



September 1, 2015

The Honorable Assembly Member Mike A. Gipson, Chair  
The Honorable Assembly Member Richard D. Roth, Vice-Chair  
California State Assembly  
Joint Legislative Audit Committee  
1020 N. Street, Room 107  
Sacramento, CA 95814

The Honorable Timothy Strack, Chair  
California Seismic Safety Commission  
1755 Creekside Oaks Drive, Suite 100  
Sacramento, CA 95833

Karen Smith, MD, MPH, Director  
California Department of Public Health  
P.O. Box 997377, MS 0500  
Sacramento, CA 95899-7377

**Subject: San Francisco Public Utilities Commission  
Fiscal Year 2014-2015 Annual Report  
Water System Improvement Program**

Dear Assembly Member Gipson, Senator Roth, Commissioner Strack, and Dr. Smith:

In accordance with Section 73502(c) of the California Water Code, the San Francisco Public Utilities Commission (SFPUC) is pleased to submit the Annual Report describing progress made on the implementation of the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2014-2015.

The WSIP is a multi-billion dollar, multi-year program to upgrade the SFPUC's Regional and Local Water Systems. The program will deliver 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 meet water supply objectives until the year 2018.

Section 1 of the attached report describes the overall progress made on the WSIP's Regional Program during FY 2014-2015 (July 1, 2014 through June 30, 2015) and Section 2 focuses on the major programmatic initiatives undertaken during that time period. Included in Section 3 is a summary of controlling and tracking the WSIP project schedules during FY 2014-2015. The achievements and challenges encountered while implementing the program during FY 2014-2015 are summarized in Section 4. Finally, Section 5 of the report highlights the current status of the specific projects mentioned in California Assembly Bill (AB) 1823.

- Edwin M. Lee  
Mayor
- Ann Moller Caen  
President
- Francesca Viotor  
Vice President
- Vince Courtney  
Commissioner
- Anson Moran  
Commissioner
- Ike Kwon  
Commissioner
- Harlan L. Kelly, Jr.  
General Manager



Significant progress was made on the implementation of the WSIP during FY 2014-2015. Between July 1, 2014 and June 30, 2015 the overall completion of the Regional Program increased from 81.4% to 88.7%. We are on track to complete the construction of a new seismically-designed lifeline that will carry water from the Sunol Valley in the East Bay to the mid-Peninsula by the end of 2015. That lifeline involves six segments contracted out separately and construction activities have now been completed on five of these segments.

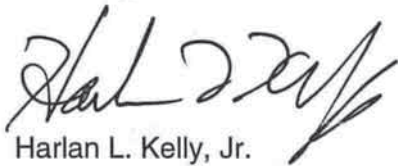
A relatively small amount of pre-construction work (planning, environmental review/permitting, real estate acquisition, engineering design, and bid & award) remains on the WSIP and the focus of the program continues to be on construction as well as administrative closeout activities of some of the larger projects that have recently completed construction. As of the end of the reporting period, planning activities are complete at 100%, whereas environmental, design, and construction efforts are 97.0%, 98.1%, and 87.7% complete, respectively.

During the reporting period, SFPUC awarded one construction contract and issued the construction Notice-to-Proceed (NTP). Furthermore, four construction contracts reached substantial completion, another four construction contracts reached final completion, and five projects reached final administrative closeout/completion. As of June 30, 2015, construction was in progress on 13 regional projects valued at \$2.5 billion, while construction had been completed on 32 other regional projects valued at \$1.096 billion.

As requested in the California Seismic Safety Commission's letter of October 13, 2014 to the Joint Legislative Audit Committee, the SFPUC is pleased to continue to report on the status of all phases of the Peninsula Pipeline Seismic Upgrade (PPSU) project. Specifically, Phases 1 and 2 will complete construction by the end of 2015 with final administrative closeout in July 2016. Phase 3, a non-WSIP project that makes a relatively small contribution to regional seismic level of services (LOS) goals under WSIP, is on track for completion by June 2018.

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

Attachment

CC: The Honorable Ann Moller Caen- President, SFPUC Commission  
The Honorable Francesca Vietor - Vice-President, SFPUC Commission  
The Honorable Vince Courtney - Commissioner, SFPUC Commission  
The Honorable Anson Moran - Commissioner, SFPUC Commission  
The Honorable Ike Kwon- Commissioner, SFPUC Commission  
Nicole Sandkulla - Chief Executive Officer and General Manager,  
BAWSCA  
Mark Starr - Deputy Director, Center for Environmental Health, California  
Department of Public Health  
William Draper – Division Chief, Drinking Water & Radiation Laboratory  
Branch, California Department of Public Health  
Cindy Forbes – Deputy Director, Division of Drinking Water, State Water  
Resources Control Board  
Bruce Burton – Assistant Deputy Director, Northern California Drinking  
Water Field Operations Branch, State Water Resources Control Board  
Stefan Cajina - Region Chief, Northern California Drinking Water Field  
Operations Branch, State Water Resources Control Board  
Robert Brownwood - San Francisco District Engineer, Drinking Water  
Field Operations Branch, State Water Resources Control Board  
Richard McCarthy - Executive Director, California Seismic Safety  
Commission





HETCH HETCHY  
WATER SYSTEM  
IMPROVEMENT  
PROGRAM

# 2014-15

## Annual Report

*Water System Improvement Program*



***Rebuilding Today  
for a Better Tomorrow***



Hetch Hetchy  
**Regional  
Water  
System**

Services of the San Francisco Public Utilities Commission

September 1, 2015



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# **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) 2014-2015 (July 1, 2014 through June 30, 2015). This report only addresses 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 benefits San Francisco retail customers.

The WSIP is a multi-billion dollar, multi-year program to upgrade the SFPUC's Regional and Local Water Systems. The program will deliver 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 until the year 2018.

Significant progress was made on the implementation of the WSIP during FY 2014-2015. Between July 1, 2014 and June 30, 2015, the overall completion of the Regional Program increased from 81.4% to 88.7%. We are on track to complete the construction of a new seismically-designed lifeline that will carry water from the Sunol Valley in the East Bay to the mid-Peninsula by the end of 2015. That lifeline involves six segments contracted out separately and construction activities have now been completed on five of these segments. Construction of the remaining segment - New Irvington Tunnel – is forecasted to be substantially complete by the end of September 2015.

Minimal pre-construction work (planning, environmental review/permitting, real estate acquisition, engineering design, and bid & award) remains on the WSIP and as the last few years, the focus of the program has been on construction activities. Construction of 13 regional projects valued at \$2.5 billion was in progress as of the end of FY 2014-15; and construction of 32 regional projects has been completed as of the end of FY2014-15. A major focus of the program going forward will be administrative closeout of major projects that will complete construction over the next several years. As of the end of the reporting period, planning activities are complete at 100.0%, whereas environmental, design and construction efforts are 97.0%, 98.1% and 87.7% complete, respectively.

Notable achievements during FY 2014-2015 include:

- Planning Phase completion of one project
- Completion of Environmental Review and Approval of two projects
- Advertisement of two contracts

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- Award approval of one contract
  - Construction notice-to-proceed (NTP) of one contract
  - Construction substantial completion of four contracts
  - Construction final completion of four contracts
  - Project completion/administrative closeout of five projects



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## **LIST OF ACRONYMS**

AB	Assembly Bill
APWA	American Public Works Association
ARM	Active Risk Management
BAWSCA	Bay Area Water Supply and Conservation Agency
BDPL	Bay Division Pipeline
BHR	Bioregional Habitat Restoration
CAMP	Comprehensive Air Monitoring Plan
CDRP	Calaveras Dam Replacement Project
CEQA	California Environmental Quality Act
CM	Construction Management
CMAA	Construction Management Association of America
CSPL2	Crystal Springs Pipeline No. 2
CS/SA	Crystal Springs/San Andreas
EIR	Environmental Impact Report
ENR	Engineering News-Record
FY	Fiscal Year
HTWTP	Harry Tracy Water Treatment Plant
JOC	Job Order Contract
LOS	Level of Service
NIT	New Irvington Tunnel
NOA	Natural Occurring Asbestos
NOC	Notice of Change
NTP	Notice to Proceed
PCCP	Pre-stressed Concrete Cylinder Pipe
PTFE	Polytetrafluoroethylene
RBOC	Revenue Bond Oversight Committee
ROW	Right-of-Way
RWBC	R.W. Block Consulting, Inc.
SFPUC	San Francisco Public Utilities Commission
SSIP	Sewer System Improvement Program
SJPL	San Joaquin Pipeline
SVWTP	Sunol Valley Water Treatment Plant
WSIP	Water System Improvement Program
WSTD	Water Enterprise, Water Supply and Treatment Division

## 1.0 OVERALL PROGRAM PROGRESS (FY 2014-2015)

Significant progress has been made on the implementation of the Water System Improvement Program (WSIP) during Fiscal Year (FY) 2014-2015 (July 1, 2014 through June 30, 2015) with overall progress increasing from 81.4% to 88.7%. Overall, actual performance (88.7%) on the Regional Program is 0.3% behind of planned performance (89.0%) based on the approved March 2014 Revised WSIP.

As indicated in Table 1-1, planning activities are complete at 100.0%, whereas environmental, design and construction efforts are 97.0%, 98.1% and 87.7% complete, respectively.

**Table 1-1: WSIP Regional Program Performance<sup>1</sup>**

Phase	June 30, 2014		June 30, 2015	
	% Planned <sup>2</sup>	% Actual	% Planned	% Actual
Planning	99.2%	99.0%	100.0%	100.0%
Environmental	97.1%	97.1%	97.6%	97.0%
Design	97.4%	97.1%	99.5%	98.1%
Bid & Award	93.1%	93.1%	96.6%	96.2%
Construction	78.7%	80.0%	87.8%	87.7%
Closeout	49.2%	45.1%	63.2%	57.1%
<b>Program Cumulative</b>	<b>80.4%</b>	<b>81.4%</b>	<b>89.0%</b>	<b>88.7%</b>

<sup>1</sup> Percent completion does not include Support Projects in the WSIP Regional Program.

<sup>2</sup> Incorporates the March 2014 Revised WSIP schedule revisions approved by the Commission in April 2014 and reported in the Notice of Change (NOC) report dated June 20, 2014.

Minimal pre-construction work (planning, environmental review/permitting, real estate acquisition, design, and bid & award) remains on the WSIP and as of the last few 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, 2014) to those at the end of the reporting period (June 30, 2015). As of the end of the reporting period, 13 regional projects are in construction with a total value of \$2,517 million and 32 additional projects with a total value of \$1,096 million have been completed. One regional project is in pre-construction.

**Table 1-2: Status of WSIP Regional Projects**

Project Phase	June 30, 2014 Status		June 30, 2015 Status	
	No. of Projects	Total Project Value (\$M) <sup>1</sup>	No. of Projects <sup>3</sup>	Total Project Value (\$M)
Planning	1	\$30	0	\$0
Design	1	\$117	1	\$30
Bid & Award	0	\$0	0	\$0
Construction	14	\$2,725	13	\$2,517
Closeout	3	\$219	0	\$0
Completed	27	\$551	32	\$1,096
Not Applicable <sup>2</sup>	2	\$32	2	\$32
<b>Total</b>	<b>48</b>	<b>\$3,674</b>	<b>48</b>	<b>\$3,675</b>

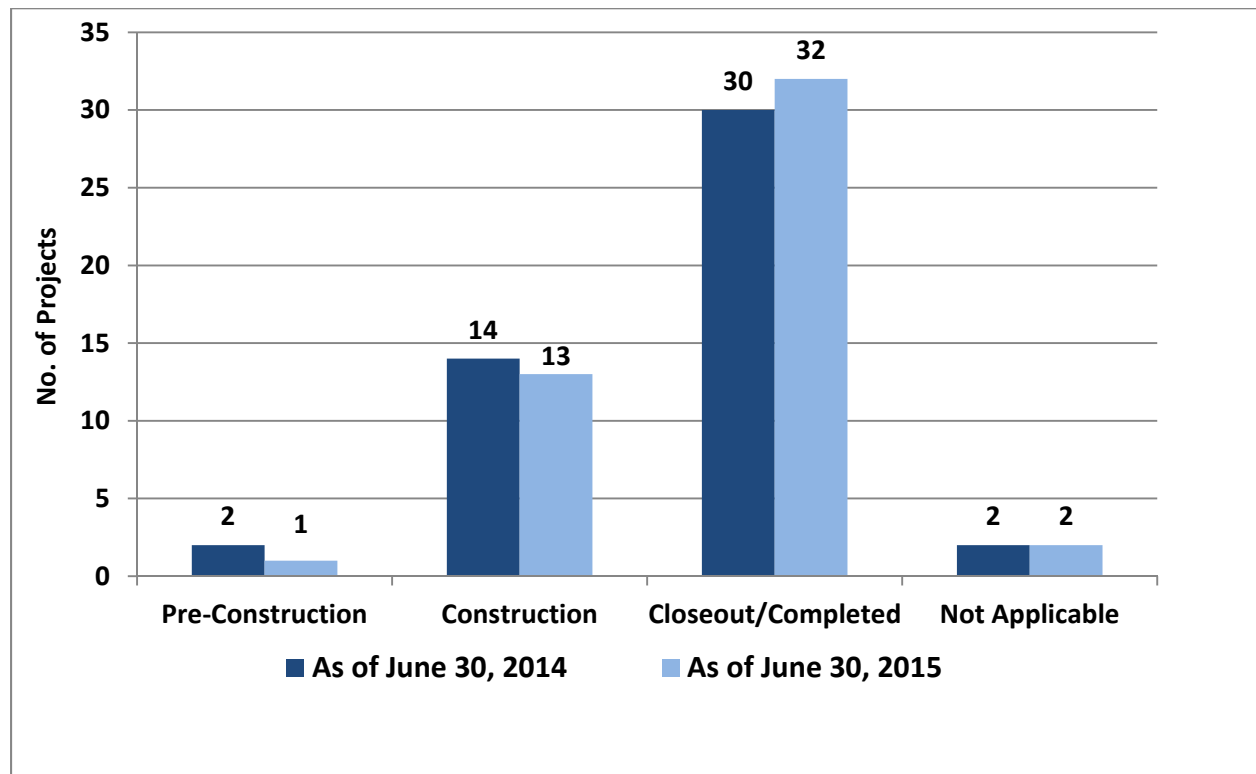
<sup>1</sup> Based on budget approved as part of the March 2014 Revised WSIP.

