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September 1, 2020

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

The Honorable Michael Gardner, Chairman
The Honorable Mia Marvelli, Acting Vice-Chair
Alfred E. Alquist Seismic Safety Commission
2945 Ramco Street, Suite 195
West Sacramento, CA 95691

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) 2019-20 Annual Report**
Water System Improvement Program
San Francisco Public Utilities Commission

Dear Assembly Member Salas, Senator Roth, Commissioners Gardner and Marvelli, 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) 2019-2020.

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 2019-20 (July 1, 2019 through June 30, 2020) and Section 2 focuses on the major 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 2019-20. 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.

Significant progress was made on the implementation of the WSIP during FY 2019-20. Between July 1, 2019 and June 30, 2020, the overall completion of the Regional Program increased from 97.3% to 98.6%. The focus of the program continued to be construction of several ongoing large projects and administrative closeout of projects that recently completed construction. During the reporting period, one project achieved final construction phase completion. As of June 30, 2020, construction was in progress on six (6) Regional projects valued at $1,021 million, while construction had been completed on 43 Regional projects valued at $2,715 million. There is one (1) project remaining in pre-construction (the Alameda Creek Recapture Project). In addition, Phase 2 of the Regional Groundwater Storage and Recovery Project is in design while Phase 1 is nearing construction completion. The largest project in the program, Calaveras Dam Replacement Project (CDRP), is 99.9% complete; the main CDRP contract reached final construction completion during the reporting period, and the sub-project Fish Project Facilities at Alameda Creek Diversion Dam is on track to be closed out in 2021.

The Final Environmental Impact Report for the Alameda Creek Recapture Project was certified by the San Francisco Planning Commission on April 16, 2020 and adopted by the SFPUC on April 28, 2020. The project completed 95% design and will be advertised for construction in the next reporting period. Phase 1 of the Regional Groundwater Storage and Recovery Project made significant progress, including sustained 4-day tests for five of the wells. For Phase 2, the 65% design has been completed for the South San Francisco Main well station and the carryover work from Contract B; this contract is anticipated to be advertised in the next reporting period.

The status of schedule forecasts and variances for all WSIP Regional Projects as of June 30, 2020 is provided in the report. As of June 30, 2020, the overall WSIP is forecast to be complete in May 2023, which is consistent with the current baseline schedule approved as part of the April 2020 Approved Baseline. The overall current approved WSIP completion date is driven by the approved final administrative closeout completion date for Alameda Creek Recapture Project, May 5, 2023.

The current approved WSIP scope is sufficiently funded to complete within the current approved baseline budget (April 2020 Approved Baseline) with over 80% confidence, based on the current understanding of trends and remaining risks in the program.

SFPUC remains committed to work 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,

Harlan L. Kelly, Jr.
General Manager
San Francisco Public Utilities Commission

Enclosure

cc: The Honorable Ann Moller Caen, President, SFPUC Commission

The Honorable Francesca Vietor, Vice President, SFPUC Commission

The Honorable Anson Moran, Commissioner, 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

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

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Richard (Dick) McCarthy - Executive Director, Alfred E. Alquist Seismic Safety Commission

Fred Turner, Structural Engineer, Alfred E. Alquist Seismic Safety Commission

Barbara Pierce, Chair, BAWSCA (without enclosure)

Gustav Larson, Vice-Chair, BAWSCA (without enclosure)

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

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HETCH HETCHY
WATER SYSTEM
IMPROVEMENT
PROGRAM

2019-20

Annual Report

Water System Improvement Program

Rebuilding Today For a Better Tomorrow

September 1, 2020

Hetch Hetchy
Regional
Water
System

Services of the San Francisco Public Utilities Commission

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FY 2019-20 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) 2019-20 (July 1, 2019 through June 30, 2020). 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.

Significant progress was made on the implementation of the WSIP during FY 2019-20. Between July 1, 2019 and June 30, 2020, the overall completion of the Regional Program increased from 97.3% to 98.6%. As of the end of the reporting period, planning, environmental, design, and construction efforts were 100.0%, 99.9%, 98.9%, and 98.9% complete, respectively. The focus of the program continued to be construction of several ongoing large projects and administrative closeout of projects that recently completed construction. During the reporting period, one project achieved final construction phase completion. As of June 30, 2020, construction was in progress on six Regional projects valued at $1,021 million, while construction was in close-out or had been completed on 43 Regional projects valued at $2,715 million. The one Regional project remaining in pre-construction was the Alameda Creek Recapture Project (ACRP). In addition, Phase 2 of Regional Groundwater Storage and Recovery Project (RGSRP) was in design while Phase 1 was nearing construction completion. The largest project in the program, Calaveras Dam Replacement Project (CDRP), reached final construction completion in July 2019.

Support programs that were continued during FY 2019-20 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 14, 2020, which is referred to as the "April 2020 Approved 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 2019-2020, 41 of the 43 Regional WSIP projects with specific LOS goals had achieved their LOS goals and objectives. The two Regional WSIP projects that have not yet achieved their LOS goals include the ACRP and the RGSRP. The other nine Regional WSIP projects (Support projects and WSIP Closeout projects) do not have specific goals.

The two Regional projects with LOS goals that remain to be completed (ACRP and RGSRP) both have water supply as a primary LOS goal. The public draft Environmental Impact Report (EIR) for the ACRP was initially certified by the San Francisco Planning Commission in June 2017; however, an appeal to the EIR was filed with the San Francisco Board of Supervisors and was upheld at a public hearing in September 2017. The project team completed revisions to and received comments on a Recirculated Draft EIR in Fall/Winter of 2019-20. The San Francisco Planning Commission certified the Final EIR on April 16, 2020, and the SFPUC adopted the CEQA findings and approved the project on April 28, 2020. The project completed 95% design by June 30, 2020, and the construction contract is anticipated to be advertised in Fall 2020.

The other remaining water supply project, RGSRP, continued construction and start-up testing for 12 well sites under Phase 1, and final design of one remaining well site under Phase 2. The project was re-baselined in 2018 to complete the Phase 1 construction and to install up to three test wells under Phase 2. Two test wells were completed in FY2018-19. The SFPUC does not intend to install a third test well due to a determination of limited potential benefit at high cost. The Phase 2 test wells will not be converted to production wells under the current approved WSIP scope. However, the SFPUC will provide an updated yield estimate for the project in the future after the wells are fully operational based on extended pumping tests and operational experience of the RGSRP wells. After sufficient operational experience has been obtained, the SFPUC will evaluate, based on updated well estimates, whether or not it would be appropriate to convert one or more of the existing two test wells, and/or future test well(s) in other location(s), into production wells. This evaluation would necessarily include schedules

for implementation, cost estimates, and funding considerations during and after the current scheduled completion of WSIP.

The status of schedule forecasts and variances for all WSIP Regional Projects as of June 30, 2020 is provided in the report. As of June 30, 2020, the overall WSIP is forecast to be complete in May 2023, which is consistent with the current baseline schedule approved as part of the April 2020 Approved Baseline. The overall current approved WSIP completion date is driven by the final administrative closeout completion date for ACRP on May 5, 2023.

All WSIP Regional Projects excluding RGSRP and ACRP are currently forecasted to be completed on or under budget. Even with the variances from the two projects, the overall program is forecast to be completed within budget in accordance with the baseline budget first approved as part of the April 2018 Approved Baseline (there were no budget changes in the April 2020 Approved Baseline).

Significant achievements in FY 2019-20 include final construction completion of the Calaveras Dam Replacement Project and substantial completion of the Fish Passage Facilities at the Alameda Creek Diversion Dam (sub-project to the CDRP). Another major milestone was the certification of the Final EIR for the ACRP by the San Francisco Planning Commission, and adoption of the findings and approval of the project by the SFPUC in April 2020. The RGSRP made progress in start-up testing for five of the wells, and continued construction modifications and improvements at all well sites. Finally, substantial progress was made on Job Order Contracts (JOCs) associated with the WSIP Closeout Projects in each of the four regions.

Challenges in FY 2019-20 include the interruption to construction projects due to COVID-19 and the resulting shelter-in-place requirement from the City of San Francisco's Health Order No. C19-07 issued in March 2020. In March and April 2020, revisions were made to the Health Order, allowing certain public works projects to continue with specific safety measures and protocols in place. While construction was eventually restarted for all WSIP projects, the impacts from delays and potential increased costs for health and safety provisions are unknown at this time. For the RGSRP, changes to the chemical feed systems, pump performance issues due to corrosion and other factors, modifications to chemical rooms for safety requirements, and transmission system flowmeter accuracy issues have further delayed the start-up testing and commissioning of all well stations.

As it would generally be overly conservative to plan for 100% of future potential risks, the SFPUC has elected to use the "80% confidence level" as a relatively conservative estimate of future cost risk for the WSIP. Namely, the "80% confidence level" represents the amount of cost for which one can be 80% confident that future cost risk will not exceed this level. The risk exposure at the "80% confidence level" at the end of the

reporting period was $2.4M, which compares to $4.0M at the end of last year's reporting period, an indication of the overall risk reduction in WSIP over this reporting period as major milestones on the CDRP have allowed some large risks to expire. The program's top 10 risks as of June 30, 2020, based on likelihood of occurrence and potential cost impact, belong to one construction contract: RGSRP (10 risks). The current highest risk for the RGSRP is related to COVID-19 issues. The second highest risk concerns the change of chemical use (during construction) from aqueous ammonia to ammonium sulfate. The third highest risk considers challenges in meeting water quality requirements.

At over 98 percent 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. Nevertheless, there are still two large active projects with significant 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 more efficient as the SFPUC strives to bring the WSIP to successful completion over the next several years. As has been the practice since the program was established, the WSIP Director will continue to meet with project teams on a rotation monthly to review status of every budget line item at least twice quarterly. Because 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. In addition, we are continuing to implement our industry best practice Construction Management (CM) Business Processes and Procedures to ensure the available funds are used efficiently and effectively, with emphasis on identification of cost savings wherever possible.

The program-level risk analysis shows that the remaining program risk exposure at the "80% confidence level" is $2.4 million for active construction contracts as of June 30, 2020. The remaining forecast construction contingency as of June 30, 2020 is $7.29 million after all current trends have been considered. In addition, the current forecast WSIP Director's Reserve Fund is $18.6 million. Therefore, a total of approximately $25.8 million is available to fund future risks, including both construction risks and unforeseen soft (non-construction) costs. If one conservatively assumes that up to $3 million is needed for future soft cost risk, this would leave approximately $22.8 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 (April 2020 Approved Baseline) with over 80 percent confidence, based on the current understanding of trends and remaining risks in the program.

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LIST OF ACRONYMS

AB	Assembly Bill
ACDD	Fish Passage Facilities at Alameda Creek Diversion Dam Project
ACRP	Alameda Creek Recapture Project
ARM	Active Risk Management
ASCE	American Society of Civil Engineers
BAWSCA	Bay Area Water Supply and Conservation Agency
BART	Bay Area Rapid Transit
BDPL	Bay Division Pipelines
BHR	Bioregional Habitat Restoration
CALTRANS	California Department of Transportation
CDRP	Calaveras Dam Replacement Project
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
CM	Construction Management
CMB	Construction Management Bureau
CMIS	Construction Management Information System
COVID-19	Coronavirus Disease of 2019
CSPL2	Crystal Springs Pipeline No. 2
CS/SA	Crystal Springs/San Andreas
DRB	Dispute Resolution Board
DSOD	Division of Safety of Dams (State of California)
EIR	Environmental Impact Report
ENR	Engineering News-Record
FY	Fiscal Year
GIS	Geographic Information System
HHWP	Hetch Hetchy Water and Power
HTWTP	Harry Tracy Water Treatment Plant
JOC	Job Order Contract
LCSD	Lower Crystal Springs Dam
LOS	Level of Service
LTI	Long-Term Improvements
MGD	Million Gallons per Day
MID/TID	Modesto Irrigation District and/or Turlock Irrigation District
NIT	New Irvington Tunnel
NMFS	National Marine Fisheries Service
NOC	Notice of Changes
NTP	Notice to Proceed
PCCP	Pre-stressed Concrete Cylinder Pipe
PM	Project Manager
PPSU	Peninsula Pipelines Seismic Upgrade
REIR	Re-circulated Draft Environmental Impact Report
RBOC	Revenue Bond Oversight Committee
RGSRP	Regional Groundwater Storage and Recovery Project
ROW	Right-of-Way
SABPL	San Antonio Backup Pipeline
SCADA	Supervisory Control and Data Acquisition
SFPUC	San Francisco Public Utilities Commission

SJPL	San Joaquin Pipeline
SSF	South San Francisco
SSBPL	Sunset Supply Branch Pipeline
SVWTP	Sunol Valley Water Treatment Plant
WECIP	Water Enterprise Capital Improvement Program
WSIP	Water System Improvement Program
WSTD	Water Enterprise, Water Supply and Treatment Division

1.0 OVERALL PROGRAM PROGRESS

1.1 Program Status Summary

Significant progress has been made on the implementation of the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2019-2020 (July 1, 2019 through June 30, 2020) with overall progress on the Regional Program increasing from 97.3% to 98.6% complete. Overall, actual performance (98.6%) on the Regional Program is 0.3% behind schedule based on the latest Baseline Budget and Schedule, approved on April 14, 2020, which is referred to as the "April 2020 Approved Baseline". The overall program schedule variance is primarily due to the forecasted schedule extension of Regional Groundwater Storage and Recovery Project (RGSRP); the project's schedule was not revised in the April 2020 Approved Baseline since challenges that have emerged during project construction and startup are still being evaluated for schedule impacts. The status of this project, and each of the other remaining projects, are discussed within this report.

As indicated in Table 1-1, planning, environmental, design, and construction efforts are 100.0%, 99.9%, 98.9%, and 98.9% complete, respectively.

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

Phase	June 30, 2019		June 30, 2020	
	% Planned	% Actual	% Planned[2]	% Actual
Planning	99.8%	99.8%	99.8%	100.0%
Environmental	99.7%	99.7%	99.8%	99.9%
Design	99.6%	97.6%	99.9%	98.9%
Bid & Award	97.8%	97.3%	98.9%	97.4%
Construction	98.7%	98.2%	99.0%	98.9%
Closeout	77.7%	71.6%	86.9%	83.0%
Program Cumulative	**98.5%**	**97.3%**	**98.9%**	**98.6%**

[1] Percent completion does not include Support Projects in the WSIP Regional Program.
[2] Incorporates the April 2020 Approved Baseline schedule revisions

In recent years, the focus of the program has been on construction activities and administrative closeout of completed projects. Table 1-2 compares the number of projects in each phase and their corresponding total approved value at the beginning of the reporting period (June 30, 2019) to those at the end of the reporting period (June 30, 2020). As of the end of the reporting period, 6 regional projects are in construction with a total value of $1,021 million, and 43 additional projects with a total value of $2,715 million are in close-out or have been completed. The one (1) regional project remaining in pre-construction is the Alameda Creek Recapture Project (ACRP). In addition, Phase 2 of RGSRP is in design while Phase 1 is nearing construction completion.

Table 1-2: Status of WSIP Regional Projects

Project Phase	June 30, 2019 Status		June 30, 2020 Status	
	No. of Projects	Total Project Value ($M)	No. of Projects	Total Project Value ($M)[1]
Planning	0	$0	0	$0
Design	3	$61	1	$35
Bid & Award	0	$0	0	$0
Construction	5	$1,015	6	$1,021
Closeout	1	$96	1	$96
Completed	42	$2,619	42	$2,619
Not Applicable[2]	1	$12	2	$32
Total	**52**	**$3,803**	**52**	**$3,803**

[1] Based on budget approved as part of the April 2020 Approved Baseline.
[2] The "Not Applicable" category is for two Support projects, the Long-Term Mitigation Endowment and the Watershed and Environmental Improvement Program, that do not have construction activities.

