicable MP Multi-Phases

For projects active in multiple phases, the table shows the phase in which a majority of the work is taking place.










+ Cost and Schedule Status

- ★ Meet Requirements: Forecasted Cost/Schedule is within Approved Budget/Schedule.
- ⚠ Need Attention: Forecasted Cost is over Approved Budget by greater than 1% and less than 10%. Or Forecasted Schedule is over Approved Schedule by greater than 2 months and both less than 6 months and less than 10%.
- Exceed Limits: Forecasted Cost is over Approved Budget by 10% or more. Or Forecasted Schedule is over Approved Schedule by greater than 6 months or 10% or more.

6. PROJECTS NOT WITHIN BUDGET AND/OR SCHEDULE

10033816 - Westside Potable Auxiliary Water Supply System

Project Description: This project proposes to design and construct earthquake-resistant water pipeline in western San Francisco, particularly the Sunset and Richmond areas. This pipeline will connect to the existing potable water distribution system to help deliver water to businesses, institutions, and residences during normal operations. It will also be designed to provide high-pressure fire suppression water when needed after a major earthquake or other emergency. When so needed, it will be isolated from the remainder of the potable distribution system by strategically located valves and can then be pumped to achieve pressures comparable to the existing conventional Auxiliary Water Supply System, which is located in other areas of San Francisco. This project also includes Lake Merced and Sunset Reservoir pump stations, which will increase water pressure when needed for fire suppression. Pipeline alignment, diameter, and related features will be determined during the planning phase, as will pump station schematic design. Phased construction scheduling and associated budgets will be determined in conjunction with finalizing these pipeline and pump station details.

Program: Local Water Conveyance/Distribution System	Project Status: Planning	Environmental Status: Not Initiated
Project Cost: Approved  \$44.78 M Forecast*  \$55.00 M Actual \$0.27 M		Project Schedule: Approved Jan-19  Jun-28 Forecast* Aug-19  Jun-28 Project Percent Complete: 0.0%
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	TBD	TBD	TBD	TBD

Progress and Status:

This project will fund portions of the Potable Emergency Firefighting Water System (PEFWS) construction for Contract WW-711 Wawona Area Stormwater Improvement and Vicente Street Water Main Replacement, and Public Works 19th Ave Contract 2652J. The Public Works Contract 2652J is in construction phase, and WW-711 is in bid and award phase, with bids due in January 2021. Remaining funding will be used to construct additional PEFWS pipelines in the next several years. These additional pipelines are in planning phase.











Issues and Challenges:

The variance between the Approved Budget and Forecast Cost is due to an increased commitment of funding from Water CIP that has been approved in the 10-Year CIP.

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CUW30101 - Lake Merced Water Level Restoration

Project Description: The project consists of two subprojects. (1) The City of Daly City is proposing and working in coordination with the SFPUC to implement the Vista Grande Drainage Basin Improvements project to address storm related flooding in the Vista Grande Watershed Drainage Basin while providing the benefit of restoring the level of Lake Merced. (2) In addition, the SFPUC is implementing a Demonstration Aeration Mixing Project to evaluate whether additional lake mixing might result in improved dissolved oxygen concentrations in the Lake.

Program: Local Water Supply	Project Status: Design	Environmental Status: Active (Various)
Project Cost: Approved  \$32.67 M Forecast*  \$32.67 M Actual  \$4.35 M		Project Schedule: Approved Jun-03  Oct-23 Forecast* Jun-03  Jan-26 Project Percent Complete: 13.9%
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental** Approval	Bid+ Advertisement	Construction+ NTP	Construction+ Final Completion
Current Forecast	(A) 07/31/18✓ (B) 11/10/16✓ (C) 08/25/22	10/01/21 N/A 09/13/22	07/08/22 06/13/17✓ 03/14/23	07/29/25 07/07/17✓ 10/08/23

+ Project includes multiple construction contracts. (A) Vista Grande Drainage Basin Improvement managed by Daly City ; (B) Lake Merced Aeration Mixing System - Phase 1 JOC Contract; (C) Lake Merced Aeration Mixing System - Phase 2

** (A) EIR/EIS; (B) CatEx; (C) MND

Progress and Status:

Vista Grande Drainage Basin Improvement Project (Contract A): Daly City completed preparation of the 100% design documents during the quarter and shared this with SFPUC for final review. SFPUC completed review of the 100% design documents and Daly City reconciled the remaining unresolved comments. Daly City and SFPUC are currently working on evaluating temporary and permanent real estate uses required for project construction. Daly City received notification in November 2020 that the project had received preliminary inclusion in the State of CA SRF list of fundable projects for FY 19/20. This approval will allow Daly City to qualify for low interest loans from the State.

Aeration Mixing System (Contract B): In August 2017 the SFPUC implemented a demonstration project to improve dissolved oxygen levels in the lower portion of the lake which typically run below 5 mg/l due to seasonal lake stratification. In February 2019 staff finalized and submitted to the Regional Water Quality Control Board (RWQCB) a report summarizing the testing and data monitoring from the aeration system, and received comments back on the report from RWQCB staff. Due to the above-mentioned delays in the Vista Grande Drainage Basin Project, no additional



South Lake Merced







evaluations or decisions have been made to determine whether to proceed with the Aeration Mixing Phase II.

Issues and Challenges:

The variance between the approved schedule and forecasted completion date is due to the delays in Daly City's ability to secure funding and due to COVID-19 impacts on resource availability. Daly City now anticipates Bid and Award in Fall 2021 and construction commencing in spring 2022, assuming project funding can be secured.

CUW30102 - San Francisco Groundwater Supply

Project Description: This project consists of two phases, which combined will provide an annual average of 4 mgd of groundwater to San Francisco’s municipal water supply. The first phase consists of building four new groundwater well stations in the western part of San Francisco. All four stations will include a building to house the well pump and electrical equipment, with two stations having an additional room to provide chemical disinfection. Buried piping will be installed to connect three of these well stations to the Sunset Reservoir. Groundwater from the fourth well station will be piped to the nearby Lake Merced Pump Station, where it will be distributed to both the Sunset Reservoir and Sutro Reservoir. The second phase consists of converting two existing irrigation well facilities in Golden Gate Park to groundwater supply wells, and would be implemented after completion of the CUW30201, San Francisco Westside Recycled Water Project. In the second phase, buried piping will be installed to also connect these two wells to the Sunset Reservoir. Improvements to the facilities at the existing San Francisco Zoo Well No. 5 have been completed as part of the project, allowing this well to serve as an emergency potable water source.

Program: Local Water Supply	Project Status: Construction	Environmental Status: Completed (EIR)
Project Cost:		Project Schedule:
Approved  \$66.55 M	Approved Jun-03  Mar-21	
Forecast*  \$66.55 M	Forecast* Jun-03  Jun-22	
Actual  \$61.78 M	Project Percent Complete: 95.7%	
		

Key Milestones:	Environmental Approval	Bid+ Advertisement	Construction+ NTP	Construction+ Final Completion
Current Forecast	12/19/13✓	(A) 05/01/14✓ (B) 03/10/14✓ (C) 08/17/16✓	(A) 03/16/15✓ (B) 08/04/14✓ (C) 08/07/17✓	03/31/21 12/21/15✓ 12/31/21

+ Project includes multiple construction contracts.

(A) San Francisco Groundwater Supply Well Stations Phase 1; (B) San Francisco Groundwater Supply Pipeline Phase 1; (C) San Francisco Groundwater Supply Phase 2

Progress and Status:

For Phase 1 well station construction (Contract A), the Contractor continued working on punchlist items during the quarter, including instrumentation and controls, other electrical items, and completion of the as-builts.

For Phase 2 (Contract C), the contractor continued working on the installation of cameras, fencing repairs, security programming, and electrical and plumbing. The contractor also started working on the change orders related to the Phase 1 contract, including those related to repairs to damaged cameras and to the booster pump. The contractor, continued working on punchlist items and closeout documents, including preparation of as-builts and the submittal of operational and maintenance manuals.

Issues and Challenges:











Phase 1 project final completion has been delayed due to additional time needed to complete punchlist items, primarily the instrumentation and controls and the as-built drawings. Phase 2 project final completion has

been delayed due to additional time needed to complete remaining scope and additional change order work; punchlist items; and closeout documents. An additional 15 months construction duration is being forecasted to allow time to complete all remaining work and start-up testing and provide for construction delays related to COVID-19.

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CUW30201 - San Francisco Westside Recycled Water

Project Description: This project consists of a new recycled water treatment facility located at the SFPUC's existing Oceanside Plant, along with the associated distribution system components, to produce and deliver an annual average of approximately 2 mgd of recycled water to Golden Gate Park (GGP), Lincoln Park, and the Presidio. The treatment process includes membrane filtration, reverse osmosis, and ultraviolet light disinfection. A new pump station and reservoir will be constructed in GGP to deliver water to Lincoln Park and the Presidio. Approximately 8 miles of new recycled water pipeline connect the treatment facility to the new reservoir in GGP, and also extends to the Lincoln Park and Presidio points of connection. The project also includes the retrofitting of the existing irrigation systems to bring them into compliance with Title 22 regulations. The treatment facility includes additional capacity to serve potential future customers, such as the SF Zoo.

