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September 1, 2022

Assembly Member Rudy Salas - Chair
Senator John Laird - Vice Chair
Joint Legislative Audit Committee
1020 N Street, Room 107
Sacramento, CA 95814

Cindy Silva, Chair
Fuad Sweiss, 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) 2021-22 Annual Report**
Water System Improvement Program
San Francisco Public Utilities Commission

Dear Assembly Member Salas, Senator Laird, Commissioners Silva and Sweiss, 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) 2021-2022.

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 2021-22 (July 1, 2021 through June 30, 2022) 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 2021-22. 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 2021-22. In March 2022, the SFPUC Commission approved revisions to the program including a schedule extension to February 2027. Even with the significant progress that was achieved between July 1, 2021 and June 30, 2022, the overall percent completion of the Regional Program decreased slightly, from 98.9% to 98.6%, due to extension of the project and program schedules. The focus of the program this past year was on continuing construction of several ongoing projects and administrative closeout of projects that recently completed construction. During the reporting period, 3 projects achieved project completion, including the largest project in the program, the Calaveras Dam Replacement Project. As of June 30, 2022, construction was in progress on three (3) Regional projects valued at $215 million, while construction had been completed on 47 Regional projects valued at $3,481 million.

The Alameda Creek Recapture Project reached 17% completion by June 30, 2022. Phase 1 of the Regional Groundwater Storage and Recovery Project made significant progress, reaching 98% completion by June 30, 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; 100% design for Phase 2B is progressing.

The status of schedule forecasts and variances for all WSIP Regional Projects as of June 30, 2022 is provided in the report. As of June 30, 2022, 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 Anson Moran, President, SFPUC Commission

The Honorable Newsha Ajami, Vice President, SFPUC Commission

The Honorable Sophie Maxwell, Commissioner, SFPUC Commission

The Honorable Tim Paulson, 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

Salina Valencia, Acting Executive Director, Alfred E. Alquist Seismic Safety Commission

Dr. H. Kit Miyamoto, Structural Engineer, Alfred E. Alquist Seismic Safety Commission

Gustav Larsson, Chair, BAWSCA (without encl.)

Tom Chambers, Vice-Chair, BAWSCA (without encl.)

BAWSCA Member Agencies (without encl., distributed by BAWSCA)

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HETCH HETCHY
WATER SYSTEM
IMPROVEMENT
PROGRAM

2021-22

Annual Report

Water System Improvement Program

Rebuilding Today For a Better Tomorrow

September 1, 2022

Hetch Hetchy
Regional
Water
System

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FY 2021-22 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) 2021-22 (July 1, 2021 through June 30, 2022). 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 2021-22. Between July 1, 2021 and June 30, 2022, the overall completion of the Regional Program decreased slightly from 98.9% to 98.6% due to the extension of the program's completion date by 45 months from May 5, 2023 to February 1, 2027. As of the end of the reporting period, planning, environmental, design, and construction phases were 100%, 99.9%, 99.8%, and 98.3% complete, respectively. The focus of the program continued to be construction of the remaining projects and administrative closeout of projects that recently completed construction. During the reporting period, three projects were completed. As of June 30, 2022, construction was in progress on three (3) Regional projects valued at $215 million, while construction was in close-out or had been completed on 48 Regional projects valued at $3,576 million. There are no projects remaining in pre-construction.

Support programs that were continued during FY 2021-22 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 2021-22, 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, 2022 is provided in the report. As of June 30, 2022, 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. The overall current approved WSIP completion date is driven by the final administrative closeout completion date for RGSRP on February 1, 2027.

All WSIP Regional Projects are currently forecasted to be completed on budget in accordance with the March 2022 Revised WSIP Baseline.

Significant achievements in FY 2021-22 included the ACRP reaching 17% completion, Phase 1 of the RGSRP reaching 98% completion, and three projects reaching final completion: WSIP Closeout - Peninsula, Calaveras Dam Replacement, and Watershed and Environmental Improvement Program.

The major challenge to the program in FY 2021-22 was due to COVID-19 resulting in some project delays related to procurement challenges and increased costs for health and safety provisions.

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 $3.4M, which compares to $2.2M at the end of last year’s reporting period; the cumulative risk exposure for the program was reduced to as low as $2.0M but was increased to $3.4M in June 2022 because RGSRP - Phase 2A began

construction and added eight (8) risks to the program. The program's top 10 risks as of June 30, 2022, based on likelihood of occurrence and potential cost impact, belonged to two construction contracts: ACRP (5 risks) and RGSRP Phase 2A (5 risks). The highest risk was associated with ACRP related to potential delay in barge/pump fabrication and installation.

The remaining forecast construction contingency as of June 30, 2022 was $4.4 million after all current trends have been considered. In addition, the current forecast WSIP Director's Reserve Fund was $8.9 million. Therefore, a total of approximately $13.3 million is available to fund future risks, including both construction risks and unforeseen soft (non-construction) costs. If one conservatively assumes that up to $4.0 million is needed for future soft cost risk, this would leave approximately $9.3 million available to fund potential future construction risks. Accordingly, the analysis shows that the current WSIP is sufficiently funded to be completed within the current approved baseline budget and schedule (March 2022 Revised WSIP Baseline) with over 80 percent confidence, based on the current understanding of trends and remaining risks in the program.

At 98.6% 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 over the next five years.

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LIST OF ACRONYMS

AB	Assembly Bill
ACDD	Alameda Creek Diversion Dam
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
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

Progress has been made on the implementation of the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2021-2022 (July 1, 2021 through June 30, 2022) with overall progress on the Regional Program at 98.6% complete. Overall, the Regional Program is on schedule based on the latest Baseline Budget and Schedule, approved on April 26, 2022, which is referred to as the "March 2022 Revised WSIP Baseline." Note that the cumulative percent completion of the program decreased from 98.9% in July 2021 to 98.6% in June 2022 due to the approved extension of the program by 45 months from May 5, 2023 to February 1, 2027.

As indicated in Table 1-1, the program's overall planning, environmental, design, and construction phases are 100%, 99.9%, 99.8%, and 98.3% complete respectively. Note that a very small reduction in the environmental, design, and construction phases occurred since 2021 as a result of the March 2022 Revised Baseline that includes the addition of the Regional Groundwater Storage and Recovery Project (RGSRP) Phase 2B construction contract with slight modifications to the project's environmental and design documents.

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

Phase	June 30, 2021		June 30, 2022	
	% Planned	% Actual	% Planned[2]	% Actual
Planning	100.0%	100.0%	100.0%	100.0%
Environmental	100.0%	100.0%	99.8%	99.9%
Design	100.0%	100.0%	99.4%	99.8%
Bid & Award	100.0%	98.6%	99.5%	99.5%
Construction	99.6%	99.0%	98.4%	98.3%
Closeout	93.5%	83.0%	95.8%	95.8%
Program Cumulative	**99.6%**	**98.9%**	**98.6%**	**98.6%**

[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 the corresponding cumulative total approved value at the end of the previous reporting period (June 30, 2021) to those at the end of the current reporting period (June 30, 2022). As of the end of the current reporting period, three (3) regional projects are in construction with a total value of $215 million, and forty-eight (48) additional projects with a total value of $3,576 million are in close-out or have been completed.

Table 1-2: Status of WSIP Regional Projects

Project Phase	June 30, 2021 Status		June 30, 2022 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	5	$1,047	3	$215
Closeout	1	$96	1	$95
Completed	44	$2,628	47	$3,481
Not Applicable[1]	2	$32	1	$12
Total	**52**	**$3,803**	**52**	**$3,803**

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

To better illustrate the progress made during FY 2021-2022, 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

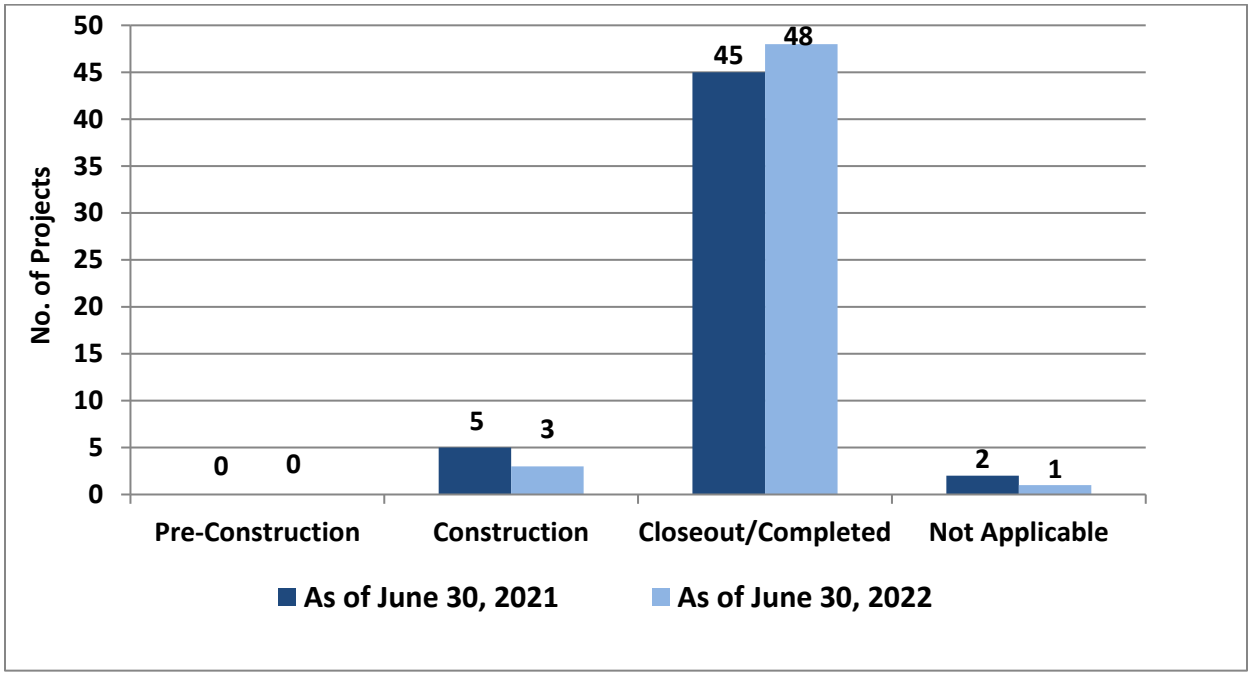
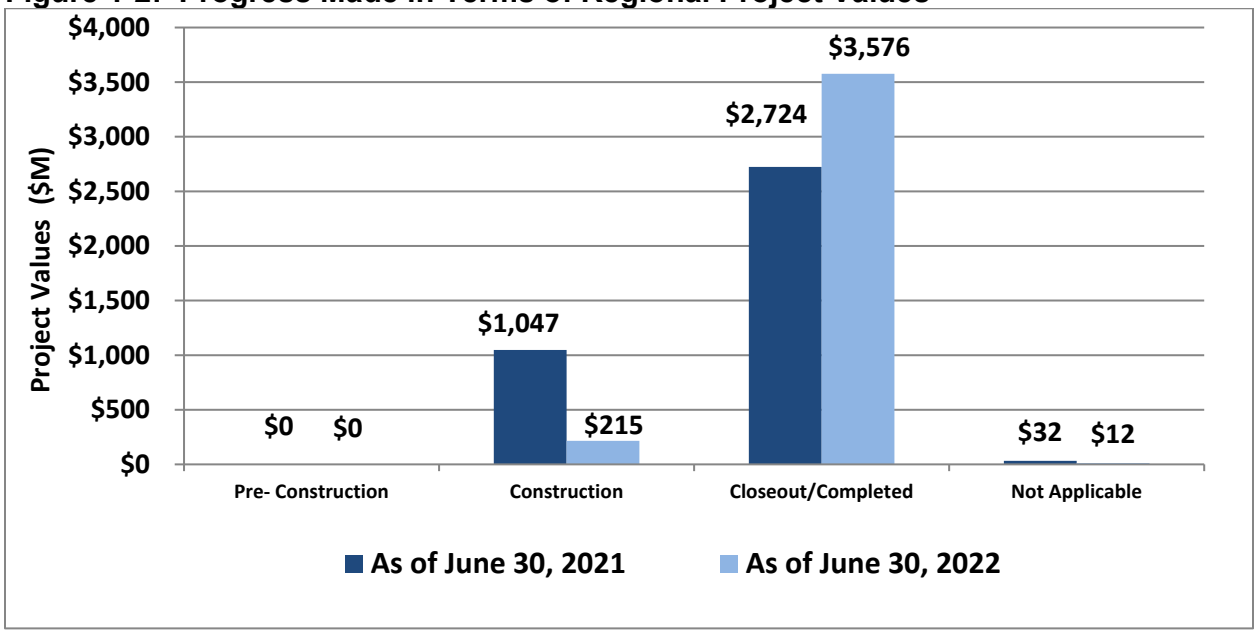