To better illustrate the progress made during FY 2019-2020, 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 No. of Regional Projects

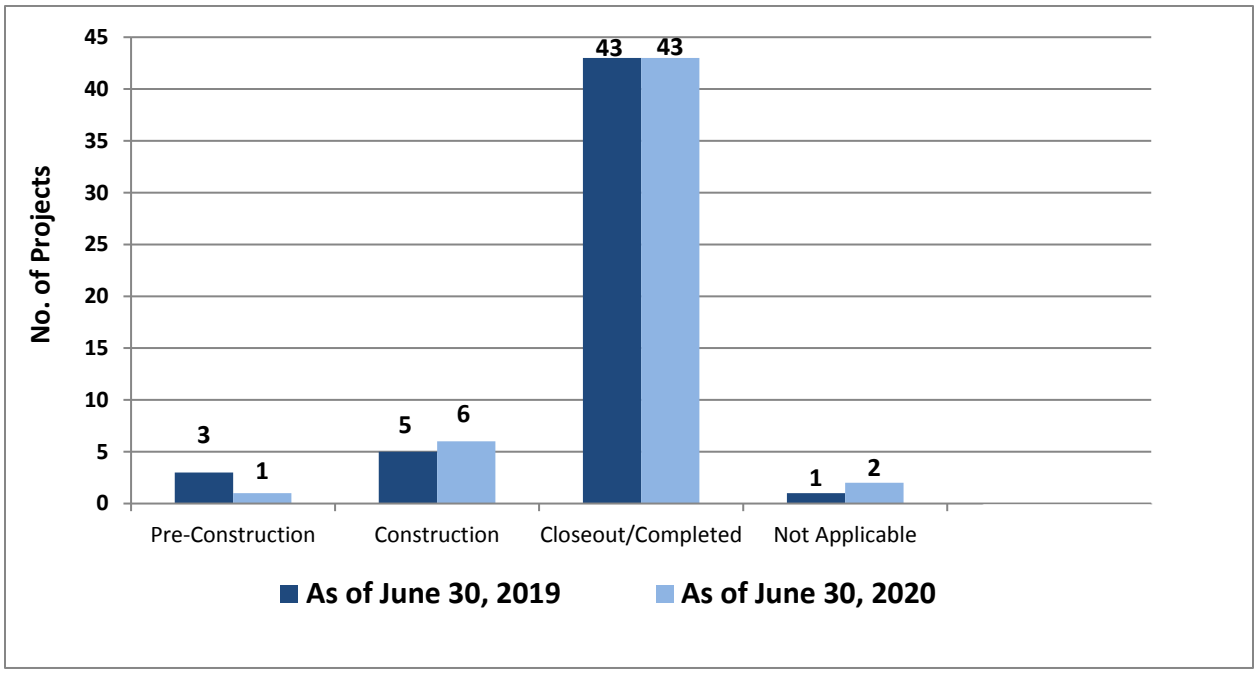
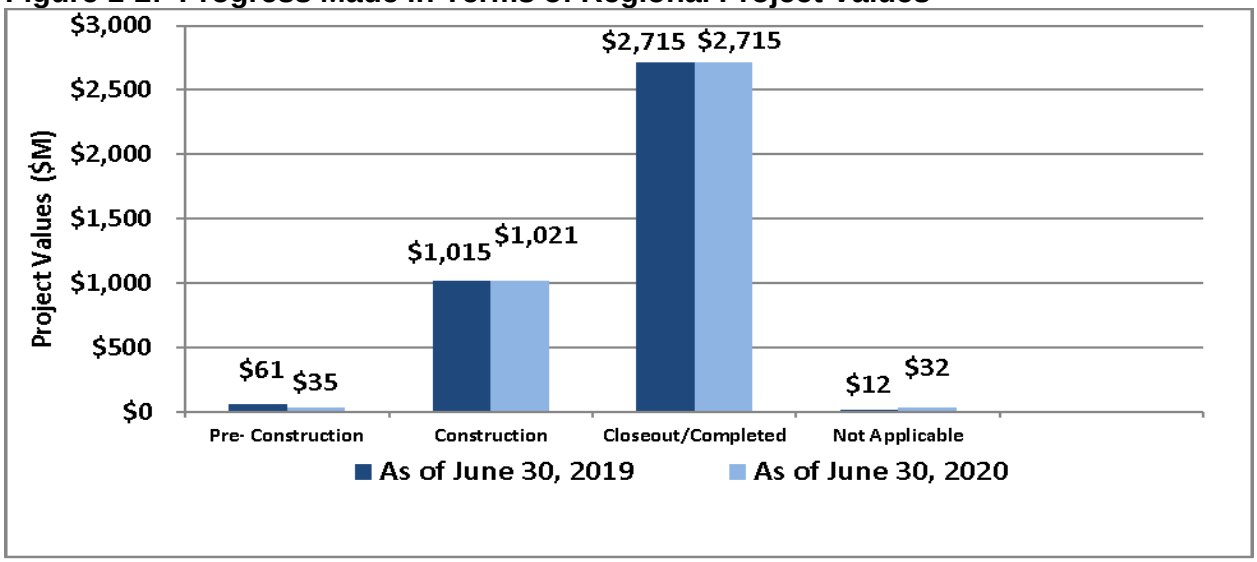


Figure 1-2: Progress Made in Terms of Regional Project Values



During the reporting period, Calaveras Dam Replacement project achieved final construction phase. The milestone is summarized below:

Final Construction Phase Completion:

Calaveras Dam Replacement – July 12, 2019

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, and April 14, 2020 respectively. All status updates in this Annual Report are referenced to the latest Baseline Budget and Schedule, approved on April 14, 2020, which is referred to as the "April 2020 Approved Baseline".

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2.0 PROGRAMMATIC INITIATIVES (FY2019-20)

This section describes some of the more important programmatic initiatives undertaken during FY 2019-20.

2.1 Shutdown Management

The WSIP team continued to actively manage the WSIP shutdowns during FY 2019-20. Table 2-1 summarizes the WSIP shutdowns that were active in FY 2019-20. Overall to date, 210 (or 98%) of the 215 WSIP system shutdowns and hot taps have been completed as shown in Figure 2-1. Two shutdowns were completed during FY 2019-20, and five shutdowns are active or planned.

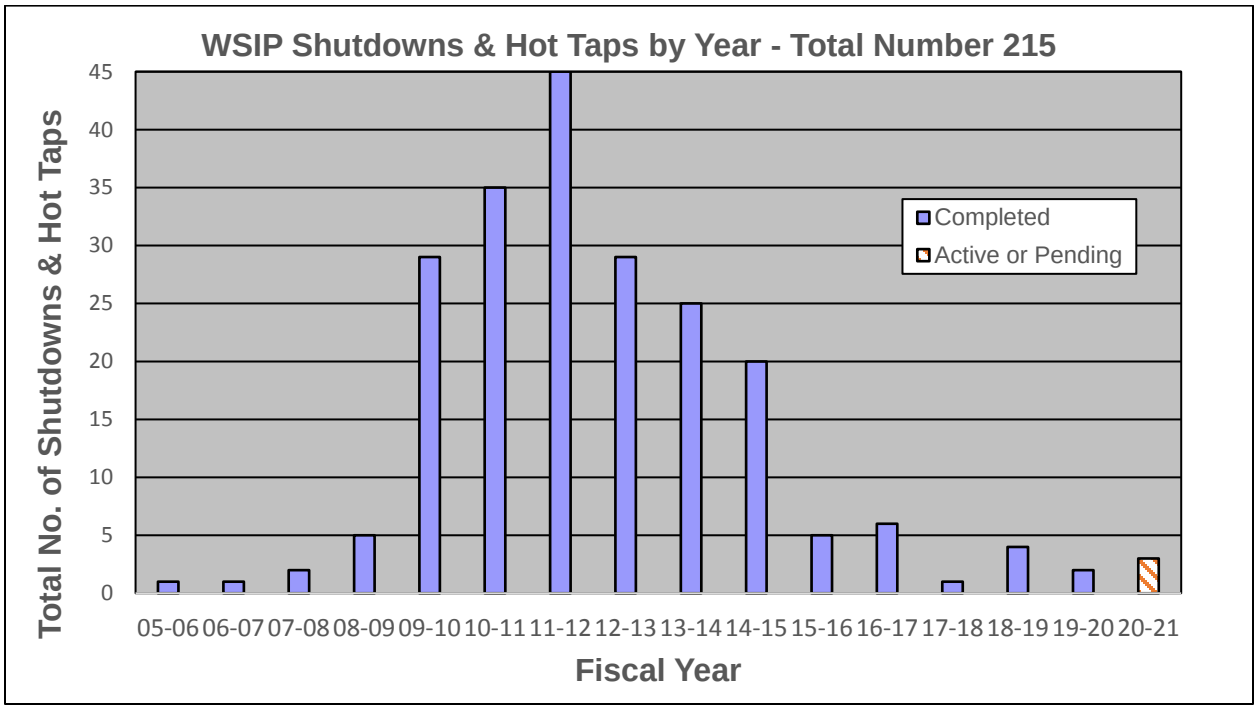
To mitigate operational risks, the SFPUC continues to carefully plan and stagger outages at the various water facilities. Whenever there is a forecasted change to a contract start date, a pre-purchased equipment delivery date, or a contractor's equipment delivery date, the impact on the schedule of a contract's shutdowns is analyzed. The SFPUC has found that in most cases, existing shutdowns can be maintained, or work-around strategies can be identified. In the rare cases where a shutdown window needs to be moved, a program-level analysis is undertaken to assess the potential impact on other system shutdowns. Potential changes to the overall WSIP Master System Shutdown Schedule are discussed at weekly Water Supply and Treatment Division (WSTD) and Hetch Hetchy Water and Power (HHWP) Operations Meetings, at bi-monthly WSIP Shutdown Coordination Meetings, at quarterly HHWP/WSTD coordination meetings, and at contract specific break-out meetings which include representatives from the WSIP team and WSTD Operations staff. Also, part of the shutdown coordination effort involves juggling WSIP shutdowns and WSIP warranty shutdowns simultaneously with operational shutdowns and non-WSIP shutdowns.

Table 2-1: Summary of Shutdowns & Hot Taps Started & Completed in FY19-20

	Shutdowns and Hot Taps	Date Started	Date Completed
1	BDPL2	12/9/2019	2/28/2020
2	BDPL3	5/19/2020	6/26//2020

BDPL – Bay Division Pipeline

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



2.2 Environmental Program

CEQA

The total number of California Environmental Quality Act (CEQA) documents approved to date for WSIP regional projects is as follows: Seventeen (17) Environmental Impact Reports (EIRs) certified, seven (7) Initial Study/Mitigated Negative Declarations approved, and thirteen (13) Categorical Exemptions issued. During FY 2019-20, the Final EIR for the ACRP was certified by the San Francisco Planning Commission on April 16, 2020 and adopted by the (SFPUC) Commission on April 28, 2020.

Resource Agency Permits

One hundred (100) resource agency permits have been obtained since the start of the Program; permitting is now 99% complete. No new permits were issued during FY 2019-20. Only one project, the ACRP in the Sunol Region, requires the issuance of one new permit. Permitting is complete in all other regions.

Environmental Construction Compliance

During FY 2019-20, the WSIP environmental construction compliance staff participated in construction activities on two Sunol Region projects and on one San Francisco Region project. Construction activities on one Sunol Region project (Calaveras Dam Replacement Project (CDRP)) and one sub-project (Fish Passage Facilities at Alameda Creek Diversion Dam (ACDD)) were substantially completed during the prior fiscal year. This year, staff on

these projects prepared and submitted final reports for the CEQA Lead Agency (the San Francisco Planning Department) and for the resource agencies and performed as-needed training and field inspections. For the San Francisco Regional project, RGSRP, WSIP environmental construction compliance staff did not perform any inspections because field activities were minor and within a developed area. Environmental construction compliance for projects includes contractor environmental training; San Francisco Planning Department and resource agency coordination; resolution of compliance events; amendment of existing permits; and implementation of required local, State, and Federal reporting procedures. In addition, revegetation of WSIP sites in areas that are only temporarily affected by construction is underway, as required by CEQA mitigation measures and resource agency permits. During FY 2019-20, revegetation monitoring was completed for the Harry Tracy Water Treatment Plant. As of the end of FY 2019-20, June 30, 2020, revegetation work has been completed on fourteen (14) WSIP project sites, comprising approximately 152 acres. Work on ten (10) additional project sites comprising over 358 acres continues. These activities were initially performed under the Vegetation Restoration of WSIP Post Construction Sites Project (CUW38803) and have been and are continuing under Water Enterprise operations.

While implementing mandated mitigation measures and permit conditions, the WSIP environmental construction compliance staff, led by the Bureau of Environmental Management, resolved several challenges during construction, thus successfully avoiding construction delays. Challenges included discovery of cultural and paleontological resources, nesting of migratory birds at construction sites, and need for proper handling of construction water. During FY 2019-20, the remaining construction activities and type of work (i.e. the work during the reporting period being primarily on or within built facilities) only warranted limited, as-needed inspections that were not tallied; no compliance issues occurred. The WSIP thus remains 99% compliant as it was last year, and has not received any violation notices from any resource agency that issued a project permit (including U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, National Marine Fisheries Service, Regional Water Quality Control Board, the State Historic Preservation Office, and the Bay Conservation and Development Commission). The 1% non-compliance issues during the prior year were successfully resolved by the construction contractors. Environmental construction compliance inspections will increase with the start of construction of the ACRP and Phase 2 of the RGSRP.

2.3 Public Outreach Program

The Public Outreach Team for the WSIP continues to support the completion of WSIP projects in FY 2019-20.

The Communications and Public Outreach Team created and launched a new interactive geographic information system (GIS)-based map for the agency's website (https://sfwater.org). The "Construction in Your Neighborhood" map features all active water capital and WSIP construction projects in an easily searchable format.

Work on the RGSRP Phase I focused on preparing the well stations for initial start-up testing activities. Communications staff responded to constituent questions and liaised between the project team and local municipalities where the well stations are sited.

The Outreach team continued to highlight the successes of the Calaveras Dam Replacement Project. This included presenting to the Sunol Citizens Advisory Council. The New Calaveras Dam has been a backdrop for several media stories – the latest being a joint project between the San Jose Mercury News and KGO 7. Several tour groups have also visited the completed New Calaveras Dam this year.

The outreach team combined its successful East Bay and Peninsula blogs into the new SFPUC NewsRoom (https://sfpucnewsroom.com). SFPUC staff use this site to post engaging content and photos on a regular basis.

The Public Outreach Team devoted a large amount of time this year to archiving each WSIP project. The team created comprehensive fact sheets with photos about each of the WSIP Projects. These fact sheets include in succinct detail the purpose of each project, details of construction, project budget, contractor, designer, construction timelines, and representative photos. This archiving of the eighty-seven (87) Regional and Local WSIP projects had become essential at this time to accomplish, since many staff who worked on these projects are either retiring or moving on to new positions elsewhere and may not remain available to share their insightful overviews.

The outreach team also facilitated submittals for industry awards during the reporting period. The WSIP program has received more than 66 industry awards since 2010.

The COVID-19 pandemic has created particular challenges to public outreach efforts. The WSIP Communications team began developing virtual tours of SFPUC facilities this year, including highlights from WSIP projects, in response to current challenges from the shelter-in-place order. These virtual tours will launch early in the next reporting period, in July 2020.

2.4 WSIP Revisions in FY 2019-20

In early 2020, 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 the schedules for five WSIP projects should be extended with new completion dates. On March 13, 2020, the SFPUC notified the Bay Area Water Supply & Conservation Agency (BAWSCA) that the Commission would be considering changes to the WSIP at a public hearing on April 14, 2020, and BAWSCA forwarded the notification to the 26 wholesale agencies it represents to comply with the change notice requirements of the Wholesale Regional Water System Security and Reliability Act. In addition, the Notice of Public Hearing and all supporting documents submitted to BAWSCA were posted on the SFPUC Website. BAWSCA provided comments on the WSIP revisions outlined in the Notice of Public Hearing in a letter dated April 7, 2020. On April 14, 2020, following a 30-day review period, the Commission, per Resolution No. 20-0070, adopted the revisions to the program schedule, including extending completion dates of five WSIP projects (Alameda Creek Recapture Project, Calaveras Dam Replacement Project, WSIP Closeout – San Joaquin Region, WSIP Closeout – Bay Division Region, and WSIP Closeout – Peninsula Region) and extending the overall program completion date of the WSIP from December 30, 2021 to May 5, 2023.

A WSIP Notice of Changes (NOC) Report that documents the above-cited schedule changes is provided in Appendix A. All notifications, approvals and reports were made in accordance with the change notice requirements of the Wholesale Regional Water System Security and Reliability Act.

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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 April 2020 Approved Baseline.

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 (4) goals, Water Quality, Seismic Reliability, Delivery Reliability, and Water Supply, are the goals that are used to determine project design criteria. The last two (2) goals, Sustainability and Cost-Effectiveness, are overarching program goals that are not applied to specific criteria at the project level. Thus, these last two (2) goals are infrequently referred to in project and program documents.

3.2 Progress Towards Meeting LOS Goals

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

Table 3-2 lists the projects with their individual contributions to LOS goals and indicates which projects have been substantially completed. This tabulation demonstrates the progress that has been achieved in the WSIP toward meeting these goals. As of the end of FY2019-20, 41 of the 43 Regional WSIP projects with specific LOS goals have achieved their 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	07/07/22				P		0%
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 (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) 99%
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 2)	(A) 07/23/12 (B) 12/31/17 (C) 02/28/21				P	(A) 07/23/12	(A) 100% (B) 99% (C) 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, are in construction and final design phases, respectively. Both projects have encountered significant challenges that have delayed the projects' completion. For the RGSRP, changes during construction to chemical feed and flow monitoring systems were required at most of the well sites. In addition, as the wells began start-up testing, groundwater quality issues including raw water ammonia and high levels of corrosivity were discovered at some of the wells. While most of the identified chemical feed system changes will be completed under this project, solutions to the emerging water quality issues that require additional planning to determine best treatment options will be resolved under a future project. More information is included in Section 6.5. Because the wells were only operated for start-up testing in FY2019-20, there is no information currently available on the groundwater sustainable yield and contribution to LOS goals.

The ACRP Final EIR was certified by the San Francisco Planning Commission and approved by the SFPUC in April 2020. The final 95% design of the project was completed in June 2020. The Final EIR included some project operational changes to gain stakeholder support for project approval. These changes include restricting schedule for facility operations to outside of the steelhead migration period and maintaining higher pond elevations. The SFPUC still needs to acquire environmental permits from the California Department of Fish and Wildlife. The project yield is anticipated to be around 6,000 acre-feet per year, but this yield will not be confirmed until all permits have been received and the project is operational. Construction completion is anticipated in 2023, and operations will begin thereafter.

The Lower Crystal Springs Dam project contributes to Water Supply LOS goal as a secondary goal. While the project has been completed, the Lower Crystal Springs Reservoir cannot fully achieve the secondary water supply goal until the reservoir is allowed to be refilled completely, following re-establishment of sensitive flora around the rim of the reservoir, to restore the full level of reservoir storage. Efforts to re-establish this flora are ongoing.

4.0 PROJECT SCHEDULES

As of June 30, 2020, the overall WSIP is forecast to be complete in May 2023, which is consistent with the current baseline schedule approved as part of the April 2020 Approved Baseline. The April 2020 Approved Baseline extended the overall approved completion date from December 30, 2021 to May 5, 2023. Any future proposed schedule changes would need to be approved by the San Francisco Public Utilities Commission, in accordance with the requirements of AB1823.

All but two projects with Level of Service (LOS) goals involving construction activities (ACRP and RGSRP) have achieved their LOS goals and objectives. Three other support projects, the Bioregional Habitat Restoration (BHR) Program, the Watershed Environmental Improvement Program, and the Long-Term Mitigation Endowment), as well as the four WSIP Closeout projects will also extend to near the end of the program; however, these projects do not directly contribute to the system's LOS.