Program: Local Water Supply	Project Status: Construction	Environmental Status: Completed (EIR)
Project Cost:		Project Schedule:
Approved  \$216.32 M	Approved Mar-03  Mar-22	
Forecast*  \$213.32 M	Forecast* Mar-03  Jul-23	
Actual  \$141.54 M	Project Percent Complete: 54.3%	
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental Approval	Bid+ Advertisement	Construction+ NTP	Construction+ Final Completion
Current Forecast	09/03/15✓	(A) 12/29/16✓ (B) 12/19/18✓ (C) 07/15/16✓ (D) 02/25/20✓	(A) 10/18/17✓ (B) 07/01/19✓ (C) 02/21/17✓ (D) 01/25/21	10/01/21 06/10/21 08/19/18✓ 03/25/22

+ Project includes multiple construction contracts. (A) Recycled Water Treatment Facilities; (B) Pump Station and Reservoir; (C) Pipeline; (D) Irrigation System Retrofit. Contract (D) was previously advertised on 09/13/19.

Progress and Status:

Treatment Facility (Contract A): The installation of major process equipment (membrane filtration system, reverse osmosis unit, and ultraviolet light disinfection system) continued during this quarter. Rough-in of mechanical, electrical, and plumbing also continued in the main treatment facility (Building 580). Work on the chemical storage facility (Building 510) continued, with the installation of chemical tanks, chemical tank piping, and fiberglass grating. Work on regulatory permitting continued, with follow-up discussions with the State, and revisions to permitting documents underway. Distribution Pump Station and Reservoir (Contract B): Forming and pouring of reservoir roof slab and beams was completed, and work on the pump station structure began.

Pipeline (Contract C) is complete.

Irrigation System Retrofit (Contract D): Contract WD-2852R was awarded to the responsible bidder with the lowest responsive bid last quarter. Notice to proceed is anticipated in mid-January. Following the demonstration to State regulatory personnel of the cross-connection testing protocol by staff last quarter











and receipt back of written comments, the test protocol is being revised for resubmittal in January 2021.

Issues and Challenges:

The project is trending behind schedule due to COVID-19 related delays. Equipment manufacturing, testing, and delivery on both WD-2776 (Contract A) and WD-2797 (Contract B) all have potential to impact the schedule further. Delays currently being experienced in the bidding and award of contract WD-2852R (Contract C) may also lead to an overall delay in project completion.

CUW28301 - College Hill Reservoir Outlet

Project Description: The College Hill Reservoir is located in San Francisco's Bernal Heights residential district and is a critical reservoir responsible for delivering water to the eastern and northern areas of San Francisco including General Hospital, Upper Market Street, Civic Center, and City Hall. The College Hill Reservoir, constructed in 1870 and San Francisco's oldest water reservoir, was seismically retrofitted in 2001. SFPUC is currently undertaking a phased program to improve the seismic reliability of the water distribution system from College Hill Reservoir to SF General Hospital to withstand a major seismic event. This project addresses essential seismic improvements within the reservoir including installation of a new control valve vault; replacement of reservoir inlet and outlet piping; reservoir roof replacement; miscellaneous piping, security, site access, electrical, instrumentation, and water quality improvements; and replacement of the first section of transmission pipelines for the College Hill system up to Cortland Avenue. This project is comprised of the following related projects: CUW28301, College Hill Reservoir Outlet and CUW280PR09, College Hill Pipeline Improvements.

Program: Local Tanks/Reservoir Improvements	Project Status: Bid and Award	Environmental Status: Completed (CatEx)
Project Cost: Approved  \$16.32 M Forecast*  \$19.28 M Actual  \$0.80 M		Project Schedule: Approved Jan-13  Sep-21 Forecast* Jan-13  Dec-23 Project Percent Complete: 15.8%
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

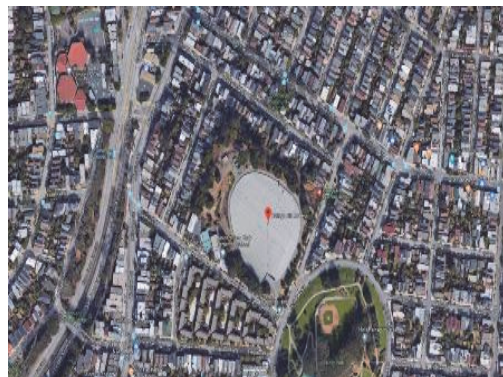
Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	11/20/19✓	02/17/21	06/22/21	06/22/23

Progress and Status:

Final design was completed on November 6, 2020. Project is anticipated to advertise in February 2021. The 24-month construction duration is forecast to start in June 2021 under contract WD-2717.

Issues and Challenges:

The variance between the Approved and Forecast Completion Dates and between the Approved Budget and Forecast Cost are the result of additional time and cost required to accomplish the following: update the contract documents with current water quality equipment standards; incorporate State funding and environmental compliance requirements; revise transmission piping alignment; restore existing retaining walls disturbed by the pipeline replacement; conduct additional surveying associated with PG&E revised work scope; implement PG&E's design of power distribution for the new facilities, and add work scope to replace the reservoir roof as it is over 20 years old and has reached the end of its useful life. Additional time was also required between final design and advertisement due to availability of resources to finalize the Contract Documents for advertisement.









Arial view of College Hill Reservoir

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CUW68601 - Automated Water Meter Program

Project Description: The Automated Water Meter Program (AWMP) will install meters with low-frequency radio signals to collect hourly water consumption data and transmit them four times a day from residential and commercial customers to our billing system and to share with customers on our My Account Website without the need for physical field visits and manual meter reading.

Program: Automated Water Meter Program		Project Status: Construction		Environmental Status: Completed (CatEx)	
Project Cost:			Project Schedule:		
Approved		\$70.24 M	Approved Mar-09		Mar-21
Forecast*		\$71.34 M	Forecast* Mar-09		Mar-21
Actual		\$69.41 M	Project Percent Complete: 99.8%		
 Approved; Actual Cost; * Forecast Status: Meet Requirements Need Attention Exceed Limits					
Key Milestones:	Environmental Approval	Bid+ Advertisement	Construction+ NTP	Construction+ Final Completion	
Current Forecast	07/27/09✓	N/A	(A) 01/04/10✓ (B) 03/15/16✓	04/29/15✓ 06/20/17✓	

+ Project includes multiple construction contracts: (A) Phase 1 & 2 Implementation of the Advanced Meter Infrastructure; and (B) Phase 3 Supply and Installation of Automatic Water Meter

Progress and Status:

The remaining scope under Phase 3 consists of installing roughly 7,000 water meter units which were either returned by the previous contractor for handling by CDD staff or only partially installed due to the presence of a metal lid on each of the meter vaults. The remaining scope is being performed primarily by CDD Construction and Maintenance, and Meter and Machine Shop crews, with a small portion handled by Customer Service Bureau Field Inspectors and is anticipated to be complete by March 2021. This anticipated completion date is highly dependent on the availability of CDD resources.

Issues and Challenges:

The variance between the Approved Budget and Forecast Cost is due to recently updated actual installation costs for these complex installations.



AWMP Data Collection Unit on the roof of the CDD Operations Building

7. On-Going Construction*

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion**	Current Forecasted Construction Final Completion	Approved Contract Cost	Current Forecasted Cost**	Schedule (Cal. Days)	Cost	
Local Water Conveyance/Distribution System								
10014974 - WD-2811 17TH STREET/CLAYTON/ORD	05/26/20	07/09/22	07/09/22	\$ 7,023,834	\$ 7,078,834	-	(\$55,000)	25.9%
10033457 - WD-2692 GEARY/36TH AVE/48TH AVE POINT LOBOS	08/27/18	11/08/20	01/25/21	\$ 6,933,463	\$ 7,074,914	(78)	(\$141,451)	79.0%
10035043 - WD-2834 GEARY RAPID EAST of VAN NESS	07/22/19	10/26/21	10/05/21	\$ 4,214,400	\$ 4,069,400	21	\$ 145,000	61.8%
CUW280PR38 - WD-2719 22ND STREET/VALENCIA ST/POTRERO	06/17/19	02/20/21	02/20/21	\$ 3,981,007	\$ 4,156,007	-	(\$175,000)	73.9%
CUW280PR42 - WD-2616 BAKER STREET /SUTTER STREET	10/19/20	03/27/22	03/27/22	\$ 3,701,180	\$ 3,701,180	-	-	0.0%
CUW280PR48 - WD-2739 CASTRO STREET 19TH/26TH STREET	08/17/20	02/10/23	08/16/22	\$ 10,707,724	\$ 11,053,393	178	(\$345,669)	2.3%
CUW280PR67 - WD-2614 GREEN/GOUGH/BRODERICK	08/26/19	12/31/20	12/31/20	\$ 2,763,377	\$ 2,919,358	-	(\$155,981)	62.4%
CUW280PR70 - WD-2766 TARAVAL STREET PHASE 1	07/01/19	09/06/21	05/16/21	\$ 4,588,340	\$ 4,944,862	113	(\$356,522)	30.4%
CUW280PR73 - WD-2775 19TH AVE/VICENTE/LINCOLN	10/19/20	01/09/23	01/09/23	\$ 6,457,251	\$ 6,457,251	-	-	2.5%
CUW280PR74 - WD-2693 21ST STREET/FORD/HANCOCK	05/26/20	12/31/21	09/29/21	\$ 3,861,835	\$ 3,970,422	93	(\$108,587)	30.0%

Note: * This table reflects Active Construction Contracts with an original contract amount greater than \$1M.