Figure 1-2: Progress Made in Terms of Regional Project Values



During the reporting period, three projects achieved final completion. The milestone is summarized below:

Project Completion:

WSIP Closeout – Peninsula – December 30, 2021

Calaveras Dam Replacement – March 31, 2022

Watershed and Environmental Improvement Program – June 30, 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 (FY2021-22)

This section describes some of the more important programmatic initiatives undertaken during FY 2021-22.

2.1 Shutdown Management

The WSIP team continued to actively manage the WSIP shutdowns during FY 2021-22. There was one shutdown performed in FY2021-22. Overall, to date, 214 (or 99%) of the 215 WSIP system shutdowns and hot taps have been completed as shown in Figure 2-1

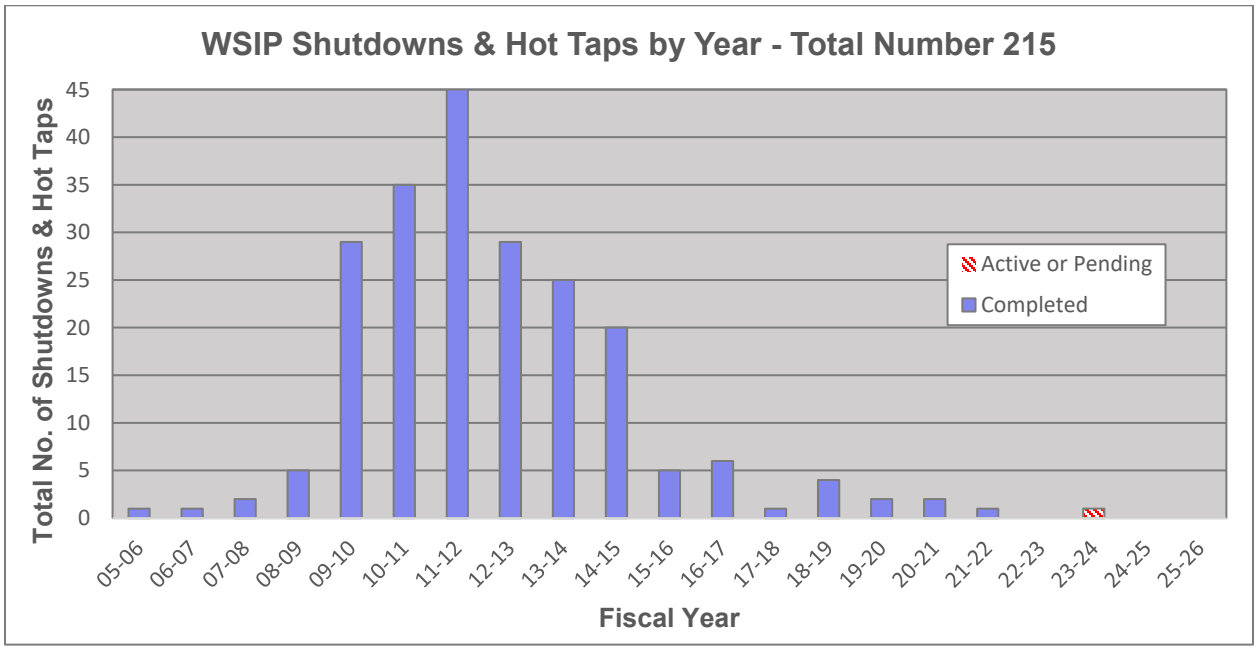

Figure 2-1: Number of Shutdowns and Hop Taps by Fiscal Year

2.2 Environmental Program

California Environmental Quality Act

Environmental review required under the California Environmental Quality Act (CEQA) for all WSIP Regional projects is complete, with the exception that there may be minor modifications to the CEQA documents for the RGSRP Phase 2B which was added to the program as part of the March 2022 Revised Baseline. 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 in total 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 2021-22, the WSIP environmental construction compliance staff, led by the Environmental Management Group, participated in construction of two Sunol Region projects (Fish Passage Facilities at Alameda Creek Diversion Dam (ACDD) and Alameda Creek Recapture Project (ACRP)) and one San Francisco Region project (RGSRP). 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.

Work on the ACDD involved only a few miscellaneous items through small-scale Job Order Contracting (JOC), and work on the RGSRP primarily consisted of work interior to buildings. Environmental inspections on these projects in FY 2021-22 were thus performed on a limited basis and were not formally tallied as in past years. There were no significant environmental compliance events on these projects. Construction of ACRP began this year, and there have been no significant environmental compliance events related to the project during the year.

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 of WSIP sites in areas that were only temporarily affected by construction continues, as required by CEQA mitigation measures and resource agency permits. During FY 2021-22, WSIP revegetation work was completed on an additional three project sites for a total of nineteen completed WSIP project sites, comprising approximately 198 acres of restored land. Revegetation work continues on five project sites, and will begin on ACRP 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 SFPUC Water Enterprise operations.

2.3 Keeping the Public and Stakeholders Informed

To make sure the general public and project stakeholders are kept informed of project status and potential changes, the SFPUC publishes extensive quarterly reports that include cost and schedule forecasts for all projects. These reports are distributed to the WSIP's oversight bodies (i.e., SFPUC Commission and BAWSCA) and are posted on the SFPUC's website (sfpuc.org). The WSIP Director presents these quarterly reports to the Commission and is available to respond to questions related to the reports at a quarterly Commission meeting that is open to the public. Likewise, throughout the year, the WSIP Director presents informative updates on the Program's status to various interested governmental and other entities (e.g., County Board of Supervisors, wholesale water agencies) and at public forums throughout the system's service area.

Additionally, the WSIP team conducts regular informational tours of project sites with elected officials, wholesale agency representatives, and other key stakeholders. These outreach efforts are promoted on a regular basis through social media platforms and email communications with stakeholders. Finally, the WSIP Communications and Public Outreach Team issues news releases and organizes special media events to highlight major program milestones (e.g., start of or completion of construction activities and completion of key projects).

2.4 Public Outreach Program

The Communications and Public Outreach Team continued to build public awareness and support for the WSIP and its projects in FY 2021-22.

Videos
During 2021-2022, the Public Outreach Team was unable to promote the importance of WSIP projects in person due to the COVID-19 pandemic. Instead, the team created a series of videos highlighting the Water Enterprise and the importance of the ongoing work to maintain the water systems, including work completed under WSIP. These videos were promoted via social media and were posted on YouTube.

Continued Project Promotion on sfpuc.org
The WSIP Communications Team continued to create and update a new set of WSIP project pages that can be accessed via a page of the new SFPUC website that was launched in February 2021: SFPUC.org/construction. These updates include streamlined pages that highlight the WSIP projects and their benefits.

Community Briefing
The WSIP Communications Team coordinated the presentation of WSIP and related water infrastructure projects to the SFPUC's Citizens Advisory Committee Water Subcommittee in September 2021 and supported multiple communications to the SFPUC Commission in a public setting.

Government Relations – Regional Groundwater Project
The WSIP Communications Team continued during the year to act as liaison between the RGSRP 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.

2.5 WSIP Revisions in FY 2021-22

The March 2022 Revised WSIP was approved on April 26, 2022 and serves as the current program baseline. The most significant change to the WSIP is the extension of the overall program completion date from May 5, 2023 to February 1, 2027. There is no change to the total forecast cost of the Regional WSIP projects at $3,803.1 million (M); the overall program cost remains at $4,787.8M. Of the fifty-two (52) regional projects in the WSIP, forty-six (46) had been completed at the time of the revisions, and another one has completed since approval of the revisions. The project scopes remain the same as those approved in 2018, except for three (3) projects with minor scope refinements. No regional projects have been deleted from the WSIP since 2018 and there are no project name changes. There is one new sub-project in the WSIP Closeout Project – Sunol Region. The March 2022 Revised WSIP includes schedule extensions for four (4) active projects, three (3) support projects, and the Program Management Project. The project with the longest schedule extension is Regional Groundwater Storage and Recovery, at sixty-one (61) months; the last project forecasted to complete in the March 2022 Revised WSIP is also Regional Groundwater Storage and Recovery. The Program Management Project account is also extended by sixty-one (61) months to provide programmatic support through the end of the program. The budget revisions involve a mix of cost increases and cost reductions at the project level. The project with the largest cost increase is Regional Groundwater Storage and Recovery. The projected cost variance of Regional Groundwater Storage and Recovery is $19.6M higher than the 2018 approved project budget. The project with the largest cost reduction is Calaveras Dam Replacement, with a forecasted cost reduction of $29.0M.

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.

Table 3-2 lists the projects with their individual contributions to the programmatic LOS goals above 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 FY2021-22, forty-one (41) of the forty-three (43) Regional WSIP projects with specific LOS goals have been completed, achieving their individual LOS goals and objectives. The other nine 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		17%
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) 08/31/23 (D) 10/31/25				P	(A) 07/23/12	(A) 100% (B) 98% (C) 0% (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, RGSRP and ACRP, both were in construction phase at the end of the reporting period and forecasted to complete on schedule under the approved March 2022 Revised WSIP.

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4.0 PROJECT SCHEDULES

As of June 30, 2022, 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 March 2022 Revised WSIP extended the overall approved completion date from May 5, 2023 to February 1, 2027. Any future proposed schedule changes would need to be approved by the San Francisco Public Utilities Commission, in accordance with the requirements of AB1823.

4.1 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.