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 to forecast dates that accord with the best available information available at the given moment the forecast dates are reported in 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).

4.2 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 WSIP Management Team 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, RBOC, and BAWSCA) and are posted on the SFPUC's website (sfwater.org/wsip). The WSIP Director presents these quarterly reports to the Commission and makes themself available for questions related to the reports at a Commission meeting open to the public quarterly. 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 Communication 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).

4.3 Project Schedule Forecast and Variances

The status of schedule forecasts and variances for WSIP Regional Projects are shown in Table 4-1 as of the end of FY 2019-20. 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, one (1) active Regional WSIP Project is currently forecasted to be completed behind schedule in accordance with the current approved completion dates. The forecasted completion date for the WSIP's RGSRP has been extended by 10 months and is due to the transfer of remaining work from Contract B to Contract C. The approved project-level and phase-level schedules are included in Appendix B. Additional detail regarding the forecasts presented below may be found in the WSIP Quarterly Report for the 4th Quarter of FY 2019-20 (Appendix C).

Table 4-1: Project Schedule Forecast and Variances

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2020 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	-	03/31/2021	03/31/2021	-
Sunol Valley Region					
CUW35201	Alameda Creek Recapture Project	5/25/2012	05/05/2023	05/05/2023	-
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	5/25/2012	03/31/2021	03/31/2021	-
CUW37402	Calaveras Reservoir Upgrades *(Completed)*	6/16/2006	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 2020 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	-	6/30/2021	6/30/2021	-
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)*	1/31/2014	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	-	12/31/2020	12/31/2020	-
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	-

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2020 Forecasted Completion	Schedule Variance (Calendar Days)
CUW36102	Pulgas Balancing - Discharge Channel Modifications *(Completed)*	8/5/2013	7/30/2010	7/30/2010	-
CUW36103	Pulgas Balancing - Structural Rehabilitation and Roof Replacement *(Completed)*	1/27/2013	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)*	8/8/2013	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)*	6/1/2006	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)*	7/1/2009	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)*	6/16/2011	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	-	08/05/2021	08/5/2021	-
San Francisco Regional Region					

Project No.	Project Name	2005 Approved Completion	Current Approved Completion [1]	June 2020 Forecasted Completion	Schedule Variance (Calendar Days)
CUW30103	Regional Groundwater Storage and Recovery	2/15/2014	12/30/2021	10/21/2022	291
CUW35801	Sunset Reservoir - North Basin *(Completed)*	5/6/2009	9/10/2010	9/10/2010	-
CUW37201	University Mound Reservoir - North Basin *(Completed)*	3/10/2011	3/29/2013	3/29/2013	-
Support Projects					
CUW36302	System Security Upgrades *(Completed)*	2/24/2012	9/28/2018	4/9/2019	(193)
CUW38801	Programmatic EIR *(Completed)*	1/18/2008	6/30/2009	6/30/2009	-
CUW38802	Bioregional Habitat Restoration	-	9/30/2021	9/30/2021	-
CUW38803	Vegetation Restoration of WSIP Construction Sites *(Completed)*	-	6/30/2016	6/30/2016	-
CUW38804	Long Term Mitigation Endowment	-	9/30/2021	9/30/2021	-
CUW39201	Program Management Project	6/29/2014	12/30/2021	12/30/2021	-
CUW39401	Watershed Environmental Improvement Program	6/1/2013	1/8/2021	1/8/2021	-

[1] Incorporates the April 2020 Approved Baseline schedule.

5.0 PROJECT BUDGETS

As of June 30, 2020, the forecasted overall WSIP total program cost (regional and local projects) is $4,787.8M, which is the same as the Commission Approved Budget (April 2020 Approved Baseline). As of the end of FY 2019-20, the current forecasted remaining construction contingency is $7.29M, not including contingency budget reserved to cover the June 2020 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 $18.6M 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 must prepare monthly budget updates/forecasts for all project phases, and review and analyze them carefully to identify cost issues and projected cost overruns at project completion. These updates allow for the measurement of performance against baseline. In standing review meetings, all current and projected cost overruns are discussed and evaluated, and project teams are expected to address the issues and come up with a plan to mitigate project variances.

Change Management

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

Management of Construction Costs

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

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

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

Control of Remaining Delivery Costs

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

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

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

5.2 Project Budget Forecast and Variances

The status of cost forecasts for WSIP Regional Projects are shown in Table 5-1 as of the end of FY 2019-20. 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 excluding RGSRP and ACRP are currently forecasted to be completed on or under budget. The RGSRP is currently forecasted at $9.6 million over the approved budget. This variance, an increase of $2.4M from the last reporting period, is primarily due to modifications to chemical systems, retrofit of transmission line flowmeters, changes to programming, and pump performance issues resulting from corrosion and other factors. The ACRP is forecasting costs that are $3.6 million over the approved budget; this increase is mostly due to the additional time and analysis to recirculate the Draft EIR and respond to comments, the updates to the design documents to meet the Final EIR, and the increases in construction duration and escalation costs. Funding would be available to cover the two projects' budget shortfalls from the remaining Director's Reserve, currently at $18.6 million for the entire WSIP. Additional detail regarding the forecasts presented below may be found in the WSIP Quarterly Report for the 4th Quarter of FY 2019-20 (Appendix C).

Table 5-1: Project Budget Forecast and Variances

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2020 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	-	$4,376,164	$3,876,376	$499,788
Sunol Valley Region					
CUW35201	Alameda Creek Recapture Project	$18,809,304	$34,000,006	$37,645,000	($3,644,994)
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	$256,511,407	$823,091,765	$812,618,729	$10,473,036
CUW37402	Calaveras Reservoir Upgrades *(Completed)*	$1,740,055	$1,690,552	$1,690,552	-
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	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2020 Forecasted Cost	Cost Variance
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	$73,623,296	$72,194,219	$1,429,077
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)*	-	$216,871,156	$216,722,172	$148,984
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	-
CUW39301	BDPL No. 4 Condition Assessment PCCP Sections *(Completed)*	$2,000,000	$1,937,599	$1,937,599	-
CUWBDP0101	WSIP Closeout - Bay Division	-	$4,398,775	$3,800,593	$598,182
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	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2020 Forecasted Cost	Cost Variance
CUW36105	Pulgas Balancing - Modifications of the Existing Dechloramination Facility *(Completed)*	-	$5,390,031	$5,390,031	-
CUW36501	Cross Connection Controls *(Completed)*	$6,111,779	$3,948,944	$3,948,944	-
CUW36601	HTWTP Short-Term Improvements (Demo Filters) *(Completed)*	$4,381,375	$3,067,903	$3,067,903	-
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)	-	$38,825,346	$38,825,346	-
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	-	$13,579,680	$13,579,680	-
San Francisco Regional Region					
CUW30103	Regional Groundwater Storage and Recovery	$39,233,443	$138,793,314	$148,350,433	($9,557,119)
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)*	-	$15,201,310	$14,700,669	$500,641
CUW38801	Programmatic EIR *(Completed)*	$9,271,001	$10,730,684	$10,730,684	-

Project No.	Project Name	2005 Approved Cost	Current Approved Cost [1]	June 2020 Forecasted Cost	Cost Variance
CUW38802	Bioregional Habitat Restoration	-	$94,063,483	$94,063,483	-
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	$112,747,230	$112,747,230	-
CUW39401	Watershed Environmental Improvement Program	$20,000,000	$20,000,000	$20,000,000	-

[1] Incorporates the April 2020 Approved Baseline.

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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 2019-20 is summarized in Table 6-1.

Table 6-1: Status of San Joaquin Regional Projects as of June 30, 2020

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	Construction

As of June 30, 2020, construction has been completed for all of the region's seven main construction contracts; the WSIP Closeout -San Joaquin Project is active in various phases.

Achievements

The project team completed the design of the solar panel installations at Oakdale Portal, Knights Ferry Throttling Station, and San Joaquin Junction No. 4 that will eliminate the need for propane generators at these sites. The scope of work includes replacement of the battery banks at all three sites and installation of a new backup generator at the Oakdale Portal site. A Job Order Contract (JOC) is being used for the construction work, and lithium ion batteries were ordered for each site. Construction is scheduled to begin in the next fiscal year.

Challenges

Construction was delayed due to long procurement time for the lithium ion batteries; however, the work is anticipated to be completed in the next fiscal year within the approved budget and schedule.

6.2 Sunol Valley Region

The status of all regional projects in the Sunol Valley Region as of the end of FY 2019-20 is summarized in Table 6-2.

Table 6-2: Status of Sunol Valley Regional Projects as of June 30, 2020

Project/Contract Name	Status
Alameda Creek Recapture Project	Design
Standby Power Facilities - Various Locations	Completed
New Irvington Tunnel	Completed
Alameda Siphon #4	Completed
Pipeline Repair & Readiness Improvements	Completed
Calaveras Dam Replacement (A) Fish Passage Facilities at Alameda Creek Diversion Dam (B)	(A) Construction – 100% Complete[1] (B) Construction – 98.6% Complete[1]
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 (various phases)

[1] Status of construction percentage complete is based on construction base bid plus approved change orders.

As of June 30, 2020, only one (1) of the eleven (11) Sunol Valley main regional projects remains in pre-construction; eight (8) projects are completed; one (1) project remains in construction; and the WSIP Closeout – Sunol Valley Project is active in various phases.

Achievements

The CDRP reached final construction completion on July 12, 2019, and the facility was turned over to Operations during the reporting period. A JOC contractor was brought on board and has started to complete several outstanding project items that were not included in the primary contract but are part of the overall project. These items include modification of security gates and fences and adjustment to the valve appurtenances. The Initial Fill Plan inspections required by the Department of Safety of Dams (DSOD) will resume once the reservoir reaches elevation 733.6 feet, which had not yet occurred at the end of the reporting period. Inspection of the dam at the second elevation hold point will then take place once the reservoir reaches elevation 745 feet to 750 feet. These two elevations may occur in the next reporting period and are dependent on rainfall.

Construction of the Fish Passage Facilities at Alameda Creek Diversion Dam Project (ACDD) was 99% complete, and the contractor has demobilized. There are two

outstanding items to be completed during the next reporting period. The first item is the repair of the debris rake and rack system, anticipated for repair during Summer or Fall 2020. The second item is the remaining portion of the wet testing to confirm performance of the facility during high creek flows. The contractor successfully completed the first part of the wet testing during the reporting period; the remaining portion is planned to be conducted during Winter 2020/2021 provided sufficient flow is available in Alameda Creek. Due to the delay for rake and rack system repairs and facility wet testing, final construction completion is forecasted for December 2020, and final administration closeout for March 2021. Some of the miscellaneous items to be completed through JOC contracting for this project include installation of a wildlife exclusion fence, modification to the electrical systems, and provisioning of a reliable power supply for the SCADA and video systems. These items are currently under construction and will be completed during the next reporting period.

The primary focus of work on the ACRP during FY 2019-20 was to revise, publish, and finalize the Re-circulated Draft Environmental Impact Report (REIR). The REIR was certified and approved as the Final EIR in April 2020. The Project Team is applying for regulatory permits and revising the design to incorporate minor changes that were included in the Final EIR, updated code requirements, and some needed erosion repair work. The 95% design documents were completed during the reporting period, and the construction contract is anticipated to be advertised in Fall 2020.

The status of the on-going sub-projects that are part of the WSIP Closeout - Sunol Valley Region are as follows:

- Construction for the New Irvington Tunnel (NIT) Water Quality Equipment Relocation was completed, and all the closeout deliverables have been transmitted.
- Construction of the San Antonio Backup Pipeline (SABPL) Carrier Water System Modifications Phase 1 work was completed, which included the installation of new pipes and fittings. Phase 2 work will begin in the next reporting period and will include the installation of the equipment analyzers and control cabinets.
- Modification of the Mobile Pilot Plant for the SVWTP Polymer Feed Facility was completed, and the plant was turned over to Water Quality Division to perform treatment evaluations for the future polymer feed upgrade project. Design for the SVWTP Polymer Feed Facility will continue in FY2020-2021. Due to the sharing of funding between WSIP and Water Enterprise Capital Improvement Program (WECIP), this project will be continued, and will be reported as a part of, the WECIP starting FY2021-2022.

Challenges

Due to COVID-19, JOC contractors' progress in completing the outstanding items for the CDRP and Fish Passage Facilities was interrupted; however, both projects should be completed by the approved project completion date, March 2021. Fill testing at CDRP and wet testing of the Fish Passage Facility depend on sufficient water flow in Alameda Creek

and into the reservoir to meet the test requirements; it is hoped adequate flows will occur next winter to complete the testing.

The ACRP will initiate construction in the next reporting period. Some new areas of erosion are required to be mitigated for the facility installation; the design drawings are being updated, and the construction cost is anticipated to increase as a result.

For the SABPL Carrier Water System Modifications, the contractor was interrupted for Phase 2 work due to COVID-19. The contractor has committed to restart and complete the work in the next reporting period.

6.3 Bay Division Region

The status of all regional projects in the Bay Division Region as of the end of FY2019-2020 is summarized in Table 6-3.

Table 6-3: Status of Bay Division Regional Projects as of June 30, 2020

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	Construction

As of June 30, 2020, no (0) Bay Division regional projects/contracts remain in pre-construction; ten (10) projects are complete; and the WSIP Closeout – Bay Division Project has completed 5 out of 6 of its subprojects; the remaining 1 sub-project is in construction.

Achievements

For the sub-project, Bay Division Pipelines 1 & 2 Decommissioning, the Conceptual Engineering report was completed, concluding the entire scope of work for the subproject required to be completed under WSIP. During the reporting period, the project team for the Bay Division WSIP Closeout Project achieved all closeout deliverables for the subproject that constructed the BDPL No. 3 articulated box permanent ventilation fan and the BDPL No. 4 sump pump. For the final subproject BDPL No. 3 pipe and pipe support coating in the articulated vault, and v-ditch drainage system, the JOC contractor has started the work on both and will complete construction and closeout deliverables in the next reporting period.

Challenges

None.

6.4 Peninsula Region

The status of all regional projects in the Peninsula as of the end of FY2019-2020 is summarized in Table 6-4.

Table 6-4: Status of Peninsula Regional Projects as of June 30, 2020

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	Construction

As of June 30, 2020, 17 projects are complete, and the WSIP Closeout - Peninsula Region Project is in construction.

All WSIP projects in the Peninsula region have been successfully completed and closed out except for the WSIP Closeout – Peninsula Region project. For the closeout project, the Lower Crystal Springs Dam (LCSD) Stilling Basin Connecting Channel Project is 99% complete and will be completed in the next reporting period. During the reporting period, a gap in the parapet wall was repaired; drainage channels atop the dam were constructed; and a security assessment for the area around the dam and LCSD bridge have been completed. The remaining activities to be completed include construction of physical

security measures at the dam, and installation of fencing, a pre-fabricated vault, and flowmeters. Installation of the flowmeters and the pre-fabricated vault will be performed using the same JOC contractor as the other site work to prevent delay to this subproject. For remaining items at HTWTP, all work was completed during the year, except for purchase of a spare mixer that will be delivered in the next fiscal year.

Challenges

None.

6.5 San Francisco (Regional) Region

The status of all regional projects in the San Francisco Region as of the end of FY 2019-20 is summarized in Table 6-5.

Table 6-5: Status of San Francisco Regional Projects as of June 30, 2020

Project/Contract Name	Status
Regional Groundwater Storage & Recovery	(A) Phase 1 Test Wells: Completed (B) Phase 1 Construction: 98.6% Complete[1] (C) Phase 2: Pre-Construction
Sunset Reservoir - North Basin	Completed
University Mound Reservoir - North Basin	Completed

1. Status of construction percentage complete is based on construction base bid plus approved change orders.

As of June 30, 2020, and during this reporting period, only one (1) of the three San Francisco Regional projects/contracts is still active. The two (2) other projects in this region were completed and closed out in prior reporting periods.

Achievements

For Phase 1 (associated with Contract B) of the Regional Groundwater Storage and Recovery Project, training of operators and 4-day continuous testing at five (5) well stations have been completed during the reporting period. During the 4-day tests, treated groundwater was successfully delivered into the potable water transmission system. Modifications are continuing to two well pump systems to address problems from decline of pump performance, most likely due to corrosion issues. The project team continues addressing other issues such as chemical system modifications; undersized carrier water pumps (for the modified chemical feed systems); retrofit of existing transmission line flowmeters; and other changes to programming, access, and treatment testing.

For Phase 2, the project team completed the Conceptual Engineering Report, the 35% design, and the 65% design for South San Francisco (SSF) Main well station and for the follow up work from Phase 1 and presented this to SFPUC management and Cal Water. The 95% design phase has started. Coordination with local governments and utility agencies including City of South San Francisco, BART, CALTRANS, Flood and Sea Level Rise Resiliency District, and PG&E has been initiated.

Challenges

For Phase 1 (associated with Contract B), there are increased cost and schedule delays due to the modifications to address changes to the liquid ammonium sulfate chemical system, issues related to corrosion and pumping capacity decline for three well pumps, changes to programming, and modifications to chemical truck access and a chemical room for safety requirements. The corrosion and pumping capacity issues are being investigated for best resolution; replacement equipment and corrosion control facilities are being designed and will be installed in the next reporting period. Further monitoring and calibration are needed to acquire more accurate and consistent readings on the transmission line flowmeters. These changes have resulted in the delay of the 4-day testing and commissioning of all well stations.

For Phase 2, the project team experienced a delay during design due to delay in receipt of as-built information from other utilities necessary to complete the design drawings. This delay can be made up during the next reporting period.

