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

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

September 1, 2023

Assembly Member David Alvarez - Chair
Senator Catherine Blakespear - Vice Chair
Joint Legislative Audit Committee
1020 N Street, Room 107
Sacramento, CA 95814

Cindy Silva, Chair
Assembly Member Freddie Rodriguez, Vice-Chair
Alfred E. Alquist Seismic Safety Commission
2945 Ramco Street, Suite 195
West Sacramento, CA 95691

Mr. Stefan Cajina, Chief
North Coastal Section, Division of Drinking Water
State Water Resources Control Board
850 Marina Bay Parkway, Bldg P, Second Floor
Richmond, CA 94804

Subject: **Fiscal Year (FY) 2022-23 Annual Report**
Water System Improvement Program
San Francisco Public Utilities Commission

Dear Assembly Member Alvarez, Senator Blakespear, Commissioners Silva and Rodriguez, and Mr. Cajina,

In accordance with Section 73502(c) of the California Water Code, the San Francisco Public Utilities Commission (SFPUC) is pleased to submit the enclosed Annual Report describing progress made on the implementation of the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2022-2023.

The WSIP is a $4.8 billion, multi-year program to upgrade the SFPUC's Regional and Local Water Systems. The program is delivering capital improvements that enhance the SFPUC's ability to provide reliable, affordable, high quality drinking water in an environmentally sustainable manner to its 26 wholesale customers and regional retail customers in Alameda, Santa Clara, and San Mateo Counties, and to 800,000 retail customers in the City and County of San Francisco. The WSIP is structured to cost-effectively meet water quality requirements, improve seismic and delivery reliability through the year 2030, and fulfill water supply objectives through the year 2018.

Section 1 of the enclosed report describes the overall progress made on the WSIP's Regional Program during FY 2022-23 (July 1, 2022 through June 30, 2023) and Section 2 focuses on programmatic initiatives undertaken during that time period. Section 3 summarizes the Level of Service (LOS) goals and objectives and addresses progress towards meeting those goals and objectives. Sections 4 and 5 include summaries of procedures used to track and control WSIP project schedules and budgets, and present current schedule and budget forecasts, respectively. Section 6 includes a summary of the achievements and challenges encountered while implementing the program during FY 2022-23. The WSIP Risk Management program and status of risk exposure for active construction projects is summarized in Section 7, and the program delivery strategy for the closeout phase is discussed in Section 8. Finally, Section 9 of the report highlights the current status of the specific projects mentioned in California Assembly Bill (AB) 1823.

Continuing progress was made on the implementation of the WSIP during FY 2022-23. In March 2022, the SFPUC Commission approved revisions to the program including a schedule extension to February 2027. Between July 1, 2022 and June 30, 2023, the overall percent completion of the Regional Program increased from 98.6% to 98.9. During the reporting period, one project achieved project completion, the WSIP Closeout Project – Sunol Valley. As of June 30, 2023, construction was in progress on two (2) Regional projects valued at $209 million, while construction had been completed on 49 Regional projects valued at $ 3,582 million.

Phase 1 of the Regional Groundwater Storage and Recovery Project made significant progress, reaching 100% completion by September 9, 2022. Construction work for Phase 2 of the Regional Groundwater Storage and Recovery Project had been separated into two contracts (Phase 2A and Phase 2B), and these progressed during the year. The Phase 2A construction contract received Notice to Proceed (NTP) on June 23, 2022 and is at 33% complete as of June 30, 2023; 100% design for Phase 2B is progressing.

The Alameda Creek Recapture Project’s construction contract had reached 32% completion by June 30, 2023 based on expenditures compared to contract value; however, this percentage is not reflective of the current status of the construction contract. SFPUC staff recommended termination of the contract to the SFPUC Commission and received approval for termination on April 11, 2023 based on a number of concerns discussed more fully within the report, including a high number of design changes and change orders, operability questions, and continuing erosion at the site. A Notice of Termination for Convenience, sent by the SFPUC to the contractor on June 13, 2023, initiated a process to negotiate the terms of the termination with the contractor. The project will undertake redesign and ensure that erosion has been addressed prior to putting a new construction contract out to bid. The Bay Area Water Supply and Conservation Agency (BAWSCA) has been kept fully informed of the progress of this project as decisions were made to terminate the construction contract in order to repair erosion and address operability concerns. The Alameda Creek Recapture Project is an important water supply project of the WSIP and the SFPUC is fully committed to its success.

The status of schedule forecasts and variances for all WSIP Regional Projects as of June 30, 2023 is provided in the report. As of June 30, 2023, the overall WSIP is forecast to be complete in February 2027, which is consistent with the current baseline schedule approved as part of the March 2022 Revised WSIP. The overall current approved WSIP completion date is driven by the approved final administrative closeout completion date for Regional Groundwater Storage and Recovery Project, February 1, 2027.

The current approved WSIP scope is sufficiently funded to complete within the current approved baseline budget (March 2022 Revised WSIP) with over 80% confidence, based on the current understanding of trends and remaining risks in the program.

SFPUC remains committed to working collaboratively with its Regional Wholesale and Retail customers and all program stakeholders and partners to ensure the successful delivery of the WSIP. Please do not hesitate to contact me at (415) 554-1600 if you have questions or need additional information.

Sincerely,

Dennis J. Herrera
General Manager
San Francisco Public Utilities Commission

Enclosure

cc: The Honorable Newsha K. Ajami, President, SFPUC Commission

The Honorable Sophie Maxwell Vice President, SFPUC Commission

The Honorable Tim Paulson, Commissioner, SFPUC Commission

The Honorable Anthony Rivera, Commissioner, SFPUC Commission

The Honorable Kate H. Stacy, Commissioner, SFPUC Commission

Nicole Sandkulla, Chief Executive Officer and General Manager, Bay Area Water Supply & Conservation Agency

Thomas (Tom) Francis, Water Resources Manager, Bay Area Water Supply & Conservation Agency

Vlad Rakhamimov, Staff Engineer, North Coastal Section, Division of Drinking Water, State Water Resources Control Board

Marco Pacheco, San Francisco District Engineer, Division of Drinking Water, State Water Resources Control Board

Darrin Polhemus, Deputy Director, Division of Drinking Water, State Water Resources Control Board

Daniel Newton, Assistant Deputy Director, Northern California Drinking Water Field Operations Branch, State Water Resources Control Board

Annde Ewertsen, Executive Director, Alfred E. Alquist Seismic Safety Commission

Jia Wang-Connelly, Senior Structural Engineer, Alfred E. Alquist Seismic Safety Commission

Gustav Larsson, Chair, BAWSCA

Tom Chambers, Vice-Chair, BAWSCA

BAWSCA Member Agencies (distributed by BAWSCA)

HETCH HETCHY
WATER SYSTEM
IMPROVEMENT
PROGRAM

2022-23

Annual Report

Water System Improvement Program

Rebuilding Today For a Better Tomorrow

September 1, 2023

Hetch Hetchy
Regional
Water
System

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FY 2022-23 ANNUAL REPORT
WATER SYSTEM IMPROVEMENT PROGRAM

EXECUTIVE SUMMARY

Pursuant to the reporting requirements of the Wholesale Regional Water System Security and Reliability Act, the San Francisco Public Utilities Commission (SFPUC) submits this report documenting the progress achieved on the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2022-23 (July 1, 2022 through June 30, 2023). This report addresses only the WSIP Regional projects (referred to as the Regional Program). These are the projects that benefit both San Francisco retail customers and the SFPUC's suburban wholesale customers. The Wholesale Regional Water System Security and Reliability Act does not require the SFPUC to report on the WSIP Local projects (referred to as the Local Program), which primarily benefit San Francisco retail customers.

The WSIP is a $4.8 billion-dollar, multi-year program to upgrade the SFPUC's Regional and Local Water Systems. The program is delivering capital improvements that enhance the SFPUC's ability to provide reliable, affordable, high quality drinking water in an environmentally sustainable manner to its 26 wholesale customers and regional retail customers in Alameda, Santa Clara and San Mateo Counties, and to 800,000 retail customers in the City and County of San Francisco. The WSIP is structured to cost-effectively meet water quality requirements, improve seismic and delivery reliability goals through the year 2030, and fulfill water supply objectives through the year 2018.

Progress was made on the implementation of the WSIP during FY 2022-23. Between July 1, 2022 and June 30, 2023, the overall completion of the Regional Program increased slightly from 98.6% to 98.9%. As of the end of the reporting period, planning, environmental, design, and construction phases were 100%, 99.9%, 99.9%, and 98.6% complete, respectively. The focus of the program continued to be construction of the two remaining projects and administrative closeout of projects that recently completed construction. During the reporting period, one project was completed. As of June 30, 2023, construction was in progress on two (2) Regional projects valued at $209 million, while construction was in close-out or had been completed on 49 Regional projects valued at $3,582 million. There are no projects remaining in pre-construction.

Support programs that were continued during FY 2022-23 included management of facilities' shutdowns, environmental compliance, and public outreach. All status updates in this Annual Report are referenced to the latest baseline scope, budget and schedule, approved on April 26, 2022, which is referred to as the "March 2022 Revised WSIP Baseline."

The scope of the WSIP is based on the primary Level of Service (LOS) goals used to determine project design criteria as follows: water quality (maintain high water quality); seismic reliability (reduce vulnerability to earthquakes); delivery reliability

(increase delivery reliability and improve ability to maintain the system); and water supply (meet customer water needs in non-drought and drought periods). In addition, two additional overarching program goals include sustainability (enhance sustainability in all system activities); and cost effectiveness (achieve a cost-effective, fully operational system). Each project that reaches construction substantial completion contributes to increasing the overall reliability of the system and achieving progress towards meeting the LOS goals and objectives. As of end of FY 2022-23, 41 of the 43 Regional WSIP projects with specific LOS goals had achieved their LOS goals and objectives. The two Regional WSIP projects with water supply as a primary LOS goal that have not yet been completed are the Alameda Creek Recapture Project (ACRP) and the Regional Groundwater Storage and Recovery Project (RGSRP). The other nine Regional WSIP projects (support projects and WSIP Closeout projects) do not have specific LOS goals.

The status of schedule forecasts and variances for all WSIP Regional Projects as of June 30, 2023 is provided in the report. As of June 30, 2023, the overall WSIP is forecast to be complete in February 2027, which is consistent with the current baseline schedule approved as part of the March 2022 Revised WSIP Baseline. However, due to the SFPUC's decision to terminate the construction contract for the Alameda Creek Recapture Project, future potential schedule changes are being analyzed to complete the project after erosion repairs are implemented. Any future proposed schedule changes will be noticed to the public and approved by the SFPUC Commission, in accordance with the requirements of California State Law AB1823.

All WSIP Regional Projects are currently forecasted to be completed on budget in accordance with the March 2022 Revised WSIP Baseline, and there is remaining construction and Director's Reserve cost contingencies of $14.3 million to mitigate potential future risks. Potential cost increases for completing the Alameda Creek Recapture Project are being reviewed; any future proposed budget changes will be noticed to the public and approved by the SFPUC Commission along with the corresponding proposed schedule changes.

Significant achievements in FY 2022-23 included Phase 1 and Phase 2A of the Regional Groundwater Storage and Recovery Project reaching 100% and 33% completion respectively, and one project completed: WSIP Closeout – Sunol Valley.

The major challenges to the program in FY 2022-23 were equipment supply chain and procurement challenges for most construction contracts and the decision to terminate the construction contract for the Alameda Creek Recapture Project. Staff recommended and the SFPUC Commission approved termination for convenience of the construction contract for the Alameda Creek Recapture Project on April 11, 2023. The primary reasons for the decision to terminate included: (1) erosion of the quarry pond banks worsened since the project was designed; (2) staff anticipated that construction change orders for unforeseen conditions would exceed 50 percent of the current contract value with significant remaining risk for additional costs; and (3) the facility would be the first of its kind in the Regional Water System and

staff responsible for operation, maintenance, and repair raised concerns about maintaining the facility due to design changes and continuing erosion. The contract termination will allow time to coordinate with the quarry operator and site leaseholder, Mission Valley Rock, on the repairs to slope and bank erosion around the quarry pond, to reassess the long-term geotechnical conditions, and to perform design improvements to assure the facility can be readily operated and maintained once constructed. Staff are analyzing and preparing potential scope, budget, and schedule changes that will be needed to complete the project. It is anticipated that a Notice of Public Hearing will be issued in Winter of FY23/24 for the SFPUC Commission to consider adoption of changes to the program in order to complete the Alameda Creek Recapture Project with its proposed revisions. Changes to the project's budget and schedule will most likely affect the overall WSIP budget and schedule, and both project and program proposed revisions will be included in the upcoming Notice of Public Hearing for Revisions to the WSIP. Any changes to the project will be made with the objective of meeting its LOS goals for Water Supply.

As it would generally be overly conservative to plan for 100% of future potential risks, the SFPUC has elected to use the "80% confidence level" as a relatively conservative estimate of future cost risk for the WSIP. Namely, the "80% confidence level" represents the amount of cost for which one can be 80% confident that future cost risk will not exceed this level. The risk exposure at the "80% confidence level" at the end of the reporting period was $2.8M, which compares to $3.4M at the end of last year's reporting period; the cumulative risk exposure for the program was reduced to as low as $2.5M but was increased to $2.8M in June 2023 due to an increase in risk probabilities and costs for the Regional Groundwater Storage and Recovery Project – Phase 2A.

The remaining forecast construction contingency as of June 30, 2023 was $6.4 million after all current trends have been considered. In addition, the current forecast WSIP Director's Reserve Fund was $7.9 million. Therefore, a total of approximately $14.3 million is available to fund future risks, including both construction risks and unforeseen soft (non-construction) costs. If one conservatively assumes that up to $3.0 million is needed for future soft cost risk, this will leave approximately $11.3 million available to fund potential future construction risks.

At 98.9% completion and with 41 of 43 Regional WSIP projects with specific LOS goals and objectives currently in service, the overall WSIP is in the Closeout Phase. It is essential to continue to implement best practices that have helped to make the WSIP successful to date and to continue to look for opportunities to become more efficient as the SFPUC strives to bring the WSIP to successful completion.

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LIST OF ACRONYMS

AB	Assembly Bill
ACDD	Fish Passage Facilities at Alameda Creek Diversion Dam Project
ACRP	Alameda Creek Recapture Project
ARM	Active Risk Management
BAWSCA	Bay Area Water Supply and Conservation Agency
BDPL	Bay Division Pipelines
BHR	Bioregional Habitat Restoration
CDRP	Calaveras Dam Replacement Project
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
CM	Construction Management
CMIS	Construction Management Information System
COVID-19	Coronavirus Disease of 2019
DRB	Dispute Resolution Board
DSOD	Division of Safety of Dams (State of California)
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
FY	Fiscal Year
HHWP	Hetch Hetchy Water and Power
HTWTP	Harry Tracy Water Treatment Plant
JOC	Job Order Contract
LOS	Level of Service
MGD	Million Gallons per Day
NOC	Notice of Changes
PCCP	Pre-stressed Concrete Cylinder Pipe
RBOC	Revenue Bond Oversight Committee
RGSRP	Regional Groundwater Storage and Recovery Project
ROW	Right-of-Way
SABPL	San Antonio Backup Pipeline
SCADA	Supervisory Control and Data Acquisition
SFPUC	San Francisco Public Utilities Commission
SJPL	San Joaquin Pipeline
SSF	South San Francisco
SVWTP	Sunol Valley Water Treatment Plant
WSIP	Water System Improvement Program
WSTD	Water Enterprise, Water Supply and Treatment Division

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1.0 OVERALL PROGRAM PROGRESS

1.1 Program Status Summary

Steady progress has been made on the implementation of the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2022-2023 (July 1, 2022 through June 30, 2023) with overall progress on the Regional Program at 98.9% complete.

As indicated in Table 1-1, planning, environmental, design, and construction phase are 100%, 99.9%, 99.9%, and 98.6% complete respectively.

Table 1-1: WSIP Regional Program Performance[1]

Phase	June 30, 2022		June 30, 2023	
	% Planned	% Actual	% Planned[2]	% Actual
Planning	100.0%	100.0%	100.0%	100.0%
Environmental	99.8%	99.9%	99.9%	99.9%
Design	99.4%	99.8%	99.9%	99.9%
Bid & Award	99.5%	99.5%	99.5%	99.5%
Construction	98.4%	98.3%	99.4%	98.6%
Closeout	95.8%	95.8%	98.3%	98.0%
Program Cumulative	**98.6%**	**98.6%**	**99.5%**	**98.9%**

[1] Percent completion does not include Support Projects in the WSIP Regional Program.
[2] Incorporates the March 2022 Revised WSIP Baseline schedule and budget revisions.

In recent years, the focus of the program has been on construction activities and administrative closeout of completed projects. Table 1-2 compares the number of projects in each phase and their corresponding total approved value at the beginning of the reporting period (June 30, 2022) to those at the end of the reporting period (June 30, 2023). As of the end of the reporting period, two (2) regional projects are in construction with a total value of $209 million, and forty-nine (49) additional projects with a total value of $3,582 million are in close-out or have been completed.

Table 1-2: Status of WSIP Regional Projects

Project Phase	June 30, 2022 Status		June 30, 2023 Status	
	No. of Projects	Total Project Value ($M)	No. of Projects	Total Project Value ($M)
Planning	0	$0	0	$0
Design	0	$0	0	$0
Bid & Award	0	$0	0	$0
Construction	3	$215	2	$209
Closeout	1	$95	1	$95
Completed	47	$3,481	48	$3,487
Not Applicable[1]	1	$12	1	$12
Total	**52**	**$3,803**	**52**	**$3,803**

[1] The "Not Applicable" category is for a project that does not include construction: the Long-Term Mitigation Endowment.

To better illustrate the progress made during FY 2022-2023, some of the key program-level data included in Table 1-2 are graphically presented in Figures 1-1 and 1-2.

Figure 1-1: Progress Made in Terms of Number of Regional Projects

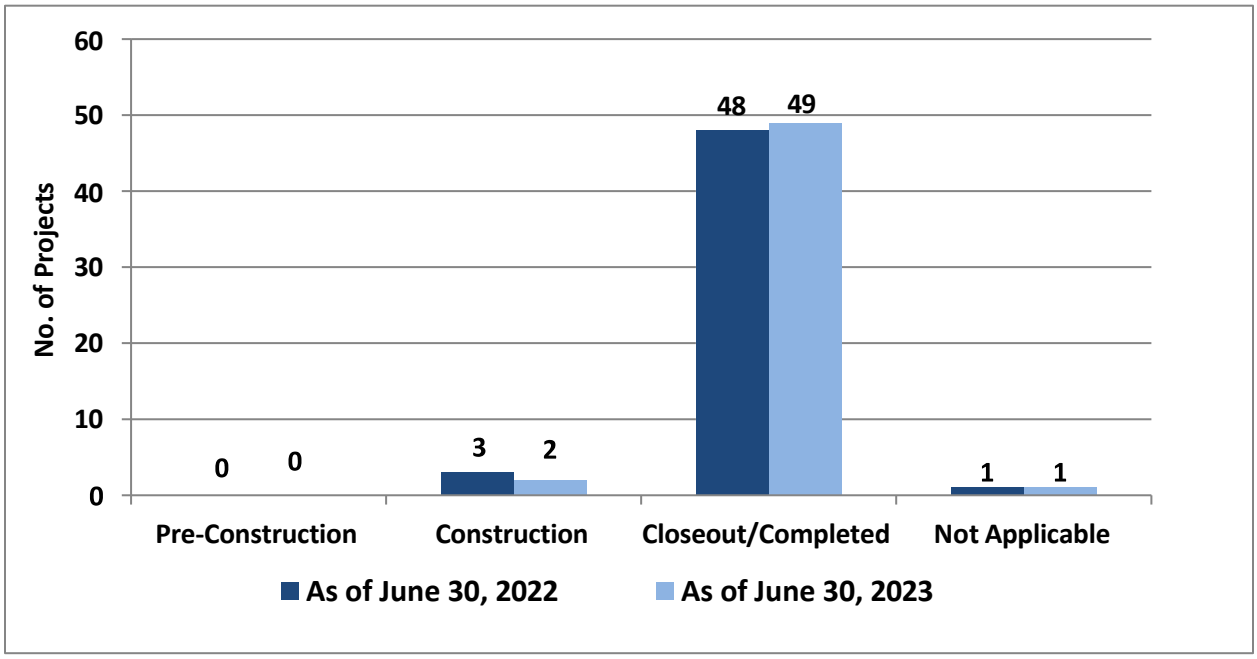
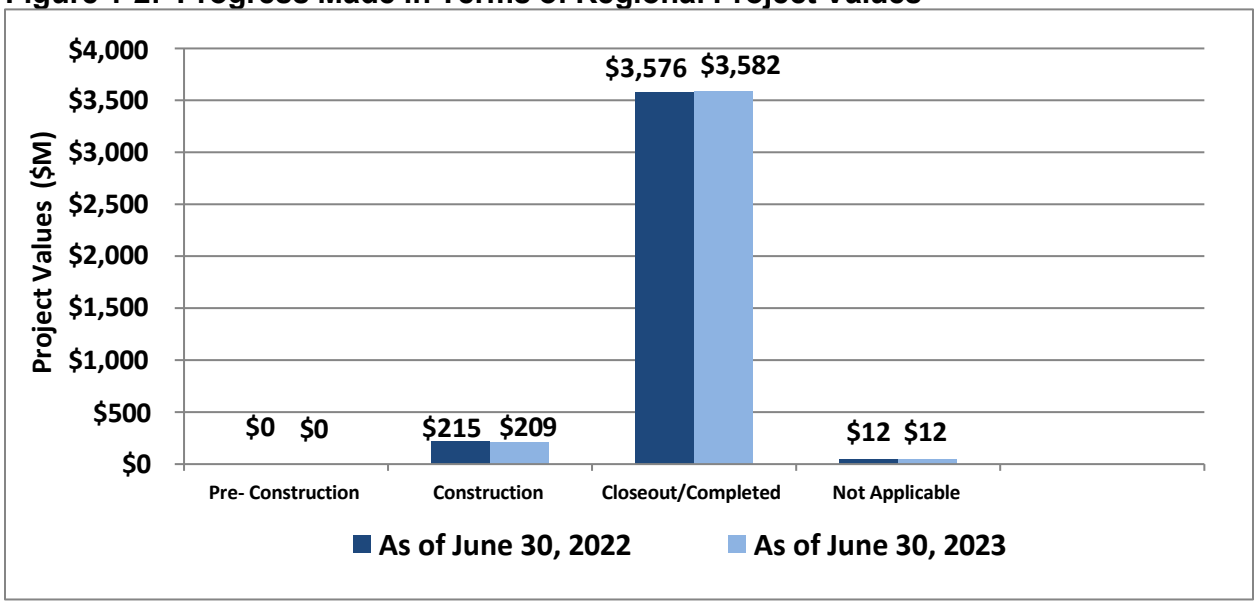


Figure 1-2: Progress Made in Terms of Regional Project Values



During the reporting period, one project achieved final completion. The milestone is summarized below:

Project Completion:

WSIP Closeout – Sunol Valley – December 31, 2022

1.2 Program Baseline Budget and Schedule

The program budget and schedule were originally adopted by the SFPUC on March 1, 2003. The program at the time was referred to as the Capital Improvement Program (CIP). The scope of the CIP was changed significantly following the adoption of Level of Service (LOS) goals in early 2005. The program changes were so substantial that the program was renamed the WSIP and a new program budget and schedule were adopted on November 29, 2005. Since the scope of the 2005 Revised WSIP is in general representative of the program being implemented today, the 2005 budget and schedule are considered the original "Baseline Budget and Schedule."