4.2 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 2021-22. 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. As can be seen in the table, two (2) out of three (3) active Regional WSIP Projects are currently forecasted to be completed on schedule in accordance with the current approved completion dates. The forecasted completion date for one (1) active project, WSIP Closeout – Sunol Valley, has been extended by 6 months to accommodate the time needed to complete the modification of the satellite communication system's power supply and for additional time for the creekbed to dry in order to complete the sluice way repair and debris removal. 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 2021-22 (Appendix B).

Table 4-1: Project Schedule Forecast and Variances

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2022 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 2022 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	-	6/30/2022	12/31/2022	(184)
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 2022 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 2022 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.

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5.0 PROJECT BUDGETS

As of June 30, 2022, the forecasted overall WSIP total program cost (regional and local projects) is $4,787.8M, which is the same as the Commission Approved Budget (March 2022 Revised WSIP). As of the end of FY 2021-22, the current forecasted remaining construction contingency is $4.4M, not including contingency budget reserved to cover the June 2022 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 $8.9M in the WSIP Director's Reserve to cover future potential project/program risks.

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.
- Preparation of Independent Cost Estimates by the project CM teams for most 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 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 2021-22. 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. As can be seen in the table, all WSIP Regional Projects are currently forecasted to be completed on budget. Additional detail regarding the forecasts presented below may be found in the WSIP Quarterly Report for the 4th Quarter of FY 2021-22 (Appendix B).

Table 5-1: Project Budget Forecast and Variances

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2022 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	$3,376,376	-
Sunol Valley Region					
CUW35201	Alameda Creek Recapture Project	$18,809,304	$43,967,395	$43,967,395	-
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	$340,406,358	-
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	$794,066,323	-
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 2022 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	-	$5,989,845	$5,989,845	-
Bay Division Region					
CUW35301	BDPL Nos. 3 & 4 Crossover/Isolation Valves *(Completed)*	$27,600,158	$27,039,149	$27,039,149	-
CUW35302	Seismic Upgrade of BDPL Nos. 3 & 4 *(Completed)*	$66,792,849	$72,194,219	$72,194,219	-
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 2022 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	$3,597,500	-
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	$4,381,375	$3,067,903	$3,067,903	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2022 Forecasted Cost	Cost Variance
	Improvements (Demo Filters) *(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	$274,081,969	-
CUW36702	Peninsula Pipelines Seismic Upgrade (Completed)	-	$39,992,344	$39,992,344	-
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	$190,309,453	-
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	$13,579,680	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2022 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	$14,700,669	-
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	$117,304,166	-
CUW39401	Watershed Environmental Improvement Program *(Completed)*	$20,000,000	$20,000,000	$20,000,000	-

[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 2021-22 is summarized in Table 6-1.

Table 6-1: Status of San Joaquin Regional Projects as of June 30, 2022

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 2021-22 is summarized in Table 6-2.

Table 6-2: Status of Sunol Valley Regional Projects as of June 30, 2022

Project/Contract Name	Status
Alameda Creek Recapture Project	Active (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	Active (construction)

As of June 30, 2022, nine (9) projects have been completed and two (2) projects were in construction. The WSIP Closeout – Sunol Valley Project has completed six (6) of its seven (7) subprojects; the seventh sub-project was added to the WSIP Closeout – Sunol Valley Project in the March 2022 Revised WSIP in order to allow closeout of the Fish Passages at Alameda Creek Diversion Dam (ACDD) sub-project to Calaveras Dam Replacement so as to allow close-out of that project as detailed in the discussion below. This new sub-project is still in construction phase.

Calaveras Dam Replacement Project

The Initial Fill Plan inspections required by the Department of Safety of Dams (DSOD) includes dam inspections at water surface elevations of 733.6 feet, 745 feet, and 750 feet. Due to lack of inflow during the reporting period, water elevations at 745 feet and 750 feet were not reached. The project was administratively closed out, and the Initial Fill Plan inspections are being handled by SFPUC Operations hereafter.

Construction of the Fish Passage Facilities under ACDD was completed during the reporting period; additional miscellaneous improvements were accomplished under Job Order Contracts including installation of a wildlife exclusion fence, modification to the electrical systems, and installation of a worker safety system for maintenance access to the sediment trap. Finally, additional miscellaneous work on power and communications facilities to support operation of the fish passages facilities was transferred to the WSIP Closeout – Sunol Valley Project as a seventh and final subproject entitled Alameda Creek Diversion Dam Power and Communication Facilities. This sub-project will be completed using three Job Order Contracts under the WSIP Closeout – Sunol Valley Project as discussed in more detail below. Due to the insufficient flow in Alameda Creek, wet testing to confirm performance of the facility during high creek flows will be accomplished by SFPUC

Operations when there is sufficient flow in the creek. Calaveras Dam Replacement Project was closed out during this reporting period.

Alameda Creek Recapture Project

Achievements

Notice to Proceed on the construction contract was issued on June 21, 2021, nine days before the end of the previous reporting period. Construction work was accomplished as follows during the current reporting period: demolition occurred to remove an existing unused Pacific Gas and Electric (PG&E) gas line and two existing unused SFPUC pipelines; site grading and grubbing work were completed; and power and communication poles and lines were installed. A required Department of Water Resource encroachment permit was secured, and a temporary bridge was installed over the pipeline right-of-way.

Challenges

The facility's planned point of connection to an existing 36-inch diameter pipeline that is intended to connect to the SFPUC Regional Water System was in a different location than the design had anticipated; additionally, the existing pipe's material differed from expected, and corrosion was found on sections of the pipe. Additional exploratory work was performed to investigate more fully the pipe condition and locate a more suitable tie-in location to the 36-inch diameter pipeline. The design team has been consequently working on redesign of the tie-in point to the existing 36-inch diameter pipeline. Additional design work is also occurring as follows: relocation of the pipelines and electrical lines due to existing erosion conditions around the Pond F2; redesign of the barge's mooring and anchoring system to meet increased loading requirements; and, finally, realignment of the access road into Pond F2, also due to erosion conditions. Scope was added to the project with approval from the Change Control Board to address the corrosion issue found on the 36-inch pipeline to be used for tie-in to the SFPUC Regional Water System. Construction activities are on hold until the redesign efforts are completed. The contractor continues to receive notices of material shortage, longer lead-time estimates, and cost increases related to COVID-19 from subcontractors. Coordination with the quarry operator on erosion repairs continues.

While no variance was reported during the 4th quarter, the pending changes to the project reported above are being evaluated for potential cost increases. There is no variance to the project completion date at this time.

WSIP Closeout – Sunol Valley Region

Achievements

At the end of the reporting period, the only subproject remaining is the new subproject added to scope in the March 2022 Revised WSIP to resolve a few miscellaneous remaining issues with the fish passages facilities constructed under Calaveras Dam Replacement, named Alameda Creek Diversion Dam Power and Communication Facilities. The work for this subproject is being accomplished under three (3) job order contracts (JOCs). Replacement of the main photovoltaic battery bank, modification of the satellite

communication system's power supply system, and realignment of several valves and actuator drive stems were all completed. However, some additional work needs to be completed in the next reporting period as described below, and the forecast date of completion of this final sub-project as of June 30, 2022 is December 2022.

Challenges

Modification of the satellite communication system's power supply took longer than anticipated due to delay in the contractor's negotiations for the task order. Installation of the system was completed in late June; functional testing and power monitoring will continue in the next quarter to ensure the system is working properly. In addition, due to the presence of water inside the creek, some minor work such as sluice way repair and final debris removal is being postponed until the water has fully receded in the first or second quarter of the next reporting period. This remaining work will extend the forecast completion date for this subproject and the WSIP Closeout – Sunol Valley Region project to December 2022. It is anticipated that there is sufficient budget within the project to complete the work; there is no forecast change to the project cost.

6.3 Bay Division Region

The status of all regional projects in the Bay Division Region as of the end of FY2021-22 is summarized in Table 6-3.

Table 6-3: Status of Bay Division Regional Projects as of June 30, 2022

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 FY2021-22 is summarized in Table 6-4.

Table 6-4: Status of Peninsula Regional Projects as of June 30, 2022

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

As of June 30, 2022, all the Peninsula Region's eighteen (18) projects have been completed, including the WSIP Closeout – Peninsula Project that was completed during the reporting period, on December 30, 2021.

Achievements

During the reporting period, the WSIP Closeout – Peninsula Project was completed. Some related improvement work for the Peninsula, including design of the Lower Crystal Springs Dam (LCSD) digital video surveillance security system and fence grounding as well as the construction of the security fence, will continue under Water Enterprise funding, but the WSIP scope of work has been completed.

6.5 San Francisco (Regional) Region

The status of all regional projects in the San Francisco Region as of the end of FY 2021-22 is summarized in Table 6-5.

Table 6-5: Status of San Francisco Regional Projects as of June 30, 2022

Project/Contract Name	Status
Regional Groundwater Storage & Recovery	(A) Phase 1 Test Wells: Completed (B) Phase 1 Construction: 98.2% Complete[1] (C) Phase 2A: Construction: 0% 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, 2022, and during this reporting period, only one (1) of the three San Francisco Regional projects is still active; two construction contracts are active within this project. The two (2) other projects in this region were completed and closed out in prior reporting periods.

Achievements

The remaining project, RGSRP, is split into two phases and four construction contracts, identified under this project as Contracts A, B, C, and D. Contract A of Phase 1 was completed in a previous reporting period. For Phase 1 Contract B, the following were completed during this reporting period: 7-week testing for four of the wells: B Street (Serra Bowl) Well, Colma Boulevard Well, F Street (Colma BART) Well and Millbrae Yard Well and Treatment Facilities; upsizing of water heaters at all well treatment facilities; construction of a partition wall at Poncetta Drive Treatment Facility; installation of cathodic protection and rehabilitated well pump, as well as programming, testing, and construction of the access road into Mission (Treasure Island) Well and Treatment Facility; and installation of backflow preventer at South Park Plaza Well Station. The Commission approved on June 28, 2022 two purchase and sale agreements and two permanent easements to provide site access and power to groundwater facilities at or near the Mission Well site. Contract B is 98.2% complete as of June 30, 2022 and is forecast to reach substantial completion on September 2, 2022.

For Phase 2A, Contract C, the contract was advertised on September 27, 2021. Two (2) bids were received on November 18, 2021. The Commission approved contract award on February 22, 2022. Notice to Proceed for construction was issued on June 23, 2022, at the end of the reporting period. For Phase 2B, Contract D, 95% design progressed to 100% design during the reporting period, and 100% design work has continued to progress. Draft designs were issued during the reporting period, on June 18, 2022, for a new PG&E underground vault and for the conduit layout crossing El Camino Real and Del Paso Roads in South San Francisco. Permits and easements continue to be negotiated for construction

of the South San Francisco Main well and pipelines. The Phase 2B Contract D will be advertised after all right of way permits and easements are obtained.

Challenges

Increases in the forecasted cost and schedule for the Phase 1A Contract B during the reporting period (that are now accounted for and approved in the March 2022 Revised WSIP) are due to flowmeter inaccuracies, repairs to corrosion in several of the well systems; modifications to the chemical feed systems; delays in obtaining a permit to enter from BART; and Town of Colma's new requirement for an Americans with Disability Act (ADA) compliant driveway, which resulted in additional design and review time by all entities.