7.0 RISK MANAGEMENT

7.1 WSIP Risk Management Protocol

Project risk registers for a specified 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 risks to the project and later meet with the risk analyst/risk manager in order to provide a qualitative assessment of all risks and to identify mitigation methods to address the risks. Once the qualitative assessment of the risk register is completed, a smaller team, consisting of the project manager, project engineer, and project construction manager, reviews each individual risk thoroughly in order to identify the probability of occurrence along with the probable cost and schedule impacts. Once the risk register has been finalized with these values, meetings to update the risk register occur between the project construction manager, project manager, and risk analyst on a monthly basis.

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

7.2 Status of Risk to Active Construction Projects

During FY 2019-2020, the WSIP team continued to implement and refine its Risk Management Program. A total of fourteen (14) risks were closed during the reporting period. In addition, the risk registers for the following construction contracts have been closed:

- Fish Passage Facilities at Alameda Creek Diversion Dam

This brought the total of active construction risk registers and the total of individual risks managed through ARM as of the end of the reporting period to one (1) and ten (10), respectively.

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

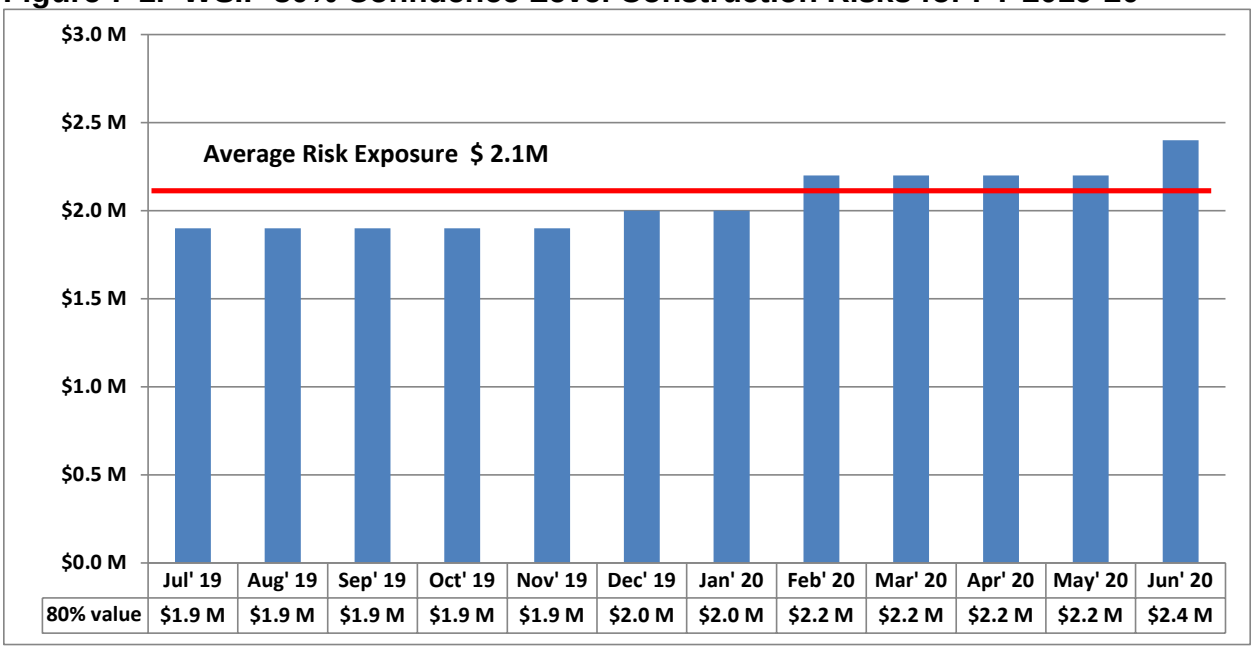
Table 7-1: Summary of Active Construction Risk Registers as of June 30, 2020

Construction Contract[1]	Date[2]	No. of Risks[3]	Risk Value ($M)[4]
Regional Groundwater Storage and Recovery	June-15	10	2.4
Cumulative active risks @ 80% confidence level		**10**	**2.4**

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, 2020.
4. Total value of all risks at eighty percent (80%) confidence level as of June 30, 2020.

Figure 7-1 shows the reporting period began with a cumulative risk exposure at the 80% confidence level of $1.9M in July 2019, which is a dramatic decrease from the $4.0M reported in June 2018. This initial decrease was due to the elimination of all Fish Passage Facilities risks. The risk exposure at the 80% confidence level remained the same from July 2019 to November 2019. The 80% confidence level had a minor increase, to $2.0M, during December 2019 and January 2020 due to unexpected challenges during testing for RGWSR. The unexpected challenges during testing caused further increase in February 2020, to $2.2M, at the 80% confidence level, which then remained fixed at that level through May 2020. For June 2020, COVID-19 related challenges caused risk at the 80% confidence level to increase to $2.4M.

Figure 7-1: WSIP 80% Confidence Level Construction Risks for FY 2019-20



The WSIP Risk Management System ranks risks based on a combination of the likelihood of occurrence and the potential cost impact to the SFPUC during construction should it 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. 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 one (1) active construction contract (RGSRP) and one (1) future construction contract (ACRP) that carry potential to impact the Program's overall cost and schedule,

All of the current top ten risks for active WSIP construction contracts, based on likelihood of occurrence and potential cost impact, belong to the RGSRP. Note in the next reporting period, when the ACRP initiates construction, risks for this project will be added. For RGSRP, the current highest risk addresses COVID-19 related issues. The second highest risk concerns the change of chemical use (during implementation) from aqueous ammonia to ammonium sulfate. The third highest risk considers challenges in meeting water quality requirements. Additional risks include the possibility of design errors and omissions; possible unexpected challenges during testing; challenges in meeting regulatory and operational requirements (testing); delays in finalizing permanent easements, including utilities; the turnover of key personnel; the possibility of untimely response to submittals/RFIs and the issuance of change orders; and encountering unforeseen underground utilities.

Table 7-2: Top 10 WSIP Risks as of June 30, 2020

Project	Risk Description	Occurrence Probability	Risk Value[1] ($K)	Mitigation
Regional Groundwater Storage and Recovery	COVID-19 related issues.	90%	180	Additional Remote Coordination
Regional Groundwater Storage and Recovery	Change of chemical use from aqueous ammonia to ammonium sulfate.	90%	152	Prepare design changes and secure vendor to supply ammonium sulfate.
Regional Groundwater Storage and Recovery	Challenges in meeting water quality requirements.	70%	700	Perform sampling tests for all wells to address ammonia issues; Finalize fluoridation addition technical memo.
Regional Groundwater Storage and Recovery	Design errors and omissions.	50%	515	Proactive review of plans and specs, along with RFIs and submittals.
Regional Groundwater Storage and Recovery	Unexpected challenges during testing	50%	420	Proactive management

Project	Risk Description	Occurrence Probability	Risk Value[1] ($K)	Mitigation
Regional Groundwater Storage and Recovery	Challenges in meeting regulatory and operational requirements (testing).	50%	390	Manage project team to complete review and re-design of remaining work in order to complete testing; coordinate with Operations on required parameters for testing.
Regional Groundwater Storage and Recovery	Delays in finalizing permanent easements including utilities and in securing agreements with local agencies for right of way access.	50%	292	Continue to work with property owners to finalize permanent access.
Regional Groundwater Storage and Recovery	Turnover of key personnel.	50%	292	Coordinate and manage resources.
Regional Groundwater Storage and Recovery	Delay in responding to Submittals/RFIs in a timely manner and issuing change orders in a timely manner.	35%	195	Coordinate and schedule resources.
Regional Groundwater Storage and Recovery	Encounter unforeseen underground utilities	20%	130	Review plans and specifications for existing conditions

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 over 97 percent completion 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 2020 Review of the Program Forecast

During early 2020, 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 the schedules for five WSIP projects should be extended by as much as 18 months with new completion dates in order to reflect current known construction schedules and remaining needs and requirements. The SFPUC did not recommend adjusting the budget for any of the projects at that time due to the uncertainty of potential cost changes, particularly with ACRP not even finished Environmental or Design Phase at the time. The recommended proposed revisions were documented in the March 13, 2020 Notice of Public Hearing for the proposed revised WSIP that was adopted by the Commission on April 14, 2020. The April 2020 Approved Baseline extended the program completion date from December 30, 2021 to May 5, 2023.

Because the April 2020 Approved Baseline only extended project and program completion dates, the SFPUC has continued to report budget variances in the project forecasts. There have been no proposed scope changes to any of the projects. At the time of the April 2020 Approved Baseline, the SFPUC did not propose revisions to schedule for the RGSRP. However, the SFPUC anticipates that at some point there may be need for revisions with respect to the RGSRP's schedule and budget due to several complications that have developed during project construction and start-up since 2017, which the SFPUC continues to evaluate and resolve. The SFPUC anticipates that it may propose revisions for the RGSRP for adoption by the Commission in approximately six months and would provide written notice not less than 30 days before the date that the Commission is to consider such proposed revisions. The SFPUC has been in communication with the Bay Area Water Supply and Conservation Agency (BAWSCA) concerning the potential need for revisions to the RGSRP, and BAWSCA agrees with the SFPUC's proposed approach. The SFPUC will continue to communicate with BAWSCA as it evaluates and develops potential revisions for the RGSRP and will keep BAWSCA informed as further information becomes available. While the SFPUC evaluates and develops potential revisions for the RGSRP, the forecasted project completion date for the project may trend beyond the current approved project completion date of December 30, 2021 until such changes are proposed to and adopted by the Commission, anticipated for its consideration in 2021.

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 budget line item 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 May 5, 2023. This schedule assumes: (1) that the ACRP contract will be awarded on time and constructed per the approved schedule; and (2) that the approved scope in Phase 1 and Phase 2 of the RGSRP can be fully constructed without additional changed conditions that may further delay the project by the forecasted project completion date. The SFPUC continues to assess the status of the RGSRP and may propose changes to schedule and/or budget in the future if warranted, in accordance with the change notice requirements of the Wholesale Regional Water System Security and Reliability Act.

As discussed in Section 7 of this report, the program-level risk analysis shows that the remaining program risk exposure at the "80 confidence level" is $2.4 million for active construction contracts as of June 30, 2020.

The remaining forecast construction contingency as of June 30, 2020 is $7.29 million after all current trends have been considered. In addition, the current forecast WSIP Director's Reserve Fund is $18.6 million. Therefore, a total of approximately $25.8 million are available to fund future risks, including both construction risks and unforeseen soft (non-construction) costs. If one conservatively assumes that up to $3 million is needed for future soft cost risk, this would leave approximately $22.8 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 (April 2020 Approved Baseline) 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, 2020, nine (9) projects were completed and one project remains in the construction phase.

Table 9-1: Status of AB 1823 Projects as of June 30, 2020

Project Name	Status
New Irvington Tunnel	Completed
Alameda Siphon #4	Completed
Calaveras Dam Replacement (A) Fish Passage Facilities at Alameda Creek Diversion Dam (B)	Construction – 100.0% Complete[1] Construction – 99.0% Complete[1]
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

[1] Status of construction percentage complete is based on construction base bid plus approved change orders.

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 now all achieved substantial construction completion 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.

The only project in the original list of AB1823 Projects that is considered to be in construction phase is the Contract B for Calaveras Dam Replacement Project, the Fish Passage Facilities at Alameda Creek Diversion Dam Project (ACDD); Contract A for Calaveras Dam Replacement reached Final Completion in July 2019. Because ACDD is 99% complete, it is anticipated that all AB1823 Projects will be completed in the next reporting period.

APPENDIX A

WSIP Notice of Changes Report
June 30, 2020

Report available on the SFPUC Website at the following address:

http://sfwater.org/index.aspx?page=306

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APPENDIX B

Current Approved WSIP Schedule
Regional Projects

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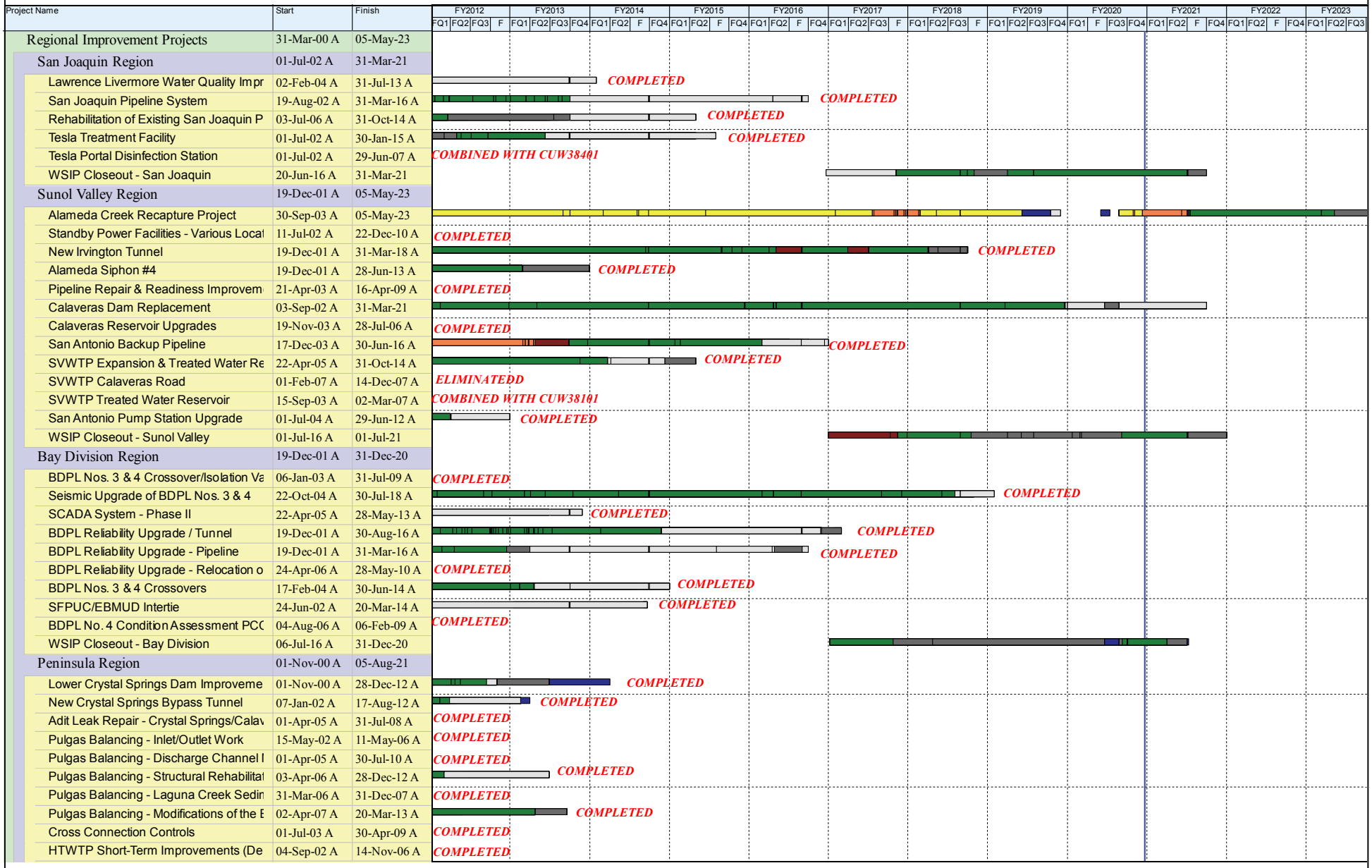
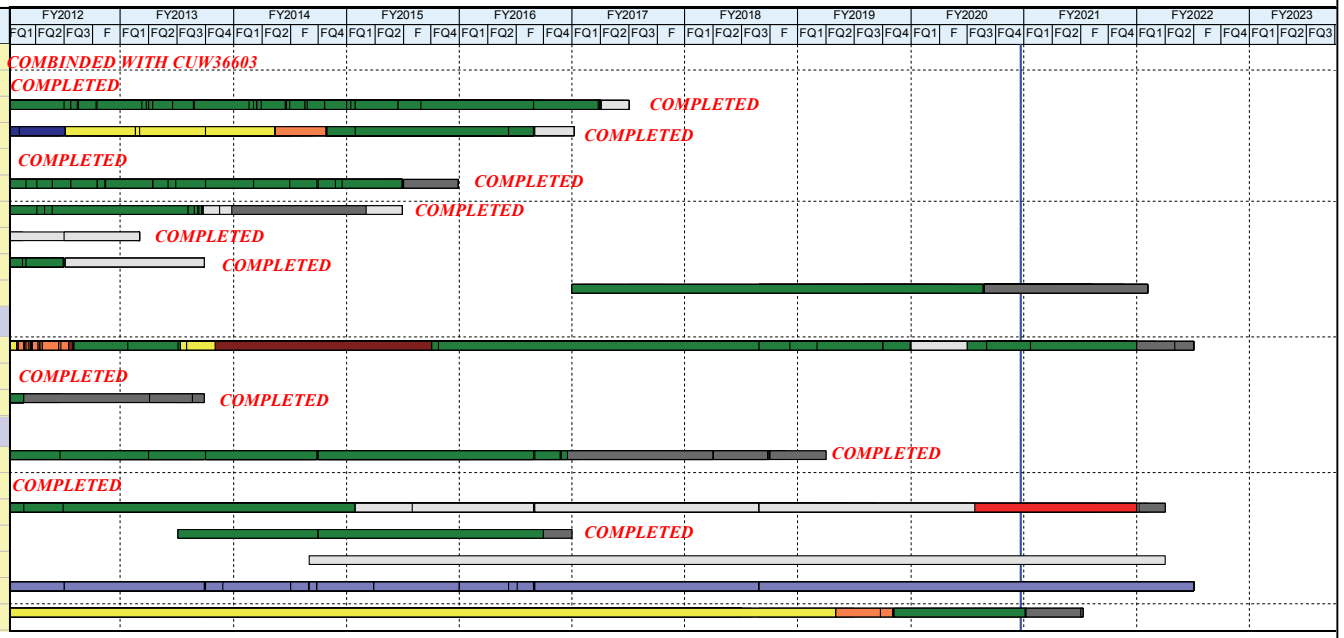
APPENDIX B: Current Approved WSIP Project-Level Schedules