Subsequently, the WSIP Baseline Budget and Schedule were revised in 2007, 2009, 2011, 2013, 2014, 2015, 2016, 2017, 2018, and 2020, and these revisions were approved by the SFPUC on February 26, 2008, July 28, 2009, July 12, 2011, April 23, 2013, April 22, 2014, December 8, 2015, April 26, 2016, February 14, 2017, April 10, 2018, April 14, 2020, and April 26, 2022 respectively. All status updates in this Annual Report are referenced to the latest Baseline Budget and Schedule, approved on April 26, 2022, which is referred to as the "March 2022 Revised WSIP Baseline".

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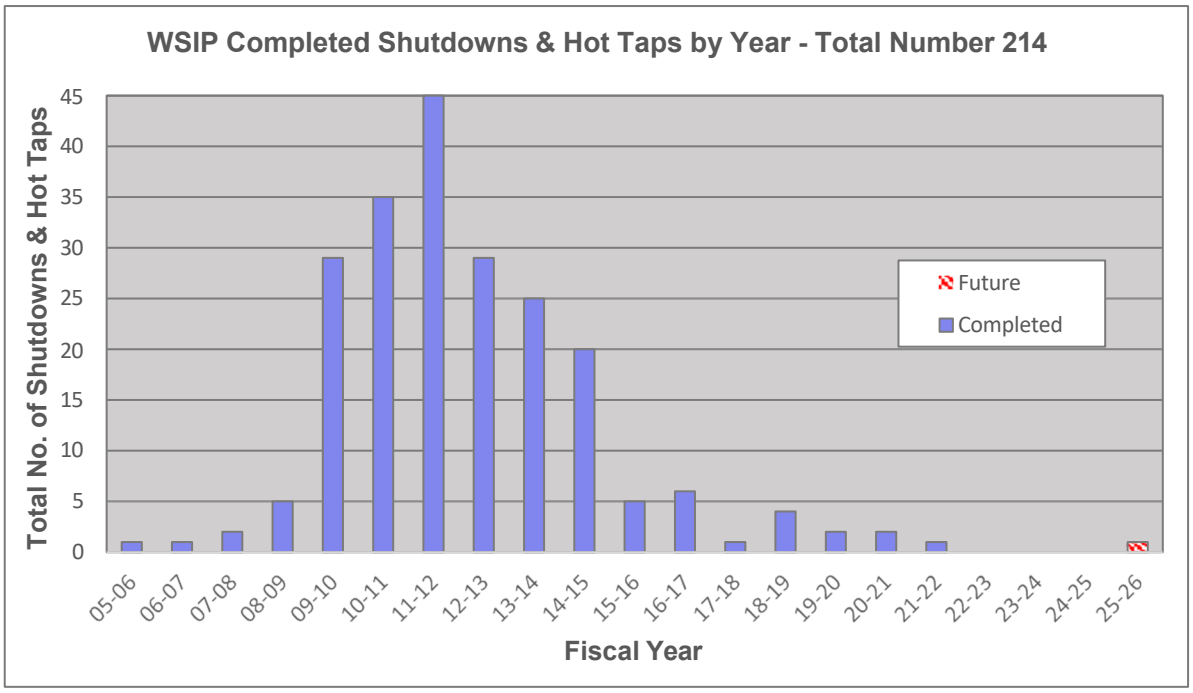
2.0 PROGRAMMATIC INITIATIVES (FY2022-23)

This section describes some of the more important programmatic initiatives undertaken during FY 2022-23.

2.1 Shutdown Management

The WSIP team continued to actively manage the WSIP shutdowns during FY 2022-23. Table 2-1 summarizes the WSIP shutdowns that were active in FY 2022-23. No shutdowns were completed during FY 2022-23. Overall, to date, 214 (or 99%) of the 215 WSIP system shutdowns and hot taps have been completed as shown in Figure 2-1. The one remaining shutdown is planned to tie in the Alameda Creek Recapture Project with the Regional Water System. While this was planned to occur in FY23-24, the termination of the construction contract during FY22-23 will delay this shutdown to a later date that has not yet been determined. More details on this project are included in Sections 4 and 6 of this report.

Figure 2-1: Number of Completed Shutdowns and Hop Taps by Fiscal Year



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2.2 Environmental Program

California Environmental Quality Act (CEQA)

CEQA environmental review for all WSIP Regional projects is complete. The total number of CEQA documents approved for WSIP Regional projects is: seventeen (17) Environmental Impact Reports certified, seven (7) Initial Study/Mitigated Negative Declarations approved, and thirteen (13) Categorical Exemptions issued.

Resource Agency Permits

Permitting is complete for all WSIP Regional projects. One hundred and one (101) permits were obtained from the resource agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, National Marine Fisheries Service, State Water Resources Control Board, Regional Water Quality Control Board, the State Historic Preservation Office, and the Bay Conservation and Development Commission).

Environmental Construction Compliance

During FY 2022-23, the WSIP environmental construction compliance staff, led by the Environmental Management Group, participated in construction of two Sunol Region project (WSIP Closeout – Sunol Valley and Alameda Creek Recapture Project) and one San Francisco Region project (Regional Groundwater Storage and Recovery Project). Environmental construction compliance activities for these projects included contractor training; biological resources surveys and monitoring; stormwater management; coordination with San Francisco Planning Department and other resource agencies; compliance inspection activities; and implementation of required local, State, and Federal reporting procedures.

Environmental inspections on the few remaining projects in FY 2022-23 were performed on a limited basis due to the infrequent need and thus were not formally tallied as in past years. There were no significant environmental compliance events during the year on the remaining projects.

The WSIP continues through this year to have no resource agency permit violations.

Construction of the habitat compensation sites under the Bioregional Habitat Restoration Project in the Sunol and Peninsula Regions is complete. In addition, revegetation continued on five WSIP sites in areas that were only temporarily affected by construction, as required by CEQA mitigation measures and resource agency permits. Revegetation was not fully completed on any additional project sites this year. Revegetation work will begin for the Alameda Creek Recapture Project upon the completion of construction. These activities were initially performed under the Vegetation Restoration of WSIP Post Construction Sites Project (CUW 38803) and are now continuing under Water Enterprise operations.

2.3 Public Outreach Program

The Communications and Public Outreach Teams continued to build public awareness and support for the WSIP and its projects in FY 2022-23.

Tours

Tour season restarted after the Pandemic. This included escorted tours of facilities within the Hetch Hetchy Regional Water System as well as our Local Water System. Board members and staff of the Bay Area Water Supply and Conservation Agency (BAWSCA) and members of the Revenue Bond Oversight Committee attended system tours and observed completed Water System Improvement Program projects and facilities.

Continued Project Promotion on sfpuc.org

The WSIP Communications Team continued to create and update a new suite of WSIP project pages as part of the new SFPUC website: SFPUC.org/construction. These project updates include streamlined pages that highlight the WSIP projects and their benefits.

Community Briefing

The WSIP Communications Team coordinated the presentation of WSIP and Water Infrastructure Projects to the SFPUC's Citizens Advisory Committee Water Subcommittee in 2022.

Government Relations – Regional Groundwater Project

The WSIP Communications Team continued to act as liaison between the Regional Groundwater Storage and Recovery Project team and the neighborhoods and municipalities in which the groundwater wells are located regarding access and construction issues.

Industry Awards

The WSIP program has received 66 industry awards since 2010.

2.4 WSIP Revisions in FY 2022-23

There have been no changes in the WSIP approved budget and schedule in FY 2022-2023. However, due to the decision to terminate the Alameda Creek Recapture Project's construction contract, staff are analyzing and preparing potential scope, budget, and schedule changes that will be needed to complete the project. It is anticipated that a Notice of Public Hearing will be issued in Winter of FY23/24 for the SFPUC Commission to consider adoption of changes to the program in order to complete the Alameda Creek Recapture Project with its proposed revisions.

3.0 LEVEL OF SERVICE (LOS) GOALS

3.1 WSIP Goals and Objectives

Table 3-1 provides a summary of the WSIP goals and objectives in accordance with the March 2022 Revised WSIP.

Table 3-1: WSIP Goals and Objectives

Program Goal	System Performance Objective
WATER QUALITY *Maintain high water quality*	• *Design improvements to meet current and foreseeable future federal and state water quality requirements.* • *Provide clean, unfiltered water originating from Hetch Hetchy Reservoir and filtered water from local watersheds.* • *Continue to implement watershed protection measures.*
SEISMIC RELIABILITY *Reduce vulnerability to earthquakes*	• *Design improvements to meet current seismic standards.* • *Deliver basic service to the three regions in the service area (East/South Bay, Peninsula, and San Francisco) within twenty-four (24) hours after a major earthquake. Basic service is defined as average winter-month usage, and the performance objective for design of the regional system is 229 mgd. The performance objective is to provide delivery to at least 70 percent of the turnouts in each region, with 104, 44, and 81 mgd delivered to the East/South Bay, Peninsula, and City of San Francisco, respectively.* • *Restore facilities to meet average-day demand of up to 300 mgd within thirty (30) days after a major earthquake.*
DELIVERY RELIABILITY *Increase delivery reliability and improve ability to maintain the system*	• *Provide operational flexibility to allow planned maintenance shutdown of individual facilities without interrupting customer service.* • *Provide operational flexibility to minimize the risk of service interruption due to unplanned facility upsets or outages.* • *Provide operational flexibility and system capacity to replenish local reservoirs as needed.* • *Meet the estimated average annual demand of up to 300 mgd under the conditions of one planned shutdown of a major facility for maintenance concurrent with one unplanned facility outage due to a natural disaster, emergency or facility failure/upset.*

Program Goal	System Performance Objective
WATER SUPPLY *Meet customer water needs in non-drought and drought periods*	• *Meet average annual water demand of 265 mgd from the SFPUC watersheds for retail and wholesale customers during non–drought years for system demands through 2019.* • *Meet dry-year delivery needs through 2019 while limiting rationing to a maximum 20 percent system-wide reduction in water service during extended droughts.* • *Diversify water supply options during non-drought and drought periods.* • *Improve use of new water sources and drought management, including groundwater, recycled water, conservation and transfers.*
SUSTAINABILITY E*nhance sustainability in all system activities*	• *Manage natural resources and physical systems to protect watershed ecosystems.* • *Meet, at a minimum, all current and anticipated legal requirements for protection of fish and wildlife habitat.* • *Manage natural resources and physical systems to protect public health and safety.*
COST-EFFECTIVENESS *Achieve a cost-effective, fully operational system*	• *Ensure cost-effective use of funds.* • *Maintain gravity-driven system.* • *Implement regular inspection and maintenance program for all facilities.*

Note that the first four goals, Water Quality, Seismic Reliability, Delivery Reliability, and Water Supply, are the goals that are used to determine project design criteria. The last two goals, Sustainability and Cost-Effectiveness, are overarching program goals that are not applied to specific criteria at the project level. Thus, these last two goals are infrequently referred to in project and program documents.

3.2 Progress Towards Meeting LOS Goals

The scope of the WSIP is based on the first four LOS goals described above – Seismic Reliability, Delivery Reliability, Water Quality, and Water Supply. Each project that reaches construction substantial completion contributes to increasing the overall reliability of the system and achieving progress towards meeting the LOS goals. The SFPUC remains committed to achieving all the LOS goals established for the system.

Table 3-2 lists the projects with their individual contributions to LOS goals and indicates which projects have been substantially completed. This tabulation demonstrates the progress that has been achieved in the WSIP toward meeting these goals. As of the end of FY2022-23, forty-one (41) of the forty-three (43) Regional WSIP projects with specific LOS goals have achieved their LOS goals and objectives. The other nine (9) Regional WSIP projects (Support projects and WSIP Closeout projects) do not have specific LOS goals.

Table 3-2: Progress Towards Meeting LOS Goals

Project No.	Project Name / Construction Contract	Actual / Approved Substantial Completion Date	LOS Goals (P =Primary, S =Secondary)				Actual Operational Service Start	Construction Progress Toward LOS Goals
			Water Quality	Seismic Reliability	Delivery Reliability	Water Supply		
San Joaquin Projects								
CUW36401	Lawrence Livermore Water Quality Improvement *(Completed)*	08/31/10	P				08/31/10	100%
CUW37301	San Joaquin Pipeline System *(Completed)* (A) HH935A Crossovers (B) HH935B Western Segment (C) HH935C Eastern Segment	(A) 01/06/12 (B) 05/27/13 (C) 06/21/13			P		(A) 01/06/12 (B) 05/27/13 (C) 06/21/13	100%
CUW37302	Rehabilitation of Existing San Joaquin Pipelines (Roselle Crossover; *Completed*)	05/13/11			P		05/13/11	100%
CUW38401	Tesla Treatment Facility *(Completed)* (A) DB116 Tesla Treatment Facility Design-Build Contract (B) HH953 Tesla Portal Protection	(A) 06/24/11 (B) 08/05/13	P	S	S		(A)06/24/11 (B)08/05/13	100%
Sunol Valley Projects								
CUW35201	Alameda Creek Recapture	11/18/22				P		32%
CUW35501	Standby Power Facilities - Various Locations *(Completed)* (A) WD-2553 East Bay - Standby Power Facilities (B) WD-2511 Peninsula - Standby Power Facilities	(A) 09/11/08 (B) 04/15/10		P	S		(A)09/11/08 (B)04/15/10	100%
CUW35901	New Irvington Tunnel *(Completed)*	09/19/15		S	P		02/27/15	100%
CUW35902	Alameda Siphon #4 *(Completed)*	12/16/11		P	S		12/16/11	100%
CUW37001	Pipeline Repair & Readiness Improvements *(Completed)* (A) WD-2530 Phase A 8 Pipe Storage Sites (B) WD-2530 Phase B Pipe Rolling Machine Facility @ Sunol Yard	(A) 02/09/07 (B) 07/14/08		P	S		(A) 02/09/07 (B)07/14/08	100%
CUW37401	Calaveras Dam Replacement *(Completed)* (A) WD-2551 Calaveras Dam Replacement (B) WD-2729 Alameda Creek Diversion Dam	(A) 04/12/19 (B) 02/15/19		S	P	S	(A) 04/12/19 (B) 02/15/19	(A) 100% (B) 100%
CUW37402	Calaveras Reservoir Upgrades *(Completed)*	10/06/05	P				10/06/05	100%
CUW37403	San Antonio Backup Pipeline *(Completed)*	12/31/14			P		12/31/14	100%
CUW38101	SVWTP Expansion & Treated Water Reservoir *(Completed)*	05/17/13	P		P		05/17/13	100%
CUW38601	San Antonio Pump Station Upgrade *(Completed)*	06/30/11			P		06/30/11	100%

Project No.	Project Name / Construction Contract	Actual / Approved Substantial Completion Date	LOS Goals (P =Primary, S =Secondary)				Actual Operational Service Start	Construction Progress Toward LOS Goals
			Water Quality	Seismic Reliability	Delivery Reliability	Water Supply		
Bay Division Projects								
CUW35301	BDPL Nos. 3&4 Crossover/ Isolation Valves (*Completed)*	11/15/07		P			11/15/07	100%
CUW35302	Seismic Upgrade of BDPL Nos. 3 & 4 (*Completed)*	10/26/15		P			06/20/14	100%
CUW36301	SCADA System - Phase II *(Completed)*	11/29/10			P		11/29/10	100%
CUW36801	BDPL Reliability Upgrade - Tunnel *(Completed)*	05/20/15		P	S		10/15/14	100%
CUW36802	BDPL Reliability Upgrade – Pipeline *(Completed)* (A) WD-2541 East Bay (B) WD-2542 Peninsula (C) WD-2665 Cordilleras	(A) 12/09/11 (B) 06/13/12 (C) 03/05/13		P	S		(A) 12/09/11 (B) 06/13/12 (C) 03/05/13	100%
CUW36803	BDPL Reliability Upgrade - Relocation of BDPL Nos. 1 & 2 *(Completed)*	05/28/10			P		05/28/10	100%
CUW38001	BDPL Nos. 3 & 4 - Crossovers *(Completed)*	08/15/12		P	S		08/15/12	100%
CUW38901	SFPUC/EBMUD Intertie *(Completed)*	09/07/07			P		09/07/07	100%
CUW39301	BDPL No. 4 Condition Assessment PCCP Sections *(Completed)*	02/06/09		P	S		02/06/09	100%
Peninsula Projects								
CUW35401	Lower Crystal Springs Dam Improvements *(Completed)*	11/20/11			P	S	11/20/11	100%
CUW35601	New Crystal Springs Bypass Tunnel (*Completed)*	07/14/11		P	S		07/14/11	100%
CUW35701	Adit Leak Repair - Crystal Springs/Calaveras *(Completed)*	11/30/07			P		11/30/07	100%
CUW36101	Pulgas Balancing – Inlet / Outlet Work *(Completed)*	02/02/06	P		S		02/02/06	100%
CUW36102	Pulgas Balancing - Discharge Channel Modifications *(Completed)*	10/23/09			P		10/23/09	100%
CUW36103	Pulgas Balancing - Structural Rehabilitation & Roof Replacement *(Completed)*	07/26/11	P		S		07/26/11	100%
CUW36105	Pulgas Balancing - Modifications of Existing Dechloramination Facility *(Completed)*	08/27/12	P		S		08/27/12	100%
CUW36501	Cross Connection Controls *(Completed)*	11/26/08	P				11/26/08	100%
CUW36601	HTWTP Short-Term Improvements - Demo Filters *(Completed)*	01/11/06		P	S		01/11/06	100%

Project No.	Project Name / Construction Contract	Actual / Approved Substantial Completion Date	LOS Goals (P =Primary, S =Secondary)				Actual Operational Service Start	Construction Progress Toward LOS Goals
			Water Quality	Seismic Reliability	Delivery Reliability	Water Supply		
CUW36603	HTWTP Short-Term Improvements - Coagulation & Flocculation/Remaining Filters *(Completed)*	12/21/09		P	S		12/21/09	100%
CUW36701	HTWTP Long -Term Improvements *(Completed)*	09/08/15		P	S		09/08/15	100%
CUW36702	Peninsula Pipelines Seismic Upgrade *(Completed)*	10/30/15		P			10/30/15	100%
CUW36901	Capuchino Valve Lot Improvements *(Completed)*	02/14/08			P		02/14/08	100%
CUW37101	Crystal Springs/San Andreas Transmission Upgrade *(Completed)*	06/30/14		P	S		09/02/14	100%
CUW37801	Crystal Springs Pipeline No. 2 Replacement *(Completed)*	01/31/13		P	S		01/31/13	100%
CUW37901	San Andreas Pipeline No. 3 Installation *(Completed)*	03/29/11		P	S		03/29/11	100%
CUW39101	Baden & San Pedro Valve Lots Improvements *(Completed)*	03/31/11		P	S		03/31/11	100%
San Francisco Regional Projects								
CUW30103	Regional Groundwater Storage and Recovery (A) WD-2600 Test Well Drilling (B) WD-2668 Regional Groundwater Storage and Recovery (C) Regional Groundwater Storage and Recovery (Phase 2A) (D) Regional Groundwater Storage and Recovery (Phase 2B)	(A) 07/23/12 (B) 12/31/17 (C) 12/22/23 (D) 10/31/25				P	(A) 07/23/12 (B) 07/27/22	(A) 100% (B) 100% (C) 33% (D) 0%
CUW35801	Sunset Reservoir - North Basin *(Completed)*	09/19/08		P	S		09/19/08	100%
CUW37201	University Mound Reservoir - North Basin *(Completed)*	05/25/11		P	S		05/25/11	100%

1 Support projects and WSIP Closeout projects are not listed in the table above since these projects do not have specific Level of Service (LOS) goals.