For Phase 2A Contract C, increases to the forecasted cost and schedule during the reporting period (that are now accounted for and approved in the March 2022 Revised WSIP) are due to the addition of cathodic protection for multiple wells in the design; the contractor's delay in submitting its proof of liability insurance; and PG&E's new requirement to include an interrupter facility housed in a vault, requiring additional design time. For Phase 2B contract D, increase to forecasted cost and schedule are due to the longer duration than anticipated to obtain right of way permits and permanent easements.

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 at which one can be 80% confident that future cost increase will not exceed this level for identified and tracked risks. 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 is expressed, as noted above, in terms of confidence level (confidence level vs. probable cost curve).

7.2 Status of Risk to Active Construction Projects

During FY 2021-22, the WSIP team continued to implement and refine its Risk Management Program. A total of nine (9) risks were closed during the reporting period and two (2) risks for existing projects were added. In addition, the risk register for the following construction contract was initiated at NTP with eight (8) risks on June 23, 2022:

- Regional Groundwater Storage and Recovery Phase 2A

This brought the number of active construction risk registers and the total number of individual risks managed through ARM at the end of the reporting period to three (3) and thirty-six (36), 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 at the end of the reporting period.

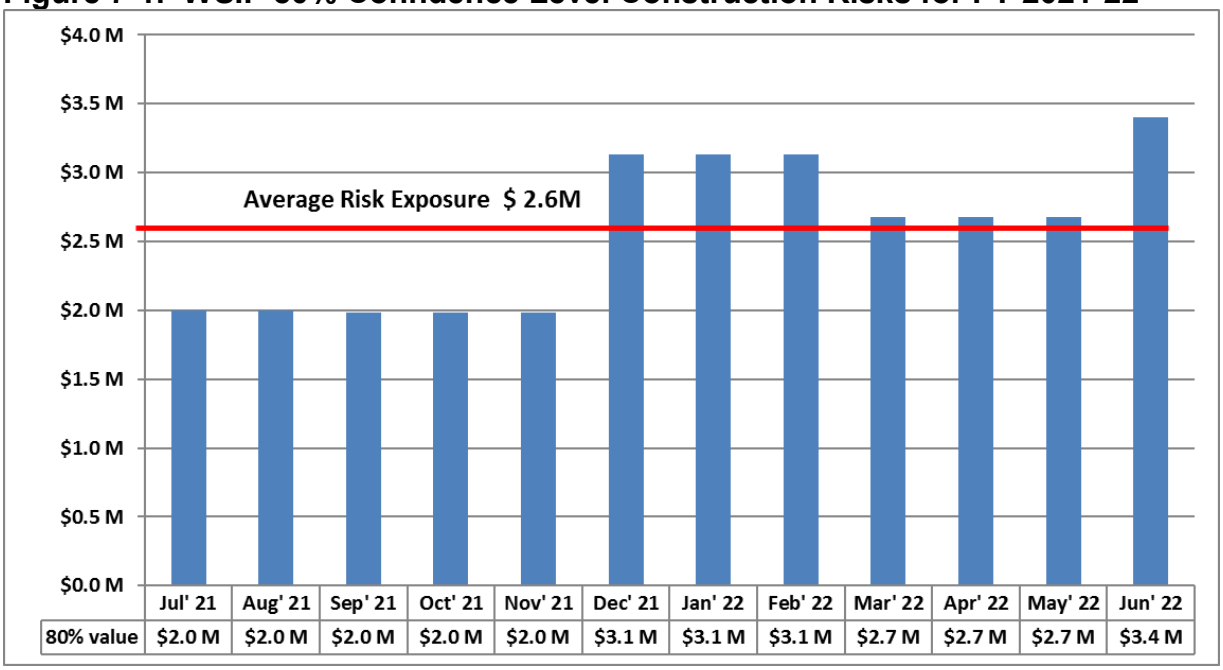
Table 7-1: Summary of Active Construction Risk Registers as of June 30, 2022

Construction Contract[1]	Date[2]	No. of Risks[3]	Risk Value ($M)[4]
Alameda Creek Recapture	June-21	25	2.5
Regional Groundwater Storage and Recovery Phase 1B	June-15	3	0.0
Regional Groundwater Storage and Recovery Phase 2A	June-22	8	0.9
Cumulative active risks @ 80% confidence level		**36**	**3.4**

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, 2022.
4. Total value of all risks at eighty percent (80%) confidence level as of June 30, 2022.

Figure 7-1 shows a cumulative risk exposure at the 80% confidence level of $3.4M as of June 30, 2022, which is higher than the risk exposure at June 30, 2021 by $1.2M. This is due to the addition to costs and probabilities of risks in the RGSRP, primarily by addition of the Phase 2B construction contract's eight (8) risks offset by reduction of the number, cost, and probability of Phase 1B contract B risks. The risk exposure at the 80% confidence remained nearly steady at the $2.2M cumulative amount reported in the WSIP 2021 Annual Report from July 2021 to November 2021. The 80% confidence level then increased in December from $2.0M to $3.1M due to an increase in risk probabilities and costs for the Alameda Creek Recapture Project (ACRP) at that time, including the addition of two new risks to the risk register for this project. The 80% confidence level remained near a $3.1M level from December 2021 until February 2022. The 80% confidence level decreased in March 2022 from $3.1M to $2.7M due to the closing of two encountered risks in ACRP. The 80% confidence level increased in June 2022 from $2.7M to $3.4M because RGSRP - Phase 2A began construction and added the eight (8) risks of its initial risk register to the program.

Figure 7-1: WSIP 80% Confidence Level Construction Risks for FY 2021-22



	Jul' 21	Aug' 21	Sep' 21	Oct' 21	Nov' 21	Dec' 21	Jan' 22	Feb' 22	Mar' 22	Apr' 22	May' 22	Jun' 22
80% value	$2.0 M	$2.0 M	$2.0 M	$2.0 M	$2.0 M	$3.1 M	$3.1 M	$3.1 M	$2.7 M	$2.7 M	$2.7 M	$3.4 M

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

Based on the risks summarized above, there are three (3) active construction contracts that carry risk (at varied levels) and potential to impact the Program's overall cost and schedule: RGSRP Phase 1, RGSRP Phase 2A, and ACRP.

Five (5) of the current top ten risks for active WSIP construction contracts, based on likelihood of occurrence and potential cost impact, belong to the ACRP and five (5) belong to RGSRP Phase 2A. The current highest risk belongs to the ACRP which relates to potential delay in barge/pump fabrication and installation. The second highest risk also belongs to ACRP which relates to cost increases due to inflation, increase in material costs, and decreased productivity due to limited qualified and experienced personnel. The third highest risk belongs to RGSRP Phase 2A and concerns the possibility of insufficient resources from Operations to support pump isolation & removal. 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, 2022

Project	Risk Description	Occurrence Probability	Risk Value[1]	Mitigation
Alameda Creek Recapture	Delay in barge/pump fabrication and installation.	80%	$803,000	Pre-qualify vendors.
Alameda Creek Recapture	Inflation increasing costs, increase in material costs, decreased productivity due to limited qualified and experienced personnel.	50%	$500,000	Partner with contractor to identify and minimize cost exposure.
Regional Groundwater Storage and Recovery Phase 2A	Insufficient resources from Operations to support pump isolation & removal.	50%	$363,000	Coordination and early request with Operations.
Regional Groundwater Storage and Recovery Phase 2A	Insufficient resources from Operations to support start-up and testing.	50%	$363,000	Coordination and early request from Operations.
Regional Groundwater Storage and Recovery Phase 2A	Possible delays in delivery of critical equipment due to supply chain issues.	50%	$198,000	Obtain early submission from the contractor for long lead items.
Regional Groundwater Storage and Recovery Phase 2A	Security issues resulting in vandalism and/or loss of stored equipment.	50%	$132,000	Contractor to secure equipment.

Project	Risk Description	Occurrence Probability	Risk Value[1]	Mitigation
Regional Groundwater Storage and Recovery Phase 2A	Operations not ready to accept equipment to operate and maintain upon turnover.	50%	$10,000	Coordination with Operations for staff augmentation/ service contract.
Alameda Creek Recapture	Encounter differing site conditions or utility coordination impacts that delay or otherwise negatively impact the schedule.	30%	$170,000	Extend work hours as needed to allow the contractor to work through the condition while minimizing schedule slippage.
Alameda Creek Recapture	Inability to fill Pond F2 to allow for pump testing.	30%	$154,000	Transfer water from adjacent ponds.
Alameda Creek Recapture	SCADA system integration Issues.	30%	$150,000	Effective communication between Contractor's System Installer and Design Team.

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 98.6 percent completion as of June 30, 2022 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 several 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 the 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 2022 Review of the Program Forecast

During early 2022, WSIP Senior Management reviewed the status of the remaining WSIP projects and analyzed the forecasted schedules, budgets, and scopes for each project. Based on this analysis, the SFPUC determined that scope, schedule, and budget changes were necessary for individual projects, without affecting the program budget, but pushing the date of completion for the program from the formerly approved date of May 23, 2023 to a new completion date of February 1, 2027. The recommended proposed revisions were documented in the March 25, 2022 Notice of Public Hearing for the proposed revised WSIP that was adopted by the Commission on April 26, 2022. The March 2022 Revised WSIP extended the program completion date from May 5, 2023 to February 1, 2027 but did not change the overall program budget, which remains at $4,787.8M. These changes were documented in the August 19, 2022 Notice of Changes Report.

8.2 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. The current staff transition plan for the remainder of WSIP is included in the WSIP Quarterly Reports. Actual staffing levels will continue to be tracked monthly against this plan 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.
- Lessons Learned Reports - Lessons Learned Reports are recorded and posted on the server for all project team members and all SFPUC Infrastructure Bureaus to access. The project team of every active region submits a lesson learned report on an issue or problem that was encountered on his or her active project. Issues are discussed and resolutions are presented. The lesson learned describes how to avoid these issues on future projects.

8.3 Adequacy of Current Approved Schedules and Budget Contingencies

The schedule forecasts presented in this report show that all of the projects in the program are forecast to be complete by the current approved program completion date of February 1, 2027. 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 $3.4 million for active construction contracts as of June 30, 2022.

The remaining forecast construction contingency as of June 30, 2022 is $4.4 million after all current trends have been considered. In addition, the current forecast WSIP Director’s Reserve Fund is $8.9 million. Therefore, a total of approximately $13.3 million are available

to fund future risks, including both construction risks and unforeseen soft (non-construction) costs. If one conservatively assumes that up to $4 million is needed for future soft cost risk, this would leave approximately $9.3 million available to fund potential future construction risks

Accordingly, the analysis shows that the current WSIP is sufficiently funded to complete within the current approved baseline budget and schedule (March 2022 Revised WSIP) with over 80 percent confidence based on the current understanding of trends and remaining risks in the program.

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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, 2022, all ten (10) projects have been completed.

Table 9-1: Status of AB 1823 Projects as of June 30, 2022

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. During the reporting period, the Contract B for Calaveras Dam Replacement Project, the Fish Passage Facilities at Alameda Creek Diversion Dam Project (ACDD), was closed out and the entire project was completed.