APPENDIX B: Current Approved WSIP Project-Level Schedules

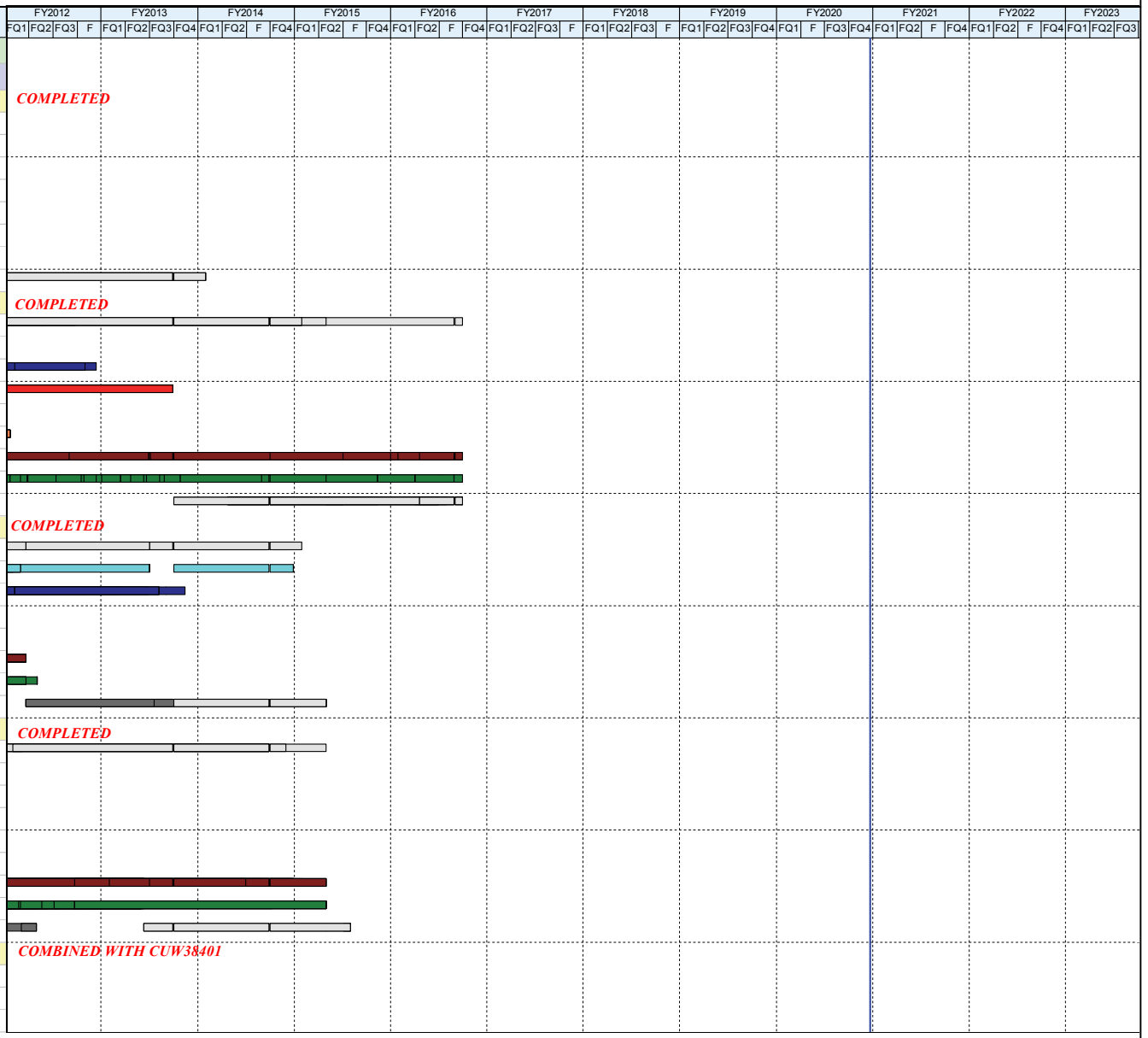
Project Name	Start	Finish
HTWTP Short-Term Improvements - Re	12-Jan-06 A	22-Feb-08 A
HTWTP Short-Term Improvements - Cc	03-Jul-06 A	28-Jul-10 A
HTWTP Long-Term Improvements	01-Jul-03 A	30-Dec-16 A
Peninsula Pipelines Seismic Upgrade	01-Jul-09 A	06-Jul-16 A
Capuchino Valve Lot Improvements	22-Apr-05 A	19-Aug-08 A
Crystal Springs/San Andreas Transmiss	18-Aug-03 A	30-Jun-15 A
Crystal Springs Pipeline No. 2 Replacen	15-Jan-04 A	31-Dec-14 A
San Andreas Pipeline No. 3 Installation	15-Jan-04 A	30-Aug-12 A
Baden and San Pedro Valve Lots Impro	03-Oct-05 A	29-Mar-13 A
WSIP Closeout - Peninsula	01-Jul-16 A	05-Aug-21
San Francisco Regional Region	31-Mar-00 A	30-Dec-21
Regional Groundwater Storage and Rec	01-Jun-03 A	30-Dec-21
Sunset Reservoir - North Basin	31-Mar-00 A	10-Sep-10 A
University Mound Reservoir - North Bas	24-Oct-05 A	29-Mar-13 A
Support Projects	13-Apr-04 A	30-Dec-21
System Security Upgrades	07-Jan-06 A	28-Sep-18 A
Programmatic EIR	13-Apr-04 A	30-Jun-09 A
Bioregional Habitat Restoration	06-Sep-06 A	30-Sep-21
Vegetation Restoration of WSIP Constru	02-Jan-13 A	30-Jun-16 A
Long Term Mitigation Endowment	05-Mar-14 A	30-Sep-21
Program Management Project	01-Aug-05 A	30-Dec-21
Watershed and Environmental Improver	02-Jan-07 A	30-Jul-21



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish
Regional Improvement Projects	31-Mar-00A	05-May-23
San Joaquin Region	01-Jul-02A	31-Mar-21
Lawrence Livermore Water Quality Impr	02-Feb-04A	31-Jul-13A
Project Management	02-Feb-04A	11-Mar-11A
Project Planning	02-Feb-04A	28-Sep-07A
Environmental Review	31-Aug-06A	25-Feb-09A
Design	01-Oct-07A	31-Mar-09A
Bid and Award	01-Dec-08A	25-Aug-09A
Construction Management	27-Feb-09A	11-Mar-11A
Construction	26-Aug-09A	11-Mar-11A
Close-Out	14-Mar-11A	31-Jul-13A
San Joaquin Pipeline System	19-Aug-02A	31-Mar-16A
Project Management	19-Aug-02A	31-Mar-16A
Project Planning	19-Aug-02A	28-Dec-06A
Environmental Review	17-Feb-04A	27-Mar-12A
Right of Way	02-Jan-07A	29-Mar-13A
Design	02-Jan-07A	23-Mar-11A
Bid and Award	27-Apr-09A	21-Jul-11A
Construction Management	03-Feb-09A	31-Mar-16A
Construction	13-Oct-09A	31-Mar-16A
Close-Out	01-Apr-13A	31-Mar-16A
Rehabilitation of Existing San Joaquin P	03-Jul-06A	31-Oct-14A
Project Management	03-Jul-06A	31-Jul-14A
Project Planning	03-Jul-06A	27-Jun-14A
Environmental Review	26-Sep-06A	31-Dec-12A
Design	31-Jul-06A	31-Mar-11A
Bid and Award	02-May-08A	31-Mar-11A
Construction Management	03-Jul-06A	19-Sep-11A
Construction	02-Oct-06A	01-Nov-11A
Close-Out	20-Sep-11A	31-Oct-14A
Tesla Treatment Facility	01-Jul-02A	30-Jan-15A
Project Management	01-Jul-02A	31-Oct-14A
Project Planning	01-Jul-02A	29-Jun-07A
Environmental Review	30-Jun-06A	25-Feb-09A
Right of Way	17-Mar-08A	16-Oct-08A
Design	15-Feb-07A	20-Nov-09A
Bid and Award	30-Jan-08A	10-Nov-08A
Construction Management	02-Feb-09A	31-Oct-14A
Construction	08-Sep-08A	31-Oct-14A
Close-Out	01-Jul-11A	30-Jan-15A
Tesla Portal Disinfection Station	01-Jul-02A	29-Jun-07A
Project Management	01-Jul-02A	29-Jun-07A
Project Planning	01-Jul-02A	29-Jun-07A
Environmental Review	19-Aug-04A	29-Dec-06A

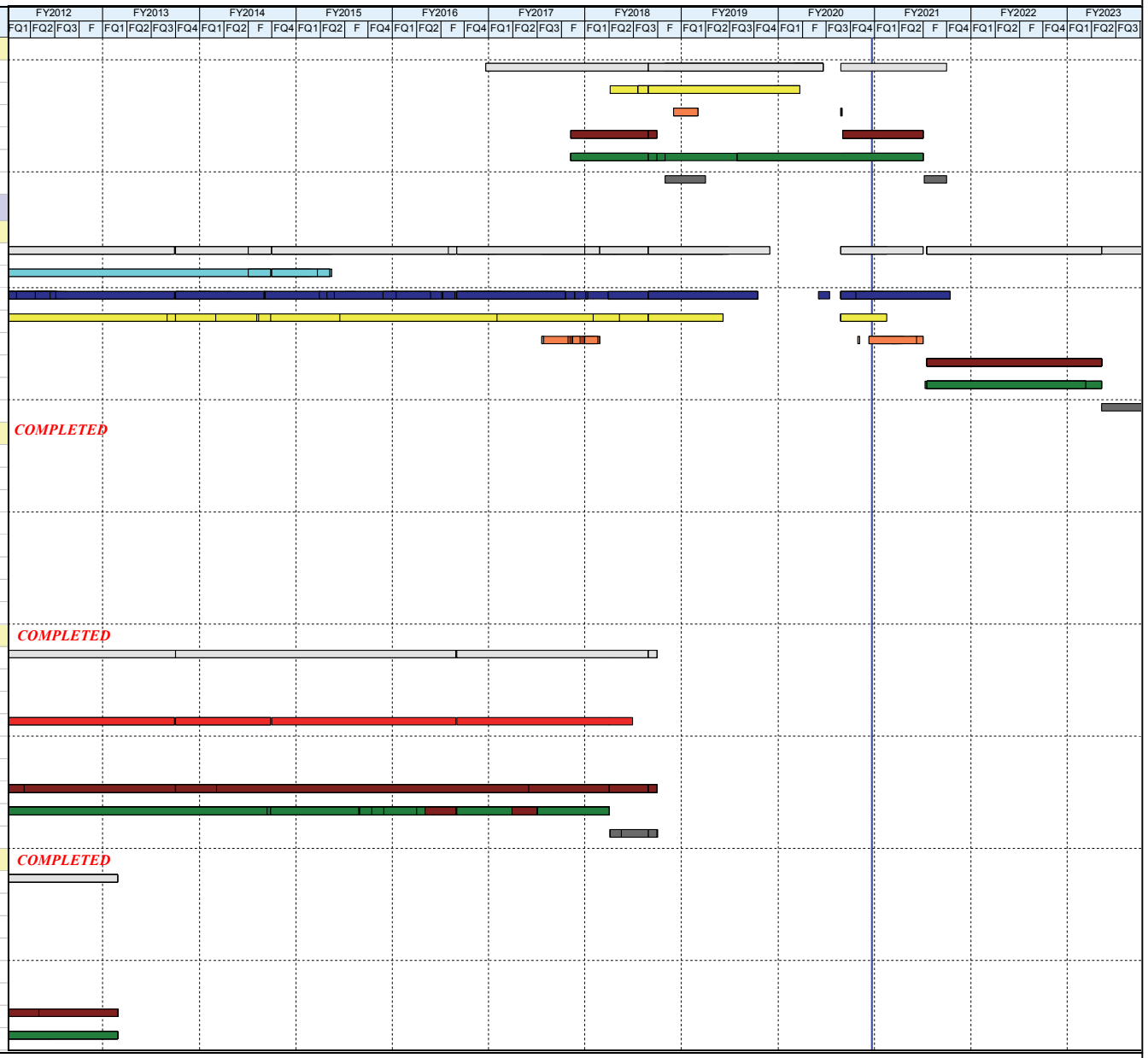


Project Management | Environmental | Right-of-Way | Construction Management | Closeout

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

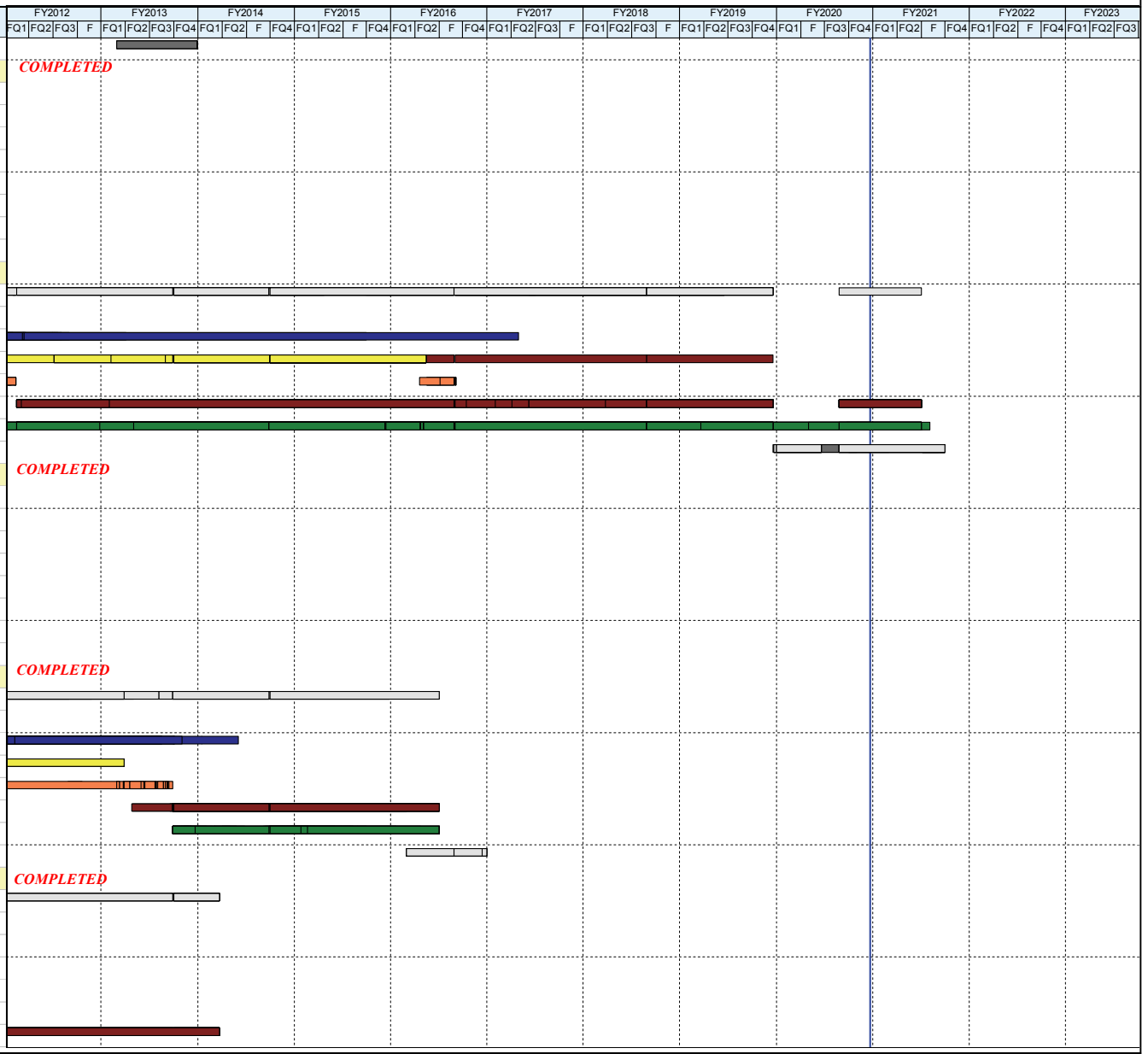
APPENDIX B: Current Approved WSIP Phase-Level Schedules