The two remaining projects that contribute to LOS goals, Regional Groundwater Storage and Recovery Project and Alameda Creek Recapture Project, were in construction phase throughout the reporting period. While the Regional Groundwater Storage and Recovery Project is on schedule for completion, the Alameda Creek Recapture Project will be delayed from completing according to its approved schedule due to the SFPUC's decision to terminate the construction contract and complete the project after erosion repairs have been implemented. Potential revisions to the project's scope, schedule and budget are being considered and will be noticed to the public prior to the SFPUC Commission's consideration of adoption of proposed changes. Any changes to the project will be made with the objective of meeting its LOS goals for Water Supply.

4.0 PROJECT SCHEDULES

As of June 30, 2023, the overall WSIP is forecast to be complete in February 2027, which is consistent with the current baseline schedule approved as part of the March 2022 Revised WSIP. However, due to the SFPUC's decision to terminate the construction contract for the Alameda Creek Recapture Project, future potential schedule changes are being analyzed. Any future proposed schedule changes will be noticed to the public and approved by the SFPUC Commission, in accordance with the requirements of California State Law AB1823.

4.0 Tracking and Controlling Project Schedules

The WSIP Management Team continues to pro-actively monitor and control program and project schedules. Detailed business processes, well defined procedures, and best practices are in place to support early identification of schedule issues and timely development of recovery plans to mitigate any forecast delays as required.

The WSIP uses best practices common in the industry and best available information to forecast dates at the time of publication of the WSIP Quarterly Reports. It is important to note that forecast dates can move each month based on the latest, best available data from the individual project teams (including information from the construction contractor in the field). When warranted, the WSIP Director may direct a project team to accelerate selected construction activities to mitigate forecasted delays.

4.1 Project Schedule Forecast and Variances

The status of schedule forecasts and variances for WSIP Regional Projects is shown in Table 4-1 as of the end of FY 2022-23. The table provides the original 2005 baseline and the current approved completion dates for each project. Additionally, the current forecast completion date for each project is provided. There are two (2) remaining active Regional WSIP projects. While the table indicates that both projects are forecasted to be completed on schedule in accordance with the current approved completion dates, the Alameda Creek Recapture Project is currently being evaluated for potential revisions to the schedule. At the end of the reporting period, it was too early to provide a forecast update for potential schedule revisions due to too many unknown factors for how long it will take to complete a revised project.

Two support projects that do not involve construction and the Program Management Project are forecasted to complete on schedule. The approved project-level and phase-level schedules are included in Appendix A. Additional detail regarding the forecasts presented below may be found in the WSIP Quarterly Report for the 4th Quarter of FY 2022-23 (Appendix B).

Table 4-1: Project Schedule Forecast and Variances

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2023 Forecasted Completion	Schedule Variance (Calendar Days)
San Joaquin Region					
CUW36401	Lawrence Livermore Water Quality Improvement *(Completed)*	11/7/2011	7/31/2013	7/31/2013	-
CUW37301	San Joaquin Pipeline System *(Completed)*	3/25/2014	3/31/2016	3/31/2016	-
CUW37302	Rehabilitation of Existing San Joaquin Pipelines *(Completed)*	6/30/2014	10/31/2014	10/31/2014	-
CUW38401	Tesla Treatment Facility *(Completed)*	7/1/2011	1/30/2015	1/30/2015	-
CUW38701	Tesla Portal Disinfection Station *(Combined with CUW38401)*	9/2/2011	6/29/2007	6/29/2007	-
CUWSJI0101	WSIP Closeout - San Joaquin *(Completed*	-	3/31/2021	3/31/2021	-
Sunol Valley Region					
CUW35201	Alameda Creek Recapture Project	5/25/2012	06/18/2024	06/18/2024	-
CUW35501	Standby Power Facilities - Various Locations *(Completed)*	12/6/2010	12/22/2010	12/22/2010	-
CUW35901	New Irvington Tunnel (Completed)	9/17/2013	3/31/2018	3/31/2018	-
CUW35902	Alameda Siphon #4 *(Completed)*	4/14/2011	6/28/2013	6/28/2013	-
CUW37001	Pipeline Repair & Readiness Improvements *(Completed)*	3/30/2007	4/16/2009	4/16/2009	-
CUW37401	Calaveras Dam Replacement *(Completed)*	5/25/2012	3/31/2022	3/31/2022	-
CUW37402	Calaveras Reservoir Upgrades *(Completed)*	2/17/2006	7/28/2006	7/28/2006	-
CUW37403	San Antonio Backup Pipeline *(Completed)*	6/29/2012	6/30/2016	6/30/2016	-
CUW38101	SVWTP Expansion & Treated Water Reservoir *(Completed)*	7/9/2013	10/31/2014	10/31/2014	-
CUW38102	SVWTP Calaveras Road *(Eliminated)*	-	12/14/2007	12/14/2007	-
CUW38201	SVWTP Treated Water Reservoir *(Combined with CUW38101)*	12/21/2010	3/2/2007	3/2/2007	-

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2023 Forecasted Completion	Schedule Variance (Calendar Days)
CUW38601	San Antonio Pump Station Upgrade *(Completed)*	12/12/2011	6/29/2012	6/29/2012	-
CUWSVI0101	WSIP Closeout - Sunol Valley *(Completed)*	-	12/31/2022	12/31/2022	-
Bay Division Region					
CUW35301	BDPL Nos. 3 & 4 Crossover/ Isolation Valves *(Completed)*	9/30/2008	7/31/2009	7/31/2009	-
CUW35302	Seismic Upgrade of BDPL Nos. 3 & 4 *(Completed)*	10/15/2012	7/30/2018	7/30/2018	-
CUW36301	SCADA System - Phase II *(Completed)*	2/24/2012	5/28/2013	5/28/2013	-
CUW36801	BDPL Reliability Upgrade / Tunnel *(Completed)*	1/31/2014	8/30/2016	8/30/2016	-
CUW36802	BDPL Reliability Upgrade - Pipeline *(Completed)*	1/31/2014	3/31/2016	3/31/2016	-
CUW36803	BDPL Reliability Upgrade - Relocation of BDPL Nos. 1 & 2 *(Completed)*	-	5/28/2010	5/28/2010	-
CUW38001	BDPL Nos. 3 & 4 Crossovers *(Completed)*	4/24/2013	6/30/2014	6/30/2014	-
CUW38901	SFPUC/EBMUD Intertie *(Completed)*	2/7/2007	3/20/2014	3/20/2014	-
CUW39301	BDPL No. 4 Condition Assessment PCCP Sections *(Completed)*	5/1/2008	2/6/2009	2/6/2009	-
CUWBDP0101	WSIP Closeout - Bay Division *(Completed)*	-	3/31/2021	3/31/2021	-
Peninsula Region					
CUW35401	Lower Crystal Springs Dam Improvements *(Completed)*	8/16/2011	12/28/2012	12/28/2012	-
CUW35601	New Crystal Springs Bypass Tunnel *(Completed)*	10/28/2010	8/17/2012	8/17/2012	-
CUW35701	Adit Leak Repair - Crystal Springs/Calaveras *(Completed)*	7/3/2008	7/31/2008	7/31/2008	-
CUW36101	Pulgas Balancing - Inlet/Outlet Work *(Completed)*	5/11/2006	5/11/2006	5/11/2006	-
CUW36102	Pulgas Balancing - Discharge Channel Modifications *(Completed)*	8/5/2013	7/30/2010	7/30/2010	-

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2023 Forecasted Completion	Schedule Variance (Calendar Days)
CUW36103	Pulgas Balancing - Structural Rehabilitation and Roof Replacement *(Completed)*	1/29/2013	12/28/2012	12/28/2012	-
CUW36104	Pulgas Balancing - Laguna Creek Sedimentation *(Eliminated)*	-	12/31/2007	12/31/2007	-
CUW36105	Pulgas Balancing - Modifications of the Existing Dechloramination Facility *(Completed)*	-	3/20/2013	3/20/2013	-
CUW36501	Cross Connection Controls *(Completed)*	5/15/2009	4/30/2009	4/30/2009	-
CUW36601	HTWTP Short-Term Improvements (Demo Filters) *(Completed)*	7/3/2006	11/14/2006	11/14/2006	-
CUW36602	HTWTP Short-Term Improvements - Remaining Filters *(Combined with CUW36603)*	9/8/2010	2/22/2008	2/22/2008	-
CUW36603	HTWTP Short-Term Improvements - Coagulation & Flocculation/ Remaining Filters *(Completed)*	9/8/2010	7/28/2010	7/28/2010	-
CUW36701	HTWTP Long-Term Improvements *(Completed)*	4/8/2014	12/30/2016	12/30/2016	-
CUW36702	Peninsula Pipelines Seismic Upgrade *(Completed)*	-	7/6/2016	7/6/2016	-
CUW36901	Capuchino Valve Lot Improvements *(Completed)*	7/24/2009	8/19/2008	8/19/2008	-
CUW37101	Crystal Springs/San Andreas Transmission Upgrade *(Completed)*	4/1/2014	6/30/2015	6/30/2015	-
CUW37801	Crystal Springs Pipeline No. 2 Replacement *(Completed)*	4/27/2012	12/31/2014	12/31/2014	-
CUW37901	San Andreas Pipeline No. 3 Installation *(Completed)*	6/9/2011	8/30/2012	8/30/2012	-
CUW39101	Baden and San Pedro Valve Lots Improvements *(Completed)*	10/12/2011	3/29/2013	3/29/2013	-
CUWPWI0101	WSIP Closeout – Peninsula *(Completed)*	-	12/30/2021	12/30/2021	-
San Francisco Regional Region					
CUW30103	Regional Groundwater Storage and Recovery	2/27/2014	2/1/2027	2/1/2027	-
CUW35801	Sunset Reservoir - North Basin *(Completed)*	5/6/2009	9/10/2010	9/10/2010	-

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2023 Forecasted Completion	Schedule Variance (Calendar Days)
CUW37201	University Mound Reservoir - North Basin *(Completed)*	3/10/2011	3/29/2013	3/29/2013	-
Support Projects					
CUW36302	System Security Upgrades *(Completed)*	-	4/19/2019	4/19/2019	-
CUW38801	Programmatic EIR *(Completed)*	6/20/2007	6/30/2009	6/30/2009	-
CUW38802	Bioregional Habitat Restoration	-	10/1/2024	10/1/2024	-
CUW38803	Vegetation Restoration of WSIP Construction Sites *(Completed)*	-	6/30/2016	6/30/2016	-
CUW38804	Long Term Mitigation Endowment	-	10/1/2024	10/1/2024	-
CUW39201	Program Management Project	6/29/2014	2/1/2027	2/1/2027	-
CUW39401	Watershed and Environmental Improvement Program *(Completed)*	6/28/2013	6/30/2022	6/30/2022	-

[1] Incorporates the March 2022 Revised WSIP schedule.

5.0 PROJECT BUDGETS

As of June 30, 2023, the forecasted overall WSIP total program cost (regional and local projects) is $4,787.8M, which is the same as the current Commission Approved Budget (March 2022 Revised WSIP). As of the end of FY 2022-23, the current forecasted remaining construction contingency is $6.4M, not including contingency budget reserved to cover the June 2023 forecasted construction change orders (approved, potential, and pending change orders) and anticipated trends on currently active construction contracts. In addition to the remaining contingency for active projects, there is currently $7.9M in the WSIP Director's Reserve to cover future potential project/program risks. Potential cost increases for completing the Alameda Creek Recapture Project are being reviewed and will be reported as a cost variance in the next reporting period.

5.1 Tracking and Controlling Project Budgets

The WSIP Management Team pro-actively monitors and controls program and project budgets. The following business processes, procedures, and best practices are in place to allow for the identification of budget issues early and to ensure measures are taken to control potential cost increases whenever required.

Monthly Statusing and Monthly Progress Meetings

According to WSIP Procedures, PM5.05 (Monthly Statusing) and PM5.07 (Monthly Progress Meetings), WSIP project teams prepare monthly budget updates/forecasts for all project phases, and review and analyze them to identify cost issues and projected cost overruns at project completion. These updates allow for the measurement of performance against baseline. In quarterly standing review meetings, all current and projected cost overruns are discussed and evaluated, and project teams are expected to address the issues and come up with a plan to mitigate project variances.

Change Management

WSIP Procedure PM5.02 (Change Management) is used by the WSIP Management Team to control any scope changes that may cause cost overruns. According to this procedure, no project-level scope, budget, and/or schedule changes can be implemented without review and approval of the Change Control Board and the WSIP Director.

Management of Construction Costs

Construction cost changes are governed by the Contract General Conditions, Section 00700, Article 6 – Clarifications and Changes in the Work, together with the Supplementary Conditions, Section 00800, as applicable. The Contract requirements, together with the supporting CM Business Processes, CM Plan and CM Procedures, are enforced to ensure diligent and pro-active management of WSIP construction costs. Unlike the progress schedules, which are updated monthly, WSIP cost information is tracked and updated on a near-real-time basis in the construction management information system (CMIS). Construction progress invoices are processed monthly, and all actual costs are summed at the program, regional, and project levels.

The WSIP team controls and manages WSIP construction costs in a number of interlocking ways as follows:

- Quality checks on design in the Pre-construction Phase to minimize design errors and the potential for change orders and consequent cost increases during construction.
- Avoiding unnecessary changes during construction by eliminating discretionary changes not required for project functionality and requiring Change Control Board approval of all owner-requested changes over $50,000.
- Earliest possible identification and definition of possible impacts through a layered early identification process from Risks (potential events), Trends (likely impacts not yet formalized as change orders), and Potential Changes (actual, non-negotiated changes) all recorded and updated in the CMIS. This system provides early warning of potential or impending cost impacts with the possibility to mitigate, as well as forecast, likely construction completion costs.
- Periodic independent verification and validation of all active Risks, Trends, and Potential Change Orders by the Program CM to assure that forecasting is current and realistic.
- Mandatory preparation of Independent Cost Estimates by the project CM teams for all change orders over $75,000 assures that change order costs are rapidly assessed and accurately forecasted.
- Expedited decision making within the SFPUC to support rapid settlement of issues, thereby avoiding unnecessary delays and associated costs.
- An urgent and aggressive approach to change order negotiation, backed by Independent Cost Estimates for larger changes, resulting in equitable agreements executed rapidly to avoid compounding and/or protracting cost issues.
- A strong preference for early bi-lateral settlement of changes to keep the performance risk on Contractors.
- Issuance of unilateral changes when necessary to avoid interruptions to work in progress. Unilateral changes are controlled with detailed CM oversight, and by record keeping of Force Account work through daily reports to control associated costs until agreement on scope and quantum is reached.
- Use of Decision Ladders, Partnering, and Dispute Resolution Boards (DRBs) to avoid, mitigate, and settle construction issues and disputes before intractable and costly disputes arise.

Control of Remaining Delivery Costs

The WSIP Management Team, with the support of SFPUC upper management, has been taking the following actions in recent years to reduce and better control the remaining delivery costs of the WSIP:

- Implementing significant reductions in both City and consultant resources at the program and project levels in accordance with the WSIP Staff Transition Plan.

- Transitioning work from consultants to City staff to the extent feasible.
- Transitioning WSIP staff to other City and SFPUC Capital Programs as more WSIP projects get completed.
- Requesting final invoices/statements from consultants and other City departments immediately following completion of work to avoid further charges.
- Terminating cost codes for completed activities to avoid further project charges.
- Accelerating project closeout to minimize cost after construction completion.
- Establishing a Director's Reserve within each project that cannot be spent by project teams without explicit written approval of the WSIP Director upon formal request by the project team.

5.2 Project Budget Forecast and Variances

The status of cost forecasts for WSIP Regional Projects is shown in Table 5-1 as of the end of FY 2022-23. The Table provides the original 2005 baseline budget and the current approved budget for each project. Additionally, the current forecast cost for each project is provided. While the table indicates that all WSIP Regional Projects are forecasted to be completed within budget, the Alameda Creek Recapture Project is currently being evaluated for potential cost increases to complete the project that will be reported in the next reporting period. Additional detail regarding the forecasts presented below may be found in the WSIP Quarterly Report for the 4th Quarter of FY 2022-23 (Appendix B).

Table 5-1: Project Budget Forecast and Variances

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2023 Forecasted Cost	Cost Variance
San Joaquin Region					
CUW36401	Lawrence Livermore Water Quality Improvement *(Completed)*	$4,235,258	$4,198,247	$4,198,247	-
CUW37301	San Joaquin Pipeline System *(Completed)*	$352,732,000	$203,178,015	$203,178,015	-
CUW37302	Rehabilitation of Existing San Joaquin Pipelines *(Completed)*	$80,000,000	$21,153,622	$21,153,622	-
CUW38401	Tesla Treatment Facility *(Completed)*	$101,643,001	$113,211,607	$113,211,607	-
CUW38701	Tesla Portal Disinfection Station *(Combined with CUW38401)*	$20,731,270	$2,081,278	$2,081,278	-
CUWSJI0101	WSIP Closeout - San Joaquin *(Completed)*	-	$3,376,376	$2,011,448	$1,364,928
Sunol Valley Region					
CUW35201	Alameda Creek Recapture Project	$18,809,304	$43,967,395	$54,188,584	($10,221,189)
CUW35501	Standby Power Facilities - Various Locations *(Completed)*	$9,949,735	$12,950,566	$12,950,566	-
CUW35901	New Irvington Tunnel *(Completed)*	$214,650,004	$340,406,358	$339,901,806	$504,553
CUW35902	Alameda Siphon #4 *(Completed)*	$78,577,000	$64,950,507	$64,950,507	-
CUW37001	Pipeline Repair & Readiness Improvements *(Completed)*	$5,591,770	$5,195,381	$5,195,381	-
CUW37401	Calaveras Dam Replacement *(Completed)*	$256,511,407	$794,066,323	$793,515,615	$550,707
CUW37402	Calaveras Reservoir Upgrades *(Completed)*	$1,740,055	$1,690,552	$1,690,552	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2023 Forecasted Cost	Cost Variance
CUW37403	San Antonio Backup Pipeline *(Completed)*	$7,677,000	$53,594,683	$53,594,683	-
CUW38101	SVWTP Expansion & Treated Water Reservoir *(Completed)*	$133,108,002	$129,593,674	$129,593,674	-
CUW38102	SVWTP Calaveras Road *(Eliminated)*	-	$34,654	$34,654	-
CUW38201	SVWTP Treated Water Reservoir *(Combined with CUW38101)*	$102,436,436	$5,056,596	$5,056,596	-
CUW38601	San Antonio Pump Station Upgrade *(Completed)*	$41,854,000	$12,894,592	$12,894,592	-
CUWSVI0101	WSIP Closeout - Sunol Valley *(Completed)*	-	$5,989,845	$5,639,559	$350,286
Bay Division Region					
CUW35301	BDPL Nos. 3 & 4 Crossover/Isolation Valves *(Completed)*	$27,600,158	$27,039,149	$27,037,926	$1,223
CUW35302	Seismic Upgrade of BDPL Nos. 3 & 4 *(Completed)*	$66,792,849	$72,194,219	$70,530,532	$1,663,687
CUW36301	SCADA System - Phase II *(Completed)*	$36,098,999	$9,470,922	$9,470,922	-
CUW36801	BDPL Reliability Upgrade / Tunnel (*Completed)*	$572,022,634	$272,364,089	$272,364,089	-
CUW36802	BDPL Reliability Upgrade - Pipeline *(Completed)*	-	$216,722,172	$216,722,172	-
CUW36803	BDPL Reliability Upgrade - Relocation of BDPL Nos. 1 & 2 *(Completed)*	-	$3,046,981	$3,046,981	-
CUW38001	BDPL Nos. 3 & 4 Crossovers *(Completed)*	$36,616,911	$29,910,449	$29,910,449	-
CUW38901	SFPUC/EBMUD Intertie *(Completed)*	$8,598,851	$9,167,306	$9,167,306	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2023 Forecasted Cost	Cost Variance
CUW39301	BDPL No. 4 Condition Assessment PCCP Sections *(Completed)*	$2,000,000	$1,937,599	$1,937,599	-
CUWBDP0101	WSIP Closeout - Bay Division *(Completed)*	-	$3,597,500	$3,322,156	$275,344
Peninsula Region					
CUW35401	Lower Crystal Springs Dam Improvements *(Completed)*	$27,752,222	$34,859,040	$34,859,040	-
CUW35601	New Crystal Springs Bypass Tunnel *(Completed)*	$83,222,790	$81,466,732	$81,466,732	-
CUW35701	Adit Leak Repair - Crystal Springs/Calaveras *(Completed)*	$3,748,452	$2,787,322	$2,787,322	-
CUW36101	Pulgas Balancing - Inlet/Outlet Work *(Completed)*	$1,667,532	$1,765,938	$1,765,938	-
CUW36102	Pulgas Balancing - Discharge Channel Modifications *(Completed)*	$8,111,422	$2,910,007	$2,910,007	-
CUW36103	Pulgas Balancing - Structural Rehabilitation and Roof Replacement *(Completed)*	$36,712,846	$20,238,716	$20,238,716	-
CUW36104	Pulgas Balancing - Laguna Creek Sedimentation *(Eliminated)*	-	$503,928	$503,928	-
CUW36105	Pulgas Balancing - Modifications of the Existing Dechloramination Facility *(Completed)*	-	$5,390,031	$5,390,031	-
CUW36501	Cross Connection Controls *(Completed)*	$6,111,779	$3,948,944	$3,948,944	-
CUW36601	HTWTP Short-Term Improvements (Demo Filters)	$4,381,375	$3,067,903	$3,067,903	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2023 Forecasted Cost	Cost Variance
	(Completed)				
CUW36602	HTWTP Short-Term Improvements - Remaining Filters *(Combined with CUW36603)*	$16,079,372	$1,424,510	$1,424,510	-
CUW36603	HTWTP Short-Term Improvements - Coagulation & Flocculation/ Remaining Filters *(Completed)*	$9,741,617	$18,604,937	$18,604,937	-
CUW36701	HTWTP Long-Term Improvements *(Completed)*	$167,570,000	$274,081,969	$273,833,162	$248,807
CUW36702	Peninsula Pipelines Seismic Upgrade (Completed)	-	$38,825,346	$38,773,912	$51,433
CUW36901	Capuchino Valve Lot Improvements (Completed)	$3,573,782	$2,803,153	$2,803,153	-
CUW37101	Crystal Springs/San Andreas Transmission Upgrade *(Completed)*	$148,582,655	$190,309,453	$189,816,066	$493,386
CUW37801	Crystal Springs Pipeline No. 2 Replacement *(Completed)*	$93,926,000	$56,070,509	$56,070,509	-
CUW37901	San Andreas Pipeline No. 3 Installation *(Completed)*	$42,029,941	$27,495,558	$27,495,558	-
CUW39101	Baden and San Pedro Valve Lots Improvements *(Completed)*	$47,319,999	$24,990,803	$24,990,803	-
CUWPWI0101	WSIP Closeout – Peninsula *(Completed)*	-	$13,579,680	$13,488,225	$91,455

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2023 Forecasted Cost	Cost Variance
San Francisco Regional Region					
CUW30103	Regional Groundwater Storage and Recovery	$39,233,443	$158,350,433	$158,350,433	-
CUW35801	Sunset Reservoir - North Basin *(Completed)*	$61,975,999	$64,270,725	$64,270,725	-
CUW37201	University Mound Reservoir - North Basin *(Completed)*	$102,882,610	$43,266,552	$43,266,552	-
Support Projects					
CUW36302	System Security Upgrades *(Completed)*	-	$14,700,669	$14,431,849	$268,821
CUW38801	Programmatic EIR *(Completed)*	$9,271,001	$10,730,684	$10,730,684	-
CUW38802	Bioregional Habitat Restoration	-	$92,165,746	$92,165,746	-
CUW38803	Vegetation Restoration of WSIP Construction Sites *(Completed)*	-	$2,111,546	$2,111,546	-
CUW38804	Long Term Mitigation Endowment		$12,000,000	$12,000,000	-
CUW39201	Program Management Project	$52,076,000	$117,304,166	$112,875,923	$4,428,243
CUW39401	Watershed Environmental Improvement Program *(Completed)*	$20,000,000	$20,000,000	$20,071,685	($71,685)

[1] Incorporates the March 2022 Revised WSIP Baseline.