<sup>2</sup> The "Not Applicable" category is for two Support projects, the Long-Term Mitigation Endowment and the Watershed Environmental Improvement Program, that do not have construction activities.

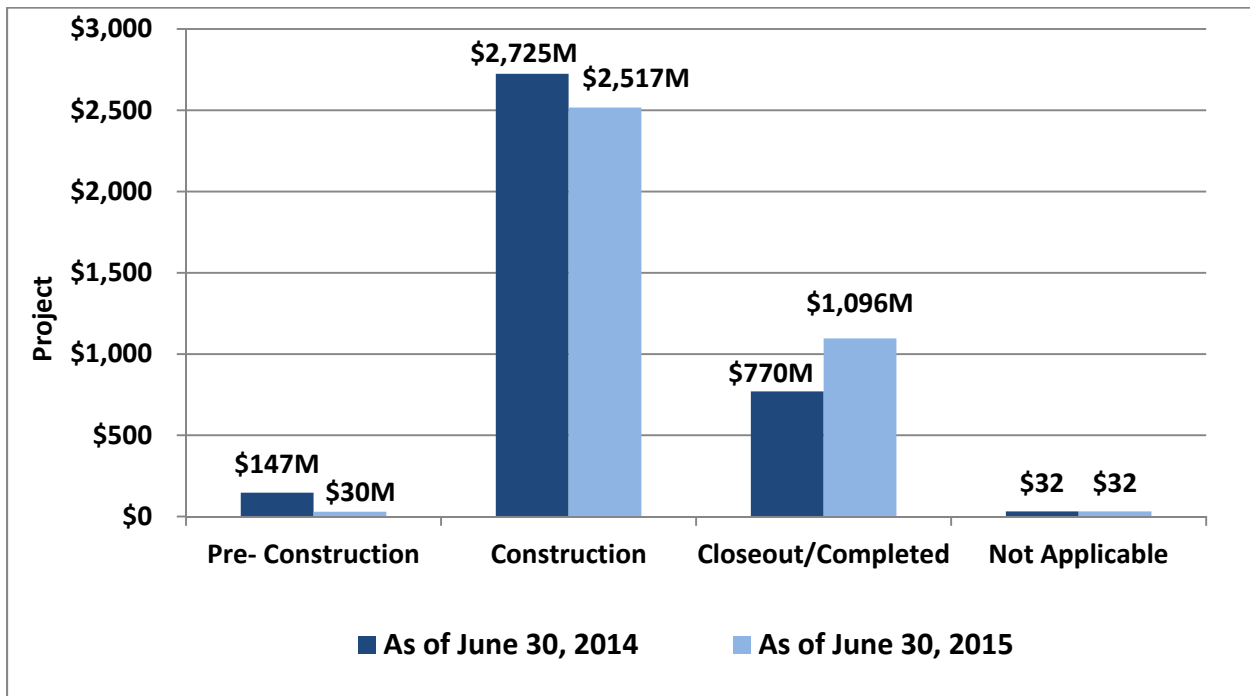
<sup>3</sup> The Long-Term Mitigation Endowment project was added to the program in FY 2013-2014. This project was previously part of the Bioregional Habitat Restoration Project.

To better illustrate the progress made during the FY 2014-2015, 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, the San Francisco Public Utilities Commission (SFPUC) Commission (“Commission”) issued one Notice to Proceed (NTP) construction contract. Furthermore, four construction contracts reached substantial completion, four construction contracts reached final completion, and five project reached completion. These milestones, as well as other important milestones reached during the reporting period, are summarized below.

Planning Phase Completion:

- Alameda Creek Recapture Project (November 14, 2014)

Environmental Phase (Environmental Review and Permitting) Completion:

- BDPL Reliability Upgrade/Tunnel (July 31, 2014)
- Bioregional Habitat Restoration (February 13, 2015)

Advertisement:

- Regional Groundwater Storage and Recovery (WD-2668) (September 22, 2014)

Construction Award:

- Regional Groundwater Storage and Recovery (WD-2668) (February 2, 2015)

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### Construction NTP:

- Regional Ground Water Storage and Recovery (WD-2668) (April 6, 2015)

### Construction Substantial Completion:

- Bioregional Habitat Restoration (WD-2652) San Antonio Creek (September 4, 2014)
- San Antonio Backup Pipeline (December 31, 2014)
- Bioregional Habitat Restoration (WD-2641R) Homestead Pond, San Andreas Reservoir Wetlands, Adobe Gulch Grasslands (February 28, 2015)
- BDPL Reliability Upgrade/Tunnel (May 20, 2015)

### Construction Final Completion:

- Bioregional Habitat Restoration (WD-2644) Goat Rock (September 4, 2014)
- Tesla Treatment Facility Project (October 31, 2014)
- Crystal Spring/San Andreas Transmission Upgrade (December 31, 2014)
- San Joaquin Pipeline System (HH-935A, Crossovers) (May 12, 2015)

### Project Administrative Closeout/Completion:

- SVWTP Expansion and Treated Water Reservoir (October 31, 2014)
- Rehabilitation of Existing San Joaquin Pipelines (October 31, 2014)
- Crystal Springs Pipeline No.2 Replacement (December 31, 2014)
- Tesla Treatment Facility Project (January 30, 2015)
- Crystal Springs/San Andreas Transmission Upgrade (June 30, 2015)

## **2.0 PROGRAMMATIC INITIATIVES (FY 2014-2015)**

This section describes some of the more important programmatic initiatives undertaken during FY 2014-2015.

### **2.1 Program Lessons Learned Audit by RBOC (FY 2014-2015)**

The SFPUC Revenue Bond Oversight Committee (RBOC) engaged R.W. Block Consulting, Inc. (RWBC) to conduct an evaluation of the knowledge management practices utilized by the WSIP and the applicability of such lessons learned to the Sewer System Improvement Program (SSIP). The focus of this engagement was to capture lessons learned from the WSIP and, through a comparison of program features and characteristics between the WSIP and SSIP, provide recommendations as to which WSIP lessons learned are most applicable to the SSIP program.

RWBC visited five active WSIP construction projects (New Irvington Tunnel; Crystal Springs/San Andreas Transmission Upgrade; Harry Tracy Water Treatment Plant Long-Term Improvements; Calaveras Dam Replacement Project; and Bay Tunnel) in the course of their data gathering. In addition to visiting sites and interviewing project staff, RWBC requested numerous project and program reports, documents and records which were provided by WSIP program management. RWBC also interviewed WSIP and SSIP executive staff, performed extensive document reviews and issued follow-up document requests.

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RWBC distilled 585 lessons learned into 10 executive level knowledge management themes and prioritized these 10 themes based on the potential impact they would have on the SSIP and WSIP, indicating the point in the capital development cycle where each theme would impact the SSIP and WSIP. RWBC received RBOC and SFPUC comments on their submitted Final Draft Report, from which the following summary comments and recommendations are abstracted:

- **Budgeting:** consider the utilization of a ‘stress test’ of future programs budgets – that is, conducting an evaluation of impacts to project/program budgets utilizing scenario analysis such as modifying contingency rates, application of historical WSIP change order rates to forecast construction costs, etc. to evaluate potential budget impacts.
- **Application of Contingency:** consider utilization of a more flexible approach to assignment of contingency to project budgets to be reflective of project-specific risk profiles.
- **The Lessons Learned Process:** could be further enhanced to fully leverage the amount of lessons learned being generated through various presentations, forms, and shutdown reports, in a more formal knowledge transfer process.
- **Project Delivery:** consider development of performance metrics (such as daily unit costs for key project delivery costs) against which various elements of project delivery performance can be measured.
- **Contracting:** consider added coordination of requirements set forth under the technical specifications and general conditions to ensure that potential for conflicting terms or conditions contained in these two key contract documents is minimized.
- **Change Management:** in general, the change management process utilized by the WSIP is robust and has shown to work well on a wide range of projects and difficult negotiating conditions.
- **Bidding:** the traditional design-bid-build with selected qualification utilized on WSIP to deliver most of the projects worked well. Bid results show over \$400 million in bid savings realized on the WSIP utilizing this methodology.
- **Financial and Scheduling Reporting:** the WSIP has developed comprehensive financial and scheduling reporting at all levels of the program. The WSIP has demonstrated very robust capability in this area.
- **Risk Assessment:** the Risk Assessment process is well developed and has evolved into a mature approach to evaluation of project and program risk.
- **Design:** RWBC interviews and project data reviewed showed that benefits could be gained by added owner involvement in the design development process through added involvement in review of design deliverables, especially at the 35% and 65% levels.

Publication of the Final RWBC Lessons Learned report is pending RBOC approval.

## 2.2 Risk Management

During FY 2014-2015, the WSIP team continued to implement and refine its Risk Management Program. New risk registers, with a total of 23 risks, were developed and entered in the Active Risk Management (ARM) software application for one construction contract:

- Regional Groundwater Storage and Recovery Project

A total of 99 risks were closed during the reporting period. In addition, the risk registers for the following construction contract has been closed:

- Crystal Springs/San Andreas Transmission Upgrade Project

This brought the total of active construction risk registers and individual risks managed through ARM as of the end of the reporting period to eight and 160, 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 2-1 summarizes the WSIP's active construction risks registers loaded into the ARM software application as of the end of the reporting period.

**Table 2-1: Summary of Active Construction Risk Registers as of June 30, 2015**

<b>Construction Contract<sup>1</sup></b>	<b>Date<sup>2</sup></b>	<b>No. of Risks<sup>3</sup></b>	<b>Risk Value (\$M)<sup>4</sup></b>
Calaveras Dam Replacement	Feb-12	41	31.9
HTWTP Long-Term Improvements	Aug-11	14	0.88
Regional Groundwater Storage and Recovery	June-15	23	2.1
New Irvington Tunnel	Jun-11	13	5.9
BDPL Reliability Upgrade - Tunnel	Nov-10	7	0.49
Seismic Upgrades of BDPL Nos. 3 & 4	May-13	14	0.66
Peninsula Pipeline Seismic Upgrades	April-14	40	0.30
San Antonio Backup Pipeline	Dec-13	8	0.45
<b>Cumulative active projects @ 80% confidence level</b>		<b>160</b>	<b>42.7<sup>5</sup></b>

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, 2015.

4. Total value of all risks at eighty percent (80%) confidence level as of June 30, 2015.

5. Active projects 80% confidence level when analyzed as a whole program.

As shown in Figure 2-1, the reporting period began with a cumulative 80% confidence level of \$43.1M in July 2014, then reached a peak of \$52.7M in November 2014, and ended the reporting period at \$42.7M, which represents a 19% decrease from the peak. The average risk exposure at the 80% confidence level during the reporting period was \$45.9M, which

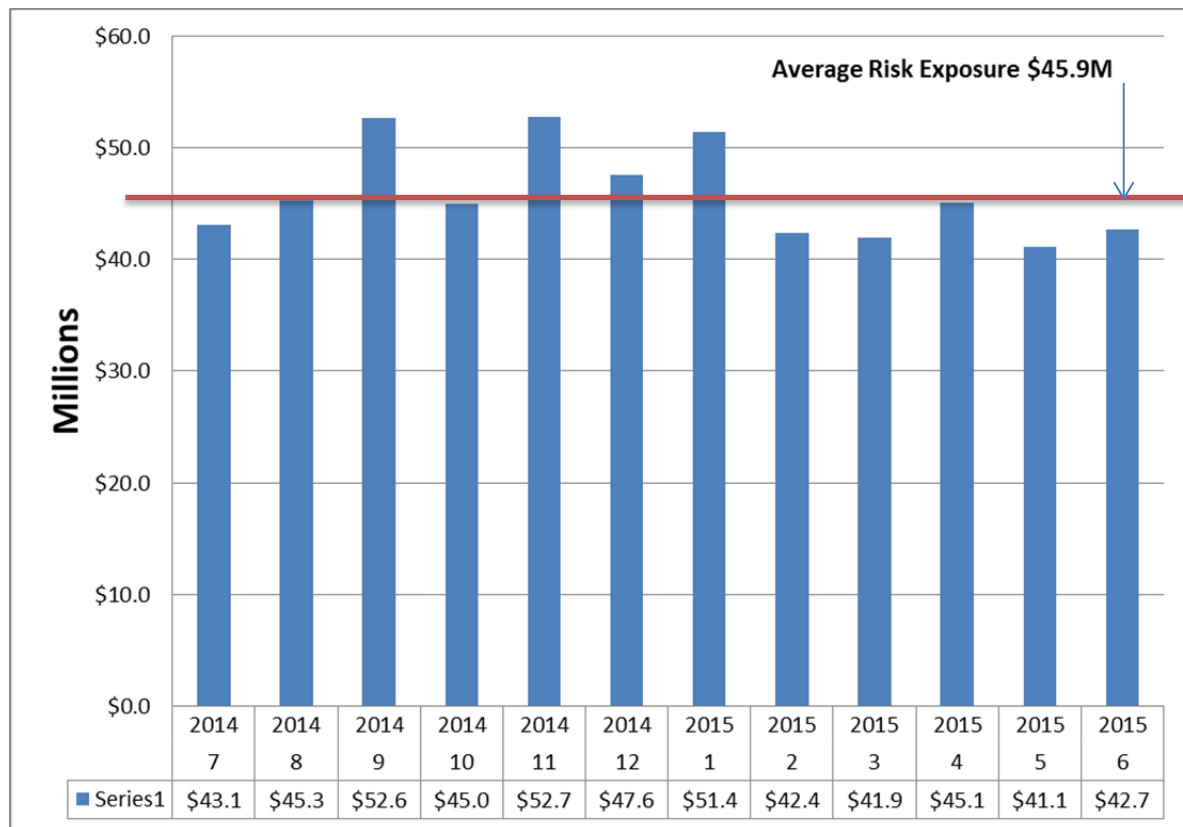


compares to an average of \$52.7M in the previous year, an indication of the overall risk reduction in WSIP over the last reporting period as some of the larger WSIP projects with relatively high risks are coming to a close.