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



APPENDIX B: Current Approved WSIP Phase-Level Schedules

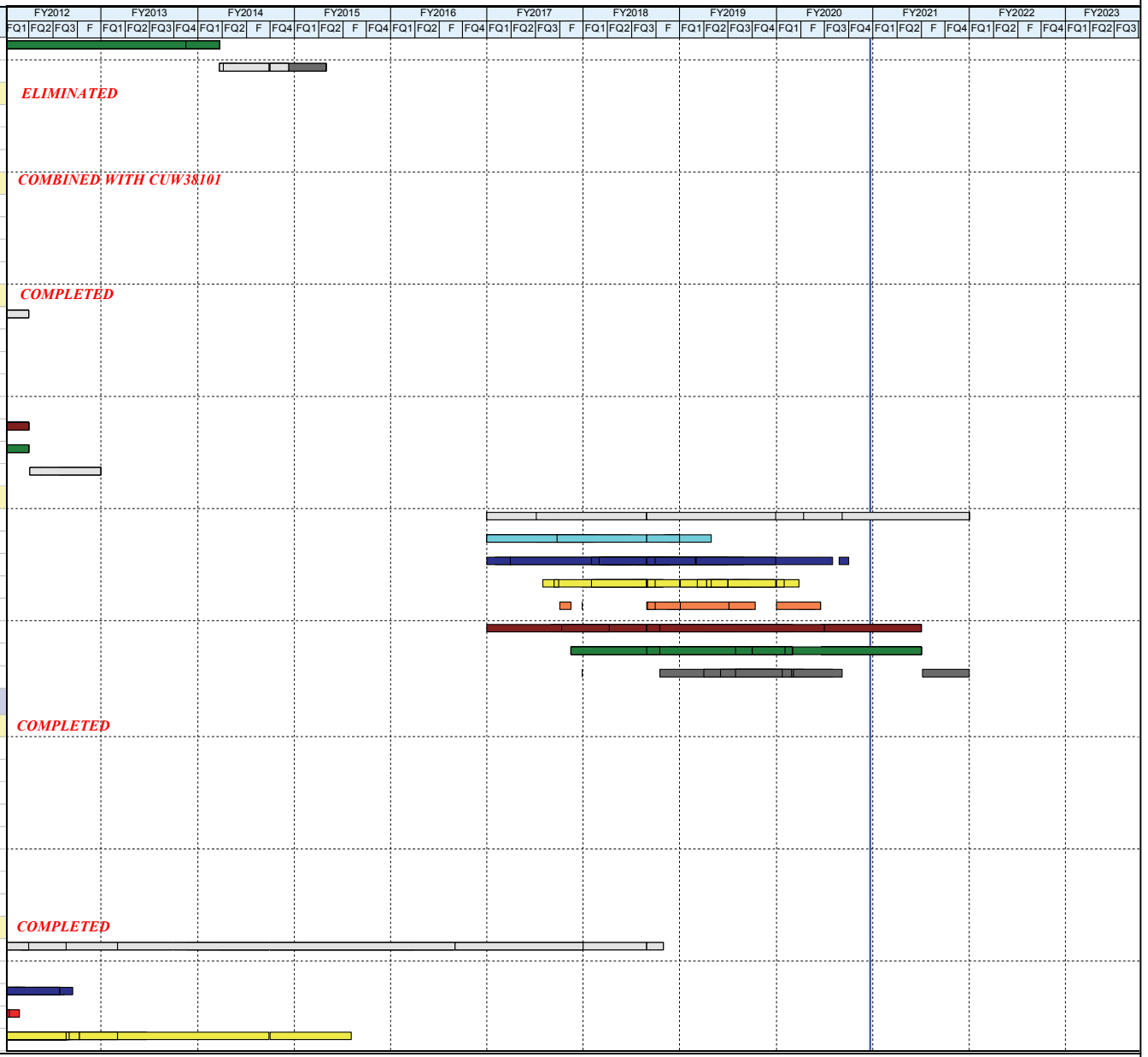
Project Name	Start	Finish
Close-Out	27-Aug-12A	28-Jun-13A
Pipeline Repair & Readiness Improvem	21-Apr-03A	16-Apr-09A
Project Management	21-Apr-03A	15-Oct-08A
Project Planning	21-Apr-03A	30-Mar-07A
Environmental Review	14-Jan-05A	29-Dec-06A
Design	07-Jun-04A	05-Feb-07A
Bid and Award	31-Oct-05A	23-Jul-07A
Construction Management	30-Jan-06A	15-Oct-08A
Construction	30-Jan-06A	15-Oct-08A
Close-Out	18-Sep-06A	16-Apr-09A
Calaveras Dam Replacement	03-Sep-02A	31-Mar-21
Project Management	03-Sep-02A	31-Dec-20
Project Planning	03-Sep-02A	04-Nov-05A
Environmental Review	16-May-05A	06-Feb-12A
Design	14-Nov-05A	19-Jun-19A
Bid and Award	27-Dec-10A	07-Mar-16A
Construction Management	15-Aug-11A	31-Dec-20
Construction	31-May-11A	01-Feb-21
Close-Out	19-Jun-19A	31-Mar-21
Calaveras Reservoir Upgrades	19-Nov-03A	28-Jul-06A
Project Management	19-Nov-03A	14-Feb-06A
Project Planning	19-Nov-03A	18-Nov-05A
Environmental Review	21-May-04A	18-Nov-05A
Design	16-Dec-04A	18-Nov-05A
Bid and Award	28-Jan-05A	18-Nov-05A
Construction Management	27-Jun-05A	14-Feb-06A
Construction	27-Jun-05A	14-Feb-06A
Close-Out	06-Oct-05A	28-Jul-06A
San Antonio Backup Pipeline	17-Dec-03A	30-Jun-16A
Project Management	17-Dec-03A	31-Dec-15A
Project Planning	17-Dec-03A	11-May-07A
Environmental Review	02-Oct-06A	29-Mar-13A
Design	01-Mar-07A	24-Sep-12A
Bid and Award	18-May-11A	29-Mar-13A
Construction Management	26-Oct-12A	31-Dec-15A
Construction	29-Mar-13A	31-Dec-15A
Close-Out	31-Aug-15A	30-Jun-16A
SVWTP Expansion & Treated Water Re	22-Apr-05A	31-Oct-14A
Project Management	22-Apr-05A	20-Sep-13A
Project Planning	22-Apr-05A	29-Jun-07A
Environmental Review	21-Jul-06A	30-Jun-10A
Right of Way	03-Jul-06A	16-Jun-09A
Design	16-Jan-07A	10-Dec-09A
Bid and Award	23-Nov-09A	22-Jun-10A
Construction Management	30-Apr-10A	20-Sep-13A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

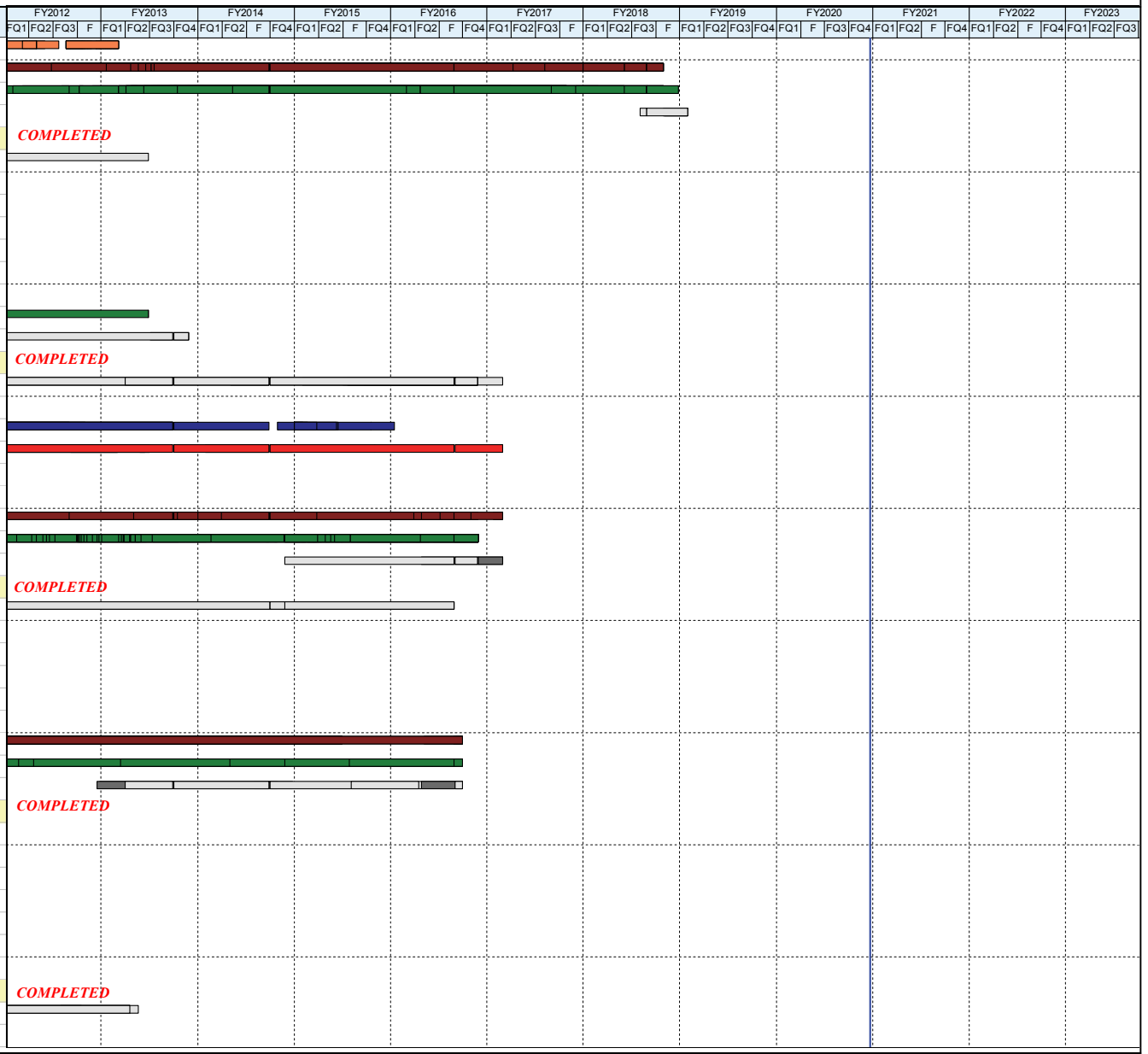
Project Name	Start	Finish
Construction	23-Jun-10A	20-Sep-13A
Close-Out	23-Sep-13A	31-Oct-14A
SVWTP Calaveras Road	01-Feb-07A	14-Dec-07A
Project Management	12-Mar-07A	14-Dec-07A
Environmental Review	01-Feb-07A	30-Jul-07A
Design	02-Apr-07A	14-Dec-07A
SVWTP Treated Water Reservoir	15-Sep-03A	02-Mar-07A
Project Management	15-Sep-03A	02-Mar-07A
Project Planning	15-Sep-03A	29-Sep-04A
Environmental Review	26-Mar-04A	09-Feb-07A
Design	03-Nov-04A	02-Mar-07A
San Antonio Pump Station Upgrade	01-Jul-04A	29-Jun-12A
Project Management	01-Jul-04A	30-Sep-11A
Project Planning	01-Jul-04A	12-Jan-07A
Environmental Review	02-Jan-07A	21-Jun-07A
Design	06-Jul-07A	15-May-09A
Bid and Award	14-Apr-09A	30-Oct-09A
Construction Management	02-Nov-09A	30-Sep-11A
Construction	02-Nov-09A	30-Sep-11A
Close-Out	03-Oct-11A	29-Jun-12A
WSIP Closeout - Sunol Valley	01-Jul-16A	30-Jun-21
Project Management	01-Jul-16A	30-Jun-21
Project Planning	01-Jul-16A	26-Oct-18A
Environmental Review	01-Jul-16A	28-Jun-19
Design	30-Jan-17A	24-Sep-19
Bid and Award	03-Apr-17A	17-Dec-19
Construction Management	01-Jul-16A	31-Dec-20
Construction	16-May-17A	31-Dec-20
Close-Out	26-Jun-17A	30-Jun-21
Bay Division Region	19-Dec-01A	31-Dec-20
BDPL Nos. 3 & 4 Crossover/Isolation Va	06-Jan-03A	31-Jul-09A
Project Management	06-Jan-03A	30-Jun-09A
Project Planning	06-Jan-03A	20-Jul-04A
Environmental Review	16-Jul-03A	28-Feb-06A
Design	03-May-04A	16-May-06A
Bid and Award	16-May-05A	18-Aug-06A
Construction Management	23-Jan-06A	03-Apr-09A
Construction	11-Oct-05A	19-Mar-08A
Close-Out	20-Mar-08A	31-Jul-09A
Seismic Upgrade of BDPL Nos. 3 & 4	22-Oct-04A	30-Jul-18A
Project Management	22-Oct-04A	30-Apr-18A
Project Planning	22-Oct-04A	12-Dec-08A
Environmental Review	11-Sep-06A	17-Mar-12A
Right of Way	03-Jul-06A	26-Aug-11A
Design	05-Mar-07A	02-Feb-15A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

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

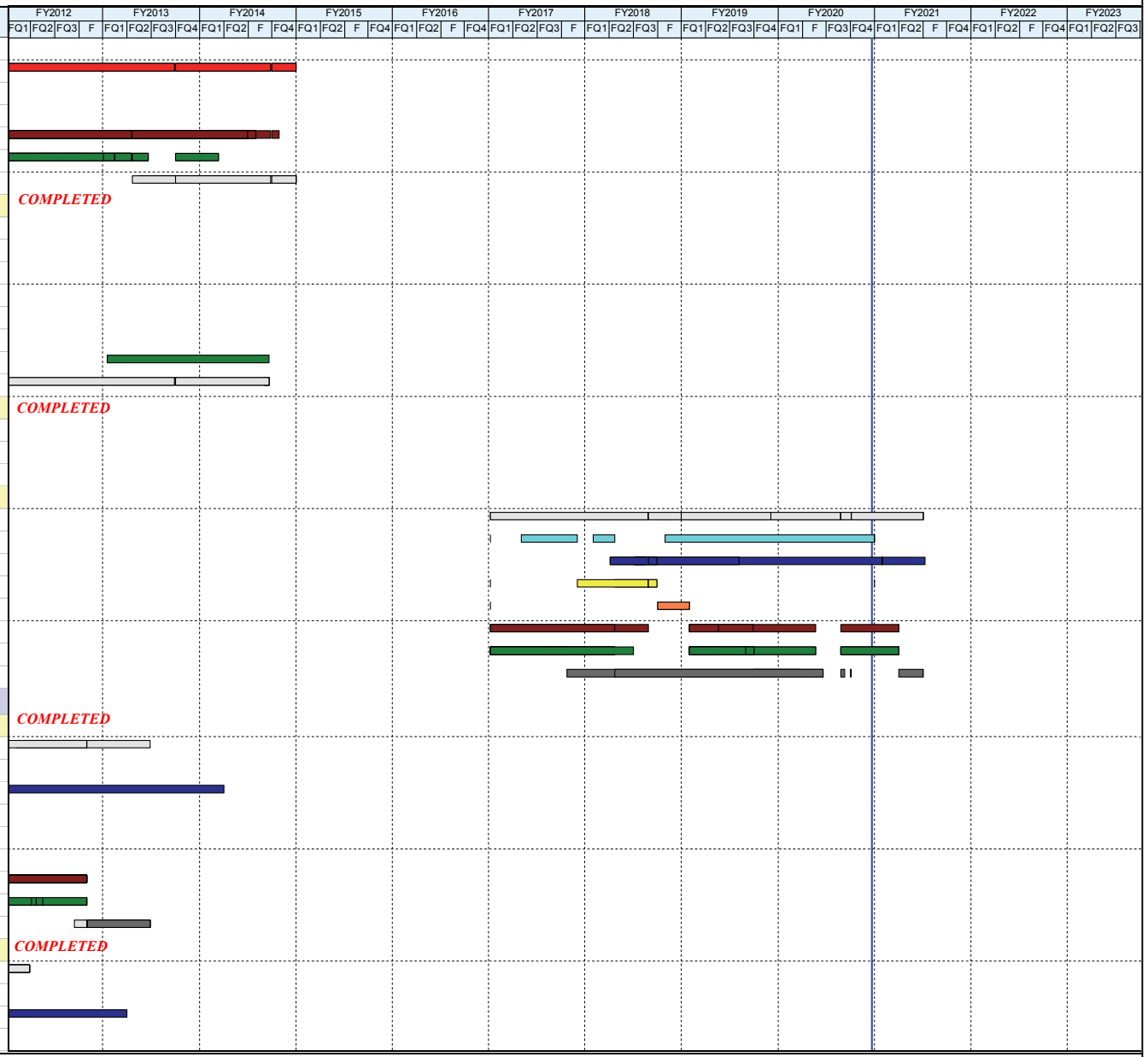


Project Management | Environmental | Right-of-Way | Construction Management | Closeout

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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