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APPENDIX A
Current Approved WSIP Schedule
Regional Projects

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APPENDIX A: Current Approved WSIP Project-Level Schedules

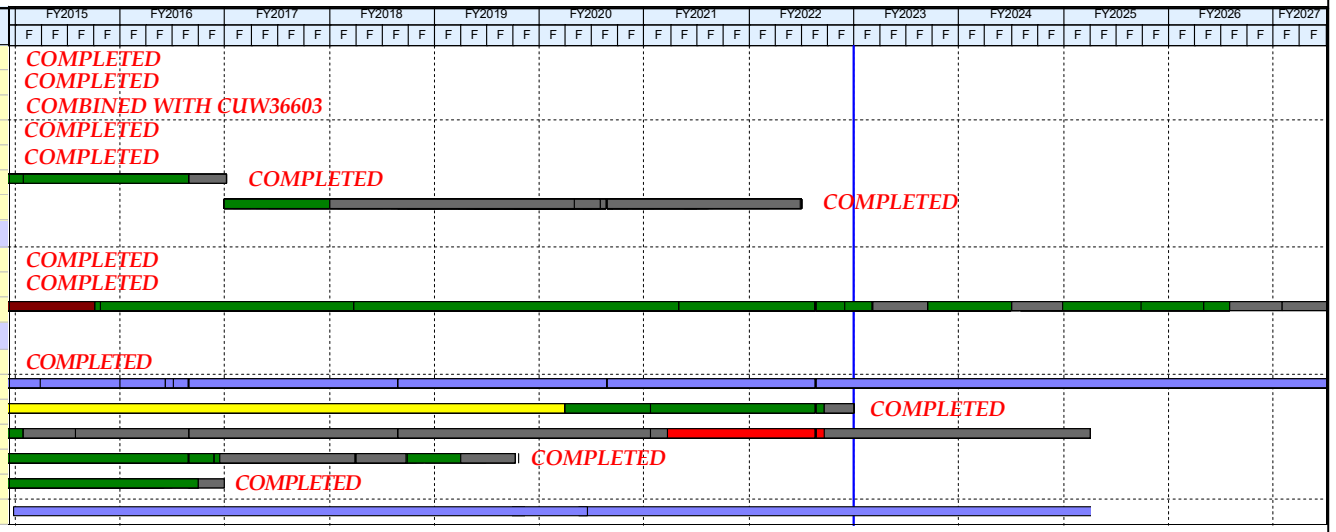
Project Name	Start	Finish	Status
Regional Improvement Projects	31-Mar-00 A	01-Feb-27	
San Joaquin Region	01-Jul-02 A	31-Mar-21 A	COMPLETED
CUW38701 Tesla Portal Disinfection Station	01-Jul-02 A	29-Jun-07 A	COMBINED WITH CUW38401
CUW38401 Tesla Treatment Facility	01-Jul-02 A	30-Jan-15 A	COMPLETED
CUW37301 San Joaquin Pipeline System	19-Aug-02 A	31-Mar-16 A	COMPLETED
CUW36401 Lawrence Livermore Water Quality Impr	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	
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 Mc	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