The WSIP Risk Management System ranks risks based on a combination of the likelihood of occurrence and the potential cost impact to the SFPUC. On that basis, the program’s top 10 risks as of June 30, 2015 belong to two projects: Calaveras Dam Replacement and New Irvington Tunnel. Table 2-2 lists the projects with the largest risks and Table 2-3 provides a description of the program’s 10 largest risks.

**Figure 2-1: WSIP 80% Confidence Level Construction Risks for FY 2014-2015**

**(Values in millions of dollars)**



**Table 2-2: Summary of Top 10 Risks of WSIP Regional Projects (as of June 30, 2015)**

<b>Project</b>	<b>No. of Top 10 Risks</b>	<b>Percent Completion<sup>1</sup></b>
<b>Risk Ranking Based on Likelihood of Occurrence and Potential Cost Impact</b>		
Calaveras Dam Replacement	9	70%
New Irvington Tunnel	1	97%

1. Refers to percent completion of the construction contract (base bid plus approved change orders) as of June 30, 2015

Mitigation plans are developed for each risk identified in the risk register associated with all WSIP construction contracts. 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 risk summaries above, the two contracts that carry the greatest potential to impact the Program’s overall cost and schedule are CDRP and NIT Projects.

*Calaveras Dam Replacement (Revised Contract Cost \$508M)*

The CDRP represents the greatest number of risks in the Program’s top 10. These include potential impacts from secondary faulting affecting the outlet works; potential geologic features found beneath the approach channel and intake tower; weather delays in excess of contractual allowance; potential impacts due to mitigation of naturally occurring asbestos (NOA); quantity overrun for remnants of slide area B; potential for required acceleration due to embankment quantity overrun; instability of cut slopes below different benches; delay to the start of the 2016 shutdown; and access constraints due to the potential for nesting birds in Borrow Area B and along the west haul road.

*New Irvington Tunnel (Revised Contract Cost \$256M)*

The greatest remaining project risk associated with the NIT project stems from a claim of differing site conditions for ground classifications overruns/underruns. Namely, the contractor is seeking compensation for excessive hard rock encountered during the tunnel mining effort beyond that which was baselined in the contract documents. An additional significant risk is a contractor claim for repairs of buckled liner in two locations as well as re-grouting of defective cellular grout backfill that was placed in the annular space between the tunnel liner and the excavation. Negotiations are currently underway for both of these issues.

**Table 2-3: Top 10 WSIP Risks as of June 30, 2015**

<b>Project</b>	<b>Risk Description</b>	<b>Occurrence Probability</b>	<b>Risk Value<sup>1</sup> (\$M)</b>	<b>Mitigation</b>
Calaveras Dam Replacement	Potential secondary faulting impacting outlet works	95%	7.5	URS to investigate issues and develop mitigation measures
New Irvington Tunnel	Differing site conditions for ground classifications overruns/underruns.	50%	5.0	Negotiate cost with contractor
Calaveras Dam Replacement	Potential geologic features found beneath, approach channel, and near intake tower (possibly L1)	50%	4.0	Geologist to provide active mapping
Calaveras Dam Replacement	Adverse weather in excess of contractual allowance for rain or dust	50%	3.1	Plan and sequence work to minimize impacts to critical path
Calaveras Dam Replacement	Natural Occurring Asbestos: Conditions beyond Contractors control lead to difficulty in complying with CAMP, H&S or other permit requirements.	50%	3.01	Minimize dust generated during any and all construction activities.
Calaveras Dam Replacement	Residual risk for addressing slide B removal for quantity overrun not anticipated on PCO 34 and additional mitigation beneath pipe bench.	40%	4.0	Continuous mapping and monitoring of on-going foundation excavation
Calaveras Dam Replacement	Potential for acceleration due to embankment activity quantity overrun.	40%	3.5	Continuous monitoring of embankment to track areas of over excavation
Calaveras Dam Replacement	Instability of cut slopes below Bench F/G during construction	5%	15.3	Continuous mapping and monitoring of final cut slope.
Calaveras Dam Replacement	Delay to start of CDR6 (2016) Shutdown and activities and acceleration before the shutdown, and/or a reduction in shutdown duration.	20%	14.2	Work with contractor and WSIP Management to identify needed coordination and prepare SOR.
Calaveras Dam Replacement	Access Constraints: Eagle Nesting Impacts construction and use of West Haul Road	10%	7.8	Develop effective means to prevent nesting raptors within the project limits within the restriction of the various permits and resource agencies.

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

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## 2.3 Shutdown Management

During FY 2014-2015, the WSIP team continued to actively manage the WSIP shutdowns.

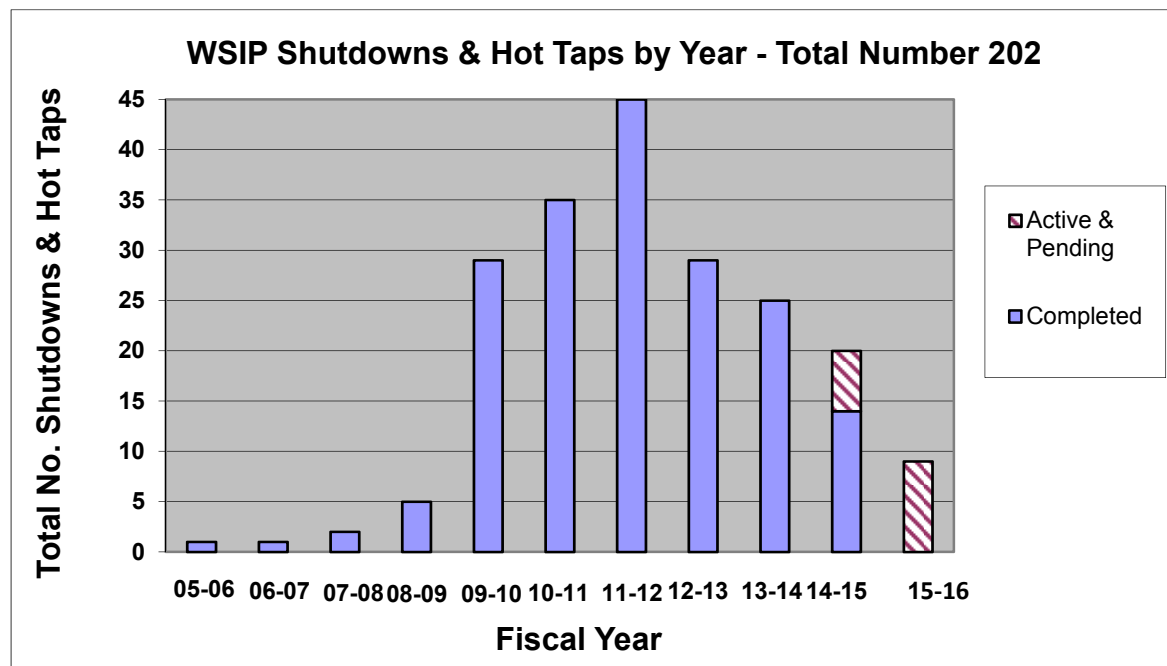
During the current 12-month reporting period, 15 WSIP shutdowns were started and 20 system shutdowns were completed as shown in Table 2-4, excluding the Local Region. For this reporting period, no hot taps were performed. Eleven WSIP shutdowns were added and six shutdowns were deleted from the Master System Shutdown Schedule to accomplish the required construction activities. In February 2015, the SFPUC completed the last of the HTWTP Long-Term Improvements Project shutdowns. Overall to date, 186 (or 92%) of the 202 WSIP system shutdowns and hot taps have been completed as shown in Figure 2-2. Nine shutdowns are planned during the coming fiscal year.

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 project NTP 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. We have 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. Due to a decrease in the number of WSIP shutdowns, the monthly WSIP Shutdown Coordination Meeting was discontinued in February 2015. Consequently, potential changes to the overall WSIP Master System Shutdown Schedule are discussed at weekly Water Enterprise, Water Supply and Treatment Division (WSTD) Operations 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 non-WSIP operational shutdowns.

**Table 2-4- Summary of Shutdowns and Hot Taps Started & Completed in FY14-15**

	<b>Shutdowns and Hot Taps Started</b>	<b>Date Started</b>	<b>Shutdowns and Hot Taps Completed</b>	<b>Date Completed</b>
1	SABPL/7	7/1/14	HTWTPLT/20	7/2/2014
2	HTWTPLT/7	7/25/14	CSSATU/2	7/15/2014
3	HTWTPLT/28	7/30/14	SUBDPL34/1	8/4/2014
4	Sutro/3 (Local Region)	8/1/14	HTWTPLT/25	8/13/2014
5	SABPL/2	8/30/14	SABPL/7	8/21/2014
6	SABPL/3	8/30/14	CSSATU/6	9/2/2014
7	HTWTPLT/7	10/11/14	HTWTPLT/12	10/12/2014
8	PPSU/1	10/14/14	CSSATU/10	11/3/2014
9	BDPL5T/3	10/27/14	BDPL5T/3	11/19/2014
10	GW/4 (Local Region)	11/12/14	Sutro/4 (Local Region)	12/11/2014
11	BDPL5T/5	11/20/14	HTWTPLT/7	12/16/2014
12	BDPL5T/6	12/2/14	HTWTPLT/28	12/16/2014
13	PPSU/3	1/9/15	PPSU/1	1/5/2015
14	PPSU/4	1/9/15	PPSU/3	1/29/2015
15	BDPL5T/4	1/31/15	BDPL5T/6	1/31/2015
16	PPSU/2	2/12/15	NIT/10	2/25/2015
17	NOIT/9	3/9/15	HTWTPLT/29	2/18/2015
18	GW/3 (Local Region)	4/10/15	HTWTPLT/32	2/26/2015
19			Sutro/2 (Local Region)	3/12/2015
20			GW/4 (Local Region)	3/13/2015
21			PPSU/6	3/24/2015
22			PPSU/4	5/21/2015
23			PPSU/2	6/22/2015

**Figure 2-2 – Number of Shutdowns and Hop Taps by Fiscal Year**



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## **2.4 Environmental Program**

### **CEQA**

The total number of California Environmental Quality Act (CEQA) documents approved to date for WSIP regional projects is as follows: 15 Environmental Impact Reports (EIRs), seven Initial Study/Mitigated Negative Declarations, and 13 Categorical Exemptions.

### **Resource Agency Permits**

Only two WSIP projects, out of 35 which required resource agency permits, remain to be permitted: The Alameda Creek Recapture Project and the permitting of potential fish passage modifications in the “Little Yosemite Reach” of Upper Alameda Creek. Overall, WSIP resource agency permitting is now 94% complete, with 98 resource agency permits obtained since the start of the program and up to seven additional permits anticipated (for two projects).

### **Environmental Construction Compliance**

The WSIP environmental construction compliance staff actively supported WSIP construction activities for three Sunol Region projects, two Bay Division Region projects, three Peninsula Region projects, one San Francisco Region and multiple habitat compensation sites in the Sunol and Peninsula Regions. Support for these projects encompassed resource agency coordination and resource agency permit amendments, implementing required State and federal reporting, and several minor project modifications for changes during construction. Additionally, 15 WSIP projects that are now in the post-construction phase are under the umbrella of the Vegetation Restoration of WSIP Construction Sites Project. Re-vegetation is underway on over 200 acres of land that was used temporarily during construction and over 1,500 trees to replace those removed by projects have been planted. Staff continued implementation of site assessments, invasive plant species, remedial seeding and planting as needed, and monitoring and reporting to ensure successful landscaping and revegetation in accordance with CEQA mitigation measures and resource agency permit conditions.

The WSIP environmental construction compliance staff, under direction of the SFPUC Bureau of Environmental Management, has effectively anticipated and managed potential challenges during construction activities, including continued discovery of cultural and paleontological resources, migratory birds, and construction water handling while still complying with all mandated mitigation measures and permit conditions and thereby minimizing possible delays. Based on the 2,109 environmental field inspections conducted during FY 2014-2015 for the WSIP projects under construction, the WSIP is 99.5% compliant and has not received any violations from the seven resource agencies that issued project permits (i.e., the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, the National Marine Fisheries Service, the Regional Water Quality Control Board, the State Historic Preservation Office, and the Bay Conservation and Development Commission). The less than 1% of non-compliance issues have since been resolved by implementation of corrective actions by the construction contractor that sometimes also includes additional environmental training.

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## 2.5 Public Outreach Program

The Public Outreach team for the WSIP kept pace with the significant milestones achieved by the projects in FY 2014-15.

One of the most important, yet least publicized, aspects of the WSIP is its safety record. To date, construction teams working on projects that are part of the WSIP have performed a total of more than 7.5 million working hours with a lost time incident rate at less than one-half the industry average. This accomplishment was formally acknowledged by the SFPUC Commission during the reporting period, and was picked up by media stories in industry trade magazines.

On October 15, 2014, the WSIP Communications team helped organize a celebration with our Bay Area partners to celebrate and watch the first water delivered through the new Bay Tunnel to be discharged into Crystal Springs Reservoir. The event was at the same location where the SFPUC celebrated the first water from Hetch Hetchy Reservoir to reach the Peninsula 80 years ago. This significant milestone, coming the same week as the 25<sup>th</sup> Anniversary of the Loma Prieta Earthquake, was widely covered by newspaper, radio, and television news outlets, including the front page of the San Francisco Chronicle.

In March 2015, the 3.5-mile-long, seismically-improved New Irvington Tunnel (NIT) began delivering water to 2.6 million people in the San Francisco Bay Area. The NIT Project completes the last of three new tunnels constructed under WSIP, creating a water lifeline able to withstand earthquakes on the Hayward, Calaveras and San Andreas faults. This milestone was highlighted in a feature, in-depth KQED story that debuted on TV in early March titled, "A New, Stronger Tunnel to Bring Hetch Hetchy Water to the Bay Area". It was also covered by local TV media and numerous local and trade articles.

Over 100 project team members, local officials and representatives from the media gathered on top of a newly-completed 11-million-gallon treated water reservoir in San Bruno in April 2015 to celebrate the completion of the Harry Tracy Water Treatment Plant (HTWTP) Long-Term Improvements Project. The Plant treats water from the Crystal Springs Reservoir and serves over one million customers in San Francisco and San Mateo counties. The event generated numerous local TV and print media stories.