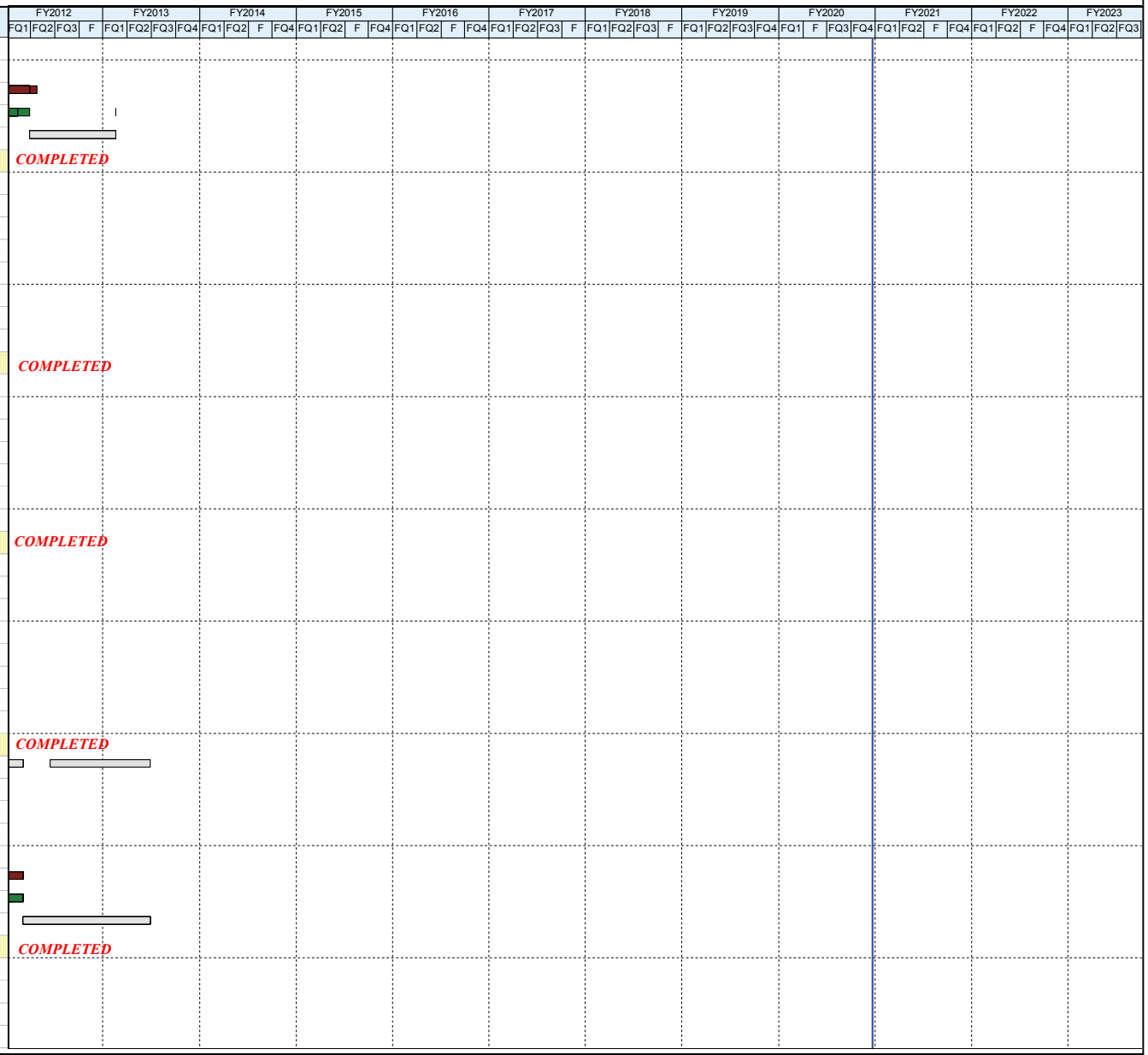
Project Name	Start	Finish
Environmental Review	28-Aug-06A	31-Dec-08A
Right of Way	04-Sep-07A	30-Jun-14A
Design	04-Dec-06A	20-Jul-09A
Bid and Award	05-Nov-08A	10-Jul-09A
Construction Management	23-Sep-08A	30-Apr-14A
Construction	30-Jan-09A	11-Sep-13A
Close-Out	22-Oct-12A	30-Jun-14A
SFPUC/EBMUD Intertie	24-Jun-02A	20-Mar-14A
Project Management	24-Jun-02A	31-Jan-08A
Project Planning	24-Jun-02A	11-Oct-02A
Environmental Review	14-Oct-02A	31-Mar-03A
Design	01-Apr-03A	30-Jul-04A
Bid and Award	02-Aug-04A	21-Dec-04A
Construction Management	18-Jan-05A	31-Jan-08A
Construction	18-Jan-05A	20-Mar-14A
Close-Out	01-Feb-08A	20-Mar-14A
BDPL No. 4 Condition Assessment PCC	04-Aug-06A	06-Feb-09A
Project Management	04-Aug-06A	06-Feb-09A
Project Planning	04-Aug-06A	06-Feb-09A
Environmental Review	16-Jul-07A	30-Sep-08A
WSIP Closeout - Bay Division	06-Jul-16A	31-Dec-20
Project Management	06-Jul-16A	31-Dec-20
Project Planning	06-Jul-16A	30-Jun-20
Environmental Review	06-Jul-16A	30-Jun-20
Design	06-Jul-16A	30-Jun-20
Bid and Award	06-Jul-16A	31-Jul-18A
Construction Management	06-Jul-16A	30-Sep-20
Construction	06-Jul-16A	30-Sep-20
Close-Out	25-Apr-17A	31-Dec-20
Peninsula Region	01-Nov-00A	05-Aug-21
Lower Crystal Springs Dam Improveme	01-Nov-00A	28-Dec-12A
Project Management	01-Nov-00A	28-Dec-12A
Project Planning	01-Nov-00A	30-Dec-04A
Environmental Review	03-Jan-05A	28-Apr-11A
Right of Way	03-Jul-06A	30-Jun-10A
Design	08-Mar-07A	30-Sep-10A
Bid and Award	20-Aug-10A	28-Jan-11A
Construction Management	31-Jan-11A	01-May-12A
Construction	31-Jan-11A	01-May-12A
Close-Out	15-Mar-12A	28-Dec-12A
New Crystal Springs Bypass Tunnel	07-Jan-02A	17-Aug-12A
Project Management	07-Jan-02A	28-Sep-11A
Project Planning	07-Jan-02A	05-Aug-04A
Environmental Review	18-Sep-03A	09-Oct-08A
Right of Way	03-Jul-06A	16-Sep-08A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

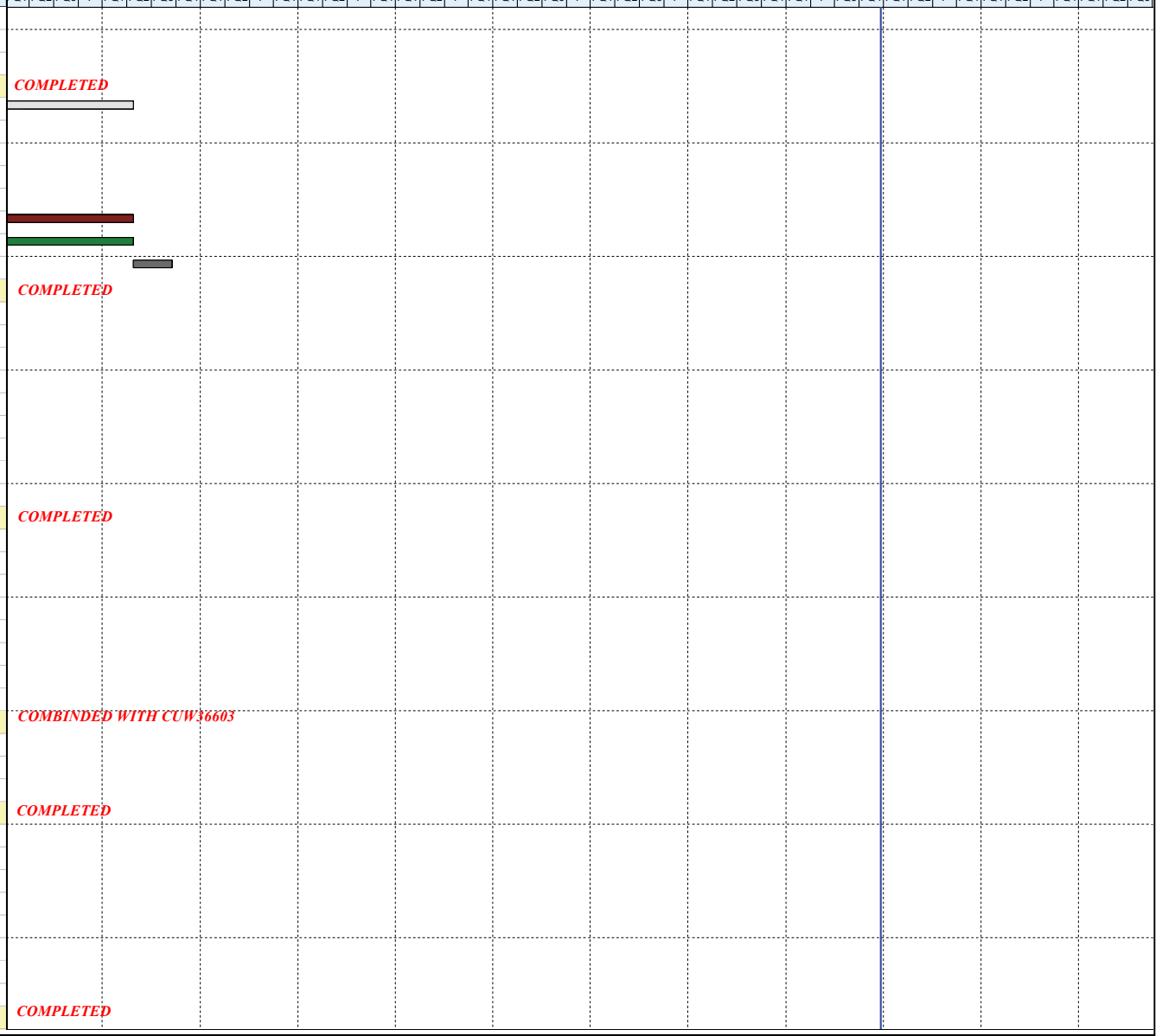
Project Name	Start	Finish
Design	01-Jun-04A	05-Jun-08A
Bid and Award	05-Jun-08A	01-Dec-08A
Construction Management	01-Dec-08A	26-Oct-11A
Construction	01-Dec-08A	17-Aug-12A
Close-Out	29-Sep-11A	17-Aug-12A
Adit Leak Repair - Crystal Springs/Calav	01-Apr-05A	31-Jul-08A
Project Management	01-Apr-05A	11-Mar-08A
Project Planning	01-Apr-05A	27-Mar-06A
Environmental Review	01-Jul-05A	30-Jun-06A
Design	01-Sep-05A	15-Sep-06A
Bid and Award	28-Aug-06A	30-Mar-07A
Construction Management	02-Apr-07A	05-Mar-08A
Construction	09-Apr-07A	05-Mar-08A
Close-Out	12-Mar-08A	31-Jul-08A
Pulgas Balancing - Inlet/Outlet Work	15-May-02A	11-May-06A
Project Management	01-Jul-03A	02-Feb-06A
Project Planning	15-May-02A	01-Aug-05A
Environmental Review	02-May-04A	02-May-04A
Bid and Award	05-Mar-04A	06-Sep-05A
Construction Management	07-Sep-05A	02-Feb-06A
Construction	06-Sep-05A	02-Feb-06A
Close-Out	03-Feb-06A	11-May-06A
Pulgas Balancing - Discharge Channel I	01-Apr-05A	30-Jul-10A
Project Management	01-Apr-05A	07-Dec-09A
Project Planning	01-Apr-05A	15-Sep-06A
Environmental Review	17-Aug-06A	03-Apr-09A
Design	16-Apr-07A	03-Nov-08A
Bid and Award	04-Nov-08A	03-Apr-09A
Construction Management	06-Apr-09A	07-Dec-09A
Construction	02-Apr-09A	07-Dec-09A
Close-Out	08-Dec-09A	30-Jul-10A
Pulgas Balancing - Structural Rehabilitat	03-Apr-06A	28-Dec-12A
Project Management	03-Apr-06A	28-Dec-12A
Project Planning	03-Apr-06A	11-Dec-07A
Environmental Review	03-Jul-07A	16-Jul-09A
Design	11-Jan-08A	01-Jul-09A
Bid and Award	06-Apr-09A	30-Nov-09A
Construction Management	30-Nov-09A	01-Sep-11A
Construction	30-Nov-09A	01-Sep-11A
Close-Out	02-Sep-11A	28-Dec-12A
Pulgas Balancing - Laguna Creek Sedin	31-Mar-06A	31-Dec-07A
Project Management	31-Mar-06A	31-Dec-07A
Environmental Review	31-Dec-07A	31-Dec-07A
Design	31-Mar-06A	26-Dec-06A
Bid and Award	27-Dec-06A	31-Dec-07A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

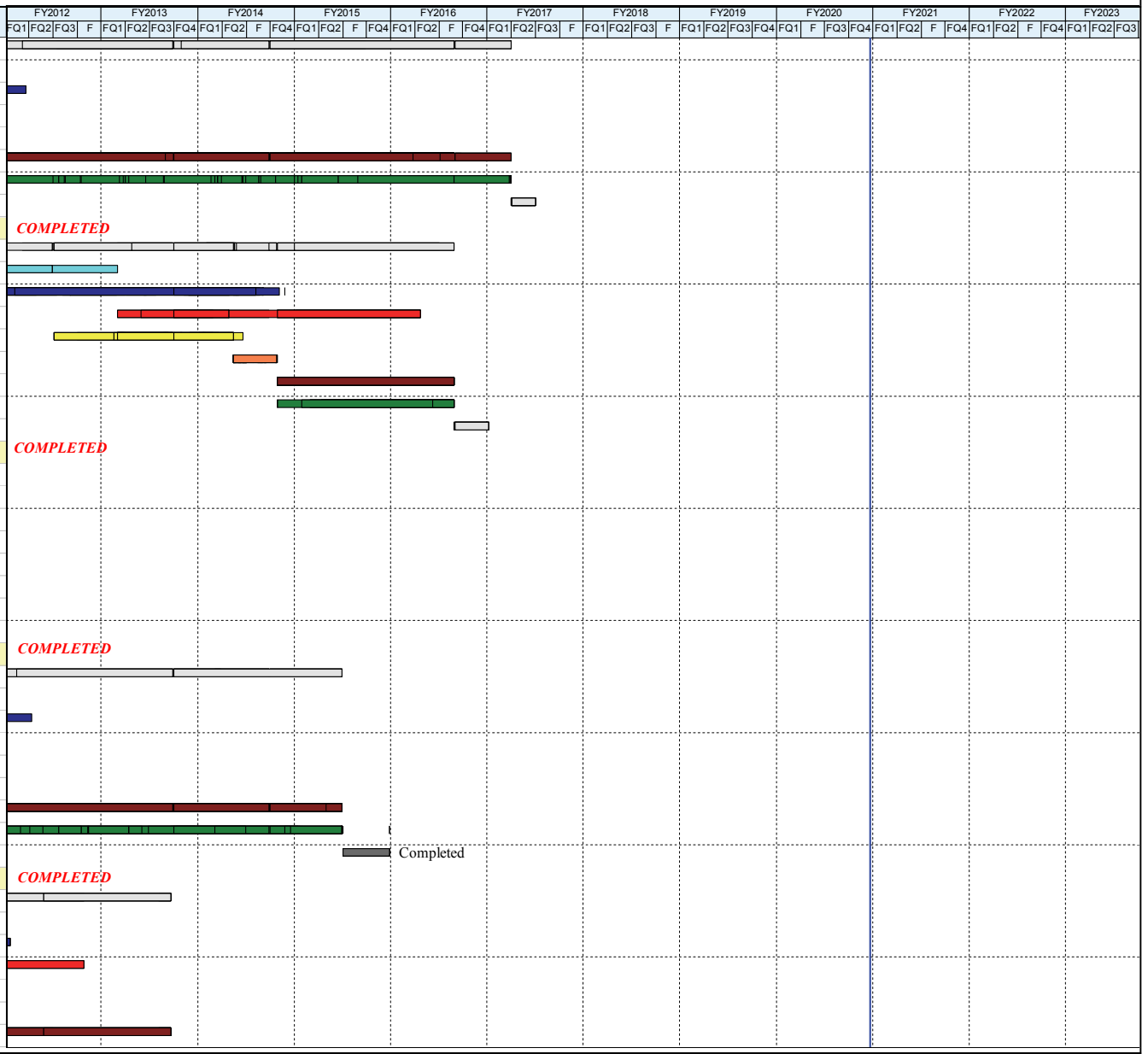
Project Name	Start	Finish
Construction Management	04-Oct-07A	31-Dec-07A
Construction	04-Oct-07A	31-Dec-07A
Close-Out	04-Oct-07A	31-Dec-07A
Pulgas Balancing - Modifications of the E	02-Apr-07A	20-Mar-13A
Project Management	02-Apr-07A	25-Oct-12A
Project Planning	02-Apr-07A	17-Mar-09A
Environmental Review	19-Nov-07A	04-Mar-10A
Design	02-Jan-09A	12-Mar-10A
Bid and Award	29-Jan-10A	22-Sep-10A
Construction Management	22-Sep-10A	25-Oct-12A
Construction	22-Sep-10A	25-Oct-12A
Close-Out	25-Oct-12A	20-Mar-13A
Cross Connection Controls	01-Jul-03A	30-Apr-09A
Project Management	01-Jul-03A	26-Nov-08A
Project Planning	01-Jul-03A	03-Aug-04A
Environmental Review	01-Jul-03A	05-Aug-08A
Right of Way	03-Sep-07A	30-Sep-08A
Design	03-Aug-04A	30-Dec-05A
Bid and Award	01-Apr-05A	31-May-05A
Construction Management	01-Jun-05A	26-Nov-08A
Construction	01-Jun-05A	26-Nov-08A
Close-Out	01-Dec-08A	30-Apr-09A
HTWTP Short-Term Improvements (De	04-Sep-02A	14-Nov-06A
Project Management	04-Sep-02A	27-Feb-06A
Project Planning	04-Sep-02A	30-Apr-03A
Environmental Review	01-Aug-03A	08-Aug-05A
Design	01-Aug-03A	11-Feb-05A
Bid and Award	14-Feb-05A	08-Sep-05A
Construction Management	09-Sep-05A	27-Feb-06A
Construction	09-Sep-05A	27-Feb-06A
Close-Out	12-Jan-06A	14-Nov-06A
HTWTP Short-Term Improvements - Re	12-Jan-06A	22-Feb-08
Project Management	12-Jan-06A	31-Jan-08A
Project Planning	12-Jan-06A	22-Aug-07A
Design	03-Mar-07A	22-Feb-08A
HTWTP Short-Term Improvements - Cc	03-Jul-06A	28-Jul-10A
Project Management	03-Jul-06A	31-Mar-10A
Project Planning	03-Jul-06A	22-Aug-07A
Environmental Review	03-Jul-06A	28-Jul-10A
Design	13-Jul-07A	22-Feb-08A
Bid and Award	03-Sep-07A	09-Jul-08A
Construction Management	18-Jun-08A	31-Mar-10A
Construction	19-Feb-08A	31-Mar-10A
Close-Out	01-Apr-10A	28-Jul-10A
HTWTP Long-Term Improvements	01-Jul-03A	30-Dec-16A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