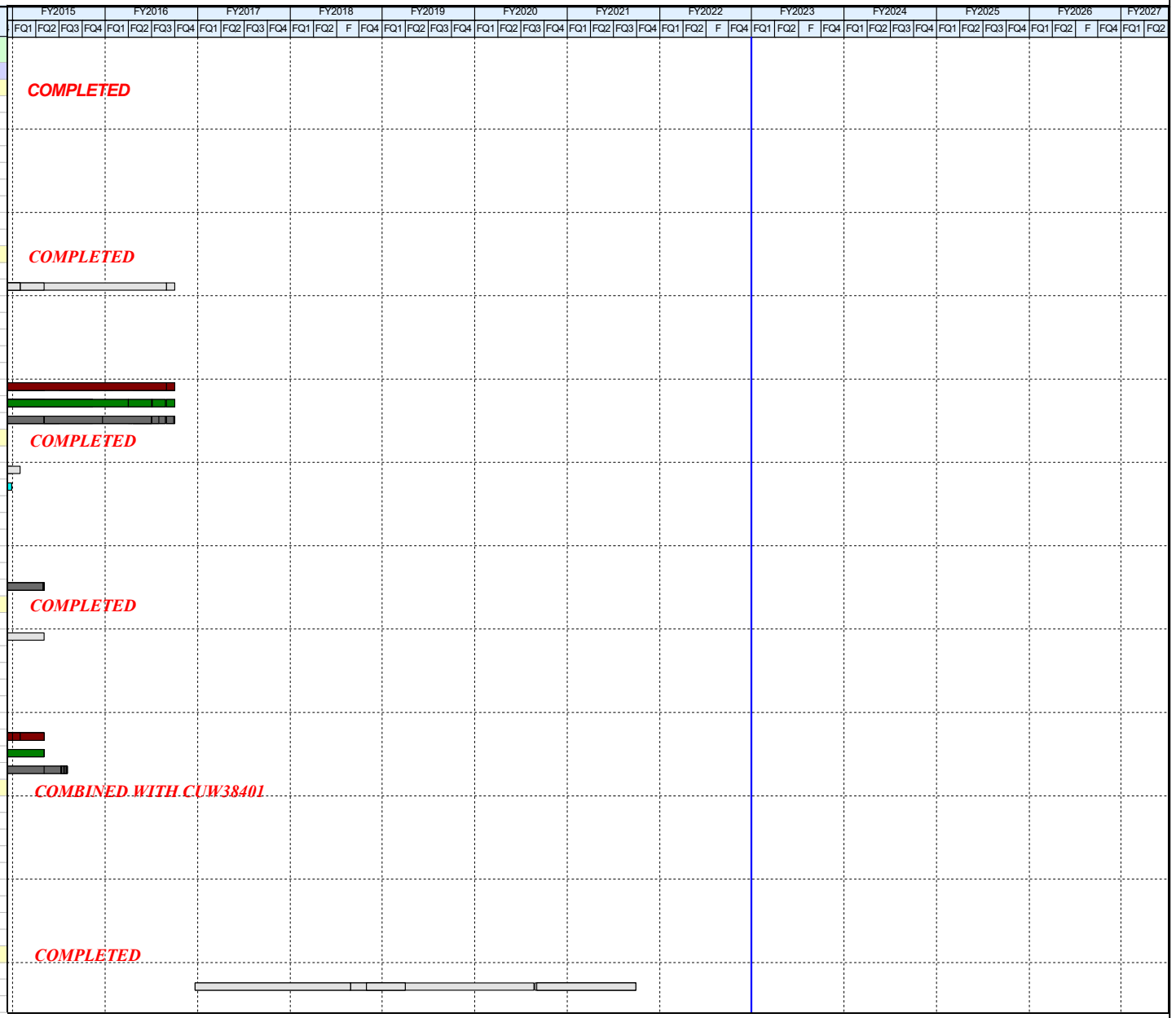


Project Management | Environmental | Right-of-Way | Construction Mgmt | Closeout

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		

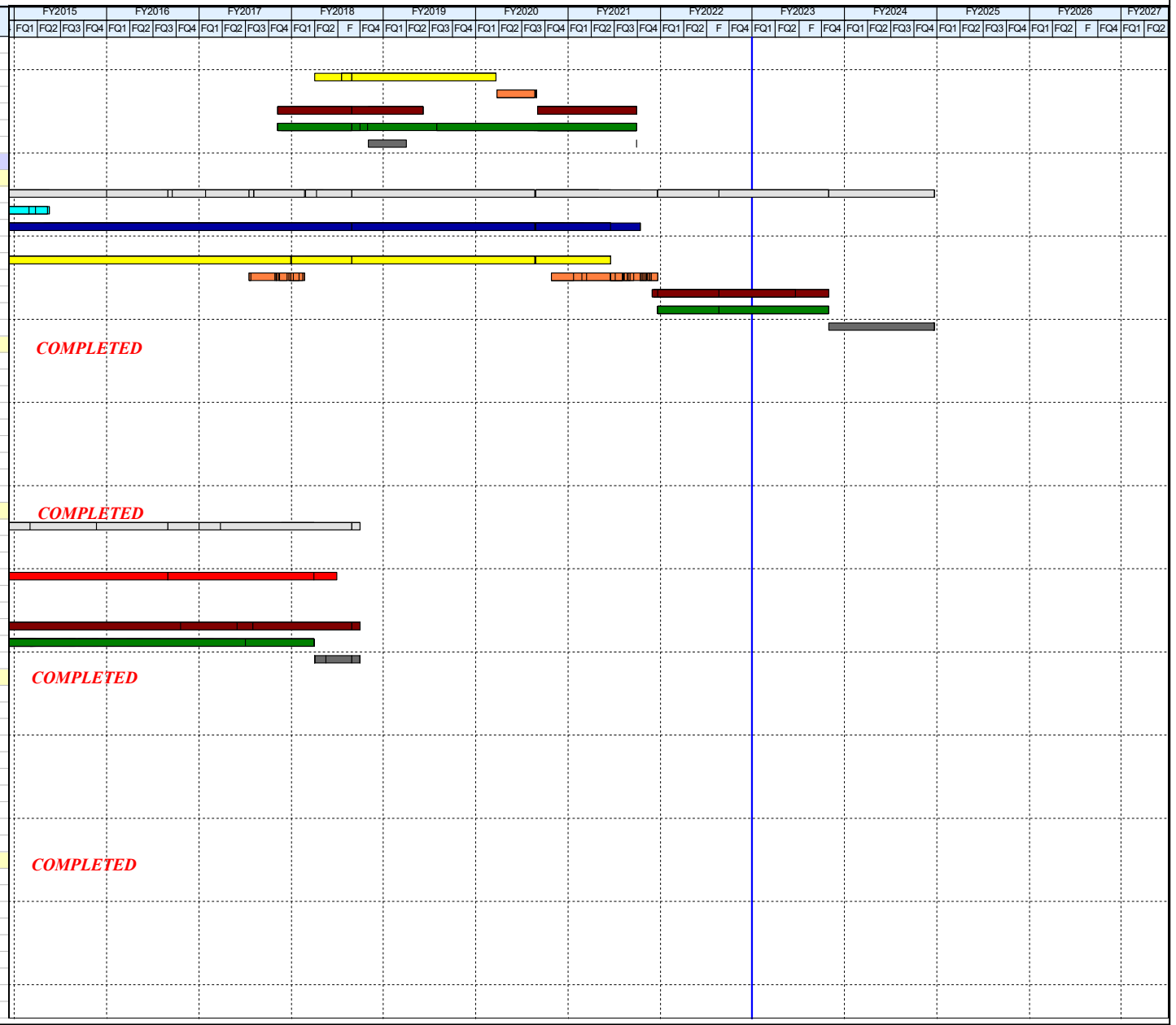


Project Management | Environmental | Right-of-Way | Construction Mgmt | Closeout

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

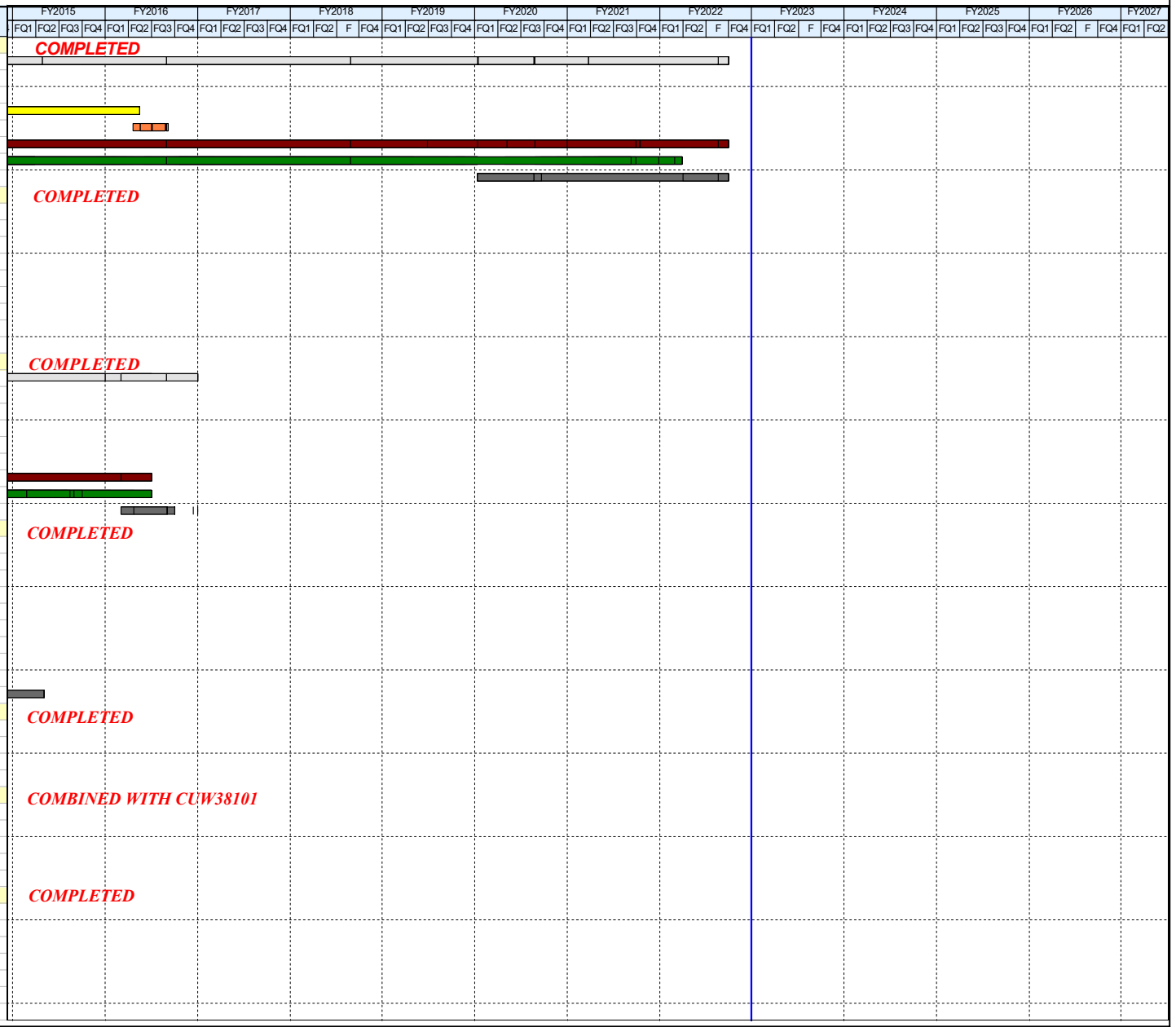


Project Management | Environmental | Right-of-Way | Construction Mgmt | Closeout

Planning | Design | Bid & Award | Construction | Program Mgmt

APPENDIX A: Current Approved WSIP Phase-Level Schedules

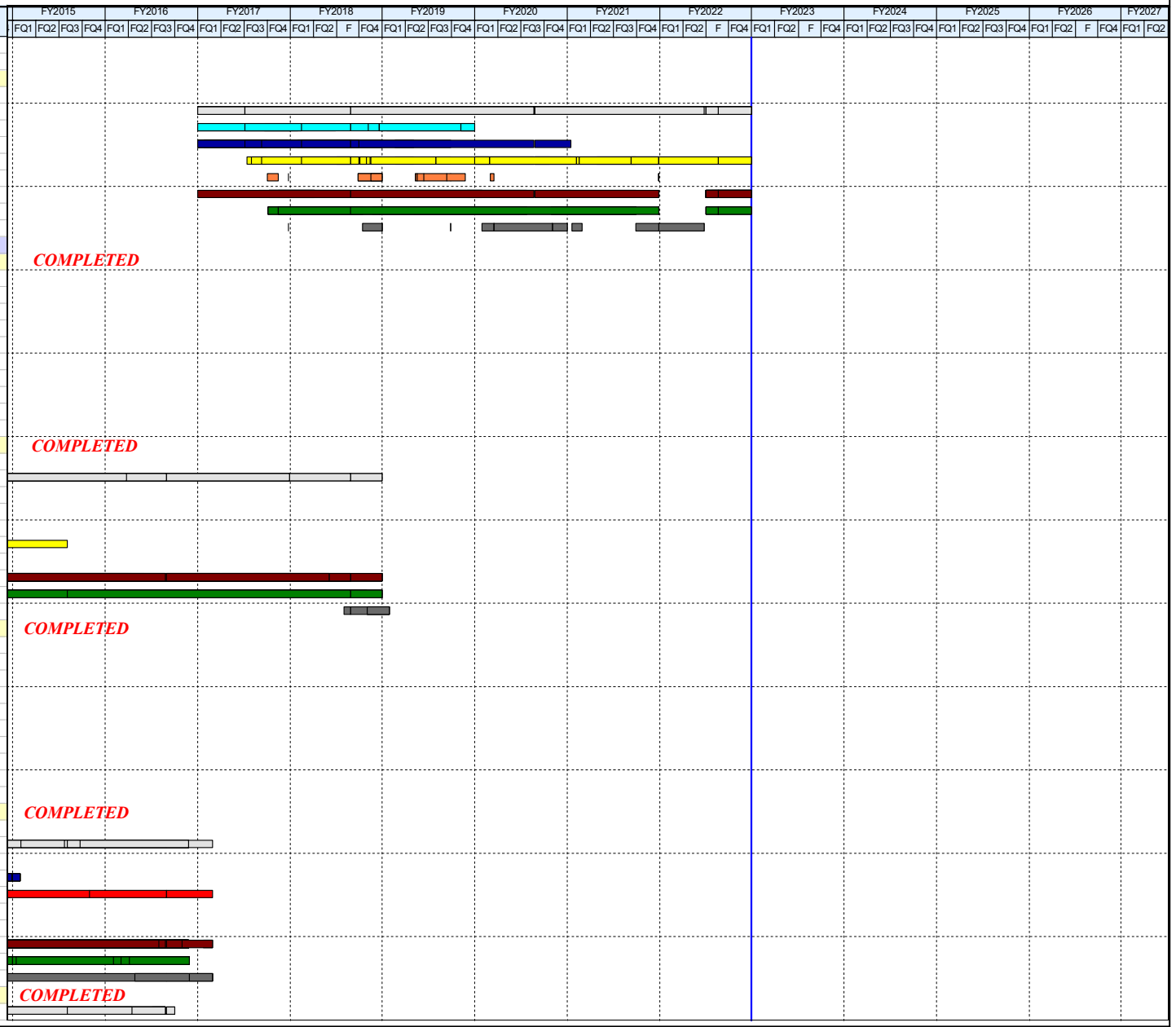
Project Name	Start	Finish
Calaveras Dam Replacement	03-Sep-02 A	31-Mar-22 A
Project Management	03-Sep-02 A	31-Mar-22 A
Project Planning	03-Sep-02 A	04-Nov-05 A
Environmental Review	16-May-05 A	06-Feb-12 A
Design	14-Nov-05 A	13-Nov-15 A
Bid and Award	27-Dec-10 A	07-Mar-16 A
Construction Management	15-Aug-11 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

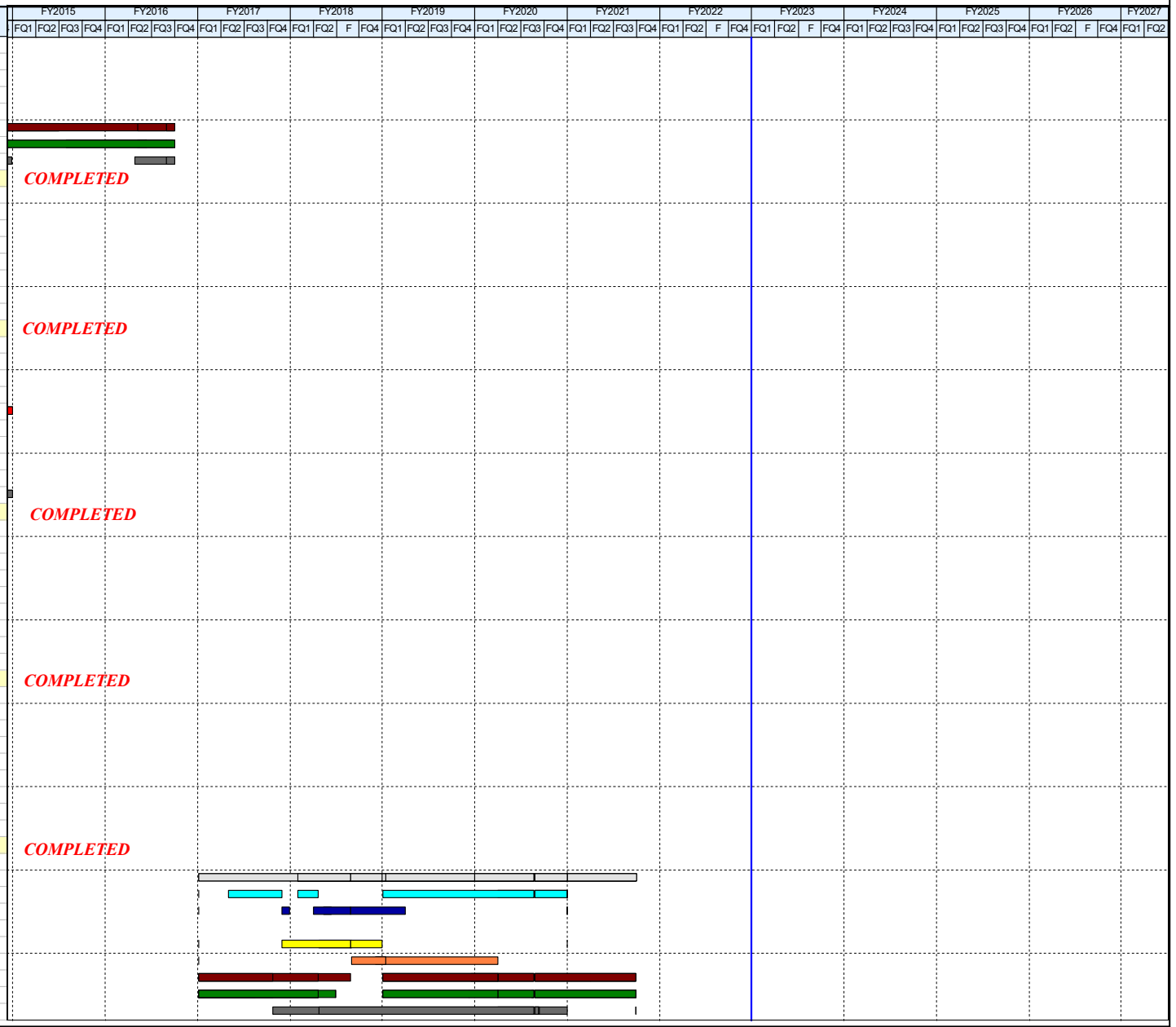
Project Name	Start	Finish
Construction	02-Nov-09 A	30-Sep-11 A
Close-Out	03-Oct-11 A	29-Jun-12 A
WSIP Closeout - Sunol Valley	01-Jul-16 A	31-Dec-22
Project Milestones		
Project Management	01-Jul-16 A	30-Dec-22
Project Planning	01-Jul-16 A	30-Jun-19 A
Environmental Review	01-Jul-16 A	17-Jul-20 A
Design	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