6.0 ACHIEVEMENTS AND CHALLENGES

WSIP implementation is organized geographically to make program delivery more manageable and to take into account project adjacency issues. This section highlights the achievements and challenges of the Program's five regional teams

6.1 San Joaquin Region

The status of all regional projects in the San Joaquin Region as of the end of FY 2022-23 is summarized in Table 6-1.

Table 6-1: Status of San Joaquin Regional Projects as of June 30, 2023

Project/Contract Name	Status
Lawrence Livermore Water Quality Improvement	Completed
SJPL System – Crossovers	Completed
SJPL System - Western Segment	Completed
SJPL System - Eastern Segment	Completed
Rehabilitation of Existing SJPLs - Roselle	Completed
Tesla Treatment Facility	Completed
Tesla Portal Protection	Completed
WSIP Closeout - San Joaquin	Completed

All of the San Joaquin Region's eight (8) projects were completed in prior reporting periods.

6.2 Sunol Valley Region

The status of all regional projects in the Sunol Valley Region as of the end of FY 2022-23 is summarized in Table 6-2.

Table 6-2: Status of Sunol Valley Regional Projects as of June 30, 2023

Project/Contract Name	Status
Alameda Creek Recapture Project	Construction
Standby Power Facilities - Various Locations	Completed
New Irvington Tunnel	Completed
Alameda Siphon #4	Completed
Pipeline Repair & Readiness Improvements	Completed
Calaveras Dam Replacement	Completed
Calaveras Reservoir Upgrades	Completed
San Antonio Backup Pipeline	Completed
SVWTP Expansion & Treated Water Reservoir	Completed
San Antonio Pump Station Upgrade	Completed
WSIP Closeout - Sunol Valley	Completed

As of June 30, 2023, ten (10) projects have been completed and one (1) project was in construction. The WSIP Closeout – Sunol Valley Project had completed all seven (7) of its subprojects as of December 2022 and is closed.

Alameda Creek Recapture Project

Achievements

During the past year, construction of the Alameda Creek Recapture Facility proceeded slowly. Worsening bank erosion at the quarry pond site and corrosion detected on the pipeline that will be used to tie the pump station into the Regional Water System resulted in the need for significant and unanticipated design changes. The design changes in turn led to potential and actual construction change orders and trends with forecasted cost increases of greater than $10 million, or almost fifty percent of the original contract value. At this same time, there were growing concerns about operational feasibility of the remote facility as redesigned. In the last quarter of the fiscal year, with contract completion at about 30 percent based on expenditures to date, the project issues were evaluated, and it was determined that it was in the City's best interest to terminate the construction contract. The SFPUC Commission approved termination for convenience on April 11, 2023. As noted above, the primary reasons for the decision to terminate included: (1) conditions and circumstances related to slope and bank stabilization at the site had evolved since the project was designed; (2) staff anticipated that construction change orders for unforeseen conditions would exceed 50 percent of the current contract value with significant remaining risk for additional costs; and (3) the facility would be the first of its kind in the Regional Water System and Water Enterprise staff responsible for operation, maintenance, and repair raised concerns about maintaining the facility due to design changes and continuing erosion. The contract termination will allow time to coordinate with the quarry operator and site leaseholder, Mission Valley Rock, on the repairs to slope and bank erosion around the

quarry pond, to reassess the long-term geotechnical conditions, and to perform design improvements to assure the facility can be readily operated and maintained once constructed.

Challenges

The terms of contract termination are currently being negotiated with the contractor. In the coming year, the cost and schedule impacts to the project related to the contract termination, additional geotechnical improvements, and facility redesign and construction are being evaluated. Staff are analyzing and preparing potential scope, budget, and schedule changes that will be needed to complete the project. It is anticipated that a Notice of Public Hearing will be issued in Winter of FY23/24 for the SFPUC Commission to consider adoption of changes to the program in order to complete the Alameda Creek Recapture Project with its proposed revisions. Changes to the project's budget and schedule will most likely affect the overall WSIP schedule and budget, and both project and program proposed revisions will be included in the upcoming Notice of Public Hearing for Revisions to the WSIP.

WSIP Closeout – Sunol Valley Region

Achievements

All the subprojects for the Sunol Valley WSIP closeout project were completed by December 2022. The subproject Alameda Creek Diversion Dam Power and Communication Facilities had completed two of its three job order contracts for corrective work on the Alameda Creek Diversion Dam Fish Passage Facilities by the end of September 2022. The subproject had been extended for 6 months due to delays in ability to repair the sluice way and perform debris removal under its final job order contract due to environmental conditions. This last job order contract for corrective action on the Fish Passage Facilities was completed by December 31, 2022, and the entire project is now closed.

Challenges

None.

6.3 Bay Division Region

The status of all regional projects in the Bay Division Region as of the end of FY2022-23 is summarized in Table 6-3.

Table 6-3: Status of Bay Division Regional Projects as of June 30, 2023

Project/Contract Name	Status
BDPL Nos. 3 & 4 Crossover/Isolation Valves	Completed
Seismic Upgrade of BDPL Nos. 3 & 4	Completed
SCADA System - Phase II	Completed
BDPL Reliability Upgrade – Tunnel (Bay Tunnel)	Completed
BDPL Reliability Upgrade - Pipeline	Completed
BDPL Reliability Upgrade - Relocation of BDPL Nos. 1 & 2	Completed
BDPL Nos. 3 & 4 Crossovers	Completed
SFPUC/EBMUD Intertie	Completed
BDPL No. 4 Condition Assessment PCCP Sections	Completed
BDPL Nos. 3 & 4 Crossover/Isolation Valves	Completed
WSIP Closeout - Bay Division	Completed

All of the Bay Division Region's eleven (11) projects were completed in previous reporting periods.

6.4 Peninsula Region

The status of all regional projects in the Peninsula as of the end of FY2022-23 is summarized in Table 6-4.

Table 6-4: Status of Peninsula Regional Projects as of June 30, 2023

Project/Contract Name	Status
Lower Crystal Springs Dam Improvements	Completed
New Crystal Springs Bypass Tunnel	Completed
Adit Leak Repair - Crystal Springs/Calaveras	Completed
Pulgas Balancing - Inlet/Outlet Work	Completed
Pulgas Balancing - Discharge Channel Modifications	Completed
Pulgas Balancing - Structural Rehabilitation and Roof Replacement	Completed
Pulgas Balancing - Modifications of the Existing Dechloramination Facility	Completed
Cross Connection Controls	Completed
HTWTP Short-Term Improvements - Demo Filters	Completed
HTWTP Short-Term Improvements - Coagulation & Flocculation/ Remaining Filters	Completed
HTWTP Long-Term Improvements	Completed
Peninsula Pipelines Seismic Upgrade (Phases 1 / 2 / 3)	Completed
Capuchino Valve Lot Improvements	Completed
Crystal Springs/San Andreas Transmission Upgrade	Completed
Crystal Springs Pipeline No. 2 Replacement	Completed
San Andreas Pipeline No. 3 Installation	Completed
Baden and San Pedro Valve Lots Improvements	Completed
WSIP Closeout – Peninsula Region	Completed

All of the Peninsula Region's eighteen (18) projects were completed in previous reporting periods.

6.5 San Francisco (Regional) Region

The status of all regional projects in the San Francisco Region as of the end of FY 2022-23 is summarized in Table 6-5.

Table 6-5: Status of San Francisco Regional Projects as of June 30, 2023

Project/Contract Name	Status
Regional Groundwater Storage & Recovery	(A) Phase 1 Test Wells: Completed (B) Phase 1 Construction: Completed (C) Phase 2A: Construction: 32% Complete[1] (D) Phase 2B: Pre-Construction
Sunset Reservoir - North Basin	Completed
University Mound Reservoir - North Basin	Completed

1. Status of construction percentage complete is based on original contract cost plus approved cost change orders.

As of June 30, 2023, only one (1) of the three San Francisco Regional projects is still active, the Regional Groundwater Storage and Recovery Project, which includes four construction contracts. The first was completed in an earlier reporting period; the second was completed during this reporting period; the third is still active in construction and 32 percent complete as of June 30, 2023; the fourth is still in pre-construction. The two (2) other projects in this region were completed and closed out in prior reporting periods.

Regional Groundwater Storage and Recovery

Achievements

The remaining project, Regional Groundwater Storage and Recovery, is split into two phases, and as noted above, four construction contracts, identified under this project as Contracts A, B, C, and D. Contract A of Phase 1, to build test wells, was completed in a previous reporting period. For Phase 1 Contract B, to build thirteen (13) production wells and treatment facilities, construction was completed in September 2022, and the Commission approved the agenda item for contract closeout on January 10, 2023. Operation and maintenance manuals (those related to controls systems) were completed, final payment to the contractor was issued, and conversion of as-built drawings to computer-aided design (CAD) continued. For the remaining work under Phase 1, design continued for installation of fencing and gates at several well stations and for electrical work for a remote analyzer at Treasure Island Well Station.

For Phase 2A, Contract C, to resolve various well operational issues and provide rehabilitation and corrosion prevention protection for the constructed wells, the groundwater pumps have been pulled for inspection, and well rehabilitation has been completed, at nine (9) of the well stations during the reporting period. Rebuilding of the pumps is occurring at the manufacturer's rehabilitation facility. Work started at Serra Bowl Well Station, which included removal of the fencing and excavation for installation of flowmeter pump. Potholing work of the existing groundwater line at the Colma BART and Millbrae well sites has been completed in preparation for installation of flowmeters. A one-year delay for procurement of

the variable frequency drives for the pumps, to be installed under this Phase 2 contract, is forecasted to delay completion of the contract work.

For Phase 2B, Contract D, to connect the South San Francisco Main Well to Cal Water's treatment facility, the 100 percent design phase and procurement of easements and permits continues together with preparation of the draft final contract package. Coordination with Cal Water continues regarding the requirements for the use of their property as a construction staging area. Technical design also continues regarding point of connection, SCADA, security, communications, and controls systems. An offer to purchase an easement for the groundwater line crossing the Colma Creek channel has recently been issued by the SFPUC to San Mateo County Flood Control. A draft license agreement from City of South San Francisco for the use of its vacant lot for construction staging is being reviewed. PG&E's electrical design to power the SSF Main Well, which includes the cables, transformer and electrical meter as part of the secondary service, is anticipated to be received early in the next reporting period.

Challenges

For Phase 2A (Contract C) WD-2878A, the contractor submitted an updated schedule that includes forecasted delays for late delivery of rehabilitated pumps and variable frequency drives (VFD) due to supply chain and procurement delays. The delays would result in forecasting final completion in summer of 2024, about 6 months later than the approved contract schedule.

For Phase 2B (Contract D), PG&E's submittal of final design for the power supply was delayed, which impacted final design completion. Impacts to the future construction schedule are being analyzed. Any forecasted potential changes to the project completion date due to construction schedule changes will be included in a duly noticed request for changes to project schedule that may affect the overall WSIP schedule and budget as well.

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7.0 RISK MANAGEMENT

7.1 WSIP Risk Management Protocol

Risk registers for a project's construction contract are developed with the project team, comprised of the project construction manager, operations analyst, project engineer, QA inspector, communications/public outreach personnel, environmental personnel, safety personnel, and scheduler. These individuals identify the specific risks to the project, and then meet with the risk analyst/risk manager in order to provide a qualitative assessment of all risks, propose mitigation methods to prevent risks from becoming realized, and address the potential impacts from the risks should they materialize. Once the qualitative assessment of the risk register is completed, a smaller team, consisting of the project manager, project engineer, and project construction manager, reviews each individual risk thoroughly in order to identify the probability of occurrence along with the probable cost and schedule impacts. Once the risk register has been finalized with these values, meetings to update the risk register occur between the project construction manager, project manager, and risk analyst on a monthly basis.

As it would generally be overly conservative to plan for 100% of future potential risks, the SFPUC has elected to use the "80% confidence level" as a relatively conservative estimate of future cost risk for the WSIP. Namely, the "80% confidence level" represents the amount of cost for which one can be 80% confident that future cost risk will not exceed this level. The "80% confidence level" is determined with the use of the Active Risk Manager (ARM) software in which the software takes the identified project/program risks and performs a Monte Carlo simulation. This takes the likelihood of each risk along with the minimum, most likely, and maximum cost of each risk and performs 1000 iterations of the risk calculation to produce probable cost impact of the risks for the project. This probable cost impact can be expressed in terms of confidence level (confidence level vs. probable cost curve).

7.2 Status of Risk to Active Construction Projects

During FY 2022-23, the WSIP team continued to implement and refine its Risk Management Program. A total of twenty-five (25) risks were closed during the reporting period and ten (10) risks for existing projects were added. In addition, the risk register for the following construction contract was closed:

- Regional Groundwater Storage and Recovery Phase 1 (Contract B)

This brought the total number of active construction risk registers and the total number of individual risks managed through ARM as of the end of the reporting period to two (2) and twenty-one (21), respectively.

Whenever new risk registers are developed, cost impact estimates are prepared to quantify each risk. Risk assessment workshops are held with the project teams responsible to update and track the risk registers. Table 7-1 summarizes the WSIP's active construction risk registers loaded into the ARM software application as of the end of the reporting period.

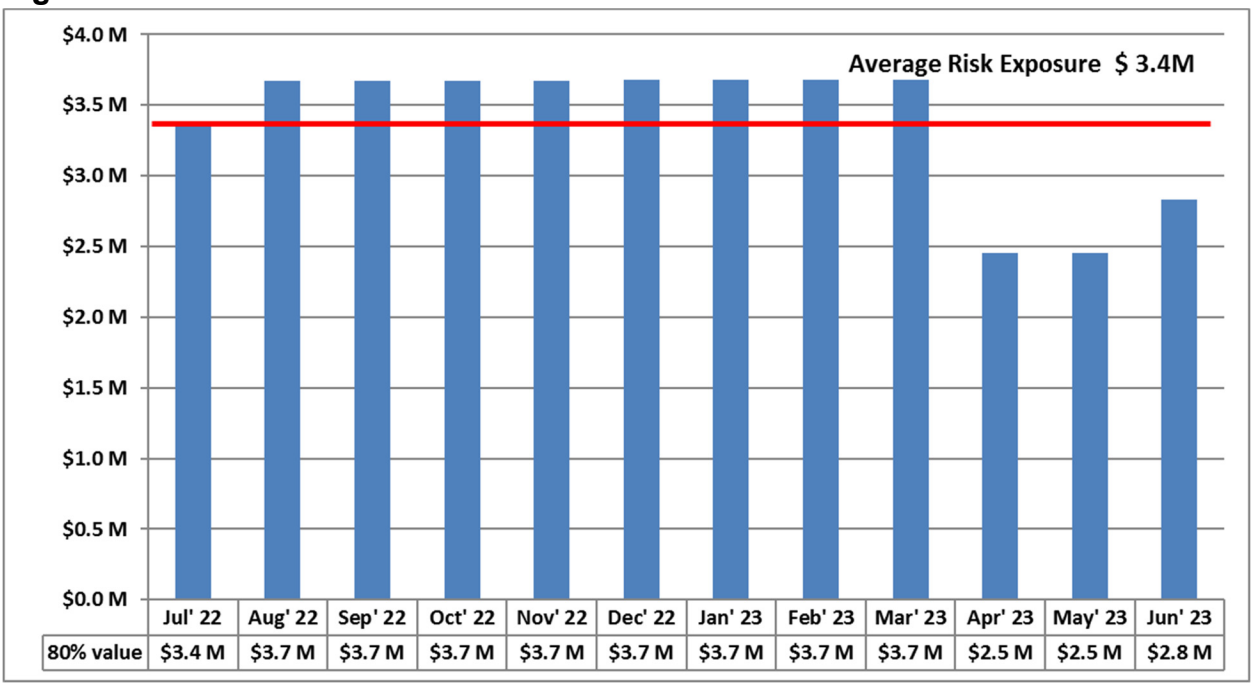
Table 7-1: Summary of Active Construction Risk Registers as of June 30, 2023

Construction Contract[1]	Date[2]	No. of Risks[3]	Risk Value ($M)[4]
Alameda Creek Recapture	June-21	10	1.3
Regional Groundwater Storage and Recovery Phase 2A	June-22	11	1.5
Cumulative active risks @ 80% confidence level		**21**	**2.8**

1. Excludes WSIP Local Region, Bioregional Habitat Restoration, and Security contracts.
2. Date when construction risk register was first created and loaded in ARM.
3. Number of individual risks recorded in register as of June 30, 2023.
4. Total value of all risks at eighty percent (80%) confidence level as of June 30, 2023.

Figure 7-1 shows the reporting period began with a cumulative risk exposure at the 80% confidence level of $3.4M in July 2022, which is the same risk exposure as in June 2022. The risk exposure increased in August 2022 by $0.3M to $3.7M due to an increase in risk probabilities and costs for the Regional Groundwater Storage and Recovery Project – Phase 2A. The risk exposure remained nearly steady at $3.7M from August 2022 until March 2023. The risk exposure decreased in April 2023 to $2.5M due to the closing of many Alameda Creek Recapture Project (ACRP) construction associated risks in anticipation of termination of the construction contract. Although many Alameda Creek Recapture Project risks were closed, new risks were added that relate specifically to the contract termination. The risk exposure increased in June 2023 to $2.8M due to an increase in risk probabilities and costs for the Regional Groundwater Storage and Recovery Project – Phase 2A.

Figure 7-1: WSIP 80% Confidence Level Construction Risks for FY 2022-23



The WSIP Risk Management System ranks construction contract risks based on a combination of the likelihood of occurrence and the potential cost impact to the SFPUC should they occur. Table 7-2 provides a description of the program's 10 largest risks.

Mitigation plans are developed for each risk identified in the risk register for active construction projects. Mitigation plans may change over the life of the risk until the risk is closed due to not having occurred. Action items derived from the risk mitigation plans are individually assigned to construction management (CM) team members and tracked in the ARM software through completion.

Six (6) of the current top ten risks for active WSIP construction contracts, based on likelihood of occurrence and potential cost impact, belong to the Regional Groundwater Storage and Recovery Project Phase 2A and four (4) belong to Alameda Creek Recapture Project. The current highest risk belongs to the Regional Groundwater Storage and Recovery Project Phase 2A which relates to scope changes. The second highest risk also belongs to Regional Groundwater Storage and Recovery Project Phase 2A and it relates to possible delays in delivery of critical equipment due to supply chain issues. The third highest risk belongs to Alameda Creek Recapture Project and it highlights the risk of closeout penalties for non-compliance with San Francisco Contract Monitoring Division's local business enterprise workforce goals. Table 7-2 below lists the top ten risks along with their cost impacts and mitigation strategies.