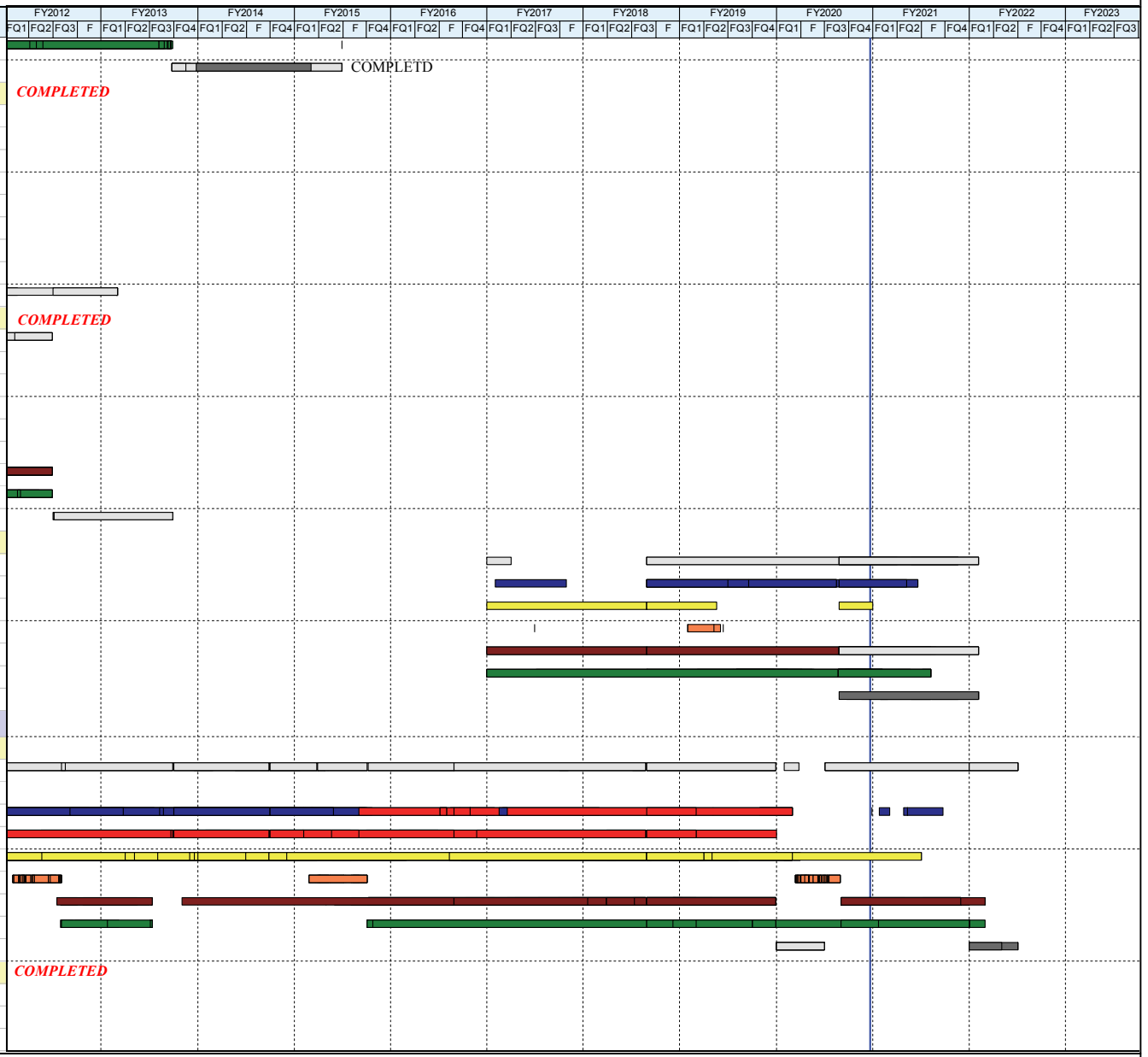
Project Name	Start	Finish
Project Management	01-Jul-03A	30-Sep-16A
Project Planning	01-Jul-03A	29-Aug-08A
Environmental Review	09-Jan-07A	15-Mar-11A
Design	02-Sep-08A	15-Oct-10A
Bid and Award	01-Jul-10A	15-Mar-11A
Construction Management	16-Mar-11A	30-Sep-16A
Construction	16-Mar-11A	30-Sep-16A
Close-Out	01-Oct-16A	30-Dec-16A
Peninsula Pipelines Seismic Upgrade	01-Jul-09A	06-Jul-16A
Project Management	01-Jul-09A	29-Feb-16A
Project Planning	01-Jul-09A	31-Aug-12A
Environmental Review	01-Jul-09A	01-Apr-14A
Right of Way	03-Sep-12A	24-Oct-15A
Design	03-Jan-12A	18-Dec-13A
Bid and Award	15-Nov-13A	28-Apr-14A
Construction Management	28-Apr-14A	29-Feb-16A
Construction	28-Apr-14A	29-Feb-16A
Close-Out	29-Feb-16A	06-Jul-1A6
Capuchino Valve Lot Improvements	22-Apr-05A	19-Aug-08A
Project Management	22-Apr-05A	05-Mar-08A
Project Planning	22-Apr-05A	01-Nov-05A
Environmental Review	01-Nov-05A	14-Nov-06A
Design	01-Nov-05A	15-Sep-06A
Bid and Award	18-Sep-06A	29-Jan-07A
Construction Management	29-Jan-07A	05-Mar-08A
Construction	29-Jan-07A	05-Mar-08A
Close-Out	06-Mar-08A	19-Aug-08A
Crystal Springs/San Andreas Transmiss	18-Aug-03A	30-Jun-15A
Project Management	18-Aug-03A	31-Dec-14A
Project Planning	18-Aug-03A	20-Apr-07A
Environmental Review	03-Jan-07A	30-Nov-10A
Right of Way	27-Mar-06A	30-Jun-10A
Design	15-Oct-07A	15-Jun-10A
Bid and Award	13-Apr-10A	30-Nov-10A
Construction Management	01-Dec-10A	31-Dec-14A
Construction	01-Dec-10A	30-Jun-15A
Close-Out	02-Jan-15A	30-Jun-15A
Crystal Springs Pipeline No. 2 Replacen	15-Jan-04A	31-Dec-14A
Project Management	15-Jan-04A	22-Mar-13A
Project Planning	15-Jan-04A	19-Jan-07A
Environmental Review	01-Apr-04A	30-Jun-11A
Right of Way	01-Sep-06A	27-Apr-12A
Design	01-Jan-07A	08-Oct-10A
Bid and Award	09-Sep-10A	04-Mar-11A
Construction Management	01-Nov-10A	22-Mar-13A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

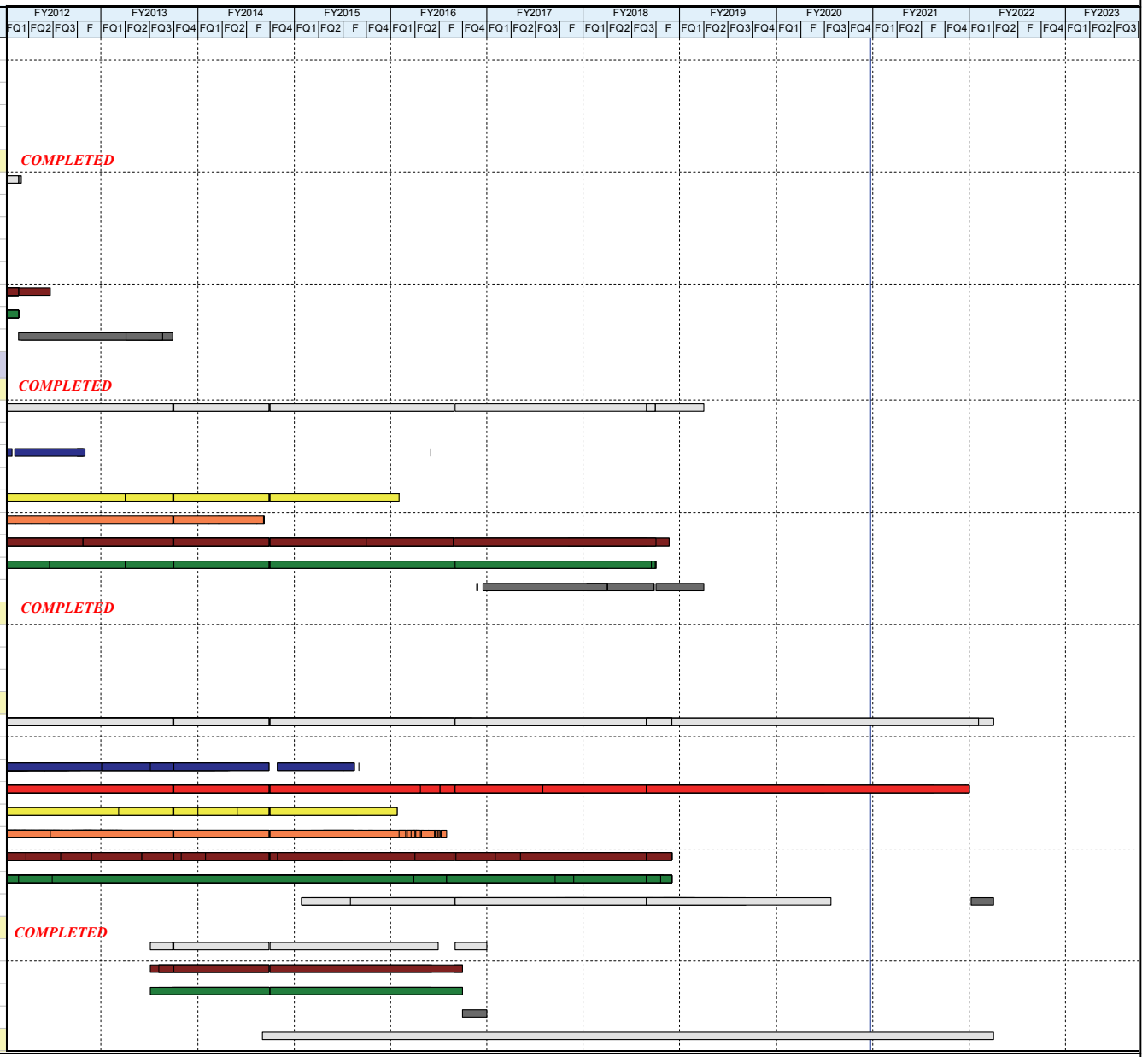
Project Name	Start	Finish
Construction	07-Feb-11A	31-Dec-14A
Close-Out	24-Mar-13A	31-Dec-14A
San Andreas Pipeline No. 3 Installation	15-Jan-04A	30-Aug-12A
Project Management	15-Jan-04A	30-Jun-11A
Project Planning	15-Jan-04A	28-Apr-05A
Environmental Review	01-Apr-04A	15-May-09A
Right of Way	01-Aug-06A	13-Aug-09A
Design	01-May-05A	17-Apr-09A
Bid and Award	20-Apr-09A	26-Aug-09A
Construction Management	26-Aug-09A	30-Jun-11A
Construction	26-Aug-09A	30-Jun-11A
Close-Out	01-Jul-11A	30-Aug-12A
Baden and San Pedro Valve Lots Impro	03-Oct-05A	29-Mar-13A
Project Management	03-Oct-05A	30-Dec-11A
Project Planning	03-Oct-05A	03-Nov-06A
Environmental Review	05-Oct-06A	21-Oct-08A
Right of Way	05-Oct-06A	31-Mar-08A
Design	29-Mar-07A	12-Jan-09A
Bid and Award	29-Sep-08A	07-Apr-09A
Construction Management	08-Apr-09A	30-Dec-11A
Construction	03-Apr-09A	30-Dec-11A
Close-Out	31-Dec-11A	29-Mar-13A
WSIP Closeout - Peninsula	01-Jul-16A	05-Aug-21
Project Management	01-Jul-16A	05-Aug-21
Environmental Review	01-Jul-16A	18-Dec-20
Design	01-Jul-16A	30-Jun-20
Bid and Award	27-Dec-16A	13-Dec-18A
Construction Management	01-Jul-16A	05-Aug-21
Construction	01-Jul-16A	06-Feb-21
Close-Out	24-Feb-20A	05-Aug-21
San Francisco Regional Region	31-Mar-00A	30-Dec-21
Regional Groundwater Storage and Rec	01-Jun-03A	30-Dec-21
Project Management	01-Jul-05A	30-Dec-21
Project Planning	01-Jun-03A	31-Jan-08A
Environmental Review	15-Oct-07A	28-Feb-20
Right of Way	07-Apr-08A	01-Jul-19
Design	02-Jan-08A	31-Dec-20
Bid and Award	11-Mar-09A	28-Feb-20
Construction Management	04-Mar-08A	31-Aug-21
Construction	01-Jul-03A	31-Aug-21
Close-Out	01-Jul-19	30-Dec-21
Sunset Reservoir - North Basin	31-Mar-00A	10-Sep-10A
Project Management	31-Mar-00A	26-Mar-09A
Project Planning	31-Mar-00A	28-Sep-01A
Environmental Review	21-May-04A	21-Dec-04A



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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish
Design	01-Oct-01A	12-Apr-06A
Bid and Award	22-Oct-04A	10-Oct-06A
Construction Management	11-Apr-05A	26-Mar-09A
Construction	11-Apr-05A	09-Nov-09A
Close-Out	13-Nov-06A	10-Sep-10A
University Mound Reservoir - North Bas	24-Oct-05A	29-Mar-13A
Project Management	24-Oct-05A	01-Sep-11A
Project Planning	24-Oct-05A	06-Apr-07A
Environmental Review	26-Dec-06A	18-Jul-07A
Design	07-Apr-07A	24-Mar-09A
Bid and Award	02-Feb-09A	31-Jul-09A
Construction Management	03-Aug-09A	23-Dec-11A
Construction	27-Jul-09A	23-Aug-11A
Close-Out	23-Aug-11A	29-Mar-13A
Support Projects	13-Apr-04A	30-Dec-21
System Security Upgrades	07-Jan-06A	28-Sep-18A
Project Management	19-Jun-06A	28-Sep-18A
Project Planning	19-Jun-06A	08-Jul-09A
Environmental Review	19-Jun-06A	28-Mar-12A
Right of Way	26-Nov-08A	26-Nov-08A
Design	19-Jun-06A	03-Aug-15A
Bid and Award	07-Jan-06A	10-Mar-14A
Construction Management	13-Nov-06A	22-May-18A
Construction	13-Nov-06A	31-Mar-18A
Close-Out	24-Sep-07A	28-Sep-18A
Programmatic EIR	13-Apr-04A	30-Jun-09A
Project Management	13-Apr-04A	30-Jun-09A
Project Planning	13-Apr-04A	28-Feb-07A
Environmental Review	15-Jun-04A	30-Jun-09A
Bioregional Habitat Restoration	06-Sep-06A	30-Sep-21
Project Management	01-Nov-06A	30-Sep-21
Project Planning	06-Sep-06A	31-Dec-07A
Environmental Review	03-Jan-07A	13-Feb-15A
Right of Way	02-Jul-08A	30-Jun-21
Design	16-Jul-07A	27-Jul-15A
Bid and Award	04-Dec-09A	29-Jan-16A
Construction Management	22-Jun-10A	31-May-18A
Construction	06-Mar-09A	31-May-18A
Close-Out	29-Jul-14A	30-Sep-21
Vegetation Restoration of WSIP Constru	02-Jan-13A	30-Jun-16A
Project Management	02-Jan-13A	30-Jun-16A
Construction Management	02-Jan-13A	31-Mar-16A
Construction	02-Jan-13A	31-Mar-16A
Close-Out	01-Apr-16A	30-Jun-16A
Long Term Mitigation Endowment	05-Mar-14A	30-Sep-21

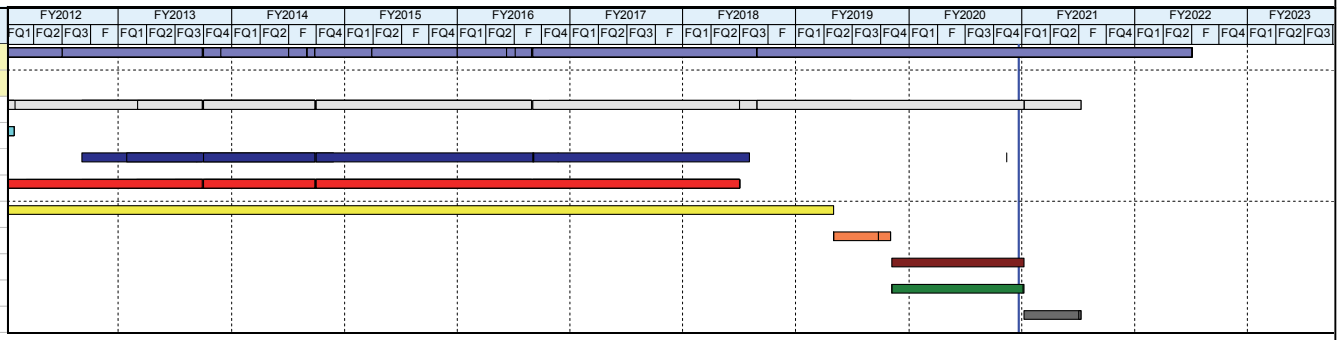


Project Management | Environmental | Right-of-Way | Construction Management | Closeout

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

APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish
Program Management Project	01-Aug-05A	30-Dec-21
Watershed and Environmental Improver	02-Jan-07A	08-Jan-21
Project Management	02-Jul-07A	08-Jan-21
Project Planning	02-Jan-07A	29-Jul-11A
Environmental Review	05-Mar-12A	06-Nov-18A
Right of Way	14-Mar-11A	31-Dec-17A
Design	31-May-11A	30-Oct-18A
Bid and Award	31-Oct-18A	03-May-19A
Construction Management	06-May-19A	06-Jul-20
Construction	06-May-19A	06-Jul-20
Close-Out	07-Jul-20	08-Jan-21



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

APPENDIX C

WSIP Quarterly Report
Regional Projects (Q4/FY 2019- 2020)

Report available on the SFPUC Website at the following address:

https://sfwater.org/index.aspx?page=307

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