** The Forecasted Cost includes all approved, pending, and potential change orders; and Final Completion includes all approved, pending, and potential change orders, and trends.

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion**	Current Forecasted Construction Final Completion	Approved Contract Cost	Current Forecasted Cost**	Schedule (Cal. Days)	Cost	
Local Water Conveyance/Distribution System								
CUW280PR88 - WD-2793 GEARY WEST/VAN NESS to STANYAN ST	10/27/18	01/01/21	02/09/21	\$ 7,457,894	\$ 7,135,759	(39)	\$ 322,135	88.9%
Local Water Supply								
CUW30102 - WD-2809 SF Groundwater Supply Phase 2	08/07/17	08/26/19	12/31/21	\$ 10,732,565	\$ 10,732,565	(858)	-	96.7%
CUW30102 - WD-2621R SF Groundwater Supply Well Stations Phase 1	03/16/15	04/03/17	03/31/21	\$ 16,480,953	\$ 16,480,953	(1,458)	-	98.4%
CUW30201 - WD-2797 Westside Recycled Water Pump Station and Reservoir	07/01/19	05/20/21	06/10/21	\$ 16,670,562	\$ 16,670,562	(21)	-	47.3%
CUW30201 - WD-2776 Westside Recycled Water Treatment Facility	10/16/17	03/18/21	10/01/21	\$ 90,005,093	\$ 90,005,093	(197)	-	69.0%
Auxiliary Water Supply System								
CUWAWSAW04 - WD-2687R Pump Station # 2	12/12/17	12/30/21	12/30/21	\$ 19,607,875	\$ 19,607,875	-	-	57.0%

Program Total for On-Going Construction	Approved Contract Cost	Current Forecasted Cost	Variance	
			Cost	Percent
	\$ 215,187,354	\$ 216,058,429	(\$871,075)	(0.4%)

Note: * This table reflects Active Construction Contracts with an original contract amount greater than \$1M.

** The Forecasted Cost includes all approved, pending, and potential change orders; and Final Completion includes all approved, pending, and potential change orders, and trends.

8. PROJECTS IN CLOSE-OUT

Project Title	Current Approved Construction Phase Completion	Actual Construction Phase Completion	Current Approved Construction Phase Budget	Construction Phase Expenditures To Date
Auxiliary Water Supply System				
CUWAWSAW05 - Pump Station #1	04/30/19	04/30/19	\$ 9,827,981	\$ 9,549,140
TOTAL			\$ 9,827,981	\$ 9,549,140

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9. COMPLETED PROJECTS

Project Title	Approved Project Completion	Actual Project Completion	Approved Project Budget	Project Expenditures To Date
Local Water Conveyance/Distribution System				
CUW26308 - Town of Sunol Fire Suppression System	06/28/19	10/30/20	\$ 11,391,719	\$ 10,728,099
Buildings and Grounds				
CUW28101 - Pacific Rod and Gun Club Remediation	12/31/19	11/02/20	\$ 17,406,989	\$ 13,727,114
CUW68800 - Buildings and Grounds Improvements	06/30/28	12/31/20	\$ 49,035,000	\$ 8,000,000
Auxiliary Water Supply System				
CUWAW2AW29-44 - ESER 2014 Pipelines				
CUWAW2AW31 - Candlestick Point Pipeline	12/29/17	12/29/17	\$ 999,831	\$ 999,831
CUWAW2AW33 - Irving St Pipeline	07/15/19	07/15/19	\$ 8,899,129	\$ 7,564,362
CUWAW2AW34 - Ashbury Bypass Pipeline	06/30/20	06/30/20	\$ 3,265,018	\$ 3,234,673
CUWAW2AW35 - Columbus Avenue Pipeline	12/29/17	12/29/17	\$ 1,028,088	\$ 1,013,566
CUWAW2AW39 - University Mound East Pipeline	03/31/20	03/31/20	\$ 1,697,840	\$ 1,698,190
CUWAW2AW42 - Ingleside Pipeline	07/24/20	07/24/20	\$ 888,993	\$ 398,778
CUWAW2AW43 - Mariposa Pipeline	06/30/20	06/30/20	\$ 3,049,328	\$ 2,800,390
CUWAW2AW44 - Sunset Pipeline	12/31/20	06/30/20	\$ 1,996,868	\$ 780,525
CUWAW2AW30 - ESER 2014 Assessment	01/31/17	01/31/17	\$ 1,186,194	\$ 1,185,452
CUWAWS WD-2685 - Reservoir and Tanks Improvements				
CUWAW2AW23 - Twin Peaks Reservoir - ESER 2014	05/31/17	05/31/17	\$ 643,519	\$ 643,519
CUWAWSAW01 - Jones Street Tank	05/31/17	05/31/17	\$ 6,408,365	\$ 6,408,365
CUWAWSAW02 - Ashbury Heights Tank	05/31/17	05/31/17	\$ 4,647,361	\$ 4,647,361
CUWAWSAW03 - Twin Peaks Reservoir	05/31/17	05/31/17	\$ 2,652,884	\$ 2,652,884
CUWAWSAW06-09 - Cisterns Construction				
CUWAWSAW06 - Cisterns Construction #1	07/19/13	07/19/13	\$ 508,057	\$ 508,057
CUWAWSAW07 - New Cisterns	06/29/18	06/29/18	\$ 34,540,819	\$ 34,540,819
CUWAWSAW08 - Cisterns Construction #3	07/05/13	07/05/13	\$ 50,718	\$ 50,718
CUWAWSAW09 - Cisterns Construction #4	07/19/13	07/19/13	\$ 124,191	\$ 124,191
CUWAWSAW10 - Pipes, Cisterns & Tunnels Study	06/30/14	06/30/14	\$ 2,739,289	\$ 2,739,289
CUWAWSAW11-19 - ESER 2010 Pipes/Tunnels Construction				
CUWAWSAW11 - Pipes/ Tunnels Construction #1	08/01/14	08/01/14	\$ 368,729	\$ 368,729
CUWAWSAW13 - Controls - Pipeline	08/23/18	08/23/18	\$ 771,888	\$ 771,888
CUWAWSAW15 - Jones Street Valves - Pipeline	05/31/17	05/31/17	\$ 641,402	\$ 641,402
CUWAWSAW16 - Manifolds - Pipeline	12/31/19	12/31/19	\$ 177,901	\$ 177,901

9. COMPLETED PROJECTS

Auxiliary Water Supply System				
CUWAWSAW17 - Pump Station #1 Tunnel	06/01/20	06/01/20	\$ 732,063	\$ 732,063
CUWAWSAW20 - AWSS Transition Projects	02/11/16	02/11/16	\$ 73,335	\$ 73,335
TOTAL			\$ 155,925,518	\$ 107,211,501











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10. PROJECTS WITHIN BUDGET AND SCHEDULE

CUW28000 - Local Water Conveyance/Distribution System

Project Description: This long-term renewal program consists of three major components:

1. Linear Assets Management Program: This program replaces and renews distribution system pipelines and customer service connections for the 1,230 miles of drinking water mains in San Francisco. Planning analysis has demonstrated a need to increase the annual replacement rate from the previous 6 miles per year to a target of 15 miles per year to minimize main breaks and meet customer service goals of uninterrupted service. The FY14 approved budget was for replacement or renewal of 9 miles of pipe; FY15 approved budget was to renew 12 miles pipelines, and FY16 and subsequent years are funded to renew 15 miles per year for the next 10 years. Improvements include replacement, rehabilitation, re-lining, and cathodic protection of all pipe size categories so as to extend or renew the pipeline's useful life. Coordination with construction projects from other City agencies, especially SFPUC Wastewater and SFPW paving, is emphasized to optimize efficiencies, reduce costs, and minimize customer disruptions.
2. Renew Services: This program replaces assets between the water main and the customer's service connection at the end of their useful life, including: replacement of 1-inch to 8-inch diameter service pipes made of galvanized steel, lead, or plastic with copper or ductile iron; replacement of broken meter boxes and outdated meters and associated piping; and subsequent restoration of associated sidewalk and roadway.
3. New Services: This program provides materials and labor for installing new domestic, fire, and irrigation services charged as a one-time flat rate to new customers and includes related sidewalk and roadway restoration. No increase over time is anticipated.

Program: Local Water Conveyance/Distribution System	Project Status: Multiple Phases	Environmental Status: Active (Various)
Project Cost:		Project Schedule:
Approved  \$902.66 M	Approved Jul-10  Jun-28	
Forecast*  \$750.58 M	Forecast* Jul-10  Jun-28	
Actual  \$338.23 M	Project Percent Complete: 36.8%	
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental Approval	Bid+ Advertisement	Construction+ NTP	Construction+ Final Completion
Current Forecast	Various	Various	Various	Various

+ The Programmatic Project includes multiple active and upcoming construction contracts (Refer to Section 7 for the active construction status).

Progress and Status:

Planning efforts have determined that a 15-mile per year pipeline replacement or renewal rate to extend the useful life of assets is required to ensure levels of service can be met in the future. City Distribution Division (CDD) and Engineering Management Bureau are performing design; CDD with Construction Management Bureau are managing construction. The environmental review is completed on a project-by-project basis as design work is completed. CDD is coordinating with Wastewater Enterprise sewer replacement projects as well as San Francisco Public Works paving projects to avoid conflicts, reduce construction costs, and minimize disruption in public and residential areas. The forecast mileage for FY21 is 11.5 miles and correlates to the approved FY21 Capital











Improvement Plan (CIP) Budget for 11.5 miles for FY21-FY22. Projects currently under construction include the City streets of Geary between Presidio and Van Ness, Geary between Van Ness and Kearny, L-Taraval between Sunset and SF Zoo, 22nd Street, Pierce Street, Castro Street, 21st Street, 17th Street, Baker Street, and 19th Avenue .