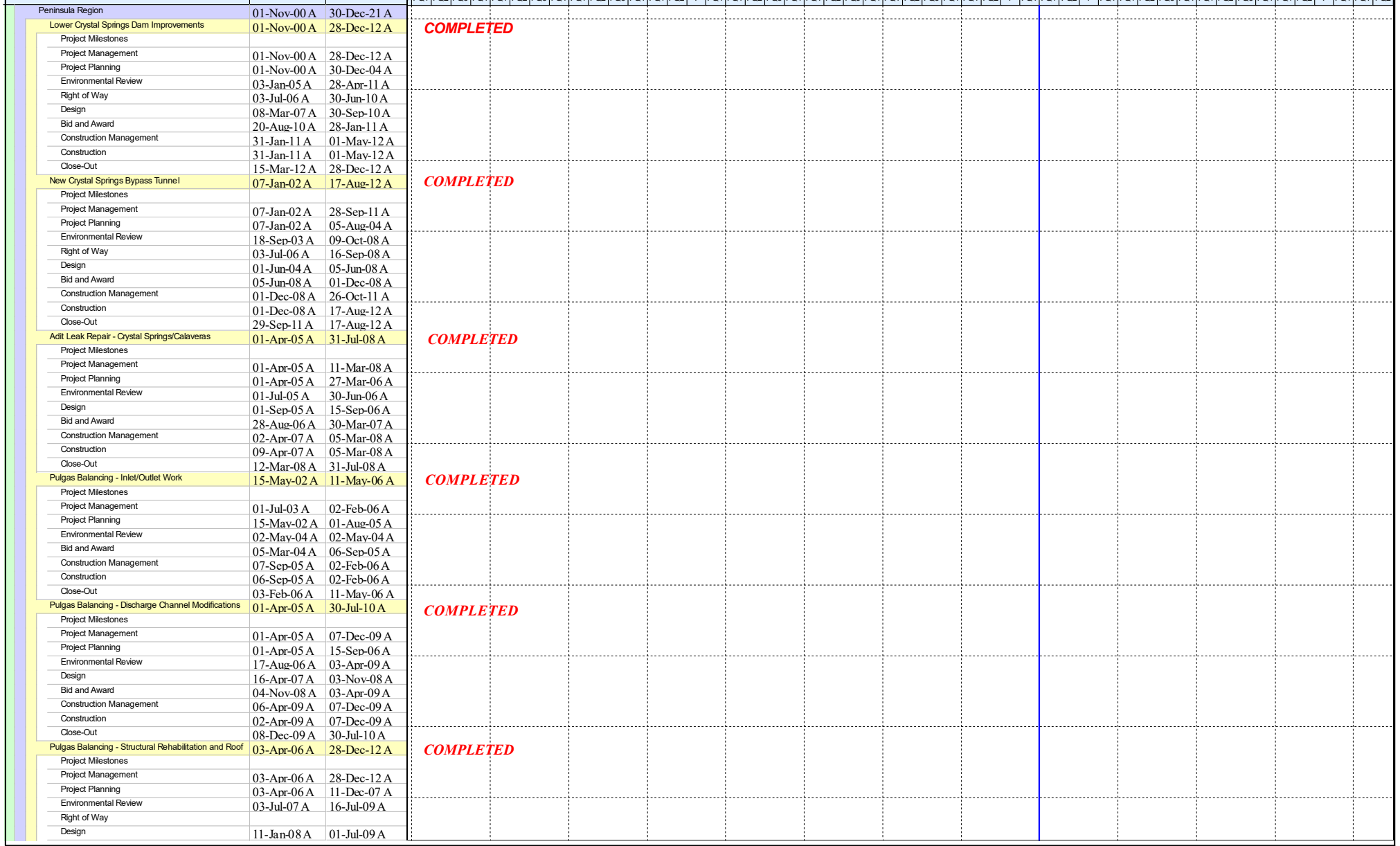
Project Name	Start	Finish
Project Planning	19-Dec-01 A	31-May-06 A
Environmental Review	18-Nov-04 A	12-Feb-10 A
Right of Way	03-Jul-06 A	08-Dec-10 A
Design	03-Jan-06 A	17-Aug-09 A
Bid and Award	22-Apr-09 A	09-Mar-10 A
Construction Management	23-Sep-08 A	31-Mar-16 A
Construction	04-Jan-10 A	31-Mar-16 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	COMPLETED
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	COMPLETED
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	COMPLETED
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	COMPLETED
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	COMBINED WITH CUW36603
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	COMPLETED
Project Milestones			
Project Management	03-Jul-06 A	31-Mar-10 A	
Project Planning	03-Jul-06 A	22-Aug-07 A	

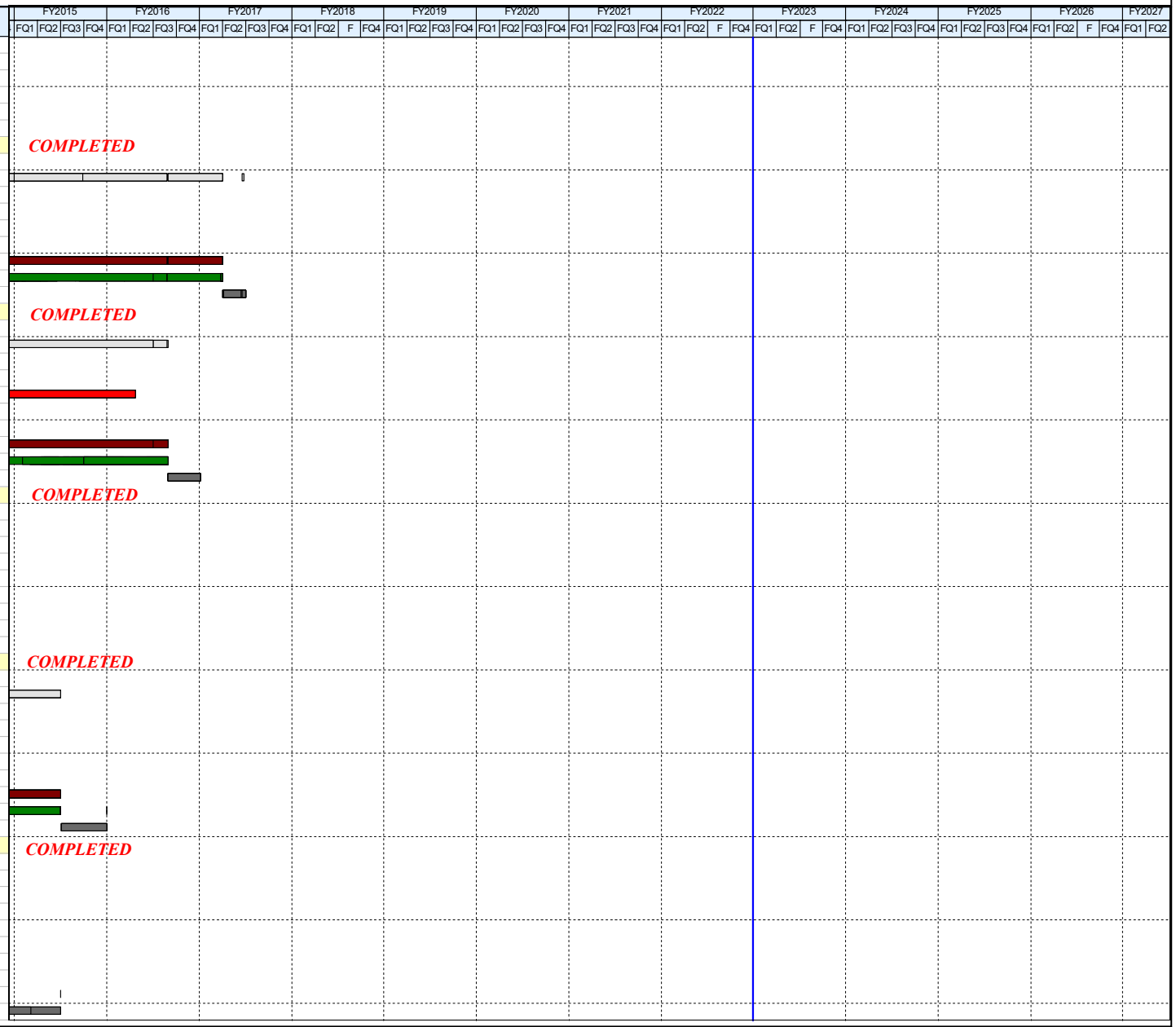
FY2015 FQ1 FQ2 FQ3 FQ4 | FY2016 FQ1 FQ2 FQ3 FQ4 | FY2017 FQ1 FQ2 FQ3 FQ4 | FY2018 FQ1 FQ2 F FQ4 | FY2019 FQ1 FQ2 FQ3 FQ4 | FY2020 FQ1 FQ2 FQ3 FQ4 | FY2021 FQ1 FQ2 FQ3 FQ4 | FY2022 FQ1 FQ2 F FQ4 | FY2023 FQ1 FQ2 F FQ4 | FY2024 FQ1 FQ2 FQ3 FQ4 | FY2025 FQ1 FQ2 FQ3 FQ4 | FY2026 FQ1 FQ2 F FQ4 | FY2027 FQ1 FQ2