Table 7-2: Top 10 WSIP Risks as of June 30, 2023

Project	Risk Description	Occurrence Probability	Risk Value[1] ($K)	Mitigation
Regional Groundwater Storage and Recovery Phase 2A	Scope Changes	90%	200	Acquire earlier direction from Water Enterprise and management.
Regional Groundwater Storage and Recovery Phase 2A	Possible delays in delivery of critical equipment due to supply chain issues	70%	900	Obtain early submittals from the contractor for long lead items.
Alameda Creek Recapture Project	CMD Closeout penalties for non-compliance with LBE goals	75%	50	Work with CMD to request relief from penalties if shortfall occurs.
Regional Groundwater Storage and Recovery Phase 2A	Insufficient resources from Water Supply & Treatment Division (WS&TD) to support pump isolation & removal	50%	363	Coordination and early request from WS&TD.
Regional Groundwater Storage and Recovery Phase 2A	Insufficient resources from Water Supply & Treatment Division (WS&TD) to support start-up and testing	50%	200	Coordination and early request from WS&TD.
Alameda Creek Recapture Project	Disposition of all project related materials.	50%	150	Transfer materials within SFPUC where feasible. Utilize auction to sell materials and recover as much value as possible

Project	Risk Description	Occurrence Probability	Risk Value[1] ($K)	Mitigation
Regional Groundwater Storage and Recovery Phase 2A	Security issues resulting in vandalism and/or loss of stored equipment	50%	132	Contractor to secure equipment.
Regional Groundwater Storage and Recovery Phase 2A	WS&TD not ready to accept equipment to operate and maintain upon turnover	50%	10	Coordination with WS&TD for staff augmentation/ service contract.
Alameda Creek Recapture Project	Final closeout cost trends cannot be reconciled	25%	1000	Validate all project costs-to-date and allow for reasonable markup.
Alameda Creek Recapture Project	Reconciling final bid items amounts	25%	500	The CM forecast is a net deduct for un-spent Bid Items of $10.9M. This is reflected as a deductive trend.

1. Most likely cost of each risk. The lowest and highest costs of each risk are also recorded in ARM.

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8.0 PROGRAM DELIVERY STRATEGY FOR CLOSEOUT PHASE

At 98.9 percent completion as of June 30, 2023 and with 41 of 43 Regional WSIP projects with specific Level of Service (LOS) goals and objectives currently in service, the overall WSIP is in the Closeout Phase. Nevertheless, there are still two active projects with potential current or future risks that, should these risks be realized, could have a negative schedule and/or budget impact to the program. Therefore, it is essential to continue to implement best practices that have helped to make the WSIP successful to date, and to continue to look for opportunities to become increasingly efficient as the SFPUC strives towards bringing the WSIP to successful completion.

8.1 Plan to Ensure Ongoing and Increasing Cost-Efficient Practices

As has been the practice since the program was established, the WSIP Director will continue to meet with project teams on a rotation monthly in order to review status of every project at least twice quarterly. As a result of these meetings, staffing adjustments are made in real time to ensure project teams work within the existing budgets, and where appropriate, budget forecasts and resources are adjusted as necessary to help ensure successful completion of every project. Staffing levels will continue to be tracked monthly and appropriate staff adjustments made accordingly to ensure staffing levels stay within the remaining available budget.

In addition, industry best practice Construction Management (CM) Business Processes and Procedures continue to be implemented to ensure the available funds are used efficiently and effectively, with emphasis on identification of cost savings wherever possible. The primary features of the best practice processes and procedures that facilitate monitoring and control of WSIP construction are summarized below.

- Change Management - All Owner-requested changes require approval by a Change Control Board, with final approval by the WSIP Director. All changes are required to support Level of Service (LOS) goals and objectives, and independent cost estimates are required for large changes in advance of contractor pricing.
- Trends Management - Project teams are required to re-assess trend values monthly to ensure accurate cost forecasting. Trends are also audited by the Program CM Management Team and discussed and reviewed monthly with the WSIP Director.
- Risk Management - SFPUC continues to proactively monitor and manage risk on all active projects. Risk registers are updated monthly by each project team, and thorough review and discussion of the Risk Register is periodically conducted by the Program CM Management Team. Discussion includes review of mitigation measures as well as probabilities and potential impacts (cost and time) to reflect up-to-date overall project risk exposure.
- Claims Avoidance - WSIP continues to enforce the CM Procedures and Business Processes across all projects by regularly auditing the CM Teams and evaluating their performance. Issues and problems are discussed as early as possible with the Contractor and elevated up the resolution ladder up to the Resolution Board, if necessary, to avoid any potential claim.

- Schedule Management – SFPUC continues to aggressively apply strong schedule control on construction activities and continuously evaluate contractor schedules to ensure approved milestones are met. Project schedule forecasts are reported every month and reviewed and discussed with the Program CM Management Team. Mitigation measures are applied to delays incurred beyond the contractor's contract due to unforeseen conditions. Schedule recoveries are enforced by the Project Teams.
- Program CM Project Audits - The Program CM Management Team conducts regular audits on all active projects, including a review of Risks, Trends, Potential Change Orders, construction schedule, and construction closeout deliverables. Identified problems and potential solutions or mitigation measures are discussed, and project forecasts for budget and schedule updated accordingly.
- Monthly and Quarterly Project Review Meetings - Monthly and Quarterly review meetings are conducted with the WSIP Director to review overall project budget & schedule forecasts as measured against the approved baseline.

8.3 Adequacy of Current Approved Schedules and Budget Contingencies

The schedule forecasts presented in this report show that the two remaining construction projects in the program are forecast to be complete by the current approved program completion date of February 1, 2027. However, as previously reported, the project schedules are currently being evaluated, particularly for schedule requirements to complete Alameda Creek Recapture Project after erosion repairs have been completed. It is anticipated that a Notice of Public Hearing will be issued in Winter of FY23/24 for the SFPUC Commission to consider adoption of changes to the program in order to complete the Alameda Creek Recapture Project with its proposed revisions. As discussed in Section 7 of this report, the program-level risk analysis shows that the remaining program risk exposure at the “80 confidence level” is $2.8 million for active construction contracts as of June 30, 2023.

The remaining forecast construction contingency as of June 30, 2023 is $6.4 million after all current trends have been considered. In addition, the current forecast WSIP Director’s Reserve Fund is $7.9 million. Therefore, a total of approximately $14.3 million is available to fund future risks, including both construction risks and unforeseen soft (non-construction) costs.

9.0 STATUS OF AB 1823 PROJECTS

The status of the ten (10) projects identified in Assembly Bill (AB) 1823 is summarized in Table 9-1. As of June 30, 2023, all ten (10) projects have been completed.

Table 9-1: Status of AB 1823 Projects as of June 30, 2023

Project Name	Status
New Irvington Tunnel	Completed
Alameda Siphon #4	Completed
Calaveras Dam Replacement	Completed
BDPL Nos. 3 & 4 Crossover/ Isolation Valves	Completed
Seismic Upgrade of BDPL Nos. 3 & 4	Completed
BDPL Reliability Upgrade – Tunnel (Bay Tunnel)	Completed
BDPL Reliability Upgrade - Pipeline	Completed
BDPL Nos. 3 & 4 Crossovers	Completed
New Crystal Springs Bypass Tunnel	Completed
Crystal Springs/San Andreas Transmission Upgrade	Completed

It should be noted that the original list of projects in AB 1823 includes the BDPL Nos. 1 & 2 - Repair of Caissons/Pipe Bridge Project. That project was removed from the WSIP following completion of a facilities condition assessment that led to the addition of a fifth conduit parallel to BDPL Nos. 1 & 2 to the SFPUC capital program. The conduit, referred to as BDPL No. 5, was completed as part of the BDPL Reliability Upgrade - Tunnel and BDPL Reliability Upgrade - Pipeline projects.

Half of the ten projects listed in AB 1823 contributed to the construction of a new seismically designed lifeline that carries water from the Sunol Valley in the East Bay to the mid-Peninsula. That lifeline involves six segments contracted out separately that have all achieved substantial construction completion in past reporting periods and are in service: Alameda Siphon #4, New Irvington Tunnel, BDPL Reliability Upgrade (East Bay Reaches), BDPL Reliability Upgrade – Tunnel (Bay Tunnel), BDPL Reliability Upgrade (Peninsula Reaches) and New Crystal Springs Bypass Tunnel.

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APPENDIX A
Current Approved WSIP Schedule
Regional Projects

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APPENDIX A: Current Approved WSIP Project-Level Schedules

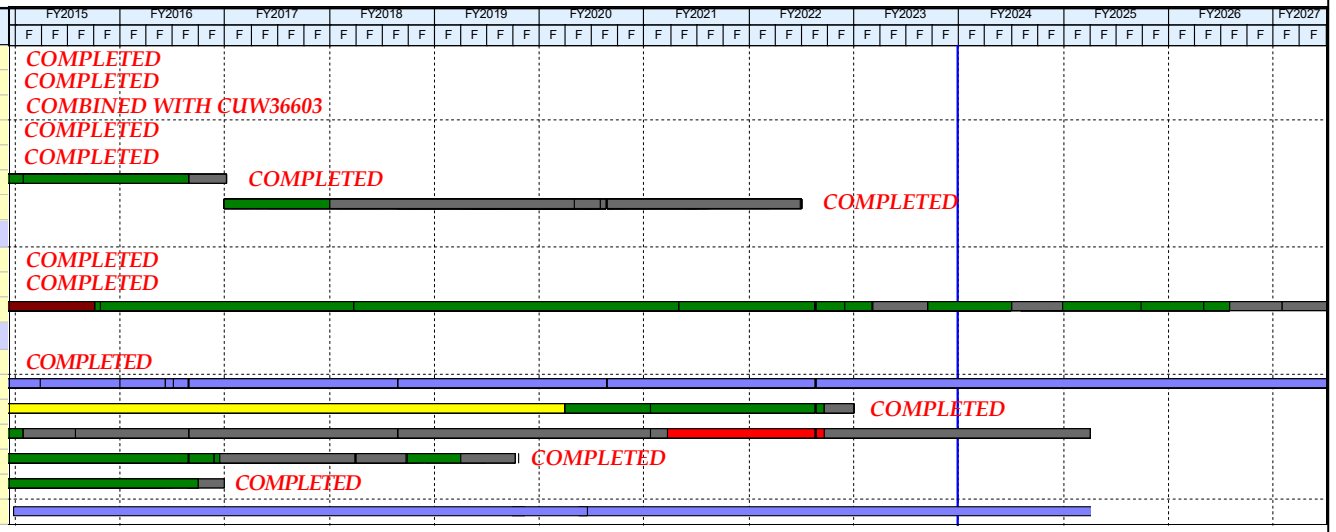
Project Name	Start	Finish	Status
Regional Improvement Projects	31-Mar-00 A	01-Feb-27	
San Joaquin Region	01-Jul-02 A	31-Mar-21 A	COMPLETED
CUW38701 Tesla Portal Disinfection Station	01-Jul-02 A	29-Jun-07 A	COMBINED WITH CUW38401
CUW38401 Tesla Treatment Facility	01-Jul-02 A	30-Jan-15 A	COMPLETED
CUW37301 San Joaquin Pipeline System	19-Aug-02 A	31-Mar-16 A	COMPLETED
CUW36401 Lawrence Livermore Water Quality Impro	02-Feb-04 A	31-Jul-13 A	COMPLETED
CUW37302 Rehabilitation of Existing San Joaquin Pip	03-Jul-06 A	31-Oct-14 A	COMPLETED
CUWSJI0101 WSIP Closeout - San Joaquin	20-Jun-16 A	31-Mar-21 A	COMPLETED
Sunol Valley Region	19-Dec-01 A	18-Jun-24	
CUW37401 Calaveras Dam Replacement	03-Sep-02 A	31-Mar-22 A	COMPLETED
CUW35501 Standby Power Facilities - Various Locati	11-Jul-02 A	22-Dec-10 A	COMPLETED
CUW37001 Pipeline Repair & Readiness Improveme	21-Apr-03 A	16-Apr-09 A	COMPLETED
CUW38601 San Antonio Pump Station Upgrade	01-Jul-04 A	29-Jun-12 A	COMPLETED
CUW38201 SVWTP Treated Water Reservoir	15-Sep-03 A	02-Mar-07 A	COMBINED WITH CUW38101
CUW35901 New Irvington Tunnel	19-Dec-01 A	31-Mar-18 A	COMPLETED
CUW35201 Alameda Creek Recapture Project	30-Sep-03 A	18-Jun-24	
CUW38101 SVWTP Expansion & Treated Water Res	22-Apr-05 A	31-Oct-14 A	COMPLETED
CUW37402 Calaveras Reservoir Upgrades	19-Nov-03 A	28-Jul-06 A	COMPLETED
CUW37403 San Antonio Backup Pipeline	03-Sep-02 A	30-Jun-16 A	COMPLETED
CUW35902 Alameda Siphon #4	19-Dec-01 A	28-Jun-13 A	COMPLETED
CUW38102 SVWTP Calaveras Road	01-Feb-07 A	14-Dec-07 A	COMPLETED
CUWSVI0101 WSIP Closeout - Sunol Valley	01-Jul-16 A	31-Dec-22	COMPLETED
Bay Division Region	19-Dec-01 A	31-Mar-21 A	COMPLETED
CUW35301 BDPL Nos. 3 & 4 Crossover/Isolation Valv	06-Jan-03 A	31-Jul-09 A	COMPLETED
CUW36801 BDPL Reliability Upgrade / Tunnel	19-Dec-01 A	30-Aug-16 A	COMPLETED
CUW38001 BDPL Nos. 3 & 4 Crossovers	17-Feb-04 A	30-Jun-14 A	COMPLETED
CUW36301 SCADA System - Phase II	22-Apr-05 A	28-May-13 A	COMPLETED
CUW38901 SFPUC/EBMUD Intertie	24-Jun-02 A	20-Mar-14 A	COMPLETED
CUW39301 BDPL No. 4 Condition Assessment PCCF	04-Aug-06 A	06-Feb-09 A	COMPLETED
CUW35302 Seismic Upgrade of BDPL Nos. 3 & 4	22-Oct-04 A	30-Jul-18 A	COMPLETED
CUW36802 BDPL Reliability Upgrade - Pipeline	19-Dec-01 A	31-Mar-16 A	COMPLETED
CUW36803 BDPL Reliability Upgrade - Relocation of	24-Apr-06 A	28-May-10 A	COMPLETED
CUWBDP0101 WSIP Closeout - Bay Division	06-Jul-16 A	31-Mar-21 A	COMPLETED
Peninsula Region	01-Nov-00 A	30-Dec-21 A	COMPLETED
CUW37801 Crystal Springs Pipeline No. 2 Replacem	15-Jan-04 A	31-Dec-14 A	COMPLETED
CUW36901 Capuchino Valve Lot Improvements	22-Apr-05 A	19-Aug-08 A	COMPLETED
CUW37101 Crystal Springs/San Andreas Transmissic	18-Aug-03 A	30-Jun-15 A	COMPLETED
CUW35701 Adit Leak Repair - Crystal Springs/Calave	01-Apr-05 A	31-Jul-08 A	COMPLETED
CUW36601 HTWTP Short-Term Improvements (Dem	04-Sep-02 A	14-Nov-06 A	COMPLETED
CUW36501 Cross Connection Controls	01-Jul-03 A	30-Apr-09 A	COMPLETED
CUW35601 New Crystal Springs Bypass Tunnel	07-Jan-02 A	17-Aug-12 A	COMPLETED
CUW35401 Lower Crystal Springs Dam Improvemen	01-Nov-00 A	28-Dec-12 A	COMPLETED
CUW36101 Pulgas Balancing - Inlet/Outlet Work	15-May-02 A	11-May-06 A	COMPLETED
CUW36701 HTWTP Long-Term Improvements	01-Jul-03 A	30-Dec-16 A	COMPLETED
CUW39101 Baden and San Pedro Valve Lots Improv	03-Oct-05 A	29-Mar-13 A	COMPLETED
CUW36102 Pulgas Balancing - Discharge Channel Mo	01-Apr-05 A	30-Jul-10 A	COMPLETED
CUW36103 Pulgas Balancing - Structural Rehabilitatic	03-Apr-06 A	28-Dec-12 A	COMPLETED

Timeline: FY2015 – FY2027

Legend: Project Management; Environmental; Right-of-Way; Construction Mgmt; Closeout; Planning; Design; Bid & Award; Construction; Program Mgmt

APPENDIX A: Current Approved WSIP Project-Level Schedules

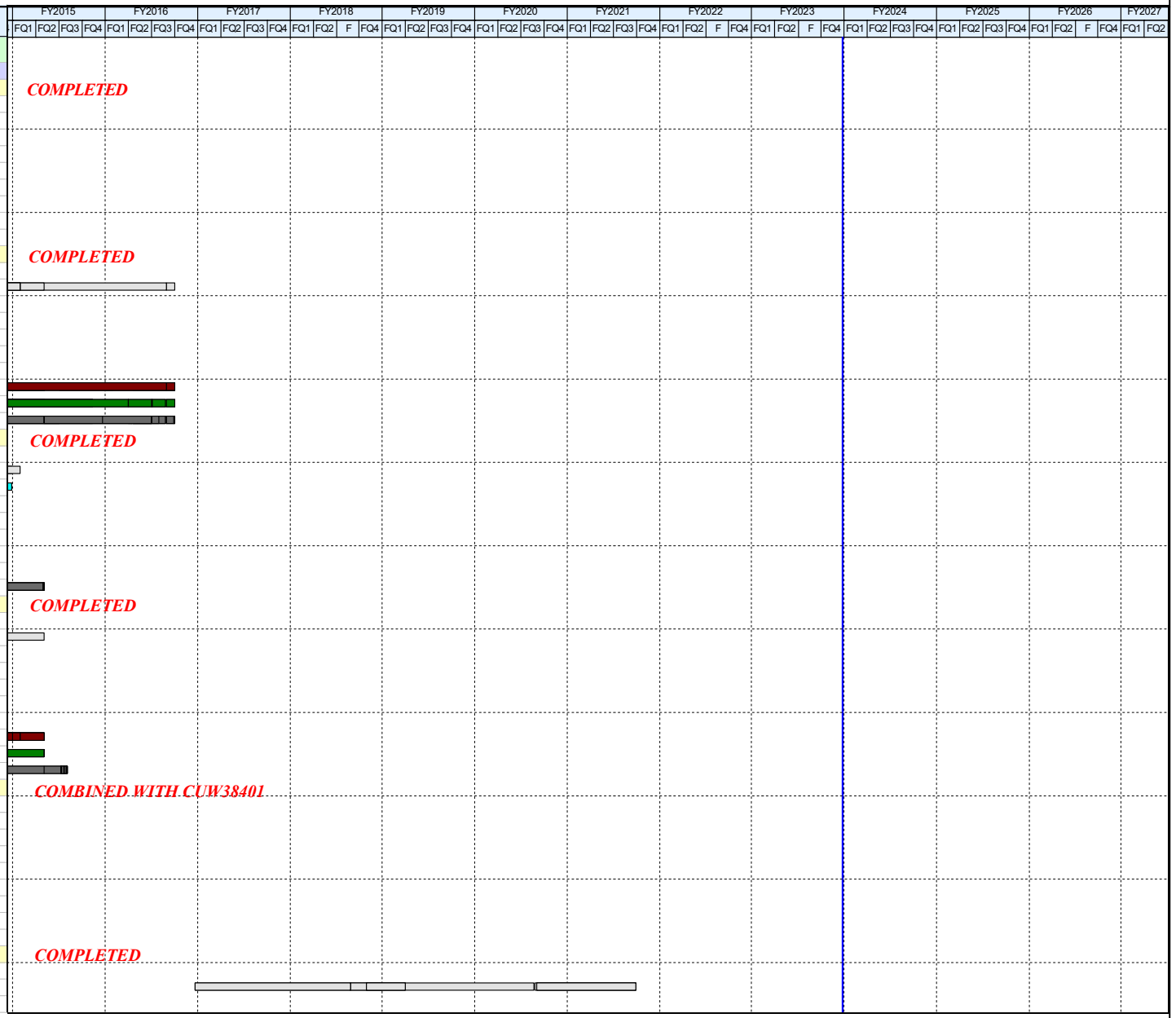
Project Name	Start	Finish
CUW36104 Pulgas Balancing - Laguna Creek Sedime	31-Mar-06 A	31-Dec-07 A
CUW36105 Pulgas Balancing - Modifications of the E:	02-Apr-07 A	20-Mar-13 A
CUW36602 HTWTP Short-Term Improvements - Rer	12-Jan-06 A	22-Feb-08 A
CUW36603 HTWTP Short-Term Improvements - Coa	03-Jul-06 A	28-Jul-10 A
CUW37901 San Andreas Pipeline No. 3 Installation	15-Jan-04 A	30-Aug-12 A
CUW36702 Peninsula Pipelines Seismic Upgrade	01-Jul-09 A	06-Jul-16 A
CUWPWI0101 WSIP Closeout - Peninsula	01-Jul-16 A	30-Dec-21 A
San Francisco Regional Region	31-Mar-00 A	01-Feb-27
CUW37201 University Mound Reservoir - North Basir	24-Oct-05 A	29-Mar-13 A
CUW35801 Sunset Reservoir - North Basin	31-Mar-00 A	10-Sep-10 A
CUW30103 Regional Groundwater Storage and Recc	01-Jun-03 A	01-Feb-27
Support Projects	13-Apr-04 A	01-Feb-27
CUW38801 Programmatic EIR	13-Apr-04 A	30-Jun-09 A
CUW39201 Program Management Project	01-Aug-05 A	01-Feb-27
CUW39401 Watershed and Environmental Improvem	02-Jan-07 A	30-Jun-22 A
CUW38802 Bioregional Habitat Restoration	06-Sep-06 A	01-Oct-24
CUW36302 System Security Upgrades	07-Jan-06 A	19-Apr-19 A
CUW38803 Vegetation Restoration of WSIP Construc	02-Jan-13 A	30-Jun-16 A
CUW38804 Long Term Mitigation Endowment	05-Mar-14 A	01-Oct-24