Issues and Challenges:

The variance between the approved budget and forecast cost is because of reducing the scope of the project to exclude the new services and the renew services since they will have a separate budget during FY20-21.

CUWAW2AW29-44 - ESER 2014 Pipelines

Project Description: These projects include construction of various pipelines using ESER 2014 bond funds.

Program: Auxiliary Water Supply System	Project Status: Design	Environmental Status: Active (StatEx)
Project Cost: Approved  \$34.64 M Forecast*  \$34.64 M Actual  \$22.07 M		Project Schedule: Approved Feb-15  Dec-22 Forecast* Feb-15  Dec-22 Project Percent Complete: 76.4%
 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits		

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	11/11/16✓ - 03/31/20✓	03/20/20✓ - 03/31/20✓	11/21/16 ✓ - 02/01/21	03/31/17 ✓ - 09/30/21

Progress and Status:

CUWAW2AW29 Clarendon Supply (ESER 2014 Partial Funding):

- Contract was awarded. Construction Notice-to-Proceed (NTP) is expected to be issued in February 2021.

CUWAW2AW32 19th Avenue Pipeline:

- This project is part of Public Works' 19th Avenue Roadway Improvements, Contract 2652J. Contract was awarded in May 2020. Construction NTP was issued during the quarter, in October 2020, Construction started in late November 2020.

10034292 Terry Francois Blvd (TFB) Mission South Pipeline:

- Construction completion expected in March 2021 for the new 20-inch diameter Emergency Firefighting Water System (EFWS) pipeline on TFB from Mission Rock St to Warriors Way.

10032909 Street Valve Motors:

- Construction completion is scheduled for December 2021.

10035104 PEFWS PS - Lake Merced:

- Planning in progress. AAR is expected to be completed in February 2021.

10035733 EFWS Studies:

- Future fire water demands and seawater supply studies are expected to be completed by June 2021. Future EFWS development study is expected to be completed by December 2021.

10035734 PEFWS Pipeline:

- Install a seismically resilient high-pressure firefighting water system to the western neighborhoods of the City, while also creating a seismically resilient pipeline that can supply drinking water to the same western neighborhoods when not

in use for a side fire situation. Design for the PEFWS pipeline continues.

10035735 AWSS PS/Pipeline - Lake Merced:

- Project is in the planning phase.

10035860 Fillmore Haight:

- Construction was completed in the quarter, in December 2020.

10036324 EFWS Manifold Fort Mason:

- Planning in progress. The project includes rehabilitation of a fireboat manifold and installation of pipelines at Fort Mason and Pier 33.5.

Issues and Challenges:







None at this time.

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CUWAWS WD-2687 - Pump Station #2

Project Description: This project will provide seismic improvements to the Pump Station #2 building foundation, walls, and roof (the roof and skylights will be replaced). It will remove the rear portion of existing steam boilers while maintaining the front boiler facade. It will add fire sprinklers to the building and will construct an accessible work area and rest room, with associated electrical, mechanical, and plumbing work.

Program: Auxiliary Water Supply System	Project Status: Construction	Environmental Status: Completed (MND)
-----------------------------------------------	-------------------------------------	----------------------------------------------

Project Cost:		Project Schedule:	
Approved	 \$28.72 M	Approved Apr-11	 Jun-22
Forecast*	 \$28.72 M	Forecast* Apr-11	 Jun-22
Actual	 \$17.23 M	Project Percent Complete: 89.1%	
			

Key Milestones:	Environmental** Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	04/01/11✓	04/06/17✓	12/12/17✓	12/30/21

** The Mitigated Negative Declaration (MND) was completed under a SFPW project.

Progress and Status:

Construction continued for Pump Station #2, contract WD-2687. Construction completion expected in December 2021.

Issues and Challenges:

None at this time.








Interior view of PS2 showing a pump, valves, engine sound enclosure and exhaust, and building structural members

CUWAWSAW11-19 - ESER 2010 Pipes/Tunnels Construction

Project Description: These projects include various pipeline and tunnel construction using ESER 2010 bond funds.

Program: Auxiliary Water Supply System	Project Status: Construction	Environmental Status: Completed (Various)
-----------------------------------------------	-------------------------------------	--------------------------------------------------

Project Cost:	Project Schedule:
Approved  \$18.87 M	Approved Apr-11  Mar-21
Forecast*  \$18.87 M	Forecast* Apr-11  Mar-21
Actual  \$7.22 M	Project Percent Complete: 99.4%

 Approved;  Actual Cost; * Forecast Status:  Meet Requirements  Need Attention  Exceed Limits

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	08/08/14✓ - 10/07/19✓	11/30/15✓ - 03/20/20✓	11/30/15 ✓ - 12/02/19✓	12/01/15 ✓ - 01/29/21

Progress and Status:

The project team is targeting closeout of ESER 2010-funded EFWS projects by end of March 2021.

Issues and Challenges:

None at this time.

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APPENDICES

A PROJECT DESCRIPTIONS

B APPROVED PROJECT-LEVEL SCHEDULE

C LIST OF ACRONYMS

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APPENDIX A. PROJECT DESCRIPTION

A1. REGIONAL PROGRAMS

Water Treatment

10032938 - SVWTP Powdered Activated Carbon Feed Units (CUW27202) (Completed)

The project intent is to construct a powdered activated carbon (PAC) feed system at SFPUC's Sunol Valley Water Treatment Plant (SVWTP) to provide an intermediate-term solution to control taste and odor (T&O) issues during Hetch Hetchy shutdowns. In recent years, SVWTP has experienced more frequent T&O events than had occurred historically. The T&O events result from by-products of algae growing naturally in San Antonio and Calaveras Reservoirs, the plant's primary water sources. The project scope includes a pair of concrete PAC tanks, their associated chemical feed system, and other related upgrades at the SVWTP headworks. Although project 10033123, SVWTP Ozone system, will provide a long-term solution to control T&O events, it will not be completed until the 2023 Hetch Hetchy shutdown. So in the interim, the PAC system will be in place for the upcoming Hetch Hetchy shutdowns. This project is a continuation of project CUW2720206, SVWTP Phase 3, under which the planning, design, environmental review and bid & award phases were performed, and those costs are not included in the budget numbers presented herein.

10033123 - SVWTP Ozone (CUW27202)

In recent years, SFPUC's Sunol Valley Water Treatment Plant (SVWTP) has experienced more frequent taste and odor (T&O) events than had occurred historically. The cause of the T&O events has been geosmin and/or 2-methylisoborneol (MIB) which are by-products of algae growing naturally in San Antonio and Calaveras Reservoirs, SVWTP's primary water sources. In early December 2016, San Antonio Reservoir was the source of a major T&O event. In addition to this specific recent event, algal blooms have also generally increased in magnitude and frequency in Calaveras Reservoir due to its lower water levels related to the dam reconstruction

project, the use of less effective algacides, and certain environmental factors. The algal blooms can occur at any time of year but are more likely in late spring and late autumn.

The project intent is to build an ozonation system that will provide a long-term solution to control T&O events encountered in the raw water supply from both the San Antonio and Calaveras Reservoir sources. The work will include installation of cryogenic oxygen tanks, liquid oxygen vaporizers, ozone generators, ozone injectors, an ozone contactor, an ozone building, an ozone destruct system, associated pumping/valving/piping/appurtenances, associated automatic controls, related facilities, an electrical building, site improvements, and offset power generation consisting of solar panels atop the treated water reservoir.

Water Transmission

10034578 - CSPL2 Reach 5 Rehabilitation

Crystal Springs Pipeline No. 2 (CSPL2) runs from Crystal Springs Pump Station to University Mound Reservoir. It delivers potable and emergency water supply to San Francisco and to several cities along the Peninsula. Reach 5 of CSPL2 in the cities of South San Francisco and San Bruno is over 80 years old and has extensive lining failures. This project would replace the coal tar lining, and would also improve access and shutdown flexibility for maintenance by installing manway structures and valves on CSPL2 and San Andreas Pipeline No. 1 (SAPL1) near Baden Pump Station.

CUW2730404 - SAPS Motor Control Centers

The San Antonio Pump Station (SAPS) is one of the key facilities in the Sunol Valley, and was constructed in 1965 and modified in 1990. The existing motor control centers MCC-A, MCC-B, and MCC-C have been in service since the 1960's and they are approaching the end of their useful life. In order to maintain reliable operation at SAPS, the existing MCCs are being replaced and facility walls are being seismically retrofitted. In order to accommodate the retrofit work, the communications system is being relocated to an adjacent room and the HVAC will be replaced in

affected rooms.

CUW2730503 - Peninsula Pipelines Seismic Upgrade Phase III (Completed)

This project completes the seismic reliability improvements to pipelines in the Peninsula geographic region leading to terminal reservoirs within the City of San Francisco. WD-2727 Phases I & II of the seismic reliability improvements project were completed under WSIP. Phase III is a non-WSIP project, and includes new isolation valves on San Andreas Pipeline No. 2 (SAPL2) at Belle Avenue and Junipero Serra Boulevard in San Francisco, and near 22nd Avenue and Sloat Boulevard in San Francisco. A new parallel pipeline will be installed within Sigmund Stern Grove in San Francisco to replace an approximately 580-foot segment of SAPL2.