For the projects still in active construction, the WSIP Communications team worked closely with the CM teams from the Sunol Valley to the City of San Francisco to plan and execute public events and tours on a regular basis to showcase the investment made in upgrading the Hetch Hetchy Regional Water System. The WSIP Communications team has been instrumental in responding to and coordinating in a timely manner with stakeholders. The team continues to focus on working with the media to inform and educate the public about this dynamic program while working with the various CM teams to ensure a safe and timely delivery of the program.

Construction activities continued to capture the attention of the local and trade media. The WSIP Communications team coordinated a number of tours to the various project sites to educate and inform the general public and subsequent articles and media coverage about the significance of the WSIP and the Hetch Hetchy Regional Water System. This year, numerous project site tours were hosted to educate wholesale customers and other regional

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and State officials about particular projects, lessons learned and how WSIP staff addressed various challenges encountered in the field.

The WSIP Communications team utilized various social media channels and multi-media platforms to communicate important information about the WSIP. Our @WSIPInTheNews Twitter handle shared milestones, highlighted media coverage and reinforced the WSIP's key messages with photos and videos. We continue posting regular updates to increase the WSIP's presence and influence with media, stakeholders and industry leaders. In the reporting period, we posted 2,107 tweets highlighting Sunol, Bay Division and Peninsula Region projects as well as program-wide milestones. An additional platform, Blogger, is utilized to implement construction outreach, communication and coordination with stakeholders.

To further our audience reach, the WSIP Communications team works in conjunction with the SFPUC's social media efforts to achieve complimentary content for the SFPUC's Facebook page, YouTube channel and Twitter handle. The team has planned for and implemented consistent public outreach and constant communication and coordination with residents, businesses, agricultural interests, elected officials, SFPUC wholesale and retail customers, partnering agencies and other park and irrigation districts.

The WSIP Communications team has also supported the project teams' submittals for industry awards. In fact, the WSIP program received seven prestigious industry awards during the reporting period. In February 2015, the Sutro Reservoir Upgrade Project was selected as "Project of the Year" from the Northern California Chapter of the American Public Works Association (APWA). The SFPUC Project Manager for the Bay Tunnel Project also won the "Manager of the Year" award for that Chapter.

Two WSIP projects, the Bay Tunnel Project and Crystal Springs/San Andreas Transmission Project received project honors from the Silicon Valley Chapter of APWA. In April, the National APWA awarded the Bay Tunnel Project with the "*Public Works Projects of the Year for 2014*" award. In May 2014, the Bay Tunnel Project won the project achievement award from the Northern California Chapter of the Construction Management Association of America (CMAA).

At the program level, in January 2015, Engineering News Record (ENR) Magazine honored the significant accomplishments of the program by naming the WSIP Director as one of the Top 25 Newsmakers of the year.

### **3.0 PROJECT SCHEDULES (FY 2014-2015)**

As of June 30, 2015, the overall WSIP is forecasted to be completed in May 2019, which is consistent with the schedule approved as part of the March 2014 Revised WSIP. All but three projects with Level of Service (LOS) goals involving construction activities (CDRP, Alameda Creek Recapture, and Regional Groundwater Storage and Recovery) are forecasted to be completed by 2016. Four other support projects (the Bioregional Habitat Restoration (BHR) Program; the Vegetation Restoration Program; the Watershed Environmental Improvement Program and the Long-Term Mitigation Endowment) will extend past 2016; however, these projects do not directly contribute to the system's LOS.



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As can be seen in the attached WSIP Q4 FY14-15 Quarterly Report, all Regional Projects with LOS goals that are in active construction are still forecast to meet the latest final completion milestone dates approved by the Commission (March 2014 Revised WSIP). Two projects that have already achieved construction substantial completion milestones are forecast to have delays to final completion dates due to ongoing litigation as of the end of the reporting period.

It is important to note that the construction substantial completion date is the most important schedule-related date because this is when new facilities or improvements to existing facilities become fully useable. The project completion date includes the remaining period between construction substantial and final completions, as well as the closeout period needed to complete all required documentation and take care of remaining administrative matters related to the project.

### **3.1 Tracking and Controlling Project Schedules**

The overall program completion schedule remains unchanged, with completion forecast for May 2019. The overall schedule is driven by the final administrative closeout completion date for the CDRP which remains unchanged at May 24, 2019.

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 are presented as the best available information at a given moment in time as reported in the WSIP Quarterly Reports. It is important to note that forecast dates can move every month based on the latest best available data from the individual project teams (including information from the construction contractor in the field). When warranted, the WSIP Director will direct a project team to accelerate selected construction activities to mitigate forecasted delays.

### **3.2 Keeping the Public and Stakeholders Informed**

To make sure the general public and 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 a number of oversight bodies (e.g., SFPUC Commission, RBOC and BAWSCA) and posted on the Program's Website ([sfwater.org/wsip](http://sfwater.org/wsip)). The WSIP Director also verbally updates the Commission on the Program's current challenges and their potential impacts on WSIP delivery at a public meeting quarterly. Likewise, throughout the year, the WSIP Director addresses various boards (e.g., County Board of Supervisors, wholesale water agencies) and speaks at public forums throughout the system's service area about the Program status. Additionally, the WSIP team conducts information tours of project sites with elected officials, wholesale agency representatives and other stakeholders. Another tool used to keep the public and stakeholders informed is the publication of a WSIP yearly bulletin that gets distributed to stakeholders and interested parties either via email or hard copies. Furthermore, these publications and outreach efforts are promoted on a regular basis through other social media platforms. Finally, the WSIP Communication team issues press

releases and organizes media events to highlight major program milestones (e.g., start of construction activities and completion of key projects).

#### **4.0 ACHIEVEMENTS AND CHALLENGES (FY 2014-2015)**

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.

##### **4.1 San Joaquin Region**

The status of all regional projects in the San Joaquin Region as of the end of FY 2014-2015 is summarized in Table 4-1.

**Table 4-1: Status of San Joaquin Regional Projects as of June 30, 2015**

<b>Project/Contract Name</b>	<b>Status</b>
Lawrence Livermore Water Quality Improvement	Completed
SJPL System - Crossovers	Closeout - Construction Completed
SJPL System - Western Segment	Completed
SJPL System - Eastern Segment	Closeout - Construction Completed
Rehabilitation of Existing SJPLs - Roselle	Completed
Tesla Treatment Facility	Completed
Tesla Portal Protection	Closeout - Construction Completed

As indicated in Table 4-1, construction is completed for all of the region’s seven main construction contracts.

##### **Achievements**

Construction completion was achieved for San Joaquin Pipeline (SJPL) System – Eastern Segment and Tesla Portal Protection in FY 2014-2015. Final project completion was also achieved for SJPL System - Western Segment, Rehabilitation of Existing SJPLs – Roselle, and Tesla Treatment Facility Projects during the reporting period.

##### **Challenges**

The potential litigation on the SJPL System – Crossover Project was settled through mediation and the project was moved to closeout.

SJPL System – Eastern Segment and Tesla Portal Protection continued in the closeout phase with processing of outstanding closeout documents on minor Job Order Contract (JOC) work for solar installations and drainage issues.

## 4.2 Sunol Valley Region

The status of all regional projects in the Sunol Valley Region as of the end of FY 2014-2015 is summarized in Table 4-2.

**Table 4-2: Status of Sunol Valley Regional Projects as of June 30, 2015**

<b>Project/Contract Name</b>	<b>Status</b>
Alameda Creek Recapture Project	Design
Standby Power Facilities - Various Locations	Completed
New Irvington Tunnel	Construction – 97.2% Complete <sup>1</sup>
Alameda Siphon #4	Completed
Pipeline Repair & Readiness Improvements	Completed
Calaveras Dam Replacement	Construction – 70.5% Complete <sup>1</sup>
Calaveras Reservoir Upgrades	Completed
San Antonio Backup Pipeline	Construction – Substantial Completion (98.7% Complete)
SVWTP Expansion & Treated Water Reservoir	Completed
San Antonio Pump Station Upgrade	Completed

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

As indicated in Table 4-2, only one of the 10 Sunol Valley regional projects/contracts remained in pre-construction as of the end of the reporting period. Six projects were completed, and three remained in construction as of June 30, 2015.

### **Achievements**

Over 6,500,000 cubic yards of earth and rock has been excavated at the Calaveras Dam Replacement Project (CDRP) to date. Excavation was completed during the reporting period in the new spillway, stilling basin, and left abutment of the new dam foundation areas, and continued below the pipe bench to the dam foundation. Buttress materials (Zone 4A) for the right abutment landslide have been completed. Placement of the rock fill materials for the upstream shell of the new dam (Zone 5), grouting of the left abutment, and structural concrete work for the new spillway and stilling basin are all on-going. Test fill for the clay core material (Zone 1) at Borrow Area E and production of hard rock materials for the upstream shell of the dam embankment (Zone 5) at Borrow Area B commenced during the reporting period.

The New Irvington Tunnel (NIT) Project completed construction of the new tunnel and was placed into service on February 27, 2015. With the new tunnel in service, this allowed the old Irvington Tunnel to be taken out of service for long overdue inspection and repairs. The inspection was conducted in April 2015 and found the tunnel to be in relatively sound structural condition, with only corrosion of some steel manifold pipes at the downstream portal needing repairs. The repairs, estimated at \$250,000, are not considered within the scope of the WSIP and will be funded by the Water Enterprise Capital Improvement Program.

The San Antonio Backup Pipeline Project was nearly 97% complete at the end of FY 2014-2015. The only items remaining are the testing of the chemical pumps and carrier water

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system, completion of operations and maintenance manuals and final approvals of equipment data sheets and final project closeout.

The Alameda Creek Recapture Project completed the 35 percent design and construction cost estimate at the end of FY 2014-2015. A technical review of the pump station hydraulics and surge analysis were also initiated and expected to be complete by September 2015. The project also completed 15 rounds of monthly water quality monitoring that will be performed over a 2-year period which is required to obtain approval from the State Department of Water Resources to operate this facility. A Draft Notice of Preparation for the EIR was also completed and a public scoping meeting was held in July 2015.

### **Challenges**

During the reporting period, there were two major challenges for the CDRP. The first was the continuation of actions needed to address potential differing site conditions due to complex geology in the left abutment. In the third quarter of 2014-2015, several secondary faults were identified along the outlet pipe alignment. The design team developed mitigation measures to address this issue which included adjustment of the pipeline configuration, over excavation of the fault features, additional backfill concrete, and restoration of the left abutment haul road. The CM team is continuing to negotiate with the Contractor for the most cost effective plan to maintain the project schedule, and anticipates the fault remediation work to be completed in the first quarter of 2015-2016. The second major challenge was to control and monitor naturally occurring asbestos (NOA) emissions at the site. Various technologies, including the “Dust Boss” and “KUMA” systems were field tested onsite as possible NOA mitigation measures. After a comprehensive evaluation of the monitoring program, the team was able to adjust the NOA monitoring protocol in the Comprehensive Air Monitoring Plan (CAMP), which allows for more efficient construction operations.

The primary construction challenge for the NIT during the reporting period was the buckling failure of two 50-foot sections of steel liner within the newly constructed tunnel due to exterior groundwater pressures acting on the outside of the liner sections. Upon investigation, it was discovered that the cellular grout injected within the annular space between the steel liner and the tunnel excavation surface was compromised due to groundwater inflows that were inadequately controlled during the grouting process. Repairs have since been made and the annular space for the entire tunnel alignment has been re-grouted under pressure to ensure a reliable tunnel for decades to come. Going forward, with the construction of the NIT nearly complete, the significant construction challenges have expired. However, the project faces the administrative challenge of submission of Operations and Maintenance related items, as-built documents, and negotiations of final change order issues before the scheduled final completion of the project in the fall 2015.

The primary challenge for Alameda Creek Recapture Project will be to navigate the public comments on the environmental review and permitting process without introducing additional constraints on the SFPUC’s water supply goals.

### **4.3 Bay Division Region**

The status of all regional projects in the Bay Division Region as of the end of FY 2014-2015 is summarized in Table 4-3. As indicated in the table, no Bay Division regional

projects/contracts remain in pre-construction. As of June 30, 2015, seven projects were completed, two were substantially complete and one remained in active construction.

**Table 4-3: Status of Bay Division Regional Projects as of June 30, 2015**

<b>Project/Contract Name</b>	<b>Status</b>
BDPL Nos. 3 & 4 Crossover/Isolation Valves	Completed
Seismic Upgrade of BDPL Nos. 3 & 4	Construction – 91.6% Complete <sup>1</sup>
SCADA System - Phase II	Completed
BDPL Reliability Upgrade - Tunnel	Construction – Substantial Completion <sup>1</sup> (99.6% Complete)
BDPL Reliability Upgrade - Pipeline	Construction – Substantial Completion <sup>2</sup>
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

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

<sup>2.</sup> Final construction completion for the BDPL Reliability Upgrade - Pipeline has been delayed due to pending litigation. All physical construction work is complete.

### **Achievements**

A major milestone for the WSIP Program occurred when the BDPL Reliability Upgrade - Tunnel (Bay Tunnel) began to convey drinking water on October 15, 2014 from the Hetch Hetchy reservoir to Crystal Springs Reservoir.

Remarkably, the Bay Tunnel came into service the week of the 25<sup>th</sup> Anniversary of the Loma Prieta Earthquake, replacing the aging BDPL Nos. 1 & 2 under the San Francisco Bay. The Substantial Completion Milestone was achieved on May 20, 2015, as the Ravenswood and Newark sites continued to be prepared for closeout at the end of the reporting period. The Final Construction Completion is anticipated at the beginning of the next fiscal year.

SFPUC Project Team and Operations went to considerable lengths to conserve water amidst our current drought. The post-construction hydrostatic testing of the pipeline was combined with the required disinfection process. Rather than treat the highly chlorinated water and discharge it to the bay as specified in the contract, the SFPUC devised a plan instead to flush the disinfection water to Crystal Springs Reservoir. This allowed saving upwards of 40 million gallons (1,375 acre feet) of water.

On the Seismic Upgrade of BDPL Nos. 3 & 4 Project, the installation of the new BDPL No.3 pipe, slip joint and ball joints inside the articulated box were installed and the new seismically reliable pipeline was placed into service. The temporary bridge over Mission Boulevard was removed and the concrete articulated box was completed and backfilled. The Alameda County Water District 12-inch and 30-inch pipelines were installed and

returned to service. The roadway re-alignment and sidewalk and site restoration started at the end of the reporting period.