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

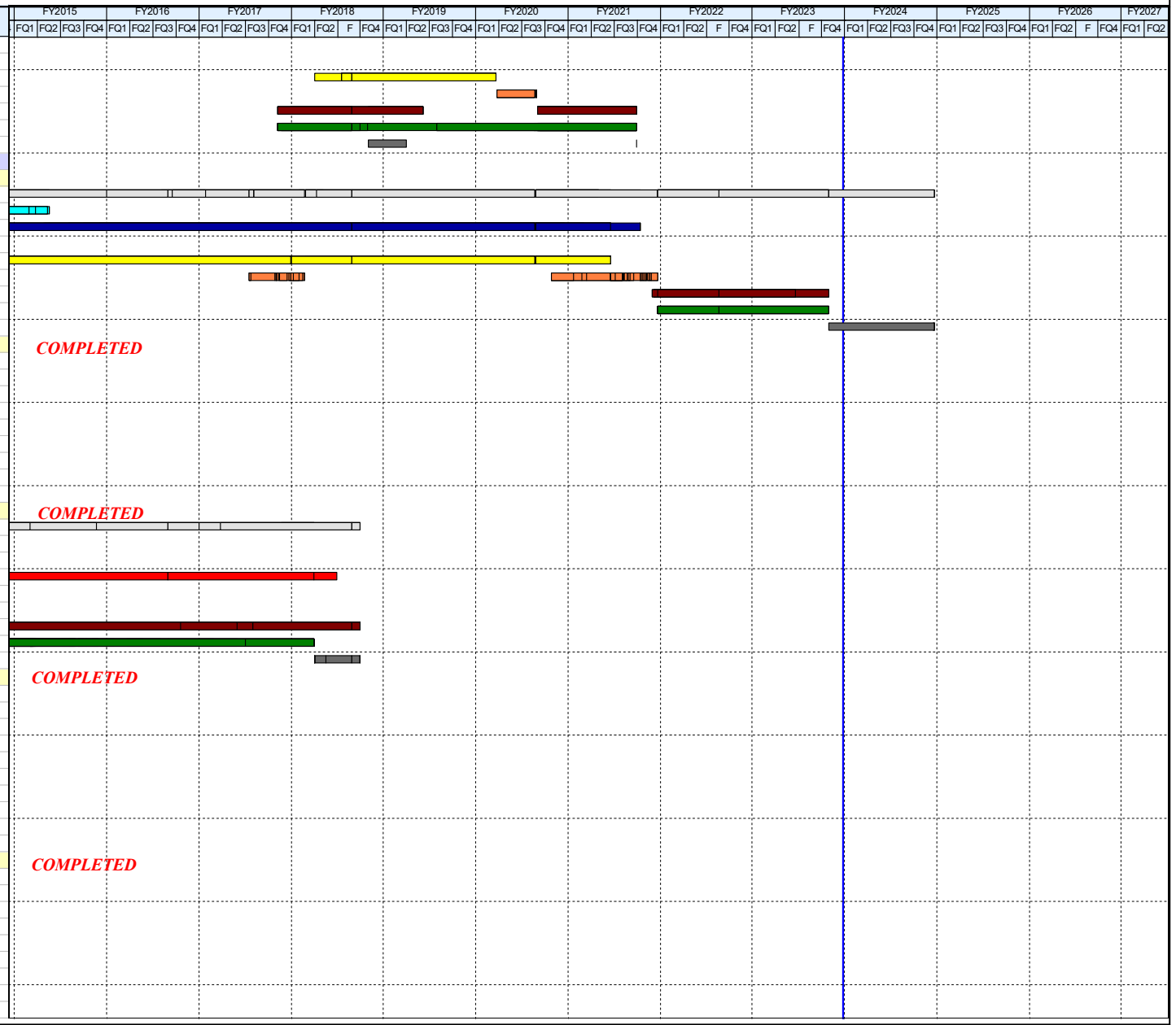
Project Name	Start	Finish
Regional Improvement Projects	31-Mar-00 A	01-Feb-27
San Joaquin Region	01-Jul-02 A	31-Mar-21 A
Lawrence Livermore Water Quality Improvement	02-Feb-04 A	31-Jul-13 A
Project Milestones		
Project Management	02-Feb-04 A	11-Mar-11 A
Project Planning	02-Feb-04 A	28-Sep-07 A
Environmental Review	31-Aug-06 A	25-Feb-09 A
Design	01-Oct-07 A	31-Mar-09 A
Bid and Award	01-Dec-08 A	25-Aug-09 A
Construction Management	27-Feb-09 A	11-Mar-11 A
Construction	26-Aug-09 A	11-Mar-11 A
Close-Out	14-Mar-11 A	31-Jul-13 A
San Joaquin Pipeline System	19-Aug-02 A	31-Mar-16 A
Project Milestones		
Project Management	19-Aug-02 A	31-Mar-16 A
Project Planning	19-Aug-02 A	28-Dec-06 A
Environmental Review	17-Feb-04 A	27-Mar-12 A
Right of Way	02-Jan-07 A	29-Mar-13 A
Design	02-Jan-07 A	23-Mar-11 A
Bid and Award	27-Apr-09 A	21-Jul-11 A
Construction Management	03-Feb-09 A	31-Mar-16 A
Construction	13-Oct-09 A	31-Mar-16 A
Close-Out	01-Apr-13 A	31-Mar-16 A
Rehabilitation of Existing San Joaquin Pipelines	03-Jul-06 A	31-Oct-14 A
Project Milestones		
Project Management	03-Jul-06 A	31-Jul-14 A
Project Planning	03-Jul-06 A	27-Jun-14 A
Environmental Review	26-Sep-06 A	31-Dec-12 A
Design	31-Jul-06 A	31-Mar-11 A
Bid and Award	02-May-08 A	31-Mar-11 A
Construction Management	03-Jul-06 A	19-Sep-11 A
Construction	02-Oct-06 A	01-Nov-11 A
Close-Out	20-Sep-11 A	31-Oct-14 A
Tesla Treatment Facility	01-Jul-02 A	30-Jan-15 A
Project Milestones		
Project Management	01-Jul-02 A	31-Oct-14 A
Project Planning	01-Jul-02 A	29-Jun-07 A
Environmental Review	30-Jun-06 A	25-Feb-09 A
Right of Way	17-Mar-08 A	16-Oct-08 A
Design	15-Feb-07 A	20-Nov-09 A
Bid and Award	30-Jan-08 A	10-Nov-08 A
Construction Management	02-Feb-09 A	31-Oct-14 A
Construction	08-Sep-08 A	31-Oct-14 A
Close-Out	01-Jul-11 A	30-Jan-15 A
Tesla Portal Disinfection Station	01-Jul-02 A	29-Jun-07 A
Project Milestones		
Project Management	01-Jul-02 A	29-Jun-07 A
Project Planning	01-Jul-02 A	29-Jun-07 A
Environmental Review	19-Aug-04 A	29-Dec-06 A
Design		
Bid and Award		
Construction Management		
Construction		
Close-Out		
WSIP Closeout - San Joaquin	20-Jun-16 A	31-Mar-21 A
Project Milestones		
Project Management	20-Jun-16 A	31-Mar-21 A
Project Planning		



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

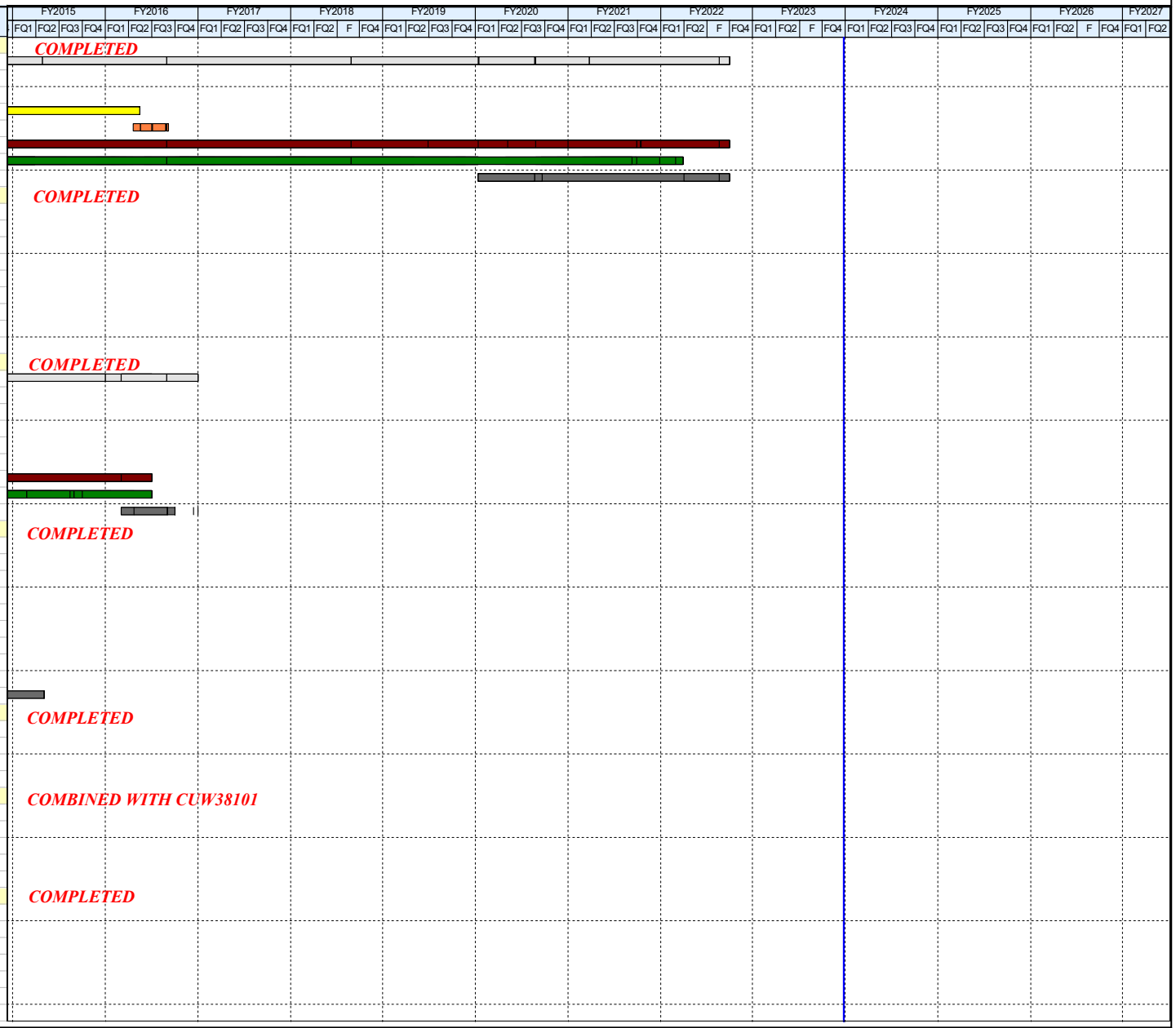
Project Name	Start	Finish
Environmental Review		
Right of Way		
Design	02-Oct-17 A	21-Sep-19 A
Bid and Award	23-Sep-19 A	28-Feb-20 A
Construction Management	09-May-17 A	31-Mar-21 A
Construction	09-May-17 A	31-Mar-21 A
Close-Out	01-May-18 A	31-Mar-21 A
Sunol Valley Region	19-Dec-01 A	18-Jun-24
Alameda Creek Recapture Project	30-Sep-03 A	18-Jun-24
Project Management	30-Sep-03 A	18-Jun-24
Project Planning	30-Sep-03 A	14-Nov-14 A
Environmental Review	23-Apr-10 A	13-Apr-21 A
Right of Way		
Design	01-Jul-10 A	18-Dec-20 A
Bid and Award	17-Jan-17 A	21-Jun-21 A
Construction Management	01-Jun-21 A	15-Sep-23
Construction	21-Jun-21 A	18-Sep-23
Close-Out	18-Sep-23	18-Jun-24
Standby Power Facilities - Various Locations	11-Jul-02 A	22-Dec-10 A
Project Milestones		
Project Management	11-Jul-02 A	22-Jun-10 A
Project Planning	11-Jul-02 A	30-Jun-05 A
Environmental Review	26-May-05 A	23-Sep-05 A
Design	01-Jul-05 A	04-May-07 A
Bid and Award	16-Apr-07 A	31-Dec-07 A
Construction Management	10-Dec-07 A	22-Jun-10 A
Construction	10-Dec-07 A	28-May-10 A
Close-Out	10-Sep-08 A	22-Dec-10 A
New Irvington Tunnel	19-Dec-01 A	31-Mar-18 A
Project Management	19-Dec-01 A	31-Mar-18 A
Project Planning	19-Dec-01 A	07-Oct-05 A
Environmental Review	25-Aug-04 A	07-Mar-11 A
Right of Way	03-Jul-06 A	29-Dec-17 A
Design	11-Oct-05 A	12-Jan-10 A
Bid and Award	05-Jan-09 A	21-Jul-10 A
Construction Management	28-Sep-09 A	30-Mar-18 A
Construction	31-Mar-09 A	30-Sep-17 A
Close-Out	02-Oct-17 A	31-Mar-18 A
Alameda Siphon #4	19-Dec-01 A	28-Jun-13 A
Project Milestones		
Project Management	19-Dec-01 A	24-Aug-12 A
Project Planning	19-Dec-01 A	07-Oct-05 A
Environmental Review	25-Aug-04 A	30-Mar-10 A
Right of Way	04-Jun-07 A	09-Feb-09 A
Design	11-Oct-05 A	13-Mar-09 A
Bid and Award	03-Nov-08 A	25-Aug-09 A
Construction Management	26-Aug-09 A	24-Aug-12 A
Construction	20-Apr-09 A	24-Aug-12 A
Close-Out	27-Aug-12 A	28-Jun-13 A
Pipeline Repair & Readiness Improvements	21-Apr-03 A	16-Apr-09 A
Project Milestones		
Project Management	21-Apr-03 A	15-Oct-08 A
Project Planning	21-Apr-03 A	30-Mar-07 A
Environmental Review	14-Jan-05 A	29-Dec-06 A
Design	07-Jun-04 A	05-Feb-07 A
Bid and Award	31-Oct-05 A	23-Jul-07 A
Construction Management	30-Jan-06 A	15-Oct-08 A
Construction	30-Jan-06 A	15-Oct-08 A
Close-Out	18-Sep-06 A	16-Apr-09 A



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

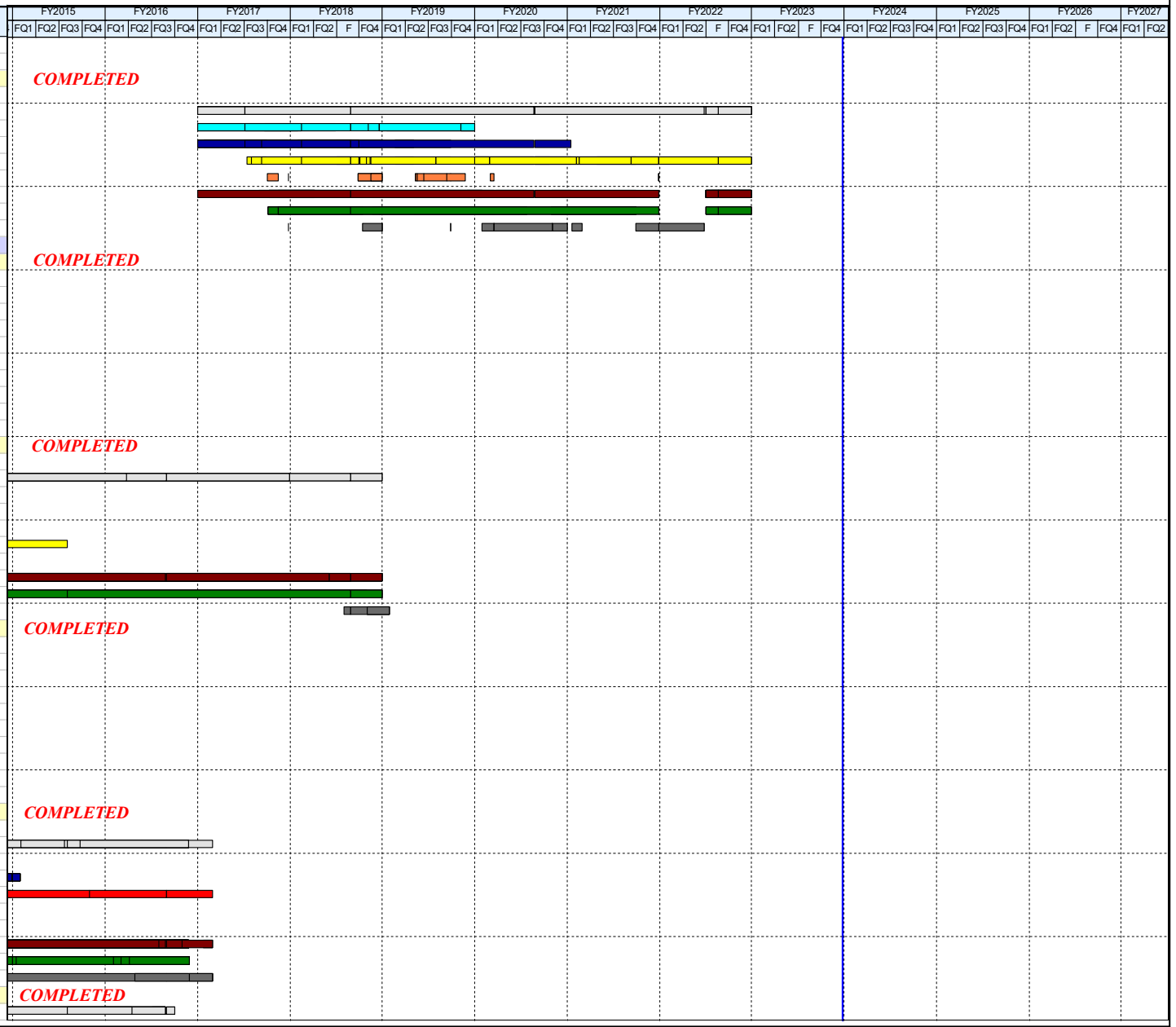
Project Name	Start	Finish
Calaveras Dam Replacement	03-Sep-02 A	31-Mar-22 A
Project Management	03-Sep-02 A	31-Mar-22 A
Project Planning	03-Sep-02 A	04-Nov-05 A
Environmental Review	16-May-05 A	06-Feb-12 A
Design	14-Nov-05 A	13-Nov-15 A
Bid and Award	27-Dec-10 A	07-Mar-16 A
Construction Management	15-Aug-11 A	31-Mar-22 A
Construction	31-May-11 A	30-Sep-21 A
Close-Out	12-Jul-19 A	31-Mar-22 A
Calaveras Reservoir Upgrades	19-Nov-03 A	28-Jul-06 A
Project Milestones		
Project Management	19-Nov-03 A	14-Feb-06 A
Project Planning	19-Nov-03 A	18-Nov-05 A
Environmental Review	21-May-04 A	18-Nov-05 A
Design	16-Dec-04 A	18-Nov-05 A
Bid and Award	28-Jan-05 A	18-Nov-05 A
Construction Management	27-Jun-05 A	14-Feb-06 A
Construction	27-Jun-05 A	14-Feb-06 A
Close-Out	06-Oct-05 A	28-Jul-06 A
San Antonio Backup Pipeline	03-Sep-02 A	30-Jun-16 A
Project Management	03-Sep-02 A	30-Jun-16 A
Project Planning	17-Dec-03 A	11-May-07 A
Environmental Review	02-Oct-06 A	29-Mar-13 A
Right of Way		
Design	01-Mar-07 A	24-Sep-12 A
Bid and Award	18-May-11 A	29-Mar-13 A
Construction Management	26-Oct-12 A	31-Dec-15 A
Construction	29-Mar-13 A	31-Dec-15 A
Close-Out	31-Aug-15 A	30-Jun-16 A
SVWTP Expansion & Treated Water Reservoir	22-Apr-05 A	31-Oct-14 A
Project Milestones		
Project Management	22-Apr-05 A	20-Sep-13 A
Project Planning	22-Apr-05 A	29-Jun-07 A
Environmental Review	21-Jul-06 A	30-Jun-10 A
Right of Way	03-Jul-06 A	16-Jun-09 A
Design	16-Jan-07 A	10-Dec-09 A
Bid and Award	23-Nov-09 A	22-Jun-10 A
Construction Management	30-Apr-10 A	20-Sep-13 A
Construction	23-Jun-10 A	20-Sep-13 A
Close-Out	23-Sep-13 A	31-Oct-14 A
SVWTP Calaveras Road	01-Feb-07 A	14-Dec-07 A
Project Milestones		
Project Management	12-Mar-07 A	14-Dec-07 A
Environmental Review	01-Feb-07 A	30-Jul-07 A
Design	02-Apr-07 A	14-Dec-07 A
SVWTP Treated Water Reservoir	15-Sep-03 A	02-Mar-07 A
Project Milestones		
Project Management	15-Sep-03 A	02-Mar-07 A
Project Planning	15-Sep-03 A	29-Sep-04 A
Environmental Review	26-Mar-04 A	09-Feb-07 A
Design	03-Nov-04 A	02-Mar-07 A
San Antonio Pump Station Upgrade	01-Jul-04 A	29-Jun-12 A
Project Milestones		
Project Management	01-Jul-04 A	30-Sep-11 A
Project Planning	01-Jul-04 A	12-Jan-07 A
Environmental Review	02-Jan-07 A	21-Jun-07 A
Design	06-Jul-07 A	15-May-09 A
Bid and Award	14-Apr-09 A	30-Oct-09 A
Construction Management	02-Nov-09 A	30-Sep-11 A