CUW2730504 - SAPL2 Lockbar Replacement

San Andreas Pipeline No. 2 (SAPL2) provides key water supply redundancy from the Harry Tracy Water Treatment Plant (HTWTP) to the Sunset Reservoir. The lock-bar steel sections of 54" diameter SAPL2 between the HTWTP and the Golden Gate National Cemetery are almost 90 years old, pitted, deteriorated, and in need of replacement. This project will replace/rehabilitate approximately 6,500 linear feet of SAPL2 in the City of San Bruno.

CUW2730505 - CSPL2 Reaches 2 and 3 Rehabilitation

Crystal Springs Pipeline No. 2 (CSPL2) spans from Crystal Springs Pump Station to University Mound Reservoir. It delivers potable and emergency water supply to San Francisco and several cities along the Peninsula. Reaches 2 and 3 of CSPL2 in the Town of Hillsborough, unincorporated areas of San Mateo County, the City of San Mateo, and the City of Burlingame are over 80 years old and deteriorated with Reach 2 located on slopes that are eroding and Reach 3 containing extensive lining failures. This project would realign Reach 2 to the existing abandoned CSPL1 alignment, replace the coal tar lining of Reach 3, and improve access to the pipeline.

Water Supply & Storage

10015232 - Merced Manor Reservoir Facilities Repairs

The Merced Manor Reservoir was upgraded in 2004 to seismically strengthen and repair the roof structure and foundations. After the completion of the upgrade, spalling of concrete at various locations on the roof structure was observed over the years due to the constant temperature gradient experienced in the roof structure. The design of the seismic retrofit of Merced Manor Reservoir was done without the benefit of the lessons learned from later roof retrofits and construction at Sunset North Basin and University Mound North Basin where the effect of temperature load on the roof due to expansion and contraction was analyzed and designed to accommodate the temperature loading. The scope of this project includes performing structural analysis of the effect of temperature gradient on the existing roof structure design; developing design modifications of the roof structure to accommodate the expansion and contraction loads; and construction of the roof modifications and repair of the spalled concrete.

10036602 - Daly City Recycled Water

The Daly City Recycled Water Expansion Project was originally envisioned and planned under Local Water CUW278 (Other Recycled Water Projects). Planning for this and other recycled water projects was completed and identified in the Local CIP. Currently, the Daly City Recycled Water Expansion Project water delivery capacity is envisioned to help offset groundwater pumping in the Westside Basin and potential demands from the Regional Water System (RWS). The SFPUC is working with Daly City's North San Mateo County Sanitation District, Cal Water, the Town of Colma and potential customers to treat, transmit, store and deliver up to 3 million gallons per day (MGD) of additional recycled water supply. Facilities included in the project design consist of a new treatment facility co-located with Daly City's existing wastewater treatment plant, a transmission pipeline through Daly City and the Town of Colma, and a storage tank. Final design and construction of the project will be completed under the scope of this project

once planning is completed in fiscal year 2019.

CUW2740102 - Pilarcitos Dam and Reservoir Improvements

This project is to address concerns regarding the seismic stability of the Pilarcitos Dam and Reservoir facilities and to perform necessary upgrades identified during the Planning Phase. The primary objectives are to perform a condition and needs assessment of the dam and forebay outlet structure, outlet tunnel, and outlet pipeline as requested by the California Division of Safety of Dams (DSOD); to develop retrofit options if required; and to implement the chosen option. Secondary objectives are to perform the same evaluation and implementation for the spillway.

CUW2740103 - San Andreas Dam Facility Improvements

This project is to address concerns regarding the condition of the San Andreas Dam facility and to perform necessary upgrades identified during the Planning Phase. This project includes CUW2740103 (10015092) San Andreas Dam Facility Improvements (DFI), San Andreas Dam (SAD) Spillway 1003237, and a new project to assess the SAD embankment. San Andreas DFI project addresses the emergency drawdown outlets, as directed by the California Division of Safety of Dams (DSOD). The SAD Spillway project performs a spillway condition assessment mandated by DSOD and also budgets for the spillway replacement, if that should be required. The third project is the SAD embankment assessment for seismic stability associated with potential alluvium underneath the embankment. Construction of the emergency drawdown outlets will precede any potential upgrades to the spillway and/or embankment.

CUW27401TD - Turner Dam and Reservoir Improvements

This project addresses the Turner Dam spillway condition assessment, and the repair of the erosion downstream of the spillway, as directed by California Division of Safety of Dams (DSOD). The project also is budgeted for the spillway replacement, if that should be necessary.

CUW2740600 - Potable Reuse & Other Supplies

The SFPUC is identifying opportunities and investigating the potential for purified water projects through direct and indirect potable reuse (DPR and IPR) processes. The SFPUC is participating in research and regulatory review statewide and is working with other Bay Area water agencies to develop potential project opportunities for up to 15 mgd of drinking water with advanced treatment technologies for water needs anticipated within the planning horizon. Feasibility analyses and pilot efforts are anticipated to promote further development of purified water as a source of drinking water. The feasibility studies currently underway include the Bay Area Regional Reliability (BARR), Potable Reuse Exploratory Plan (PREP) Study Silicon Valley Clean Water, Evaluation of Purified Water Alternatives, and Los Vaqueros Expansion Opportunities. Additional opportunities are also being identified under this portfolio. Once one or more projects have been identified for planning to continue to move forward, pilot testing, environmental review, design, and construction phases will follow. The current funding will carry this work through the bid and award phase and cover a portion of construction.

Watershed & Lands Management

CUW2751801 - Southern Skyline Blvd Ridge Trail Extension

The Bay Area Ridge Trail project was started in 1987 by the Bay Area Ridge Trail Council to create an approximately 550-mile long continuous trail for hikers, mountain bicyclists, and equestrians along the ridgelines overlooking San Francisco Bay. This proposed extension project would construct a 6-mile-long trail on the Peninsula Watershed in San Mateo County between Highway 92 and the Golden Gate National Recreation Area's (GGNRA) Phleger Estate. The project would consist of 10 to 12-foot wide, all-weather surface trails; retaining structures to stabilize cut and/or fill slopes; drainage facilities; a 15,000-square-foot parking lot accommodating up to 14 cars; two to three pre-fabricated restrooms along the trail; site security features; and landscape restoration. In addition, trailhead

improvements on SFPUC lands will be analyzed with the goals to support trail users, enhance educational opportunities, and ensure watershed protection.

Buildings and Grounds

10033555 - Rollins Road Building Renovations (CUW27703)

The SFPUC purchased a property on Rollins Road in September 2017, securing an additional 10,000 square feet of office space for the SFPUC Water Enterprise (WE). The project is to perform tenant improvements, facilitating the consolidation of WE work groups and the elimination of trailers at the SFPUC WE Administration Building. Renovation of the facility is required to create useable office space, a limnology laboratory, conference rooms, additional showers, and a workshop and library for Natural Resources Division (NRD). In addition, the project will address deferred building maintenance, replace the roof, upgrade security, HVAC, phone, and electrical systems, and build storage space.

CUW27701 - Sunol Long Term Improvements

The project includes general redevelopment of the existing Sunol Yard and construction of a Watershed Center near the Sunol Water Temple. Replacement structures will be constructed for existing maintenance shops and equipment storage. New structures to be built include a fueling center, a new administration building, four new pre-fabricated shop buildings, approximately 40,000 square feet of covered storage for vehicles and materials, and a re-surfaced area for vehicle traffic. To create space and lower maintenance costs, six existing dilapidated structures will be demolished. Near the Sunol Water Temple, a 13,000-square foot Watershed Center will be constructed. Additionally, work will be completed on the main gate and road to the Sunol Water Temple. This project is comprised of the following related projects: CUW27701, Sunol Long Term Improvements, and CUW2630601, Sunol Master Plan Support.

CUW2770304 - Millbrae Yard Laboratory and

Shop Improvements

Additional laboratory space is needed to meet current water regulations and to provide WSTD operations improvements. There are four major components to this project: (1) the construction of a new 13,500 square-foot shop building for WSTD; (2) the construction of a new 2,000 square-foot WQD Lab addition; (3) conversion of the existing WSTD Operations Supervisor wing of the existing Administration Building into a WQD laboratory; and (4) Tenant Improvements to the existing Administration Building laboratory. The scope includes remodeling a portion of the Administration Building with WQ sample receiving room upgrades, reconfiguring a conference and flavor profile room, lab additions with extraction lab, a calibration room, relocating and reconfiguring WSTD space, adding two offices for WSTD, server room renovation, a new south shop with WSTD office space, security upgrades and site improvements.

A2. LOCAL PROGRAMS

LOCAL WATER CONVEYANCE/ DISTRIBUTION SYSTEM

10033816 - Westside Potable Auxiliary Water Supply System

This project proposes to design and construct earthquake-resistant water pipeline in western San Francisco, particularly the Sunset and Richmond areas. This pipeline will connect to the existing potable water distribution system to help deliver water to businesses, institutions, and residences during normal operations. It will also be designed to provide high-pressure fire suppression water when needed after a major earthquake or other emergency. When so needed, it will be isolated from the remainder of the potable distribution system by strategically located valves and can then be pumped to achieve pressures comparable to the existing conventional Auxiliary Water Supply System, which is located in other areas of San Francisco. This project also includes Lake Merced and Sunset Reservoir pump stations, which will increase water pressure when needed for fire suppression. Pipeline alignment, diameter, and related features will be determined during the planning phase, as will pump station schematic design. Phased construction scheduling and associated budgets will be determined in conjunction with finalizing these pipeline and pump station details.