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	03-Jul-06 A	28-Jul-10 A
Design	13-Jul-07 A	22-Feb-08 A
Bid and Award	03-Sep-07 A	09-Jul-08 A
Construction Management	18-Jun-08 A	31-Mar-10 A
Construction	19-Feb-08 A	31-Mar-10 A
Close-Out	01-Apr-10 A	28-Jul-10 A
HTWTP Long-Term Improvements	01-Jul-03 A	30-Dec-16 A
Project Milestones		
Project Management	01-Jul-03 A	22-Dec-16 A
Project Planning	01-Jul-03 A	29-Aug-08 A
Environmental Review	09-Jan-07 A	15-Mar-11 A
Design	02-Sep-08 A	15-Oct-10 A
Bid and Award	01-Jul-10 A	15-Mar-11 A
Construction Management	16-Mar-11 A	30-Sep-16 A
Construction	16-Mar-11 A	30-Sep-16 A
Close-Out	01-Oct-16 A	30-Dec-16 A
Peninsula Pipelines Seismic Upgrade	01-Jul-09 A	06-Jul-16 A
Project Milestones		
Project Management	01-Jul-09 A	29-Feb-16 A
Project Planning	01-Jul-09 A	31-Aug-12 A
Environmental Review	01-Jul-09 A	01-Apr-14 A
Right of Way	03-Sep-12 A	24-Oct-15 A
Design	03-Jan-12 A	18-Dec-13 A
Bid and Award	15-Nov-13 A	28-Apr-14 A
Construction Management	28-Apr-14 A	29-Feb-16 A
Construction	28-Apr-14 A	29-Feb-16 A
Close-Out	29-Feb-16 A	06-Jul-16 A
Capuchino Valve Lot Improvements	22-Apr-05 A	19-Aug-08 A
Project Milestones		
Project Management	22-Apr-05 A	05-Mar-08 A
Project Planning	22-Apr-05 A	01-Nov-05 A
Environmental Review	01-Nov-05 A	14-Nov-06 A
Design	01-Nov-05 A	15-Sep-06 A
Bid and Award	18-Sep-06 A	29-Jan-07 A
Construction Management	29-Jan-07 A	05-Mar-08 A
Construction	29-Jan-07 A	05-Mar-08 A
Close-Out	06-Mar-08 A	19-Aug-08 A
Crystal Springs/San Andreas Transmission Upgrade	18-Aug-03 A	30-Jun-15 A
Project Milestones		
Project Management	18-Aug-03 A	31-Dec-14 A
Project Planning	18-Aug-03 A	20-Apr-07 A
Environmental Review	03-Jan-07 A	30-Nov-10 A
Right of Way	27-Mar-06 A	30-Jun-10 A
Design	15-Oct-07 A	15-Jun-10 A
Bid and Award	13-Apr-10 A	30-Nov-10 A
Construction Management	01-Dec-10 A	31-Dec-14 A
Construction	01-Dec-10 A	30-Jun-15 A
Close-Out	02-Jan-15 A	30-Jun-15 A
Crystal Springs Pipeline No. 2 Replacement	15-Jan-04 A	31-Dec-14 A
Project Milestones		
Project Management	15-Jan-04 A	22-Mar-13 A
Project Planning	15-Jan-04 A	19-Jan-07 A
Environmental Review	01-Apr-04 A	30-Jun-11 A
Right of Way	01-Sep-06 A	27-Apr-12 A
Design	01-Jan-07 A	08-Oct-10 A
Bid and Award	09-Sep-10 A	04-Mar-11 A
Construction Management	01-Nov-10 A	22-Mar-13 A
Construction	07-Feb-11 A	31-Dec-14 A
Close-Out	24-Mar-13 A	31-Dec-14 A

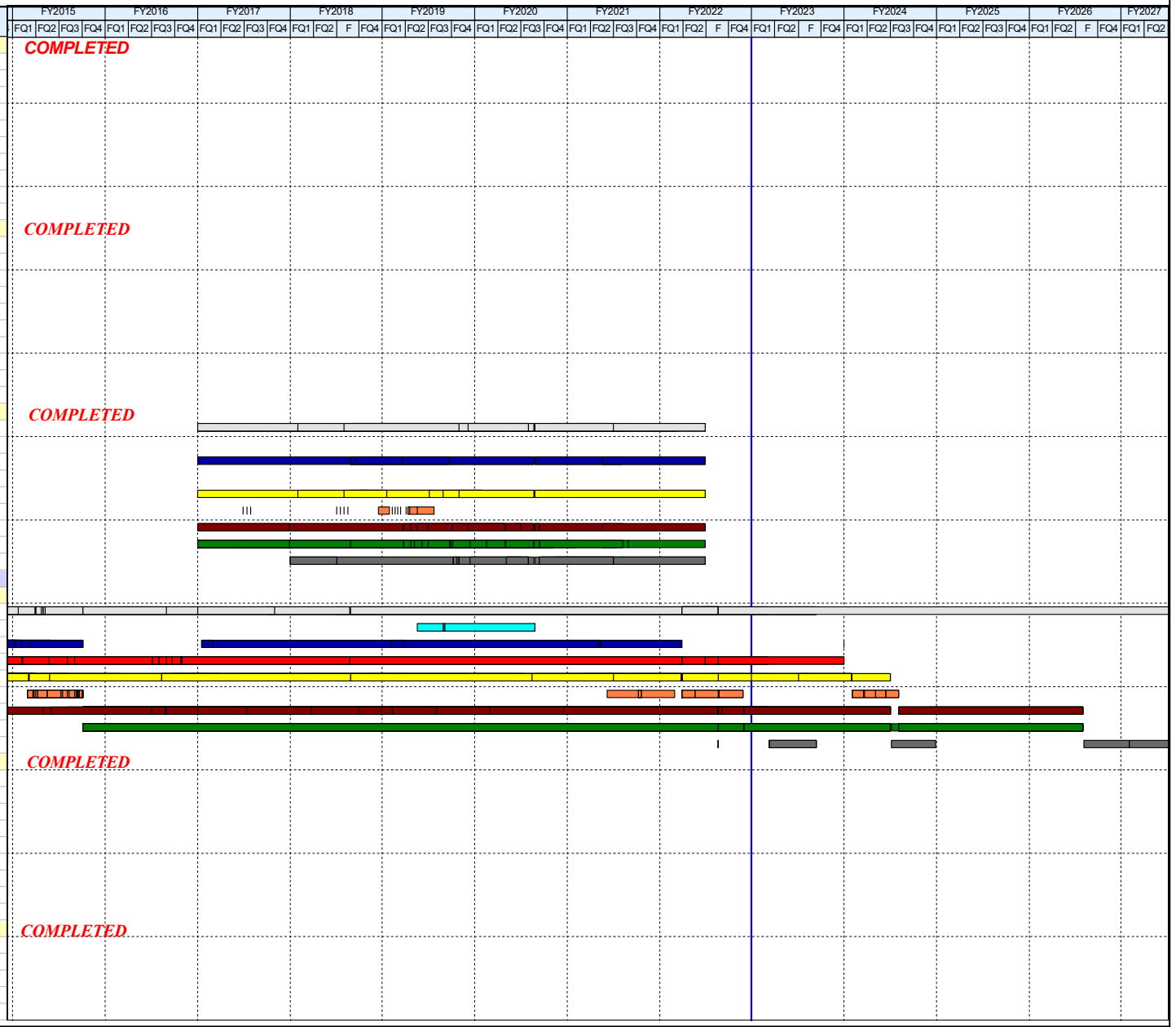


Project Management | Environmental | Right-of-Way | Construction Mgmt | Closeout

Planning | Design | Bid & Award | Construction | Program Mgmt

APPENDIX A: Current Approved WSIP Phase-Level Schedules

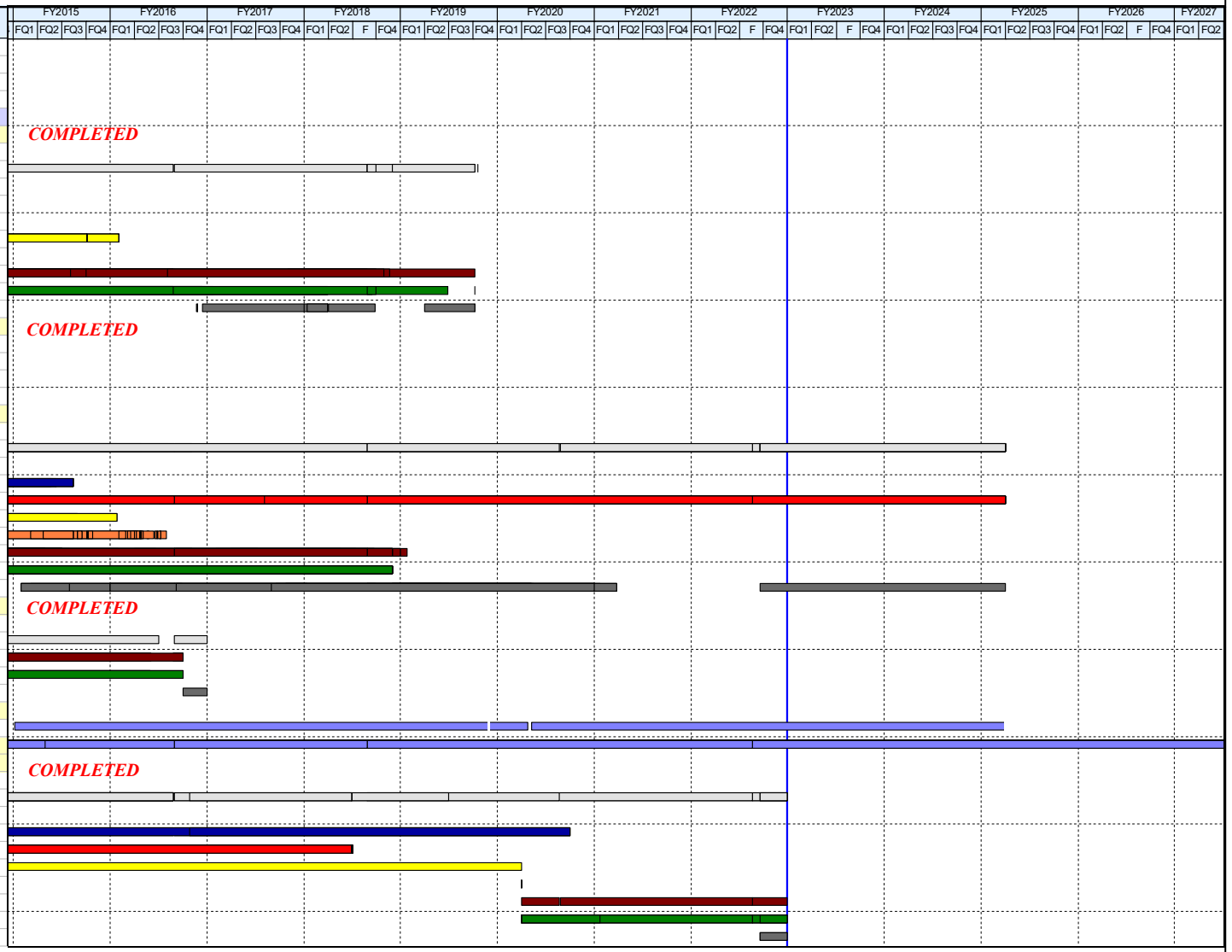
Project Name	Start	Finish
San Andreas Pipeline No. 3 Installation	15-Jan-04 A	30-Aug-12 A
Project Milestones		
Project Management	15-Jan-04 A	30-Jun-11 A
Project Planning	15-Jan-04 A	28-Apr-05 A
Environmental Review	01-Apr-04 A	15-May-09 A
Right of Way	01-Aug-06 A	13-Aug-09 A
Design	01-May-05 A	17-Apr-09 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 2021- 2022)

Report available on the SFPUC Website at the following address:
https://sfpuc.org/construction-contracts/water-infrastructure-improvements

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