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

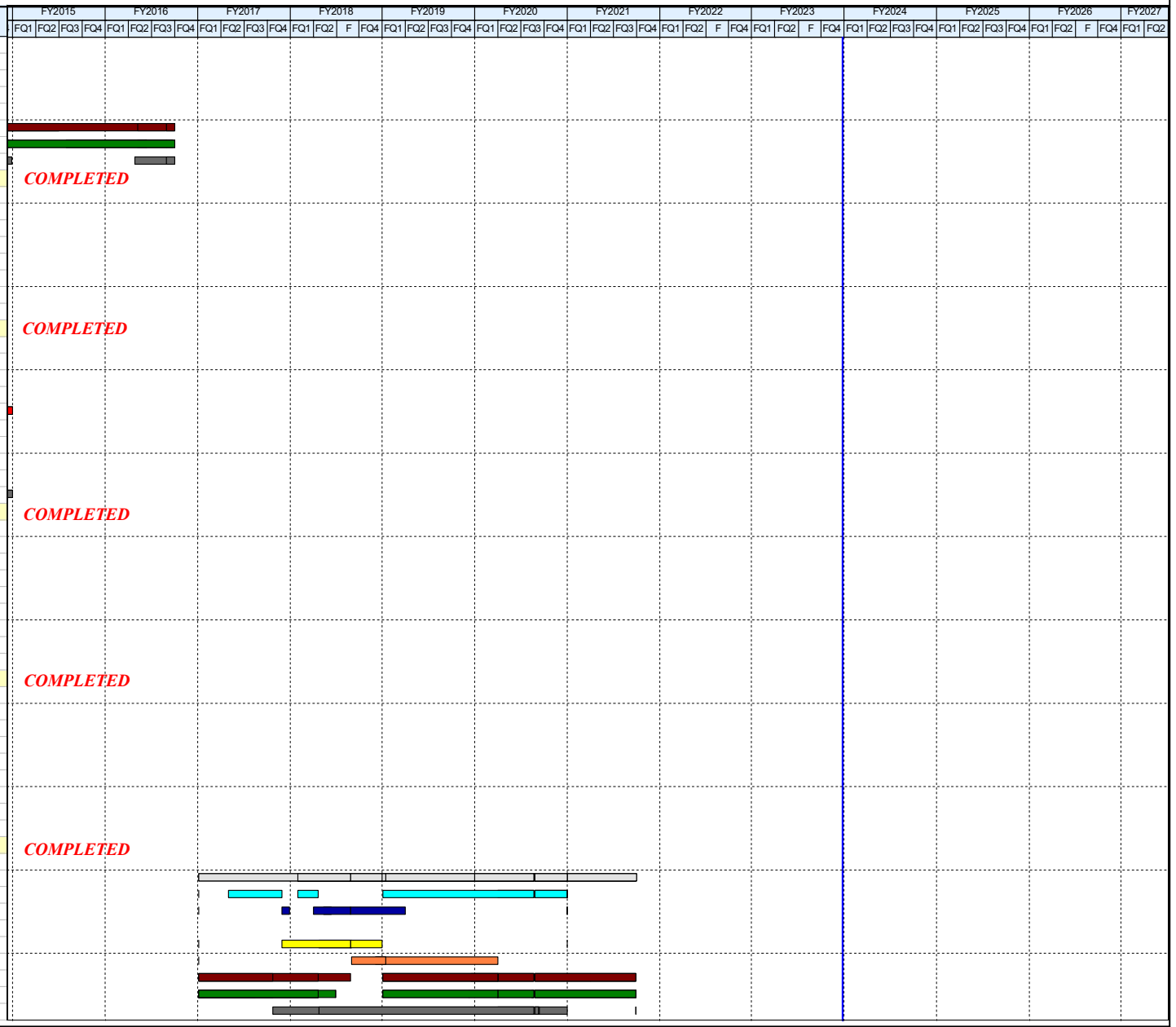
Project Name	Start	Finish
Construction	02-Nov-09 A	30-Sep-11 A
Close-Out	03-Oct-11 A	29-Jun-12 A
WSIP Closeout - Sunol Valley	01-Jul-16 A	31-Dec-22
Project Milestones		
Project Management	01-Jul-16 A	30-Dec-22
Project Planning	01-Jul-16 A	30-Jun-19 A
Environmental Review	01-Jul-16 A	17-Jul-20 A
Design	13-Jan-17 A	30-Jun-22 A
Bid and Award	03-Apr-17 A	30-Jun-21 A
Construction Management	01-Jul-16 A	30-Dec-22
Construction	07-Apr-17 A	31-Dec-22
Close-Out	26-Jun-17 A	25-Dec-21 A
Bay Division Region	19-Dec-01 A	31-Mar-21 A
BDPL Nos. 3 & 4 Crossover/Isolation Valves	06-Jan-03 A	31-Jul-09 A
Project Milestones		
Project Management	06-Jan-03 A	30-Jun-09 A
Project Planning	06-Jan-03 A	20-Jul-04 A
Environmental Review	16-Jul-03 A	28-Feb-06 A
Right of Way		
Design	03-May-04 A	16-May-06 A
Bid and Award	16-May-05 A	18-Aug-06 A
Construction Management	23-Jan-06 A	03-Apr-09 A
Construction	11-Oct-05 A	19-Mar-08 A
Close-Out	20-Mar-08 A	31-Jul-09 A
Seismic Upgrade of BDPL Nos. 3 & 4	22-Oct-04 A	30-Jul-18 A
Project Milestones		
Project Management	22-Oct-04 A	28-Jun-18 A
Project Planning	22-Oct-04 A	12-Dec-08 A
Environmental Review	11-Sep-06 A	17-Mar-12 A
Right of Way	03-Jul-06 A	26-Aug-11 A
Design	05-Mar-07 A	02-Feb-15 A
Bid and Award	03-Nov-08 A	04-Sep-12 A
Construction Management	03-May-10 A	28-Jun-18 A
Construction	12-Jan-10 A	28-Jun-18 A
Close-Out	01-Feb-18 A	30-Jul-18 A
SCADA System - Phase II	22-Apr-05 A	28-May-13 A
Project Milestones		
Project Management	22-Apr-05 A	28-Dec-12 A
Project Planning	26-Apr-05 A	24-Dec-07 A
Environmental Review	30-Oct-07 A	15-Jul-09 A
Right of Way	10-Apr-07 A	01-Jun-09 A
Design	26-Dec-07 A	27-Jul-09 A
Bid and Award	22-Jun-09 A	11-Dec-09 A
Construction Management	23-Sep-08 A	28-Feb-11 A
Construction	25-Jul-08 A	28-Dec-12 A
Close-Out	01-Mar-11 A	28-May-13 A
BDPL Reliability Upgrade / Tunnel	19-Dec-01 A	30-Aug-16 A
Project Milestones		
Project Management	19-Dec-01 A	30-Aug-16 A
Project Planning	19-Dec-01 A	31-May-06 A
Environmental Review	18-Nov-04 A	31-Jul-14 A
Right of Way	03-Jul-06 A	30-Aug-16 A
Design	01-Aug-05 A	03-Aug-09 A
Bid and Award	01-May-09 A	31-Mar-10 A
Construction Management	24-Jun-08 A	30-Aug-16 A
Construction	17-Jul-09 A	30-May-16 A
Close-Out	27-May-14 A	30-Aug-16 A
BDPL Reliability Upgrade - Pipeline	19-Dec-01 A	31-Mar-16 A
Project Management	03-Jan-06 A	31-Mar-16 A



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

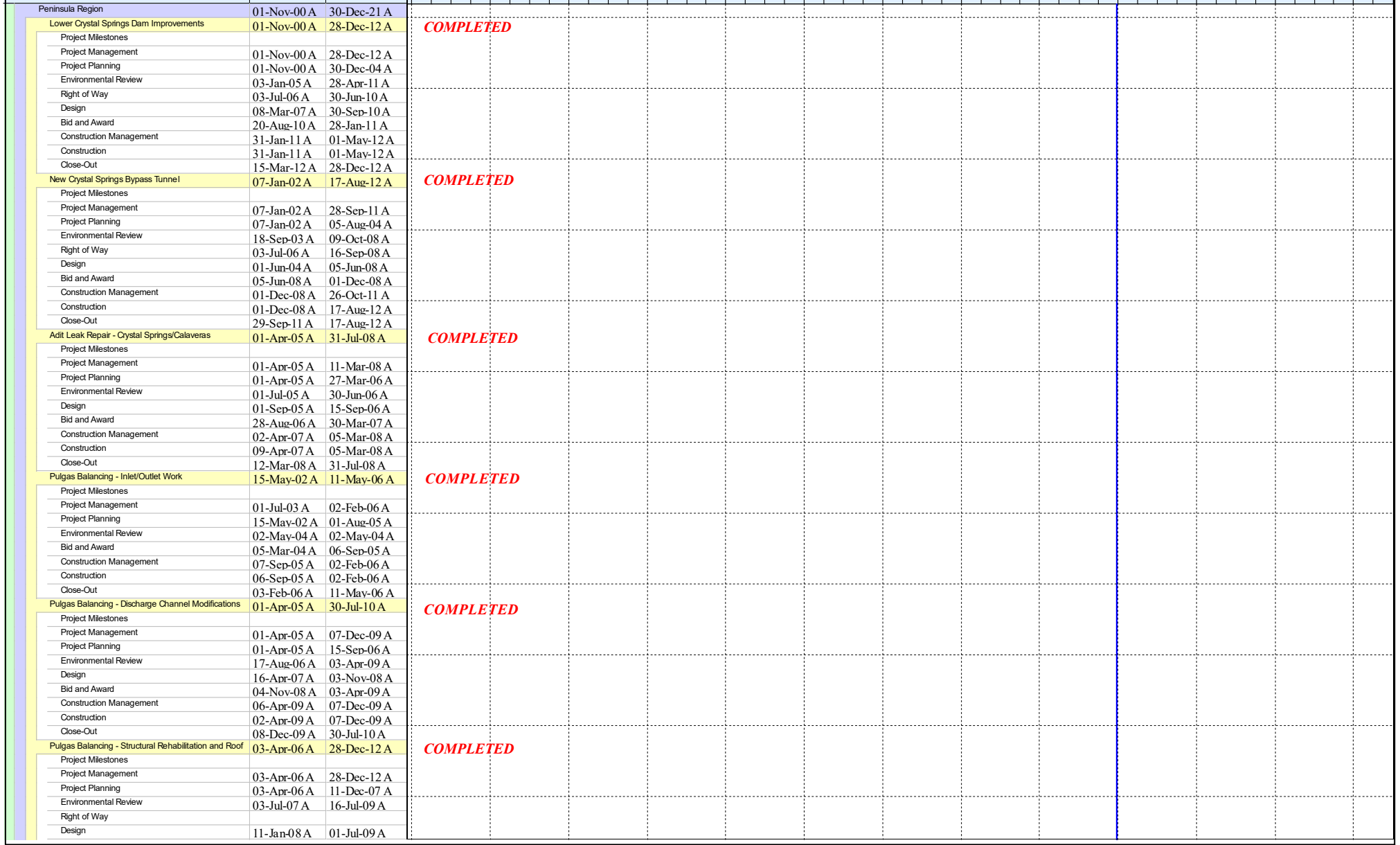
Project Name	Start	Finish
Project Planning	19-Dec-01 A	31-May-06 A
Environmental Review	18-Nov-04 A	12-Feb-10 A
Right of Way	03-Jul-06 A	08-Dec-10 A
Design	03-Jan-06 A	17-Aug-09 A
Bid and Award	22-Apr-09 A	09-Mar-10 A
Construction Management	23-Sep-08 A	31-Mar-16 A
Construction	04-Jan-10 A	31-Mar-16 A
Close-Out	14-Jun-12 A	31-Mar-16 A
BDPL Reliability Upgrade - Relocation of BDPL Nos. 1	24-Apr-06 A	28-May-10 A
Project Milestones		
Project Management	24-Apr-06 A	28-May-10 A
Right of Way	28-May-10 A	28-May-10 A
Design	24-Apr-06 A	16-Jan-07 A
Bid and Award	17-Jan-07 A	06-Jan-10 A
Construction Management	02-Jul-07 A	28-May-10 A
Construction	15-Nov-06 A	28-May-10 A
Close-Out	28-May-10 A	28-May-10 A
BDPL Nos. 3 & 4 Crossovers	17-Feb-04 A	30-Jun-14 A
Project Milestones		
Project Management	17-Feb-04 A	16-Nov-12 A
Project Planning	17-Feb-04 A	14-Nov-06 A
Environmental Review	28-Aug-06 A	31-Dec-08 A
Right of Way	04-Sep-07 A	30-Jun-14 A
Design	04-Dec-06 A	20-Jul-09 A
Bid and Award	05-Nov-08 A	10-Jul-09 A
Construction Management	23-Sep-08 A	30-Apr-14 A
Construction	30-Jan-09 A	11-Sep-13 A
Close-Out	22-Oct-12 A	30-Jun-14 A
SFPUC/EBMUD Intertie	24-Jun-02 A	20-Mar-14 A
Project Milestones		
Project Management	24-Jun-02 A	31-Jan-08 A
Project Planning	24-Jun-02 A	11-Oct-02 A
Environmental Review	14-Oct-02 A	31-Mar-03 A
Design	01-Apr-03 A	30-Jul-04 A
Bid and Award	02-Aug-04 A	21-Dec-04 A
Construction Management	18-Jan-05 A	31-Jan-08 A
Construction	18-Jan-05 A	20-Mar-14 A
Close-Out	01-Feb-08 A	20-Mar-14 A
BDPL No. 4 Condition Assessment PCCP Sections	04-Aug-06 A	06-Feb-09 A
Project Milestones		
Project Management	04-Aug-06 A	06-Feb-09 A
Project Planning	04-Aug-06 A	06-Feb-09 A
Environmental Review	16-Jul-07 A	30-Sep-08 A
Design		
Bid and Award		
Construction Management		
Construction		
Close-Out		
WSIP Closeout - Bay Division	06-Jul-16 A	31-Mar-21 A
Project Milestones		
Project Management	06-Jul-16 A	31-Mar-21 A
Project Planning	06-Jul-16 A	30-Jun-20 A
Environmental Review	06-Jul-16 A	30-Jun-20 A
Right of Way		
Design	06-Jul-16 A	30-Jun-20 A
Bid and Award	06-Jul-16 A	30-Sep-19 A
Construction Management	06-Jul-16 A	31-Mar-21 A
Construction	06-Jul-16 A	31-Mar-21 A
Close-Out	25-Apr-17 A	31-Mar-21 A



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

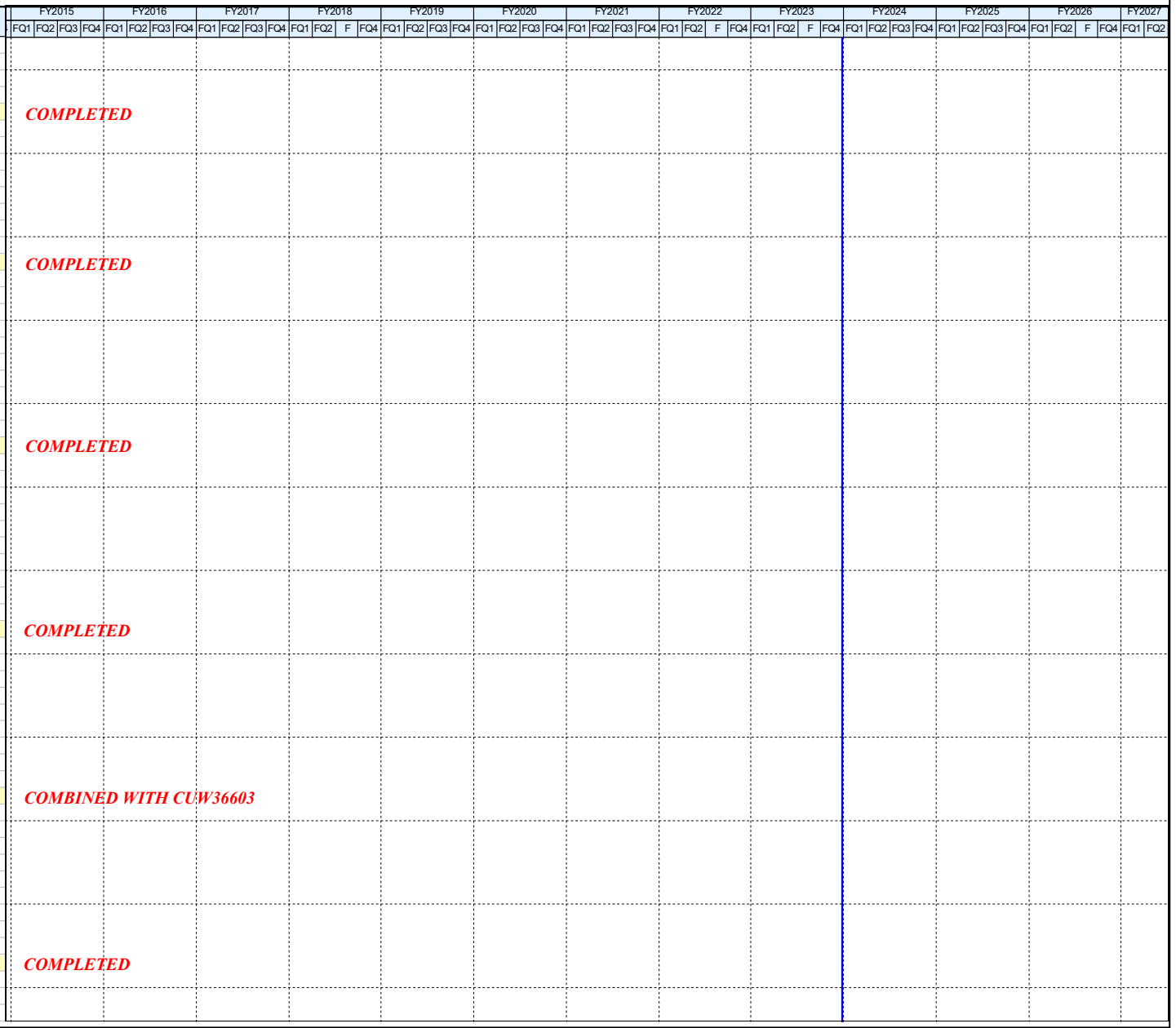
Project Name	Start	Finish
Peninsula Region	01-Nov-00 A	30-Dec-21 A
Lower Crystal Springs Dam Improvements	01-Nov-00 A	28-Dec-12 A
Project Milestones		
Project Management	01-Nov-00 A	28-Dec-12 A
Project Planning	01-Nov-00 A	30-Dec-04 A
Environmental Review	03-Jan-05 A	28-Apr-11 A
Right of Way	03-Jul-06 A	30-Jun-10 A
Design	08-Mar-07 A	30-Sep-10 A
Bid and Award	20-Aug-10 A	28-Jan-11 A
Construction Management	31-Jan-11 A	01-May-12 A
Construction	31-Jan-11 A	01-May-12 A
Close-Out	15-Mar-12 A	28-Dec-12 A
New Crystal Springs Bypass Tunnel	07-Jan-02 A	17-Aug-12 A
Project Milestones		
Project Management	07-Jan-02 A	28-Sep-11 A
Project Planning	07-Jan-02 A	05-Aug-04 A
Environmental Review	18-Sep-03 A	09-Oct-08 A
Right of Way	03-Jul-06 A	16-Sep-08 A
Design	01-Jun-04 A	05-Jun-08 A
Bid and Award	05-Jun-08 A	01-Dec-08 A
Construction Management	01-Dec-08 A	26-Oct-11 A
Construction	01-Dec-08 A	17-Aug-12 A
Close-Out	29-Sep-11 A	17-Aug-12 A
Adit Leak Repair - Crystal Springs/Calaveras	01-Apr-05 A	31-Jul-08 A
Project Milestones		
Project Management	01-Apr-05 A	11-Mar-08 A
Project Planning	01-Apr-05 A	27-Mar-06 A
Environmental Review	01-Jul-05 A	30-Jun-06 A
Design	01-Sep-05 A	15-Sep-06 A
Bid and Award	28-Aug-06 A	30-Mar-07 A
Construction Management	02-Apr-07 A	05-Mar-08 A
Construction	09-Apr-07 A	05-Mar-08 A
Close-Out	12-Mar-08 A	31-Jul-08 A
Pulgas Balancing - Inlet/Outlet Work	15-May-02 A	11-May-06 A
Project Milestones		
Project Management	01-Jul-03 A	02-Feb-06 A
Project Planning	15-May-02 A	01-Aug-05 A
Environmental Review	02-May-04 A	02-May-04 A
Bid and Award	05-Mar-04 A	06-Sep-05 A
Construction Management	07-Sep-05 A	02-Feb-06 A
Construction	06-Sep-05 A	02-Feb-06 A
Close-Out	03-Feb-06 A	11-May-06 A
Pulgas Balancing - Discharge Channel Modifications	01-Apr-05 A	30-Jul-10 A
Project Milestones		
Project Management	01-Apr-05 A	07-Dec-09 A
Project Planning	01-Apr-05 A	15-Sep-06 A
Environmental Review	17-Aug-06 A	03-Apr-09 A
Design	16-Apr-07 A	03-Nov-08 A
Bid and Award	04-Nov-08 A	03-Apr-09 A
Construction Management	06-Apr-09 A	07-Dec-09 A
Construction	02-Apr-09 A	07-Dec-09 A
Close-Out	08-Dec-09 A	30-Jul-10 A
Pulgas Balancing - Structural Rehabilitation and Roof	03-Apr-06 A	28-Dec-12 A
Project Milestones		
Project Management	03-Apr-06 A	28-Dec-12 A
Project Planning	03-Apr-06 A	11-Dec-07 A
Environmental Review	03-Jul-07 A	16-Jul-09 A
Right of Way		
Design	11-Jan-08 A	01-Jul-09 A