CUW26308 - Town of Sunol Fire Suppression System (Completed)

In 2010, the SFPUC committed to the implementation of a fire hydrant system for the Town of Sunol via an MOU with Alameda County. The project will involve construction of a fire hydrant system, including new pipelines, pump stations, monitoring equipment, and storage tanks. The project may be integrated into the existing local potable water system or may be independent.

CUW28000 - Local Water Conveyance/ Distribution System

This long-term renewal program consists of three major components:

1. Linear Assets Management Program: This program replaces and renews distribution system pipelines and customer service connections for the 1,230 miles of drinking water mains in San Francisco. Planning analysis has demonstrated a need to increase the annual replacement rate from the previous 6 miles per year to a target of 15 miles per year to minimize main breaks and meet customer service goals of uninterrupted service. The FY14 approved budget was for replacement or renewal of 9 miles of pipe; FY15 approved budget was to renew 12 miles pipelines, and FY16 and subsequent years are funded to renew 15 miles per year for the next 10 years. Improvements include replacement, rehabilitation, re-lining, and cathodic protection of all pipe size categories so as to extend or renew the pipeline's useful life. Coordination with construction projects from other City agencies, especially SFPUC Wastewater and SFPW paving, is emphasized to optimize efficiencies, reduce costs, and minimize customer disruptions.

2. Renew Services: This program replaces assets between the water main and the customer's service connection at the end of their useful life, including: replacement of 1-inch to 8-inch diameter service pipes made of galvanized steel, lead, or plastic with copper or ductile iron; replacement of broken meter boxes and outdated meters and associated piping; and subsequent restoration of associated sidewalk and roadway.

3. New Services: This program provides materials and labor for installing new domestic, fire, and irrigation services charged as a one-time flat rate to new customers and includes related sidewalk and roadway restoration. No increase over time is anticipated.

Local Water Supply

CUW30101 - Lake Merced Water Level Restoration

The project consists of two subprojects. (1) The City of Daly City is proposing and working in coordination with the SFPUC to implement the Vista Grande Drainage Basin Improvements project to address storm related flooding in the Vista Grande Watershed Drainage Basin while providing the benefit of restoring the level of

Lake Merced. (2) In addition, the SFPUC is implementing a Demonstration Aeration Mixing Project to evaluate whether additional lake mixing might result in improved dissolved oxygen concentrations in the Lake.

CUW30102 - San Francisco Groundwater Supply

This project consists of two phases, which combined will provide an annual average of 4 mgd of groundwater to San Francisco's municipal water supply. The first phase consists of building four new groundwater well stations in the western part of San Francisco. All four stations will include a building to house the well pump and electrical equipment, with two stations having an additional room to provide chemical disinfection. Buried piping will be installed to connect three of these well stations to the Sunset Reservoir. Groundwater from the fourth well station will be piped to the nearby Lake Merced Pump Station, where it will be distributed to both the Sunset Reservoir and Sutro Reservoir. The second phase consists of converting two existing irrigation well facilities in Golden Gate Park to groundwater supply wells, and would be implemented after completion of the CUW30201, San Francisco Westside Recycled Water Project. In the second phase buried piping will be installed to also connect these two wells to the Sunset Reservoir. Improvements to the facilities at the existing San Francisco Zoo Well No. 5 have been completed as part of the project, allowing this well to serve as an emergency potable water source.

CUW30201 - San Francisco Westside Recycled Water

This project consists of a new recycled water treatment facility located at the SFPUC's existing Oceanside Plant, along with the associated distribution system components, to produce and deliver an annual average of approximately 2 mgd of recycled water to Golden Gate Park (GGP), Lincoln Park, and the Presidio. The treatment process includes membrane filtration, reverse osmosis, and ultraviolet light disinfection. A new pump station and reservoir will be constructed in GGP to deliver water to Lincoln Park and the Presidio. Approximately 8 miles of

new recycled water pipeline connect the treatment facility to the new reservoir in GGP, and also extends to the Lincoln Park and Presidio points of connection. The project also includes the retrofitting of the existing irrigation systems to bring them into compliance with Title 22 regulations. The treatment facility includes additional capacity to serve potential future customers, such as the SF Zoo.

Local Tanks/Reservoir Improvements

CUW28301 - College Hill Reservoir Outlet

The College Hill Reservoir is located in San Francisco's Bernal Heights residential district and is a critical reservoir responsible for delivering water to the eastern and northern areas of San Francisco including General Hospital, Upper Market Street, Civic Center, and City Hall. The College Hill Reservoir, constructed in 1870 and San Francisco's oldest water reservoir, was seismically retrofitted in 2001. SFPUC is currently undertaking a phased program to improve the seismic reliability of the water distribution system from College Hill Reservoir to SF General Hospital to withstand a major seismic event. This project addresses essential seismic improvements within the reservoir including installation of a new control valve vault; replacement of reservoir inlet and outlet piping; reservoir roof replacement; miscellaneous piping, security, site access, electrical, instrumentation, and water quality improvements; and replacement of the first section of transmission pipelines for the College Hill system up to Cortland Avenue. This project is comprised of the following related projects: CUW28301, College Hill Reservoir Outlet, and CUW280PR09, College Hill Pipeline Improvements.

Pump Stations

CUW28401 - McLaren Park Pump Station Upgrades

This project is to rebuild the McLaren Park Pump Station. This facility is the backup to the Alemany Pump Station and provides water to the McLaren Park Tanks. The project includes the demolition of the existing building, construction of a new reinforced concrete building with bridge crane,

new pumps and motors, a fire sprinkler system, a new electrical system, a new standby generator and generator building, replacement of surge tanks, a new Lenel security system, new fencing, water quality monitoring, landscaping and other site work. The new pump station will be automated and operated through the existing Water SCADA system.

Buildings and Grounds

CUW28101 - Pacific Rod and Gun Club Remediation (Completed)

The City owns the property, and the SFPUC has exclusive jurisdiction over the property. The SFPUC leases the property to the Pacific Rod and Gun Club (PRGC) which has used it for skeet and trap shooting since 1934. Until 1994 and 2000 respectively, shotgun shells containing lead shot and clay pigeons containing polycyclic aromatic hydrocarbons (PAHs) were used on the property. Elevated concentrations of lead, PAHs, other heavy metals, and arsenic have been detected in site soil; of these, the detected concentrations of lead and PAHs are the primary constituents that contribute to potential human health risk at the site.

The SFPUC wants to preserve all options for future use of the property. Under this project, the SFPUC proposes to excavate and dispose of impacted soils at an approved landfill over a period of up to 50 weeks. This project includes planning, environmental review, excavation, and loading and offsite disposal of about 45,000 cubic yards of contaminated soils located throughout the property. Contaminated soils will be excavated to a depth of up to 7 feet below ground surface at various locations. Following removal of impacted soils, excavated areas will be backfilled with clean soil.

The project is needed to implement remediation of contaminated soils at the PRGC site in order to reduce soil contamination below applicable human health screening levels, and would enable future unrestricted safe reuse of the property. The project will also utilize technology, to the extent possible, in conformance with the SFPUC's technology policy (adopted on 7/24/12). Areas where technology may be used include: cost

management, environmental impact assessment and resource management, and regulatory compliance.

CUW68800 - Buildings and Grounds Improvements

This project covers capital improvements to CDD non-operational facilities and structures, primarily benefitting the CDD corporate yard, to address health, safety, reliability, and security issues. This project will replace obsolete and inefficient HVAC equipment, improve office and warehouse efficiencies, and replace the underground Fueling Station, which has reached the end of its useful service life and poses an environmental risk. In addition, the program includes the construction of a future CDD Control Center (a seismically reliable building to house CDD's communications and control systems, with space for Operations, Administration, and Support staff), and as-needed improvements to ancillary facilities to reduce operating and maintenance costs, improve reliability to maintain routine and emergency operations of the potable and auxiliary water systems, and increase efficiency.

Automated Water Meter Program

CUW68601 - Automated Water Meter Program

The Automated Water Meter Program (AWMP) will install meters with low-frequency radio signals to collect hourly water consumption data and transmit the data four times a day from residential and commercial customers to our billing system and to share with customers on our My Account Website. This will remove the need for physical field visits and manual meter reading. In addition to installation or retrofit of approximately 180,000 residential and commercial water meters in San Francisco, project implementation includes deployment of the data collection network of 84 data collection units (DCUs) and establishment of an FCC licensed private RF channel and a Verizon data connection for transmittal of the data from the meters to a network control computer. The network control computer will be equipped with software to collect and analyze the meter reading data

interfaced to the SFPUC's billing system and My Account Website portals. The program also involves potential connection of Power Enterprise electric meters to the AWMP collection network.

Auxiliary Water Supply System

10034292 - TFB Mission South Pipeline

Install new AWSS pipeline and appurtenances on Terry Francois Boulevard from Mission Rock Street to South Street.

CUWAW2AW23 - Twin Peaks Reservoir - ESER 2014 (Completed)

In order to reduce leakage occurring from the Twin Peaks Reservoir basins, sealant materials will be installed along the joints at Twin Peaks Reservoir in this project.