**Challenges**

The biggest construction challenge on the Bay Tunnel during the reporting period was the larger than anticipated leakage through BDPL1 and BDPL2 bypasses that affected Contract Shutdown BDPL5T/6 to be able to tie-in to the new 42-inch BDPL2 bypass to the Hayward Service connection. The contractor requested an extension of time based on a change order that added Shutdown 5T/6 to the contract and potentially delayed progress for Contract Shutdown 5T/4. This resulted in a no-cost time extension to the substantial completion and final construction completion milestones.

During the reporting period the Seismic Upgrade of BDPL No. 3 and 4 Project experienced and resolved several significant challenges, including the polytetrafluoroethylene (PTFE) bonding of sliding bearings and resolution of impacts precipitated by various differing site conditions. The SFPUC project team and the construction contractor have successfully cooperated in the identification and resolution of these issues in the reporting period. In addition, the most significant remaining construction challenge on the project is to remediate voids discovered in the grouted section beneath the two sliding support bearing plates supporting the new BDPL No. 3. The pipe is not fully supported as designed with the voids in the grout. The corrective action plan was initiated and progressed to a point wherein completion is anticipated within two months after this reporting period.

**4.4 Peninsula Region**

The status of all regional projects in the Peninsula Region as of the end of FY 2014-2015 is summarized in Table 4-4.

As indicated in Table 4-4, of the 17 Peninsula regional projects/contracts, 15 projects have been completed, and two projects are in construction as of June 30, 2015.

**Table 4-4: Status of Peninsula Regional Projects as of June 30, 2015**

<b>Project/Contract Name</b>	<b>Status</b>
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	Construction – 97.3% Complete <sup>1</sup>

Peninsula Pipelines Seismic Upgrade (Phases 1 & 2)	Construction – 68.4% complete <sup>1</sup>
Peninsula Pipelines Seismic Upgrade (Phase 3)	Design <sup>2</sup>
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

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

<sup>2.</sup> Although Phase 3 of the Peninsula Pipelines Seismic Upgrade is a non-WSIP project, the status is reported herein as it contributes to meeting regional Level of Service (LOS) goals under WSIP.

### **Achievements**

Construction of the Peninsula Pipelines Seismic Upgrade (PPSU) (Phases 1 & 2) Project is progressing well with the completion of four of the planned five shutdowns. Construction completion is forecasted by the end of 2015 and final administrative closeout is forecast on schedule by July 2016.

The Alternative Analysis and Conceptual Engineering Reports for the Peninsula Pipelines Seismic Upgrades (Phase 3) have been completed. Detailed design and environmental review are currently underway. Final completion of this project is forecast on schedule for June 2018.

The Crystal Springs/San Andreas (CS/SA) Transmission Upgrade Project Final Completion was achieved in December 2014. The closeout activities were also completed in June 2015.

Construction of the HTWTP Long-Term Improvements Project is essentially complete except for a few residual punch-list items. Final construction completion is forecasted for the fall 2015 and administrative closeout will occur shortly thereafter.

All closeout activities on the Crystal Springs Pipeline No. 2 Replacement Project have been completed.

### **Challenges**

Overall, construction activities on the two ongoing construction contracts for the HTWTP Long-Term Improvements and the PPSU projects are progressing in accordance with the currently approved plans.

The HTWTP Long-Term Improvements Project has experienced many challenges including adherence to established shutdown schedules, maintaining contractor productivity, and resolution of impacts precipitated by differing site conditions. The majority of these challenges have been resolved. The SFPUC project team and the construction contractor continue to cooperate in the resolution of the few outstanding issues. The project teams have been successful in meeting the shutdown milestones without impacting the overall system operation. The Project is currently forecasted to achieve final construction and administrative closeout within the currently approved schedule.

The remaining key challenge for the PPSU Project is the completion of the last shutdown in San Bruno. The work was initiated in June 2015; the Project Team and the Contractor have

developed detailed plans for completing the work and achieving the planned Final Completion milestone by the end of 2015.

#### 4.5 San Francisco (Regional) Region

The status of all regional projects in the San Francisco Region as of the end of FY 2014-2015 is summarized in Table 4-5.

**Table 4-5: Status of San Francisco Regional Projects as of June 30, 2015**

Project/Contract Name	Status
Regional Groundwater Storage & Recovery	Construction – 6%
Sunset Reservoir - North Basin	Completed
University Mound Reservoir - North Basin	Completed

As indicated in Table 4-5, one of the three San Francisco Regional projects/contracts is in construction as of the end of the reporting period. The two other projects in this region have been completed and closed out.

#### **Achievements**

For the Regional Groundwater Storage & Recovery Project, the San Francisco Environmental Planning Department certified the Final EIR and the SFPUC Commission approved the project in August 2014. The construction contract was advertised in September 2014 and awarded in January 2015. The well station construction contract Notice to Proceed (NTP) was issued in April 2015. Construction has been initiated at seven of the thirteen well sites. Appraisals and offer letters have been completed for all of the forty-six easements required for well stations, access, and utility connections.

#### **Challenges**

The challenges associated with the Regional Groundwater Storage & Recovery project are related to finalizing required right-of-way (ROW) acquisition. ROW agreements need to be finalized with the Lake Merced Golf Club and two retail outlets. Efforts to avoid delays include ongoing outreach with these parties. In addition, identifying well sites in the San Bruno area (to serve as alternates to the Golden Gate National Cemetery proposed wells) is on the critical path in order to deliver the full complement of water supply scoped under this project.

### 5.0 STATUS OF AB 1823 PROJECTS

The status of the 10 projects identified in Assembly Bill (AB) 1823 is summarized in Table 5-1. As of June 30, 2015, four projects were completed and six projects remain in construction.

**Table 5-1: Status of AB 1823 Projects as of June 30, 2015**

Project Name	Status
New Irvington Tunnel	Construction – 97.3% Complete <sup>1</sup>
Alameda Siphon #4	Completed



Calaveras Dam Replacement	Construction – 70.5% Complete <sup>1</sup>
BDPL Nos. 3 & 4 Crossover/Isolation Valves	Completed
Seismic Upgrade of BDPL Nos. 3 & 4	Construction – 91.6% Complete <sup>1</sup>
BDPL Reliability Upgrade - Tunnel	Construction – Substantial Completion (99.6% Complete) <sup>1</sup>
BDPL Reliability Upgrade - Pipeline	Construction - Substantial Completion <sup>2</sup>
BDPL Nos. 3 & 4 Crossovers	Completed
New Crystal Springs Bypass Tunnel	Completed
Crystal Springs/San Andreas Transmission Upgrade	Completed

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

<sup>2.</sup> Final construction completion for the BDPL Reliability Upgrade - Pipeline has been delayed due to pending litigation. All physical construction work is complete.

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, is currently under construction as part of the BDPL Reliability Upgrade - Tunnel and BDPL Reliability Upgrade - Pipeline Projects.

Half of the 10 projects listed in AB 1823 contribute to the construction of a new seismically-designed lifeline that will carry water from the Sunol Valley in the East Bay to the mid-Peninsula. That lifeline involves six segments contracted out separately to be completed by the end of 2015 - Alameda Siphon #4, New Irvington Tunnel, BDPL Reliability Upgrade (East Bay Reaches), BDPL Reliability Upgrade – Tunnel, BDPL Reliability Upgrade (Peninsula Reaches) and New Crystal Springs Bypass Tunnel. Construction activities have now been completed on five of the six segments. Construction of the remaining segment - New Irvington Tunnel is forecasted to be substantially completed by September 2015.



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**APPENDIX A**  
**WSIP Quarterly Report**  
**Regional Projects (Q4/FY 2014- 2015)**

Report available on the SFPUC Website at the following address:

<http://216.119.104.145/index.aspx?page=307>



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**APPENDIX B**

**Current Approved WSIP Schedule  
Regional Projects**



## APPENDIX B: Current Approved WSIP Project-Level Schedules

Project Name	Start	Finish	FY2008				FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4				
<b>Regional Improvement Projects</b>																																														
<b>San Joaquin Region</b>																																														
CUW36401 Lawrence Livermore Water Quality Improv	02-Feb-04 A	31-Jul-13A	COMPLETED																																											
CUW37301 San Joaquin Pipeline System	19-Aug-02 A	31-Mar-15																																												
CUW37302 Rehabilitation of Existing San Joaquin Pipe	03-Jul-06 A	30-Jun-14 A	COMPLETED																																											
CUW38401 Tesla Treatment Facility	01-Jul-02 A	31-Jul-14A	COMPLETED																																											
<b>Sunol Valley Region</b>																																														
CUW35201 Alameda Creek Recapture Project	30-Sep-03 A	11-Apr-19																																												
CUW35501 Standby Power Facilities - Various Locatio	11-Jul-02 A	22-Dec-10A	COMPLETED																																											
CUW35901 New Irvington Tunnel	19-Dec-01 A	11-Mar-16																																												
CUW35902 Alameda Siphon #4	19-Dec-01 A	28-Jun-13A	COMPLETED																																											
CUW37001 Pipeline Repair & Readiness Improvements	21-Apr-03 A	16-Apr-09A	COMPLETED																																											
CUW37401 Calaveras Dam Replacement	03-Sep-02 A	24-May-19																																												
CUW37402 Calaveras Reservoir Upgrades	19-Nov-03 A	28-Jul-06 A	COMPLETED																																											
CUW37403 San Antonio Backup Pipeline	17-Dec-03 A	30-Nov-15																																												
CUW38101 SVWTP Expansion & Treated Water Rese	22-Apr-05 A	12-Jun-14 A	COMPLETED																																											
CUW38601 San Antonio Pump Station Upgrade	01-Jul-04 A	29-Jun-12A	COMPLETED																																											
<b>Bay Division Region</b>																																														
CUW35301 BDPL Nos. 3 & 4 Crossover/Isolation Valv	06-Jan-03 A	31-Jul-09A	COMPLETED																																											
CUW35302 Seismic Upgrade of BDPL Nos. 3 & 4	22-Oct-04 A	09-Dec-15																																												
CUW36301 SCADA System - Phase II	22-Apr-05 A	28-May-13A	COMPLETED																																											
CUW36801 BDPL Reliability Upgrade / Tunnel	19-Dec-01 A	31-Mar-16																																												
CUW36802 BDPL Reliability Upgrade - Pipeline	19-Dec-01 A	06-Apr-15																																												
CUW36803 BDPL Reliability Upgrade - Relocation of	24-Apr-06 A	28-May-10A	COMPLETED																																											
CUW38001 BDPL Nos. 3 & 4 Crossovers	17-Feb-04 A	30-Jun-14 A	COMPLETED																																											
CUW38901 SFPUC/EBMUD Intertie	24-Jun-02 A	20-Mar-14 A	COMPLETED																																											
CUW39301 BDPL No. 4 Condition Assessment PCCP	04-Aug-06 A	06-Feb-09A	COMPLETED																																											
<b>Peninsula Region</b>																																														
CUW35401 Lower Crystal Springs Dam Improvements	01-Nov-00 A	28-Dec-12 A	COMPLETED																																											
CUW35601 New Crystal Springs Bypass Tunnel	07-Jan-02 A	17-Aug-12A	COMPLETED																																											
CUW35701 Adit Leak Repair - Crystal Springs/Calaver	01-Apr-05 A	31-Jul-08 A	COMPLETED																																											
CUW36101 Pulgas Balancing - Inlet/Outlet Work	15-May-02 A	11-May-06A	COMPLETED																																											
CUW36102 Pulgas Balancing - Discharge Channel Mo	01-Apr-05 A	30-Jul-10 A	COMPLETED																																											
CUW36103 Pulgas Balancing - Structural Rehabilitation	03-Apr-06 A	28-Dec-12 A	COMPLETED																																											
CUW36105 Pulgas Balancing - Modifications of the Ex	02-Apr-07 A	20-Mar-13 A	COMPLETED																																											
CUW36501 Cross Connection Controls	01-Jul-03 A	30-Apr-09A	COMPLETED																																											
CUW36601 HTWTP Short-Term Improvements (Demc	04-Sep-02 A	14-Nov-06 A	COMPLETED																																											
CUW36603 HTWTP Short-Term Improvements - Coag	03-Jul-06 A	28-Jul-10 A	COMPLETED																																											
CUW36701 HTWTP Long-Term Improvements	01-Jul-03 A	04-Jan-16																																												
CUW36702 Peninsula Pipelines Seismic Upgrade	01-Jul-09 A	06-Jul-16																																												
CUW36901 Capuchino Valve Lot Improvements	22-Apr-05 A	19-Aug-08A	COMPLETED																																											
CUW37101 Crystal Springs/San Andreas Transmission	18-Aug-03 A	30-Jun-15 A	COMPLETED																																											
CUW37801 Crystal Springs Pipeline No. 2 Replacement	15-Jan-04 A	31-Jul-14A	COMPLETED																																											
CUW37901 San Andreas Pipeline No. 3 Installation	15-Jan-04 A	30-Aug-12A	COMPLETED																																											
CUW39101 Baden and San Pedro Valve Lots Improver	03-Oct-05 A	29-Mar-13 A	COMPLETED																																											



## APPENDIX B: Current Approved WSIP Project-Level Schedules

Project Name	Start	Finish	FY2008		FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4		
<b>San Francisco Regional Region</b>	31-Mar-00 A	31-Jul-18																																										
CUW30103 Regional Groundwater Storage and Recov	01-Jun-03 A	31-Jul-18	[Gantt bar with various phases]																																									
CUW35801 Sunset Reservoir - North Basin	31-Mar-00 A	10-Sep-10A	[Gantt bar with 'COMPLETED' text]																																									
CUW37201 University Mound Reservoir - North Basin	24-Oct-05 A	29-Mar-13A	[Gantt bar with 'COMPLETED' text]																																									
<b>Support Projects</b>	13-Apr-04 A	31-Aug-18																																										
CUW36302 System Security Upgrades	07-Jan-06 A	29-Apr-16	[Gantt bar]																																									
CUW38801 Programmatic EIR	13-Apr-04 A	30-Jun-09 A	[Gantt bar with 'COMPLETED' text]																																									
CUW38802 Bioregional Habitat Restoration	06-Sep-06 A	28-Jul-16	[Gantt bar]																																									
CUW38803 Vegetation Restoration of WSIP Constructi	02-Jan-13 A	31-Dec-15	[Gantt bar]																																									
CUW38804 Long Term Mitigation Endowment	05-Mar-14 A	31-Aug-18	[Gantt bar]																																									
CUW39201 Program Management Project	01-Aug-05 A	30-Dec-16	[Gantt bar]																																									
CUW39401 Watershed Environmental Improvement Pr	02-Jan-07 A	31-Aug-18	[Gantt bar]																																									





## APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish	FY2008				FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4				
<b>Regional Improvement Projects</b>																																														
<b>San Joaquin Region</b>																																														
CUW36401 Lawrence Livermore Water Quality Improv	02-Feb-04	31-Jul-13	<b>COMPLETED</b>																																											
Project Management	02-Feb-04	31-Jul-13	[Gantt bar: 02-Feb-04 to 31-Jul-13]																																											
Planning	02-Feb-04	28-Sep-07	[Gantt bar: 02-Feb-04 to 28-Sep-07]																																											
Environmental	31-Aug-06	25-Feb-09	[Gantt bar: 31-Aug-06 to 25-Feb-09]																																											
Design	01-Oct-07	31-Mar-09	[Gantt bar: 01-Oct-07 to 31-Mar-09]																																											
Bid & Award	01-Dec-08	25-Aug-09	[Gantt bar: 01-Dec-08 to 25-Aug-09]																																											
Construction Management	27-Feb-09	11-Mar-11	[Gantt bar: 27-Feb-09 to 11-Mar-11]																																											
Construction	26-Aug-09	11-Mar-11	[Gantt bar: 26-Aug-09 to 11-Mar-11]																																											
Closeout	14-Mar-11	31-Jul-13	[Gantt bar: 14-Mar-11 to 31-Jul-13]																																											
CUW37301 San Joaquin Pipeline System	19-Aug-02	31-Mar-15																																												
Project Management	19-Aug-02	31-Mar-15	[Gantt bar: 19-Aug-02 to 31-Mar-15]																																											
Planning	19-Aug-02	28-Dec-06	[Gantt bar: 19-Aug-02 to 28-Dec-06]																																											
Environmental Review	17-Feb-04	27-Mar-12	[Gantt bar: 17-Feb-04 to 27-Mar-12]																																											
Right of Way	02-Jan-07	29-Mar-13	[Gantt bar: 02-Jan-07 to 29-Mar-13]																																											
Design	02-Jan-07	23-Mar-11	[Gantt bar: 02-Jan-07 to 23-Mar-11]																																											
Bid & Award	27-Apr-09	21-Jul-11	[Gantt bar: 27-Apr-09 to 21-Jul-11]																																											
Construction Management	03-Feb-09	31-Jul-14	[Gantt bar: 03-Feb-09 to 31-Jul-14]																																											
Construction	13-Oct-09	31-Jul-14	[Gantt bar: 13-Oct-09 to 31-Jul-14]																																											
Closeout	25-Oct-13	31-Mar-15	[Gantt bar: 25-Oct-13 to 31-Mar-15]																																											
CUW37302 Rehabilitation of Existing San Joaquin Pipe	03-Jul-06	30-Jun-14	<b>COMPLETED</b>																																											
Project Management	03-Jul-06	30-Jun-14	[Gantt bar: 03-Jul-06 to 30-Jun-14]																																											
Planning	03-Jul-06	30-Apr-12	[Gantt bar: 03-Jul-06 to 30-Apr-12]																																											
Environmental Review	26-Sep-06	31-Dec-12	[Gantt bar: 26-Sep-06 to 31-Dec-12]																																											
Design	31-Jul-06	31-Mar-11	[Gantt bar: 31-Jul-06 to 31-Mar-11]																																											
Bid & Award	02-May-08	31-Mar-11	[Gantt bar: 02-May-08 to 31-Mar-11]																																											
Construction Management	03-Jul-06	19-Sep-11	[Gantt bar: 03-Jul-06 to 19-Sep-11]																																											
Construction	02-Oct-06	01-Nov-11	[Gantt bar: 02-Oct-06 to 01-Nov-11]																																											
Closeout	20-Sep-11	30-Jun-14	[Gantt bar: 20-Sep-11 to 30-Jun-14]																																											
CUW38401 Tesla Treatment Facility	01-Jul-02	31-Jul-14	<b>COMPLETED</b>																																											
Project Management	01-Jul-02	31-Jul-14	[Gantt bar: 01-Jul-02 to 31-Jul-14]																																											
Planning	01-Jul-02	29-Jun-07	[Gantt bar: 01-Jul-02 to 29-Jun-07]																																											
Environmental	30-Jun-06	25-Feb-09	[Gantt bar: 30-Jun-06 to 25-Feb-09]																																											
Right of Way	17-Mar-08	16-Oct-08	[Gantt bar: 17-Mar-08 to 16-Oct-08]																																											
Design	15-Feb-07	20-Nov-09	[Gantt bar: 15-Feb-07 to 20-Nov-09]																																											
Bid & Award	30-Jan-08	10-Nov-08	[Gantt bar: 30-Jan-08 to 10-Nov-08]																																											
Construction Management	02-Feb-09	20-May-14	[Gantt bar: 02-Feb-09 to 20-May-14]																																											
Construction	08-Sep-08	20-May-14	[Gantt bar: 08-Sep-08 to 20-May-14]																																											
Closeout	01-Jul-11	31-Jul-14	[Gantt bar: 01-Jul-11 to 31-Jul-14]																																											
<b>Sunol Valley Region</b>																																														
CUW35201 Alameda Creek Recapture Project	30-Sep-03	11-Apr-19																																												
Project Management	30-Sep-03	11-Apr-19	[Gantt bar: 30-Sep-03 to 11-Apr-19]																																											
Planning	30-Sep-03	14-Nov-14	[Gantt bar: 30-Sep-03 to 14-Nov-14]																																											
Environmental Phase	23-Apr-10	30-Sep-16	[Gantt bar: 23-Apr-10 to 30-Sep-16]																																											



## APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish	FY2008		FY2009		FY2010		FY2011		FY2012		FY2013		FY2014		FY2015		FY2016		FY2017		FY2018				
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1
Design Phase	01-Jul-10	31-May-16																									
Bid & Award Phase	03-Oct-16	31-Mar-17																									
Construction Management Phase	03-Apr-17	31-Oct-18																									
Construction	03-Apr-17	31-Oct-18																									
Closeout Phase	01-Nov-18	11-Apr-19																									
<b>CUW35501 Standby Power Facilities - Various Locatio</b>	<b>11-Jul-02</b>	<b>22-Dec-10</b>	<b>COMPLETED</b>																								
Project Management	11-Jul-02	22-Dec-10																									
Planning	11-Jul-02	30-Jun-05																									
Environmental (CatEx)	26-May-05	23-Sep-05																									
Design	01-Jul-05	04-May-07																									
Bid & Award	16-Apr-07	31-Dec-07																									
Construction Management	10-Dec-07	22-Jun-10																									
Construction	10-Dec-07	28-May-10																									
Closeout	10-Sep-08	07-Oct-10																									
<b>CUW35901 New Irvington Tunnel</b>	<b>19-Dec-01</b>	<b>11-Mar-16</b>																									
Project Management	19-Dec-01	11-Mar-16																									
Planning	19-Dec-01	07-Oct-05																									
Environmental	25-Aug-04	07-Mar-11																									
Right of Way	03-Jul-06	11-Sep-15																									
Design	11-Oct-05	12-Jan-10																									
Bid & Award	05-Jan-09	21-Jul-10																									
Construction Management	28-Sep-09	11-Sep-15																									
Construction	31-Mar-09	11-Sep-15																									
Close Out	14-Sep-15	11-Mar-16																									
<b>CUW35902 Alameda Siphon #4</b>	<b>19-Dec-01</b>	<b>28-Jun-13</b>	<b>COMPLETED</b>																								
Project Management	19-Dec-01	28-Jun-13																									
Planning	19-Dec-01	07-Oct-05																									
Environmental	25-Aug-04	30-Mar-10																									
Right of Way	04-Jun-07	09-Feb-09																									
Design	11-Oct-05	13-Mar-09																									
Bid & Award	03-Nov-08	25-Aug-09																									
Construction Management	26-Aug-09	24-Aug-12																									
Construction	20-Apr-09	24-Aug-12																									
Closeout	27-Aug-12	28-Jun-13																									
<b>CUW37001 Pipeline Repair &amp; Readiness Improvements</b>	<b>21-Apr-03</b>	<b>16-Apr-09</b>	<b>COMPLETED</b>																								
Project Management	21-Apr-03	16-Apr-09																									
Planning	21-Apr-03	30-Mar-07																									
Environmental (CatEx)	14-Jan-05	29-Dec-06																									
Design	07-Jun-04	05-Feb-07																									
Bid & Award	31-Oct-05	23-Jul-07																									
Construction Management	30-Jan-06	15-Oct-08																									
Construction	30-Jan-06	15-Oct-08																									
Close Out	18-Sep-06	16-Apr-09																									
<b>CUW37401 Calaveras Dam Replacement</b>	<b>03-Sep-02</b>	<b>24-May-19</b>																									
Project Management	03-Sep-02	24-May-19																									
Planning	03-Sep-02	04-Nov-05																									

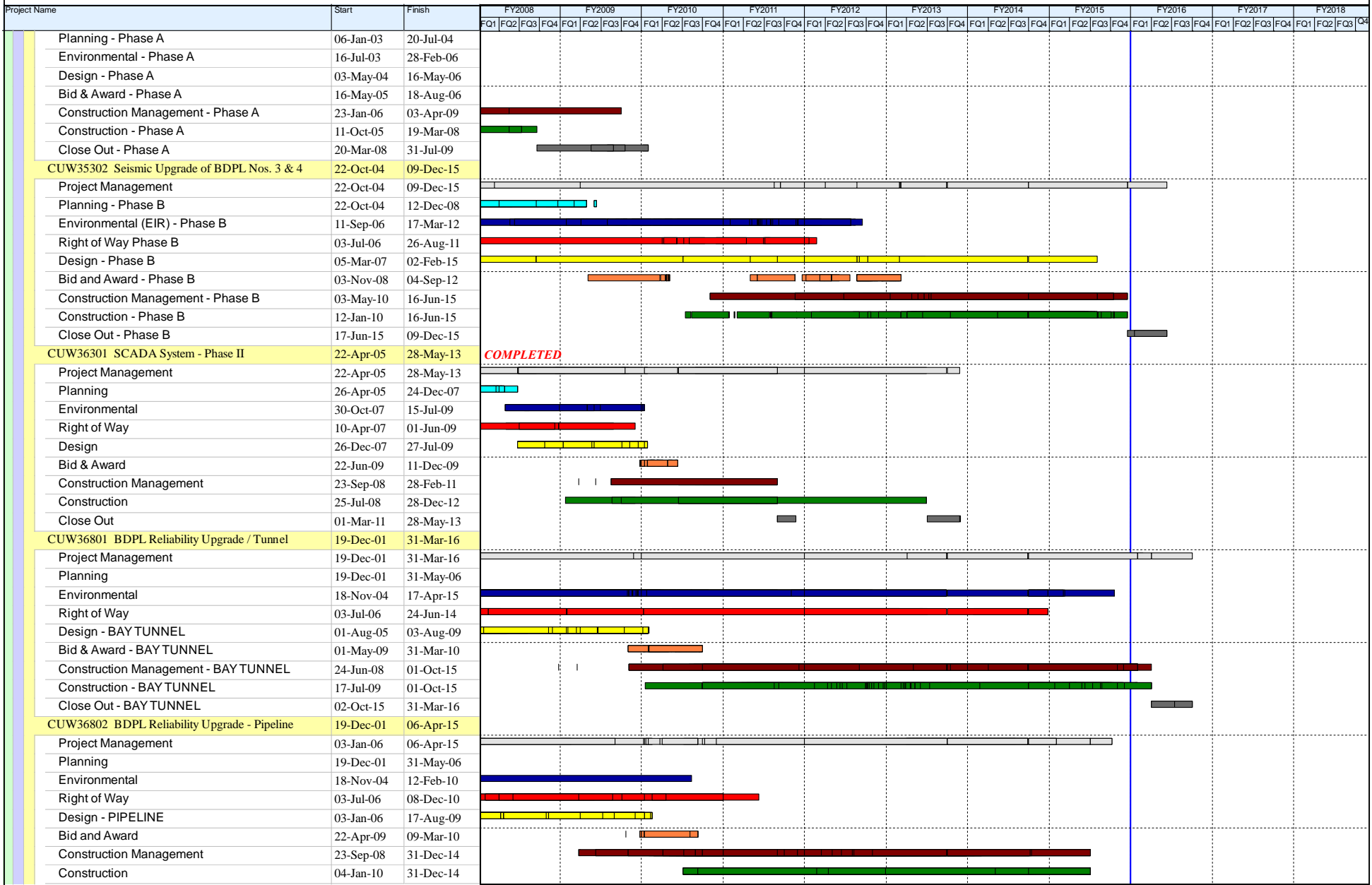
- |  |                    |   |               |   |              |   |                   |   |              |
|--|--------------------|---|---------------|---|--------------|---|-------------------|---|--------------|
|  | Project Management |  | Environmental |  | Right-of-Way |  | Construction Mgmt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

## APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish	FY2008		FY2009		FY2010		FY2011		FY2012		FY2013		FY2014		FY2015		FY2016		FY2017		FY2018				
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1
Environmental	16-May-05	06-Feb-12																									
Design	14-Nov-05	30-Nov-15																									
Bid & Award	27-Dec-10	30-Nov-15																									
Construction Management	15-Aug-11	10-Sep-18																									
Construction	31-May-11	26-Nov-18																									
Closeout	27-Nov-18	24-May-19																									
<b>CUW37402 Calaveras Reservoir Upgrades</b>	<b>19-Nov-03</b>	<b>28-Jul-06</b>	<b>COMPLETED</b>																								
Project Management	19-Nov-03	28-Jul-06																									
Planning	19-Nov-03	18-Nov-05																									
Environmental	21-May-04	18-Nov-05																									
Design	16-Dec-04	18-Nov-05																									
Bid & Award	28-Jan-05	18-Nov-05																									
Construction Management	27-Jun-05	14-Feb-06																									
Construction	27-Jun-05	14-Feb-06																									
Close Out	07-Oct-05	28-Jul-06																									
<b>CUW37403 San Antonio Backup Pipeline</b>	<b>17-Dec-03</b>	<b>30-Nov-15</b>																									
Project Management	17-Dec-03	30-Nov-15																									
Planning	17-Dec-03	11-May-07																									
Environmental	02-Oct-06	29-Mar-13																									
Design	01-Mar-07	24-Sep-12																									
Bid & Award	18-May-11	29-Mar-13																									
Construction Management	26-Oct-12	18-Mar-15																									
Construction	29-Mar-13	31-May-15																									
Close Out	01-Jun-15	30-Nov-15																									
<b>CUW38101 SVWTP Expansion &amp; Treated Water Rese</b>	<b>22-Apr-05</b>	<b>12-Jun-14</b>	<b>COMPLETED</b>																								
Project Management	22-Apr-05	14-May-14																									
Planning	22-Apr-05	29-Jun-07																									
Environmental Review	21-Jul-06	30-Jun-10																									
Right of Way	03-Jul-06	16-Jun-09																									
Design	16-Jan-07	10-Dec-09																									
Bid & Award	23-Nov-09	22-Jun-10																									
Construction Management	30-Apr-10	20-Sep-13																									
Construction	23-Jun-10	20-Sep-13																									
Closeout	23-Sep-13	12-Jun-14																									
<b>CUW38601 San Antonio Pump Station Upgrade</b>	<b>01-Jul-04</b>	<b>29-Jun-12</b>	<b>COMPLETED</b>																								
Project Management	01-Jul-04	29-Jun-12																									
Planning	01-Jul-04	12-Jan-07																									
Environmental (CatEx)	02-Jan-07	21-Jun-07																									
Design	06-Jul-07	15-May-09																									
Bid & Award	14-Apr-09	30-Oct-09																									
Construction Management	02-Nov-09	30-Sep-11																									
Construction	02-Nov-09	30-Sep-11																									
Close-Out	03-Oct-11	29-Jun-12																									
<b>Bay Division Region</b>	<b>19-Dec-01</b>	<b>31-Mar-16</b>	<b>COMPLETED</b>																								
<b>CUW35301 BDPL Nos. 3 &amp; 4 Crossover/Isolation Valv</b>	<b>06-Jan-03</b>	<b>31-Jul-09</b>	<b>COMPLETED</b>																								
Project Management	06-Jan-03	31-Jul-09																									



## APPENDIX B: Current Approved WSIP Phase-Level Schedules



## APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish	FY2008				FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4				
Closeout	14-Jun-12	06-Apr-15																																												
<b>CUW36803 BDPL Reliability Upgrade - Relocation of</b>	<b>24-Apr-06</b>	<b>28-May-10</b>	<b>COMPLETED</b>																																											
Project Management	24-Apr-06	28-May-10																																												
Right of Way	28-May-10	28-May-10																																												
Design	24-Apr-06	16-Jan-07																																												
Bid and Award	17-Jan-07	06-Jan-10																																												
Construction Management	02-Jul-07	28-May-10																																												
Construction	15-Nov-06	28-May-10																																												
Closeout	28-May-10	28-May-10																																												
<b>CUW38001 BDPL Nos. 3 &amp; 4 Crossovers</b>	<b>17-Feb-04</b>	<b>30-Jun-14</b>	<b>COMPLETED</b>																																											
Project Management	17-Feb-04	30-Jun-14																																												
Planning	17-Feb-04	14-Nov-06																																												
Environmental	28-Aug-06	31-Dec-08																																												
Right of Way	04-Sep-07	30-Jun-14																																												
Design	04-Dec-06	20-Jul-09																																												
Bid & Award	05-Nov-08	10-Jul-09																																												
Construction Management	23-Sep-08	30-May-14																																												
Construction	30-Jan-09	11-Sep-13																																												
Close Out	31-Dec-12	30-Jun-14																																												
<b>CUW38901 SFPUC/EBMUD Intertie</b>	<b>24-Jun-02</b>	<b>20-Mar-14</b>	<b>COMPLETED</b>																																											
Project Management	24-Jun-02	20-Mar-14																																												
Planning	24-Jun-02	11-Oct-02																																												
Environmental	14-Oct-02	31-Mar-03																																												
Design	01-Apr-03	30-Jul-04																																												
Bid & Award	02-Aug-04	21-Dec-04																																												
Construction Management	18-Jan-05	31-Jan-08																																												
Construction	18-Jan-05	31-Jan-08																																												
Close Out	01-Feb-08	20-Mar-14																																												
<b>CUW39301 BDPL No. 4 Condition Assessment PCCP</b>	<b>04-Aug-06</b>	<b>06-Feb-09</b>	<b>COMPLETED</b>																																											
Project Management	04-Aug-06	06-Feb-09																																												
Planning	04-Aug-06	06-Feb-09																																												
Environmental	16-Jul-07	30-Sep-08																																												
<b>Peninsula Region</b>	<b>01-Nov-00</b>	<b>06-Jul-16</b>																																												
<b>CUW35401 Lower Crystal Springs Dam Improvements</b>	<b>01-Nov-00</b>	<b>28-Dec-12</b>	<b>COMPLETED</b>																																											
Project Management	01-Nov-00	28-Dec-12																																												
Planning	01-Nov-00	30-Dec-04																																												
Environmental Review	03-Jan-05	28-Apr-11																																												
Right of Way	03-Jul-06	30-Jun-10																																												
Design	08-Mar-07	30-Sep-10																																												
Bid & Award	20-Aug-10	28-Jan-11																																												
Construction Management	31-Jan-11	01-May-12																																												
Construction	31-Jan-11	01-May-12																																												
Close Out	02-May-12	28-Dec-12																																												
<b>CUW35601 New Crystal Springs Bypass Tunnel</b>	<b>07-Jan-02</b>	<b>17-Aug-12</b>	<b>COMPLETED</b>																																											
Project Management	07-Jan-02	17-Aug-12																																												
Planning	07-Jan-02	05-Aug-04																																												