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

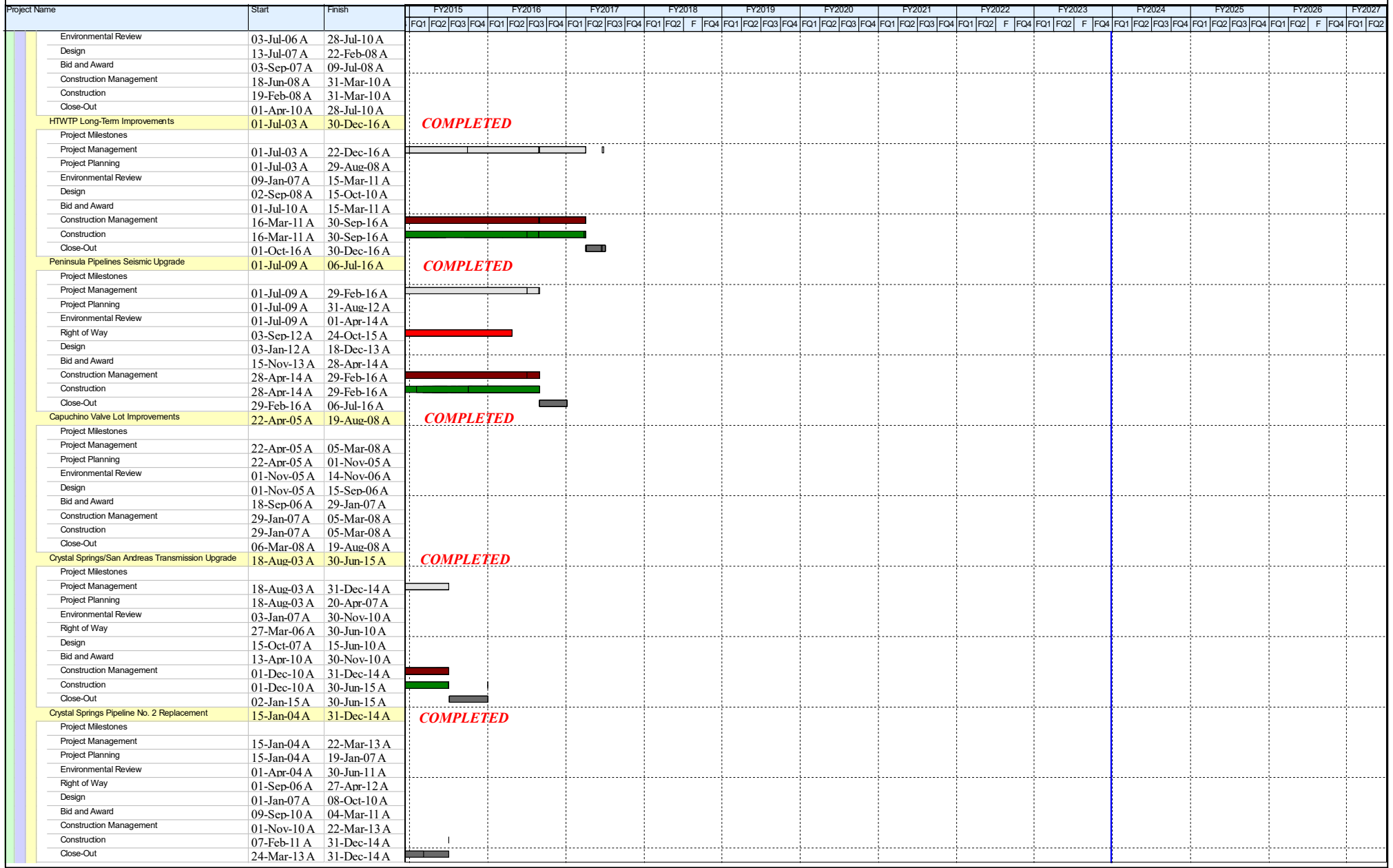
APPENDIX A: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish
Bid and Award	06-Apr-09 A	30-Nov-09 A
Construction Management	30-Nov-09 A	01-Sep-11 A
Construction	30-Nov-09 A	01-Sep-11 A
Close-Out	02-Sep-11 A	28-Dec-12 A
Pulgas Balancing - Laguna Creek Sedimentation	31-Mar-06 A	31-Dec-07 A
Project Milestones		
Project Management	31-Mar-06 A	31-Dec-07 A
Environmental Review	31-Dec-07 A	31-Dec-07 A
Design	31-Mar-06 A	26-Dec-06 A
Bid and Award	27-Dec-06 A	31-Dec-07 A
Construction Management	04-Oct-07 A	31-Dec-07 A
Construction	04-Oct-07 A	31-Dec-07 A
Close-Out	04-Oct-07 A	31-Dec-07 A
Pulgas Balancing - Modifications of the Existing Dech	02-Apr-07 A	20-Mar-13 A
Project Milestones		
Project Management	02-Apr-07 A	25-Oct-12 A
Project Planning	02-Apr-07 A	17-Mar-09 A
Environmental Review	19-Nov-07 A	04-Mar-10 A
Right of Way		
Design	02-Jan-09 A	12-Mar-10 A
Bid and Award	29-Jan-10 A	22-Sep-10 A
Construction Management	22-Sep-10 A	25-Oct-12 A
Construction	22-Sep-10 A	25-Oct-12 A
Close-Out	25-Oct-12 A	20-Mar-13 A
Cross Connection Controls	01-Jul-03 A	30-Apr-09 A
Project Milestones		
Project Management	01-Jul-03 A	26-Nov-08 A
Project Planning	01-Jul-03 A	03-Aug-04 A
Environmental Review	01-Jul-03 A	05-Aug-08 A
Right of Way	03-Sep-07 A	30-Sep-08 A
Design	03-Aug-04 A	30-Dec-05 A
Bid and Award	01-Apr-05 A	31-May-05 A
Construction Management	01-Jun-05 A	26-Nov-08 A
Construction	01-Jun-05 A	26-Nov-08 A
Close-Out	01-Dec-08 A	30-Apr-09 A
HTWTP Short-Term Improvements (Demo Filters)	04-Sep-02 A	14-Nov-06 A
Project Milestones		
Project Management	04-Sep-02 A	27-Feb-06 A
Project Planning	04-Sep-02 A	30-Apr-03 A
Environmental Review	01-Aug-03 A	08-Aug-05 A
Design	01-Aug-03 A	11-Feb-05 A
Bid and Award	14-Feb-05 A	08-Sep-05 A
Construction Management	09-Sep-05 A	27-Feb-06 A
Construction	09-Sep-05 A	27-Feb-06 A
Close-Out	12-Jan-06 A	14-Nov-06 A
HTWTP Short-Term Improvements - Remaining Filters	12-Jan-06 A	22-Feb-08 A
Project Milestones		
Project Management	12-Jan-06 A	31-Jan-08 A
Project Planning	12-Jan-06 A	22-Aug-07 A
Environmental Review		
Design	03-Mar-07 A	22-Feb-08 A
Bid and Award		
Construction Management		
Construction		
Close-Out		
HTWTP Short-Term Improvements - Coagulation & Fl	03-Jul-06 A	28-Jul-10 A
Project Milestones		
Project Management	03-Jul-06 A	31-Mar-10 A
Project Planning	03-Jul-06 A	22-Aug-07 A



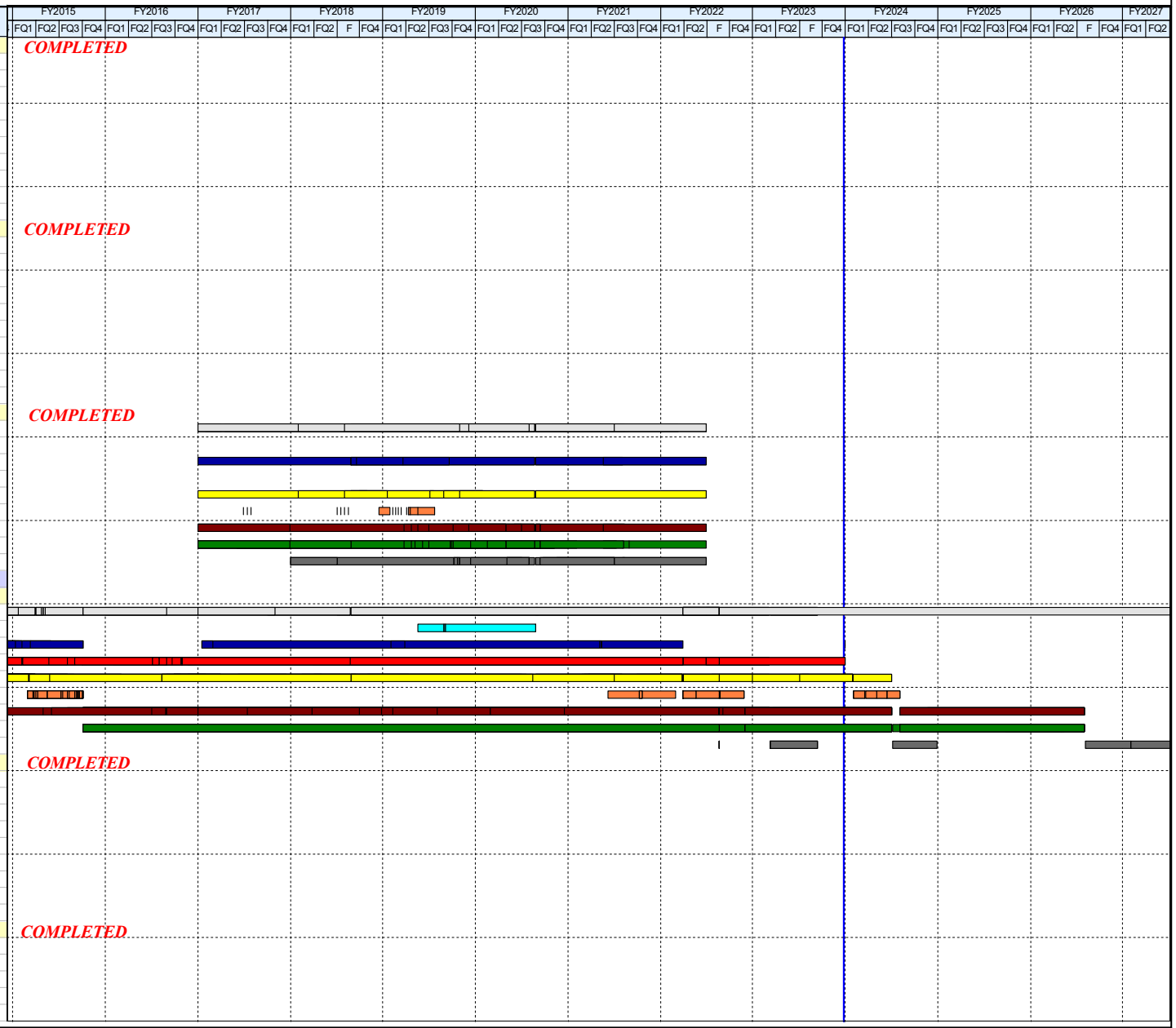
Project Management | Environmental | Right-of-Way | Construction Mgmt | Closeout
Planning | Design | Bid & Award | Construction | Program Mgmt

APPENDIX A: Current Approved WSIP Phase-Level Schedules



APPENDIX A: Current Approved WSIP Phase-Level Schedules

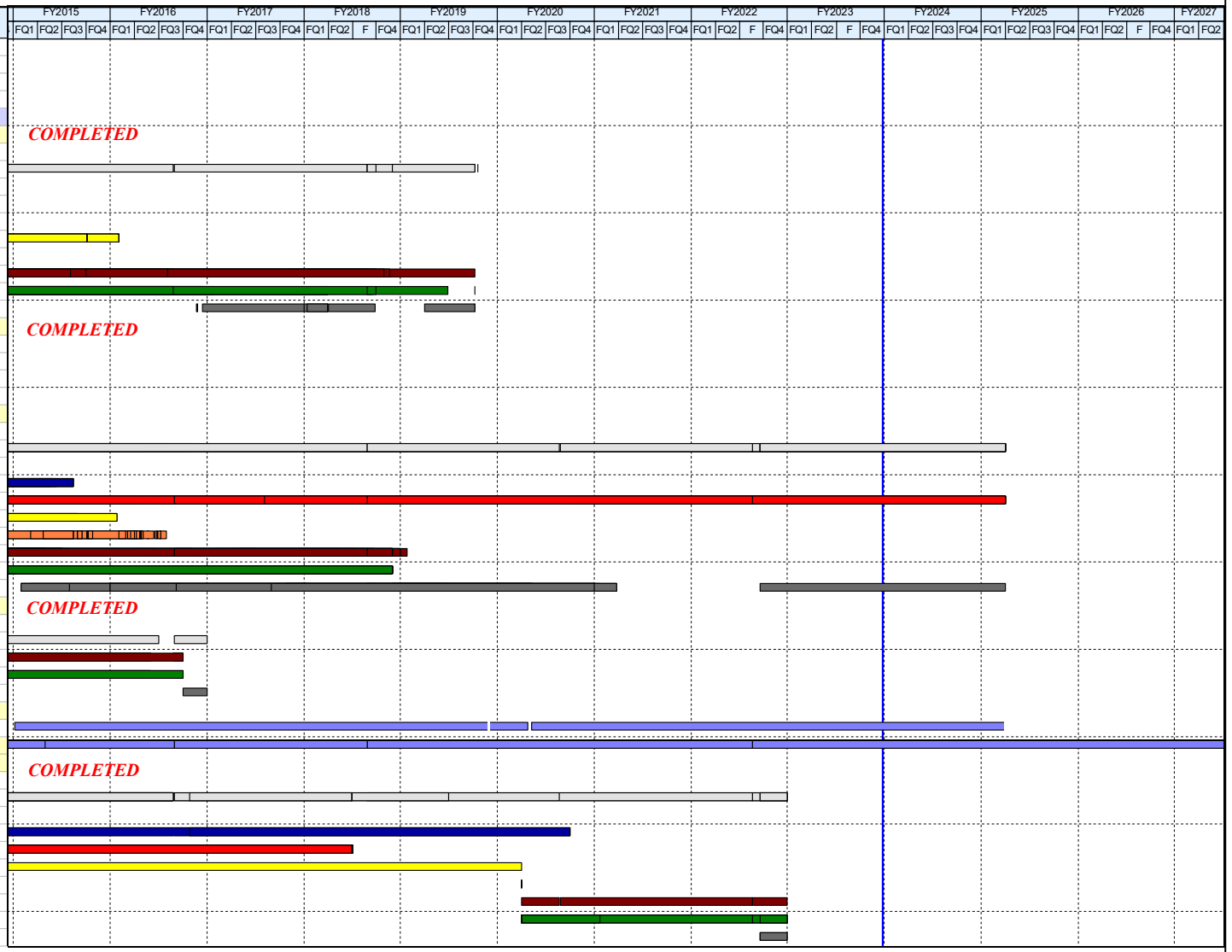
Project Name	Start	Finish
San Andreas Pipeline No. 3 Installation	15-Jan-04 A	30-Aug-12 A
Project Milestones		
Project Management	15-Jan-04 A	30-Jun-11 A
Project Planning	15-Jan-04 A	28-Apr-05 A
Environmental Review	01-Apr-04 A	15-May-09 A
Right of Way	01-Aug-06 A	13-Aug-09 A
Design	01-May-05 A	17-Apr-09 A
Bid and Award	20-Apr-09 A	26-Aug-09 A
Construction Management	26-Aug-09 A	30-Jun-11 A
Construction	26-Aug-09 A	30-Jun-11 A
Close-Out	01-Jul-11 A	30-Aug-12 A
Baden and San Pedro Valve Lots Improvements	03-Oct-05 A	29-Mar-13 A
Project Milestones		
Project Management	03-Oct-05 A	30-Dec-11 A
Project Planning	03-Oct-05 A	03-Nov-06 A
Environmental Review	05-Oct-06 A	21-Oct-08 A
Right of Way	05-Oct-06 A	31-Mar-08 A
Design	29-Mar-07 A	12-Jan-09 A
Bid and Award	29-Sep-08 A	07-Apr-09 A
Construction Management	08-Apr-09 A	30-Dec-11 A
Construction	03-Apr-09 A	30-Dec-11 A
Close-Out	31-Dec-11 A	29-Mar-13 A
WSIP Closeout - Peninsula	01-Jul-16 A	30-Dec-21 A
Project Management	01-Jul-16 A	30-Dec-21 A
Project Planning		
Environmental Review	01-Jul-16 A	30-Dec-21 A
Right of Way		
Design	01-Jul-16 A	30-Dec-21 A
Bid and Award	27-Dec-16 A	22-Jan-19 A
Construction Management	01-Jul-16 A	30-Dec-21 A
Construction	01-Jul-16 A	30-Dec-21 A
Close-Out	01-Jul-17 A	30-Dec-21 A
San Francisco Regional Region	31-Mar-00 A	01-Feb-27
Regional Groundwater Storage and Recovery	01-Jun-03 A	01-Feb-27
Project Management	01-Jul-05 A	01-Feb-27
Project Planning	01-Jun-03 A	24-Feb-20 A
Environmental Review	15-Oct-07 A	30-Jun-23
Right of Way	07-Apr-08 A	29-Dec-23
Design	02-Jan-08 A	29-Dec-23
Bid and Award	11-Mar-09 A	31-Jan-24
Construction Management	04-Mar-08 A	30-Jan-26
Construction	01-Jul-03 A	31-Jan-26
Close-Out	18-Feb-22 A	01-Feb-27
Sunset Reservoir - North Basin	31-Mar-00 A	10-Sep-10 A
Project Milestones		
Project Management	31-Mar-00 A	26-Mar-09 A
Project Planning	31-Mar-00 A	28-Sep-01 A
Environmental Review	21-May-04 A	21-Dec-04 A
Design	01-Oct-01 A	12-Apr-06 A
Bid and Award	22-Oct-04 A	10-Oct-06 A
Construction Management	11-Apr-05 A	26-Mar-09 A
Construction	11-Apr-05 A	09-Nov-09 A
Close-Out	13-Nov-06 A	10-Sep-10 A
University Mound Reservoir - North Basin	24-Oct-05 A	29-Mar-13 A
Project Milestones		
Project Management	24-Oct-05 A	01-Sep-11 A
Project Planning	24-Oct-05 A	06-Apr-07 A
Environmental Review	26-Dec-06 A	18-Jul-07 A
Design	07-Apr-07 A	24-Mar-09 A



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

APPENDIX A: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish
Bid and Award	02-Feb-09 A	31-Jul-09 A
Construction Management	03-Aug-09 A	23-Dec-11 A
Construction	27-Jul-09 A	23-Aug-11 A
Close-Out	23-Aug-11 A	29-Mar-13 A
Support Projects	13-Apr-04 A	01-Feb-27
System Security Upgrades	07-Jan-06 A	19-Apr-19 A
Project Milestones		
Project Management	19-Jun-06 A	19-Apr-19 A
Project Planning	19-Jun-06 A	08-Jul-09 A
Environmental Review	19-Jun-06 A	28-Mar-12 A
Right of Way	26-Nov-08 A	26-Nov-08 A
Design	19-Jun-06 A	03-Aug-15 A
Bid and Award	07-Jan-06 A	10-Mar-14 A
Construction Management	13-Nov-06 A	09-Apr-19 A
Construction	13-Nov-06 A	09-Apr-19 A
Close-Out	24-Sep-07 A	09-Apr-19 A
Programmatic EIR	13-Apr-04 A	30-Jun-09 A
Project Milestones		
Project Management	13-Apr-04 A	30-Jun-09 A
Project Planning	13-Apr-04 A	28-Feb-07 A
Environmental Review	15-Jun-04 A	30-Jun-09 A
Bioregional Habitat Restoration	06-Sep-06 A	01-Oct-24
Project Milestones		
Project Management	01-Nov-06 A	01-Oct-24
Project Planning	06-Sep-06 A	31-Dec-07 A
Environmental Review	03-Jan-07 A	13-Feb-15 A
Right of Way	02-Jul-08 A	01-Oct-24
Design	16-Jul-07 A	27-Jul-15 A
Bid and Award	04-Dec-09 A	29-Jan-16 A
Construction Management	22-Jun-10 A	27-Jul-18 A
Construction	06-Mar-09 A	31-May-18 A
Close-Out	29-Jul-14 A	01-Oct-24
Vegetation Restoration of WSIP Construction Sites	02-Jan-13 A	30-Jun-16 A
Project Milestones		
Project Management	02-Jan-13 A	30-Jun-16 A
Construction Management	02-Jan-13 A	31-Mar-16 A
Construction	02-Jan-13 A	31-Mar-16 A
Close-Out	01-Apr-16 A	30-Jun-16 A
Long Term Mitigation Endowment	05-Mar-14 A	01-Oct-24
Construction	05-Mar-14 A	01-Oct-24
Program Management Project	01-Aug-05 A	01-Feb-27
Watershed and Environmental Improvement Program	02-Jan-07 A	30-Jun-22 A
Project Milestones		
Project Management	02-Jul-07 A	30-Jun-22 A
Project Planning	02-Jan-07 A	29-Jul-11 A
Environmental Review	05-Mar-12 A	31-Mar-20 A
Right of Way	14-Mar-11 A	31-Dec-17 A
Design	31-May-11 A	30-Sep-19 A
Bid and Award	30-Sep-19 A	30-Sep-19 A
Construction Management	01-Oct-19 A	30-Jun-22 A
Construction	01-Oct-19 A	30-Jun-22 A
Close-Out	31-May-22 A	30-Jun-22 A



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

APPENDIX B
WSIP Quarterly Report
Regional Projects (Q4/FY 2022- 2023)

Report available on the SFPUC Website at the following address:
https://www.sfpuc.org/sites/default/files/documents/WSIP_Quarterly%20Report_FY2022-23_Q4.pdf

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