CUWAW2AW24 - PS 2 (ESER 2014)

This project will provide seismic improvements to the Pump Station #2 building foundation, walls, and roof (the roof and skylights will be replaced). It will remove the rear portion of existing steam boilers while maintaining the front boiler facade. It will add fire sprinklers to the building and will construct an accessible work area and rest room, with associated electrical, mechanical, and plumbing work.

CUWAW2AW29 - Clarendon Supply (ESER 2014 Partial Funding)

Provide a new AWSS water supply near the crest of Clarendon Avenue at Dellbrook Avenue.

CUWAW2AW30 - ESER 2014 Assessment (Completed)

This study will help decide which projects to pursue with Earthquake Safety and Emergency Response (ESER) 2014 bond funding among candidate projects derived from the AWSS Planning Study, considering the need for flexible water supply systems and taking into account CCSF obligations under various land development agreements. A Network Surge Analysis will also assess the potential for pressure surge conditions in the AWSS pipeline and recommend solutions if any such conditions are identified. Additional assessments will analyze

the structural integrity of various AWSS components for seismic reliability.

CUWAW2AW31 - Candlestick Point Pipeline (Completed)

This project will install a new 20" AWSS pipe on Carroll Avenue from Ingalls Street to Hawes Street. This project is being performed in coordination with the Candlestick Point development project and will be constructed as part of Public Works' Potrero Streetscape project.

CUWAW2AW32 - 19th Avenue Pipeline

This project will install a new 20" AWSS pipe on 19th Avenue from Irving Street to Kirkham Street, replacing the existing 12" pipe. It will also construct pipe crossings under 19th Avenue at four locations for the FWSS. This project is part of Public Works' 19th Avenue project.

CUWAW2AW33 - Irving St Pipeline

This project will install a new 20" AWSS pipe on Irving Street from 7th Street to 19th Street, replacing most of the existing 12" pipe. This project is part of Public Works' Irving Street project.

CUWAW2AW34 - Ashbury Bypass Pipeline

This project will install new 20" AWSS pipe near Ashbury Heights Tank to allow Twin Peaks Reservoir to connect with the lower (Ashbury and Jones Street) pressure zones without need for the Ashbury Tank valve house devices. This new connection is anticipated to be used in the event the valve house is damaged.

CUWAW2AW35 - Columbus Avenue Pipeline (Completed)

Replace existing AWSS pipe with new AWSS pipe at the intersection of Columbus Avenue and Green Street to eliminate an existing sewer conflict. This work will be part of Public Works' Columbus Avenue project starting in early 2016.

CUWAW2AW36 - Lake Merced Pipeline

Install new 20" AWSS pipe from Lake Merced Pump Station across Lake Merced Boulevard to the intersection of Vidal Drive and Higuera Avenue. Modify lake-pump discharge piping.

This project is being performed in coordination with the Parkmerced development project.

CUWAW2AW37 - McLaren Tank Flexible System (Eliminated)

Project is cancelled due to logistical and operational issues.

CUWAW2AW38 - Sunset Reservoir Flexible System (Eliminated)

Project is cancelled due to logistical and operational issues.

CUWAW2AW39 - University Mound East Pipeline

This project will install new 20" AWSS pipe from the University Mound Reservoir to the existing 20" AWSS pipeline on Third Street in the vicinity of Jamestown Avenue.

CUWAW2AW40 - Repairs - Pipeline (2014) (Eliminated)

This project will assess the condition of AWSS pipeline and establish a capital improvement program for abandonment, repair, or replacement activities as needed. Assessments of corrosion potential, utility conflicts, liquefiable areas, joint restraints, pipeline settlement, and related factors are being planned.

CUWAW2AW41 - FWSS Crossings (Eliminated)

Project is cancelled due to logistical and operational issues.

CUWAW2AW42 - Ingleside Pipeline

This project will install new 20" AWSS pipe from existing Ocean Avenue AWSS pipe to the intersection of Ocean Ave and Jules Ave.

CUWAW2AW43 - Mariposa Pipeline

This project will install new 20" AWSS pipe from Mariposa St/3rd St to South St via Terry Francois Blvd.

CUWAW2AW44 - Sunset Pipeline

This project will install new Potable AWSS pipeline from Sunset Reservoir.

CUWAWSAW01 - Jones Street Tank

(Completed)

Construction at Jones Street Tank will reinforce the connection between the existing 750,000-gallon water tank wall and foundation. It will improve the seismic capacity of pipes, fittings, supports, restraints, joints, valves, and related items leading away from the tank and to the valve house. It will add electric actuators on selected gate valves with Supervisory Control and Data Acquisition (SCADA) interface. It will replace valve house skylights and re-surface the roof. Work includes installing micropiles to stabilize the tank foundation, adding a curb to better connect the tank wall to the foundation, and improving or repairing various architectural, mechanical, and electrical elements of Jones Street Tank.

CUWAWSAW02 - Ashbury Heights Tank (Completed)

Construction at Ashbury Heights Tank will replace the existing 500,000-gallon water tank and improve the seismic capacity of pipes, fittings, supports, restraints, joints, valves, and related items connecting the tank to the valve house. Work includes removing the existing riveted steel tank, installing drilled piers into rock for the foundation, and installing a new bolted glass-fused steel tank of equivalent storage capacity.

CUWAWSAW03 - Twin Peaks Reservoir (Completed)

Construction at Twin Peaks Reservoir will improve the seismic capacity of pipes, valves, gates, and related items. The work also includes repairing miscellaneous concrete spall and cracks, replacing sluice gates and discharge screens, and replacing and motorizing selected gate valves.

CUWAWSAW04 - Pump Station #2

This project will provide seismic improvements to the Pump Station #2 building foundation, walls, and roof (the roof and skylights will be replaced). It will remove the rear portion of existing steam boilers while maintaining the front boiler facade. It will add fire sprinklers to the building and will construct an accessible work area and rest room, with associated electrical, mechanical, and

plumbing work.

CUAWSAW05 - Pump Station #1

This project will replace the seawater pump engines and engine controls. It will replace the existing pump room ventilation system to provide adequate combustion air and allow ambient air flow. The work includes installing four new diesel engines, a new backup power generator, engine controls with SCADA interface, new engine exhaust piping, and pump room ventilation; replacing seawater intake pipes; anchoring seawater pumps; and repairing the concrete slab supporting one of the pumps.

CUAWSAW06 - Cisterns Construction #1 (Completed)

The initial analysis of existing cisterns indicated no need for repairs. Project is being consolidated under CUAWSAW07 New Cisterns.

CUAWSAW07 - New Cisterns (Completed)

This project will construct new cisterns for storage of water for firefighting.

CUAWSAW08 - Cisterns Construction #3 (Completed)

Initial design of new cisterns. Project is being consolidated under CUAWSAW07 New Cisterns.

CUAWSAW09 - Cisterns Construction #4 (Completed)

Initial design of new cisterns. Project is being consolidated under CUAWSAW07 New Cisterns.

CUAWSAW10 - Pipes, Cisterns & Tunnels Study (Completed)

Joint Venture Consultant AECOM/AGS provided planning support services for repair, improvement, and expansion of the AWSS pipelines, cisterns, and tunnels. The planning incorporated results of work by EMB for Twin Peaks Reservoir, Ashbury Heights Tank, Jones Street Tank, Pumping Station 1, and Pumping Station 2. The work also included planning-level assessment of the effects of proposed AWSS modifications on fire insurance premiums for

property owners in San Francisco. The objective was to review existing configurations, analyze system hydraulics and water demands, and make recommendations for pipelines, control systems, cisterns, and seawater intake tunnels to optimize benefits to the AWSS, given the potential for seismic activity in the area. A critical goal of this work was to maximize the likelihood that the AWSS will effectively provide required fire suppression capabilities after a major seismic event.

CUAWSAW11 - Pipes/ Tunnels Construction #1 (Completed)

New 16" fill pipe was installed by CDD at Twin Peaks Reservoir.

CUAWSAW12 - 4th Street Pipeline (Eliminated)

This project was cancelled because it is no longer hydraulically needed.

CUAWSAW13 - Controls - Pipeline (Completed)

Design and construct improvements to the AWSS SCADA control and telecommunications systems.

CUAWSAW14 - Gate Valve Motors - Pipeline

This project will motorize street valves, and replace a non-functioning street valve on AWSS pipelines, to better control water flows. This work is planned to occur near the intersections of Bayshore/Cesar Chavez, Clarendon/Twin Peaks, Evans/Napoleon, Kearny/Sacramento, and Van Ness/Bay.

CUAWSAW15 - Jones Street Valves - Pipeline (Completed)

This project will design and construct motorized actuators for Jones Street Tank valves to allow remote control of pressure zone connections. This project is being constructed as part of contract WD-2685 Reservoir and Tanks Improvements (CUAWSAW 01 - 03 and CUAW2AW23).

CUAWSAW16 - Manifolds - Pipeline

Repair existing AWSS fireboat manifolds at Fort Mason Pier 1 and Embarcadero Pier 33.

CUWAWSAW17 - Pump Station #1 Tunnel

Design and construct seismic improvements and concrete repair to the Embarcadero seawall tunnel, installing resilient inserts at the existing Embarcadero sewer-box crossing, the mid-tunnel inflection, and the sand-rock interface, and repairing minor concrete spalling and exposed steel reinforcing.