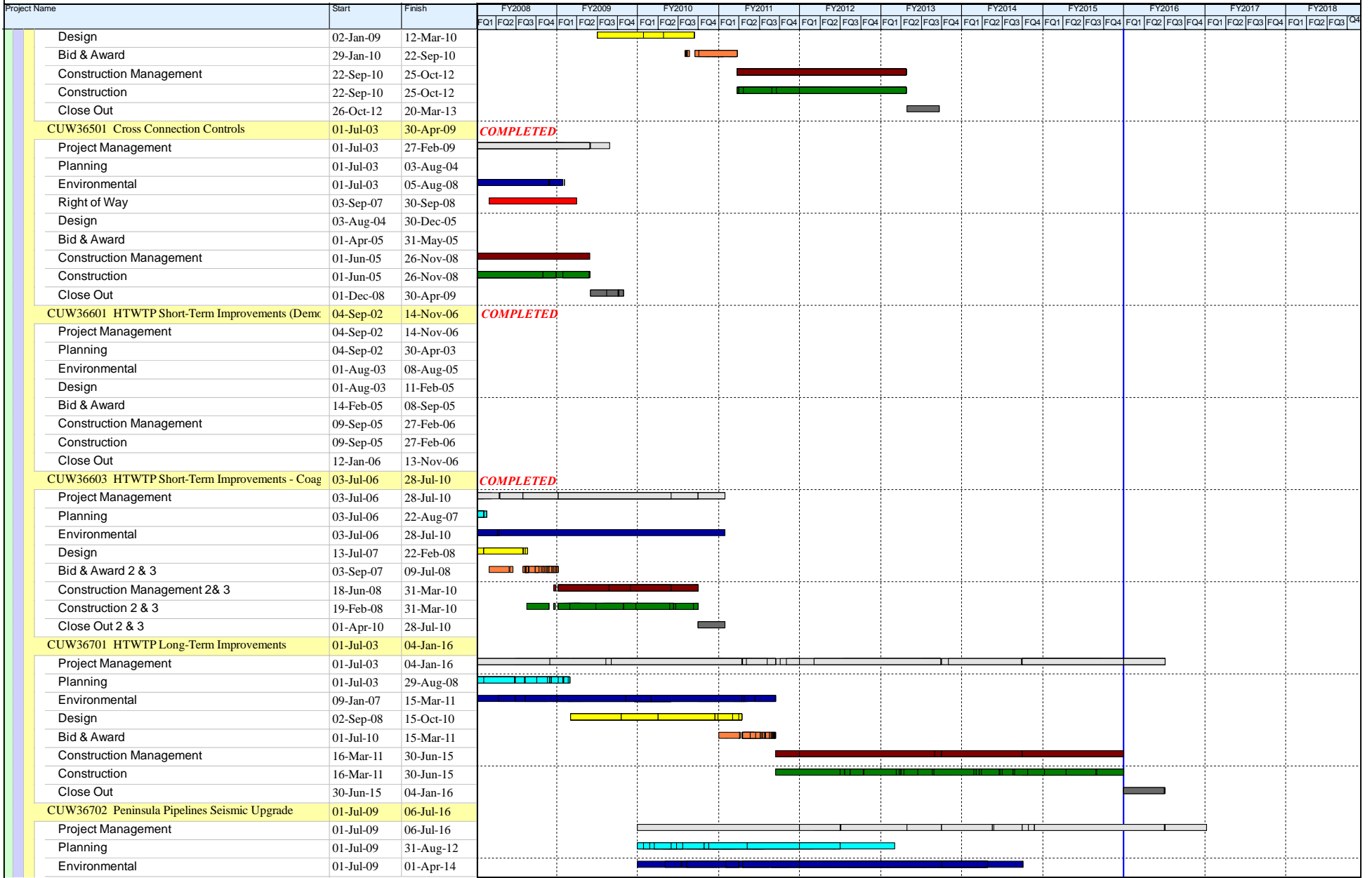


## APPENDIX B: Current Approved WSIP Phase-Level Schedules

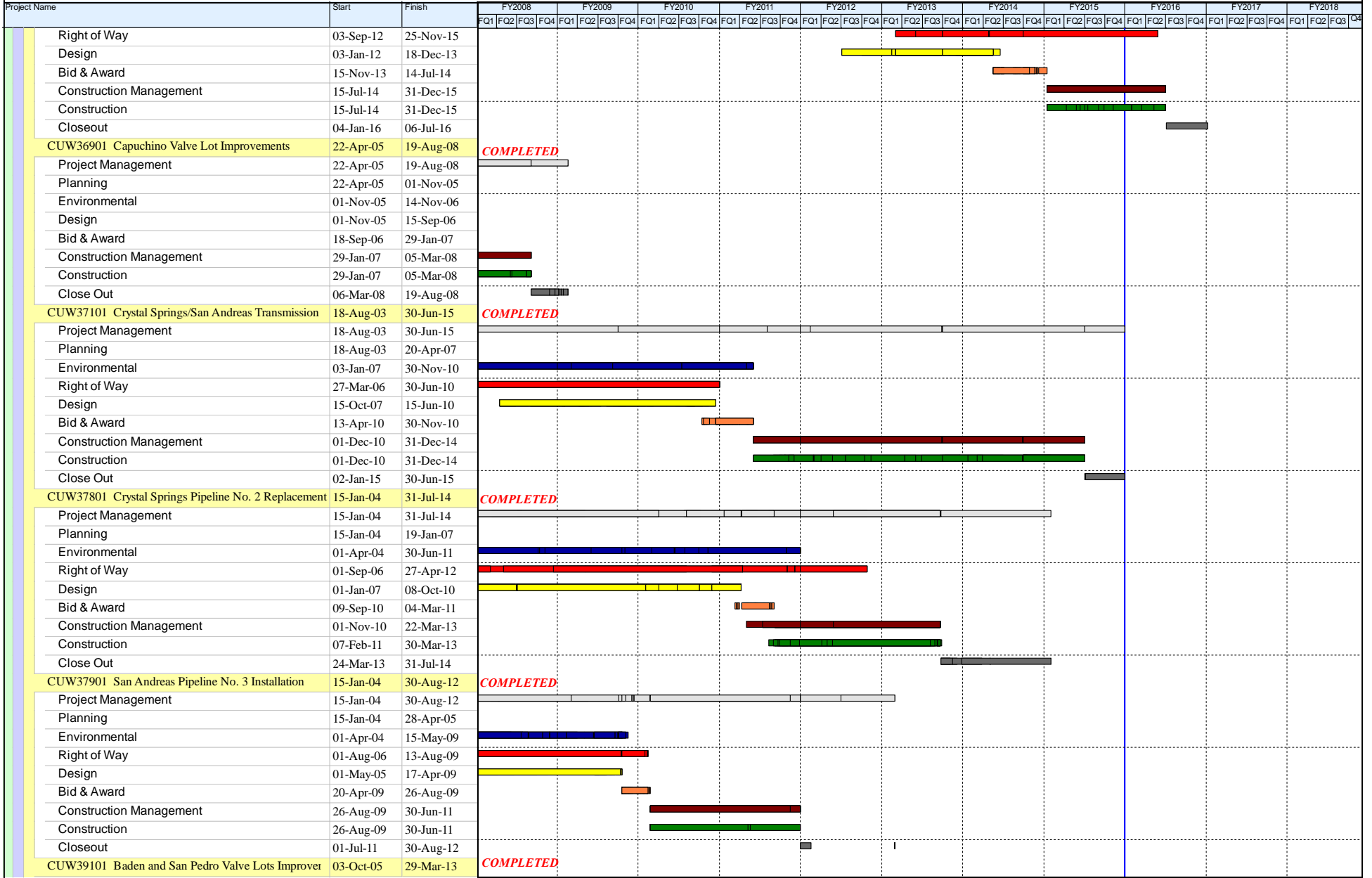
Project Name	Start	Finish	FY2008				FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4				
Environmental	18-Sep-03	09-Oct-08	[Gantt bar: Environmental phase from 18-Sep-03 to 09-Oct-08]																																											
Right of Way	03-Jul-06	16-Sep-08	[Gantt bar: Right of Way phase from 03-Jul-06 to 16-Sep-08]																																											
Design	01-Jun-04	05-Jun-08	[Gantt bar: Design phase from 01-Jun-04 to 05-Jun-08]																																											
Bid & Award	05-Jun-08	01-Dec-08	[Gantt bar: Bid & Award phase from 05-Jun-08 to 01-Dec-08]																																											
Construction Management	01-Dec-08	26-Oct-11	[Gantt bar: Construction Management phase from 01-Dec-08 to 26-Oct-11]																																											
Construction	01-Dec-08	17-Aug-12	[Gantt bar: Construction phase from 01-Dec-08 to 17-Aug-12]																																											
Close Out	29-Sep-11	17-Aug-12	[Gantt bar: Close Out phase from 29-Sep-11 to 17-Aug-12]																																											
<b>CUW35701 Adit Leak Repair - Crystal Springs/Calaver</b>	<b>01-Apr-05</b>	<b>31-Jul-08</b>	<b>COMPLETED</b>																																											
Project Management	01-Apr-05	31-Jul-08	[Gantt bar: Project Management phase from 01-Apr-05 to 31-Jul-08]																																											
Planning	01-Apr-05	27-Mar-06	[Gantt bar: Planning phase from 01-Apr-05 to 27-Mar-06]																																											
Environmental	01-Jul-05	30-Jun-06	[Gantt bar: Environmental phase from 01-Jul-05 to 30-Jun-06]																																											
Design	01-Sep-05	15-Sep-06	[Gantt bar: Design phase from 01-Sep-05 to 15-Sep-06]																																											
Bid & Award	28-Aug-06	30-Mar-07	[Gantt bar: Bid & Award phase from 28-Aug-06 to 30-Mar-07]																																											
Construction Management	02-Apr-07	05-Mar-08	[Gantt bar: Construction Management phase from 02-Apr-07 to 05-Mar-08]																																											
Construction	09-Apr-07	05-Mar-08	[Gantt bar: Construction phase from 09-Apr-07 to 05-Mar-08]																																											
Close Out	12-Mar-08	08-Jul-08	[Gantt bar: Close Out phase from 12-Mar-08 to 08-Jul-08]																																											
<b>CUW36101 Pulgas Balancing - Inlet/Outlet Work</b>	<b>15-May-02</b>	<b>11-May-06</b>	<b>COMPLETED</b>																																											
Project Management	01-Jul-03	11-May-06	[Gantt bar: Project Management phase from 01-Jul-03 to 11-May-06]																																											
Planning	15-May-02	01-Aug-05	[Gantt bar: Planning phase from 15-May-02 to 01-Aug-05]																																											
Environmental	02-May-04	02-May-04	[Gantt bar: Environmental phase from 02-May-04 to 02-May-04]																																											
Bid & Award	05-Mar-04	06-Sep-05	[Gantt bar: Bid & Award phase from 05-Mar-04 to 06-Sep-05]																																											
Construction Management	07-Sep-05	02-Feb-06	[Gantt bar: Construction Management phase from 07-Sep-05 to 02-Feb-06]																																											
Construction	06-Sep-05	02-Feb-06	[Gantt bar: Construction phase from 06-Sep-05 to 02-Feb-06]																																											
Close Out	03-Feb-06	11-May-06	[Gantt bar: Close Out phase from 03-Feb-06 to 11-May-06]																																											
<b>CUW36102 Pulgas Balancing - Discharge Channel Mo</b>	<b>01-Apr-05</b>	<b>30-Jul-10</b>	<b>COMPLETED</b>																																											
Project Management	01-Apr-05	30-Jul-10	[Gantt bar: Project Management phase from 01-Apr-05 to 30-Jul-10]																																											
Planning	01-Apr-05	15-Sep-06	[Gantt bar: Planning phase from 01-Apr-05 to 15-Sep-06]																																											
Environmental	17-Aug-06	03-Apr-09	[Gantt bar: Environmental phase from 17-Aug-06 to 03-Apr-09]																																											
Design	16-Apr-07	03-Nov-08	[Gantt bar: Design phase from 16-Apr-07 to 03-Nov-08]																																											
Bid & Award	04-Nov-08	03-Apr-09	[Gantt bar: Bid & Award phase from 04-Nov-08 to 03-Apr-09]																																											
Construction Management	06-Apr-09	07-Dec-09	[Gantt bar: Construction Management phase from 06-Apr-09 to 07-Dec-09]																																											
Construction	02-Apr-09	07-Dec-09	[Gantt bar: Construction phase from 02-Apr-09 to 07-Dec-09]																																											
Close Out	08-Dec-09	30-Jul-10	[Gantt bar: Close Out phase from 08-Dec-09 to 30-Jul-10]																																											
<b>CUW36103 Pulgas Balancing - Structural Rehabilitation</b>	<b>03-Apr-06</b>	<b>28-Dec-12</b>	<b>COMPLETED</b>																																											
Project Management	03-Apr-06	28-Dec-12	[Gantt bar: Project Management phase from 03-Apr-06 to 28-Dec-12]																																											
Planning	03-Apr-06	11-Dec-07	[Gantt bar: Planning phase from 03-Apr-06 to 11-Dec-07]																																											
Environmental	03-Jul-07	16-Jul-09	[Gantt bar: Environmental phase from 03-Jul-07 to 16-Jul-09]																																											
Design	11-Jan-08	01-Jul-09	[Gantt bar: Design phase from 11-Jan-08 to 01-Jul-09]																																											
Bid & Award	06-Apr-09	30-Nov-09	[Gantt bar: Bid & Award phase from 06-Apr-09 to 30-Nov-09]																																											
Construction Management	30-Nov-09	01-Sep-11	[Gantt bar: Construction Management phase from 30-Nov-09 to 01-Sep-11]																																											
Construction	30-Nov-09	01-Sep-11	[Gantt bar: Construction phase from 30-Nov-09 to 01-Sep-11]																																											
Close Out	02-Sep-11	28-Dec-12	[Gantt bar: Close Out phase from 02-Sep-11 to 28-Dec-12]																																											
<b>CUW36105 Pulgas Balancing - Modifications of the Ex</b>	<b>02-Apr-07</b>	<b>20-Mar-13</b>	<b>COMPLETED</b>																																											
Project Management	02-Apr-07	20-Mar-13	[Gantt bar: Project Management phase from 02-Apr-07 to 20-Mar-13]																																											
Planning	02-Apr-07	17-Mar-09	[Gantt bar: Planning phase from 02-Apr-07 to 17-Mar-09]																																											
Environmental	19-Nov-07	04-Mar-10	[Gantt bar: Environmental phase from 19-Nov-07 to 04-Mar-10]																																											



### APPENDIX B: Current Approved WSIP Phase-Level Schedules



## APPENDIX B: Current Approved WSIP Phase-Level Schedules



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



## APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish	FY2008		FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4		
<b>San Francisco Regional Region</b>	<b>31-Mar-00</b>	<b>31-Jul-18</b>																																										
<b>CUW30103 Regional Groundwater Storage and Recov</b>	<b>01-Jun-03</b>	<b>31-Jul-18</b>																																										
Project Management	01-Jul-05	31-Jul-18																																										
Planning	01-Jun-03	31-Jan-08																																										
Environmental	15-Oct-07	29-Apr-16																																										
Right of Way	07-Apr-08	30-Oct-17																																										
Design	02-Jan-08	30-Jun-17																																										
Bid & Award	11-Mar-09	29-Apr-16																																										
Construction Management	04-Mar-08	31-Jan-18																																										
Construction	01-Jul-03	31-Mar-18																																										
Closeout	01-Feb-18	31-Jul-18																																										
<b>CUW35801 Sunset Reservoir - North Basin</b>	<b>31-Mar-00</b>	<b>10-Sep-10</b>	<b>COMPLETED</b>																																									
Project Management	31-Mar-00	10-Sep-10																																										
Planning	31-Mar-00	28-Sep-01																																										
Environmental	21-May-04	21-Dec-04																																										
Design	01-Oct-01	12-Apr-06																																										
Bid & Award	22-Oct-04	10-Oct-06																																										
Construction Management	11-Apr-05	26-Mar-09																																										
Construction	11-Apr-05	09-Nov-09																																										
Closeout	13-Nov-06	10-Sep-10																																										
<b>CUW37201 University Mound Reservoir - North Basin</b>	<b>24-Oct-05</b>	<b>29-Mar-13</b>	<b>COMPLETED</b>																																									
Project Management	24-Oct-05	29-Mar-13																																										
Planning	24-Oct-05	06-Apr-07																																										
Environmental	26-Dec-06	18-Jul-07																																										
Design	07-Apr-07	24-Mar-09																																										
Bid & Award	02-Feb-09	31-Jul-09																																										
Construction Management	03-Aug-09	23-Dec-11																																										
Construction	27-Jul-09	23-Aug-11																																										
Close Out	23-Aug-11	29-Mar-13																																										
<b>Support Projects</b>	<b>13-Apr-04</b>	<b>31-Aug-18</b>																																										
<b>CUW36302 System Security Upgrades</b>	<b>07-Jan-06</b>	<b>29-Apr-16</b>																																										
Project Management	19-Jun-06	29-Apr-16																																										
Planning	19-Jun-06	08-Jul-09																																										
Environmental	19-Jun-06	28-Mar-12																																										
Right of Way	26-Nov-08	26-Nov-08																																										
Design	19-Jun-06	03-Apr-15																																										



## APPENDIX B: Current Approved WSIP Phase-Level Schedules

Project Name	Start	Finish	FY2008				FY2009				FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016				FY2017				FY2018			
			FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4				
Bid & Award	07-Jan-06	10-Mar-14	[Bar spanning from FY2008 FQ1 to FY2014 FQ4]																																											
Construction Management	13-Nov-06	25-Jan-16	[Bar spanning from FY2008 FQ4 to FY2016 FQ2]																																											
Construction	13-Nov-06	24-Jan-16	[Bar spanning from FY2008 FQ4 to FY2016 FQ1]																																											
Close Out	24-Sep-07	29-Apr-16	[Bar spanning from FY2015 FQ3 to FY2016 FQ4]																																											
<b>CUW38801 Programmatic EIR</b>	<b>13-Apr-04</b>	<b>30-Jun-09</b>	<b>COMPLETED</b>																																											
Project Management	13-Apr-04	30-Jun-09	[Bar spanning from FY2008 FQ1 to FY2009 FQ4]																																											
Planning	13-Apr-04	28-Feb-07	[Bar spanning from FY2008 FQ1 to FY2009 FQ2]																																											
Environmental Review	15-Jun-04	30-Jun-09	[Bar spanning from FY2008 FQ1 to FY2009 FQ4]																																											
<b>CUW38802 Bioregional Habitat Restoration</b>	<b>06-Sep-06</b>	<b>28-Jul-16</b>	[Bar spanning from FY2008 FQ3 to FY2016 FQ4]																																											
Project Management	01-Nov-06	28-Jul-16	[Bar spanning from FY2008 FQ4 to FY2016 FQ4]																																											
Planning	06-Sep-06	31-Dec-07	[Bar spanning from FY2008 FQ3 to FY2008 FQ4]																																											
Environmental Review	03-Jan-07	30-May-14	[Bar spanning from FY2008 FQ4 to FY2014 FQ3]																																											
Right of Way	02-Jul-08	29-May-15	[Bar spanning from FY2009 FQ1 to FY2015 FQ3]																																											
Design	16-Jul-07	31-Mar-14	[Bar spanning from FY2008 FQ4 to FY2014 FQ2]																																											
Bid & Award	04-Dec-09	29-Aug-14	[Bar spanning from FY2010 FQ1 to FY2014 FQ3]																																											
Construction Management	22-Jun-10	03-May-16	[Bar spanning from FY2010 FQ3 to FY2016 FQ2]																																											
Construction	06-Mar-09	03-May-16	[Bar spanning from FY2009 FQ4 to FY2016 FQ1]																																											
Closeout	23-May-14	28-Jul-16	[Bar spanning from FY2014 FQ3 to FY2016 FQ4]																																											
<b>CUW38803 Vegetation Restoration of WSIP Constructi</b>	<b>02-Jan-13</b>	<b>31-Dec-15</b>	[Bar spanning from FY2013 FQ1 to FY2015 FQ4]																																											
Project Management	02-Jan-13	31-Dec-15	[Bar spanning from FY2013 FQ1 to FY2015 FQ4]																																											
Construction Management	02-Jan-13	30-Nov-15	[Bar spanning from FY2013 FQ1 to FY2015 FQ3]																																											
Construction (Maintenance)	02-Jan-13	30-Nov-15	[Bar spanning from FY2013 FQ1 to FY2015 FQ3]																																											
Closeout	01-Dec-15	31-Dec-15	[Bar spanning from FY2015 FQ4 to FY2015 FQ4]																																											
<b>CUW38804 Long Term Mitigation Endowment</b>	<b>05-Mar-14</b>	<b>31-Aug-18</b>	[Bar spanning from FY2014 FQ2 to FY2018 FQ4]																																											
<b>CUW39201 Program Management Project</b>	<b>01-Aug-05</b>	<b>30-Dec-16</b>	[Bar spanning from FY2008 FQ4 to FY2016 FQ4]																																											
<b>CUW39401 Watershed Environmental Improvement Pr</b>	<b>02-Jan-07</b>	<b>31-Aug-18</b>	[Bar spanning from FY2007 FQ1 to FY2018 FQ4]																																											
Project Management	02-Jul-07	31-Aug-18	[Bar spanning from FY2007 FQ3 to FY2018 FQ4]																																											
Planning	02-Jan-07	29-Jul-11	[Bar spanning from FY2007 FQ1 to FY2011 FQ3]																																											
Environmental	05-Mar-12	31-Jan-18	[Bar spanning from FY2012 FQ1 to FY2018 FQ4]																																											
Right of Way	14-Mar-11	29-Mar-18	[Bar spanning from FY2011 FQ2 to FY2018 FQ4]																																											
Design	31-May-11	31-May-11	[Bar spanning from FY2011 FQ4 to FY2011 FQ4]																																											
Bid & Award	31-May-11	31-May-11	[Bar spanning from FY2011 FQ4 to FY2011 FQ4]																																											
Construction Management	31-May-11	31-May-11	[Bar spanning from FY2011 FQ4 to FY2011 FQ4]																																											
Construction	31-May-11	31-May-11	[Bar spanning from FY2011 FQ4 to FY2011 FQ4]																																											
Closeout	30-Mar-18	31-Aug-18	[Bar spanning from FY2018 FQ1 to FY2018 FQ4]																																											