**CUWAWSAW18 - Repairs - Pipeline (2010)
(Eliminated)**

Assess the condition of AWSS pipeline and establish a capital improvement program for abandonment, repair, or replacement activities as needed. Assessments of corrosion potential, utility conflicts, liquefiable areas, joint restraints, pipeline settlement, and related factors are planned.

**CUWAWSAW19 - Clarendon Supply (ESER
2010 Partial Funding)**

Provide a new AWSS water supply near the crest of Clarendon Avenue at Dellbrook Avenue.

Appendix B. Water Enterprise Approved Project Level Schedules Regional Programs

Project Name	Start	Finish	FY2018				FY2019				FY2020				FY2021				FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028	
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2				
Water Regional Improvement Projects	01-Jan-09	20-Mar-29																																										
Water Treatment	27-Jun-17	09-Sep-24																																										
10032938 SVWTP Powdered Activated Carbon Feed Units (CUW)	16-Apr-18	18-Dec-19																																										
10033123 SVWTP Ozone (CUW27202)	27-Jun-17	09-Sep-24																																										
Water Transmission	03-Dec-12	10-Oct-23																																										
10034578 CSPL2 Reach 5 Rehabilitation	25-Feb-19	30-Nov-22																																										
CUW2730404 SAPS Motor Control Centers	12-May-16	27-Jan-23																																										
CUW2730503 Peninsula Pipelines Seismic Upgrade Phase III	03-Dec-12	27-Feb-19																																										
CUW2730504 SAPL2 Lockbar Replacement	01-Mar-16	08-Dec-21																																										
CUW2730505 CSPL2 Reach 2 and 3 Rehabilitation	12-Sep-16	10-Oct-23																																										
Water Supply & Storage	11-Dec-13	20-Mar-29																																										
10015232 Merced Manor Reservoir Facilities Repairs	01-Jul-19	28-Feb-24																																										
CUW2740102 Pilarcitos Dam and Reservoir Improvements	07-Apr-14	05-Sep-25																																										
CUW2740103 San Andreas Dam Facility Improvements	11-Dec-13	20-Apr-27																																										
CUW27401TD Turner Dam and Reservoir Improvements	02-Jan-20	20-Mar-29																																										
10036602 Daly City Recycled Water	01-Oct-19	19-Sep-25																																										
CUW2740600 Potable Reuse & Other Supplies	06-Jan-17	30-Jun-26																																										
Watershed and Lands Management	31-Oct-12	21-Jan-22																																										
CUW2751801 Southern Skyline Blvd Ridge Trail Extension	31-Oct-12	21-Jan-22																																										
Buildings and Grounds	01-Jan-09	03-May-23																																										
10033555 Rollins Road Building Renovations (CUW27703)	01-Mar-18	31-Jan-22																																										
CUW27701 Sunol Long Term Improvements	01-Jan-09	01-Sep-21																																										
CUW2770304 Millbrae Yard Laboratory and Shop Improvements	02-Nov-15	03-May-23																																										

- Project Management
- Design
- Construction Mgmt
- Planning
- Right-of-Way
- Construction
- Environmental
- Bid & Award
- Closeout

Appendix B. Water Enterprise Approved Project Level Schedules Local Programs

Project Name	Start	Finish	FY2017				FY2018				FY2019				FY2020				FY2021				FY2022				FY2023				FY2024				FY2025				FY2026				FY2027	
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2				
Water Local Improvement Projects	03-Mar-03	30-Jun-28																																										
Local Water Conveyance / Distribution System	01-Jan-09	30-Jun-28																																										
10033816 Westside Potable Auxiliary Water Supply System	02-Jan-19	30-Jun-28																																										
CUW28000 Local Water Conveyance/Distribution System	01-Jul-10	30-Jun-28																																										
CUW26308 Town of Sunol Fire Suppression System	01-Jan-09	28-Jun-19																																										
Local Water Supply	03-Mar-03	31-Oct-23																																										
CUW30101 Lake Merced Water Level Restoration	16-Jun-03	31-Oct-23																																										
CUW30102 San Francisco Groundwater Supply	16-Jun-03	30-Mar-21																																										
CUW30201 San Francisco Westside Recycled Water	03-Mar-03	28-Mar-22																																										
Local Tanks/Reservoir Improvements	24-Jan-13	28-Sep-21																																										
CUW28301 College Hill Reservoir Outlet	24-Jan-13	28-Sep-21																																										
Pump Stations	03-Feb-20	21-Apr-26																																										
CUW28401 McLaren Park Pump Station Upgrades	03-Feb-20	21-Apr-26																																										
Buildings and Grounds	01-Oct-08	30-Jun-28																																										
CUW28101 Pacific Rod and Gun Club Remediation	20-Aug-13	31-Dec-19																																										
CUW68800 Buildings and Grounds Improvements	01-Oct-08	30-Jun-28																																										
Automated Water Meter	02-Mar-09	17-Mar-21																																										
CUW68601 Automated Water Meter Program	02-Mar-09	17-Mar-21																																										
Auxiliary Water Supply System	01-Apr-11	31-Dec-20																																										
Physical Plants	01-Apr-11	31-Dec-20																																										
CUWAW2AW30 ESER 2014 Assessment	13-Nov-14	31-Jan-17																																										
CUWAWS WD-2685 Reservoir and Tanks Improvements	01-Apr-11	31-May-17																																										
CUWAWSAW05 Pump Station # 1	01-Apr-11	29-Jul-19																																										
CUWAWS WD-2687 Pump Station #2	01-Apr-11	31-Dec-20																																										
Cistern	01-Apr-11	29-Jun-18																																										
CUWAWSAW06-09 Cisterns Construction	01-Apr-11	29-Jun-18																																										
Pipelines	01-Apr-11	31-Dec-20																																										
CUWAWSAW10 Pipes, Cisterns, & Tunnels Study	01-Apr-11	30-Jun-14																																										
CUWAWSAW11-19 Pipes/ Tunnels Construction	01-Apr-11	30-Nov-20																																										
CUWAW2AW29-44 ESER 2014 Pipelines, Tunnels, and Flexibl	23-Feb-15	31-Dec-20																																										
CUWAWS01 AUXILIARY WATER SUPPLY SYSTEM*	01-Apr-11	31-Dec-20																																										
CUWAW200 2014 AUXILIARY WATER SUPPLY SYSTEM*	06-Nov-14	31-Dec-20																																										



APPENDIX C. LIST OF ACRONYMS

AAR	Alternative Analysis Report	MW	Megawatt
ADEIR	Administrative Draft of the Environmental Impact Report	NEPA	National Environmental Policy Act
AWMP	Automated Water Meter Program	NLWS	North Lake Well Station
AWSS	Auxiliary Water Supply System	NRD	Natural Resources Division
BARR	Bay Area Regional Reliability	NTP	Notice to Proceed
BRT	Bus Rapid Transit	O&M	Operation and Maintenance
C&M	Construction and Maintenance	PAC	Powdered Activated Carbon
CalTrans	California Department of Transportation	PAH	Polycyclic Aromatic Hydrocarbons
CATEX	Categorical Exemption	PMF	Probable Maximum Flood
CDD	City Distribution Division	PREP	Potable Reuse Exploratory Plan
CEQA	California Environmental Quality Act	PRGC	Pacific Rod and Gun Club
CER	Conceptual Engineering Report	PS	Pump Station
CIP	Capital Improvement Program	PUC	Public Utilities Commission
CM	Construction Management	RF	Radio Frequency
CMB	Construction Management Bureau	RFP	Request for Proposal
COVID-19	Coronavirus Disease of 2019	RFQ	Request for Qualifications
CSPL2	Crystal Springs Pipeline Number 2	ROW	Right-of-Way
DCU	Data Collection Unit	RWQCB	Regional Water Quality Control Board
DFI	Dam Facility Improvements	RWS	Regional Water System
DIP	Ductile Iron Pipe	SAD	San Andreas Dam
DSOD	Division of Safety of Dams (State of California)	SAPL1	San Antonio Pipeline Number 1
EFWS	Emergency Firefighting Water System	SAPL2	San Antonio Pipeline Number 2
EIR	Environmental Impact Report	SAPS	San Antonio Pump Station
EIS	Environmental Impact Statement	SCADA	Supervisory Control and Data Acquisition
EMB	Engineering Management Bureau	SF	San Francisco
ESER	Earthquake Safety and Emergency Response	SFPUC	San Francisco Public Utilities Commission
FCC	Federal Communications Commission	SFPW	San Francisco Public Works (formerly SFDPW)
FY	Fiscal Year	STATEX	Statutory Exemption
GGNRA	Golden Gate National Recreation Area	SVWTP	Sunol Valley Water Treatment Plant
GGP	Golden Gate Park	SWWS	South Windmill Well Station
HTWTP	Harry Tracy Water Treatment Plant	T&O	Taste and Odor
HVAC	Heating, Ventilation, and Air Conditioning	TBD	To be determined
ITS	Information Technology Services	UV	Ultra Violet
JOC	Job Order Contract	VNBRT	Van Ness Bus Rapid Transit
MCC	Motor Control Centers	WE	Water Enterprise
MCP	Main Control Panel	WECIP	Water Enterprise Capital Improvement Program
MG	Million Gallons	WQD	Water Quality Division
MGD	Million Gallons per Day	WSIP	Water System Improvement Program
MIB	2-Methylisoborneol	WSTD	Water Supply and Treatment Division
MND	Mitigated Negative Declaration		
MOU	Memorandum of Understanding		