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

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DATE: August 31, 2021

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

FROM: Michael Carlin, Acting General Manager

RE: Wastewater Enterprise Capital Improvement Program
4th Quarter/ Fiscal Year 2020-2021

Enclosed please find the Wastewater Enterprise Capital Improvement Program (CIP) Quarterly Report for the 4th Quarter (Q) of Fiscal Year (FY) 2020-2021. The primary intent of the report is to provide the Commission, stakeholders, and the public, with a status summary of the Wastewater Enterprise Capital Projects, based on the data for the period of April 1, 2021 to June 30, 2021.

This quarterly report incorporates other SSIP projects beyond Phase 1 that were presented to the San Francisco Public Utilities Commission (SFPUC) on December 11, 2018 and December 22, 2020. The scopes, schedules, and budgets for other active SSIP projects can be found in the respective sections in this report.

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

The Memorandum of Understanding (MOU) between SFPUC and SFPW was finalized during the 3rd Quarter/ Fiscal Year 2020-2021. The MOU outlines estimating, tracking, and reporting processes for SFPUC capital projects where SFPW is providing design and/or

construction management support; it allows programmatic updates of SFPW costs into the SFPUC project controls system and monthly reconciliation of reported actual costs against the PeopleSoft financial system.

The highlights of this reporting period are stated below:

SEWER SYSTEM IMPROVEMENT PROGRAM (SSIP)

STATUS AND PERFORMANCE SUMMARY

The SSIP Phase 1 is 45.7% complete, Other SSIP is 1.1% complete, and Overall SSIP is 35% complete as of June 2021.

As of the end of the reporting period, there are no projects in pre-planning, seven (7) projects in planning or design, one (1) project in bid & award, eighteen (18) projects in construction, and forty-four (44) projects in closeout or completed in SSIP Phase 1.

PROGRAM UPDATE

The highlights for this reporting period are as follows:

- Continued construction on the Southeast Area Major projects which include Biosolids Digester Facility Project (BDFP), Headworks and the Southeast Community Center.
- Continued extensive remote work practices and ongoing review of construction activities including site-specific health and safety protocols in response to the Shelter-in-Place Public Health Order.
- Conducted Green and Grey Infrastructure workshop for Stormwater Management and Flood Resilience with the Commission in April 2021.

Major program milestones reached during the reporting quarter include:

Planning and Design

- None

Environmental

- None

Construction Contracts Advertised:

- None

Construction Contracts Awarded:

- One (1) construction contract was awarded during this quarter
  - WW-711, Wawona Area Stormwater Improvement Project

Construction Notice to Proceed (NTP) Issued:

- One (1) NTP was issued during this quarter
  - WW-645, Westside Pump Station Reliability Improvements

Construction Substantial Completion Issued:

- None

Construction Final Completion Issued:

- One (1) construction contract achieved final completion
  - WW-647R, SEP Biosolids Digester Facilities Project - Scope I (Demolition and Utility Relocation)

Project Completion

- One (1) project was completed during this quarter
  - SEP 521/522 and Disinfection Upgrades

UPDATE ON PROJECTS IN PRE-CONSTRUCTION

Treatment Plant Projects:

- Distributed Control System Upgrade - Planning and scoping activities to replace/upgrade the existing DCS at Oceanside facilities began. Meanwhile, design and coordination activities progressed for the DCS project at Southeast. A notice to proceed was issued under the WW-685R Northshore Pump Station contract to renovate one of the existing DCS server rooms.
- SEP New Headworks - Continued development of SEP-008 (Influent Pumping rehabilitation) and Revised Odor Control Facility 100% design package under the SEP New Headworks (Grit) Replacement – Scope III (Main Headworks).

Collection System:

- Kansas and Marin Streets Sewer Improvements project -The authorization from the Commission was obtained for the Memorandum of Agreement (MOA) with SFPW to allow for the tunnel through their operations yard at 2323 Cesar Chavez Street, including mitigations for a future garage structure on top of the tunnel alignment and parking replacement during construction. Also, the project team has completed the DB-131 Request for Qualifications (RFQ) package for the design-build contract to complete the design and construction for the Kansas Marin project. In the next quarter, the project

team intends to obtain signatures for the MOA, advertise the RFQ for DB-131, pre-qualify candidates and prepare the Request for Proposals (RFP) package for DB-131.

- Better Market Street Sewer Improvements - The Phase 1 contract with full utility scopes was aborted per the SFMTA/SFPW Directors' decision. A first contract without any utility scope is being repackaged for advertisement in August 2021. The utility work (including SFPUC's Sewer and Water scopes) will be incorporated into a second Contract to be issued in 3-4 years. The design/advertisement delays had a ripple effect on the NTP and Final Completion milestones.

Stormwater Management:

- Yosemite Green Infrastructure - The RFP PUC.PRO.0123 – Engineering Services for Green Infrastructure was advertised on April 15. 2021 and two proposals were received on June 9, 2021. The proposals will be reviewed and evaluated next quarter.
- Watershed Stormwater Management (Planning Only) - The project team provided technical support for Flood Resilience Programmatic Strategies, green infrastructure projects and programs, and billing system upgrades. Flood resilience work included interdepartmental coordination for FEMA floodplain management/flood resilient building code modifications, development of flood elevations for the 100-Year Storm Flood Risk Map, and development of a flood resilience voluntary buyout strategy. Green infrastructure support included development of materials for a residential green infrastructure (downspout disconnect) grant pilot, expected to launch end of Q2 FY21-22, and the project evaluation of the Buchanan Street Mall Neighborhood GI project.

Flood Resilience:

- Lower Alemany Area Stormwater Improvement Project - The project team presented the project as part of a special workshop to the Commission in April 2021. The Commission requested a watershed assessment to be performed for Upper Islais Creek area to explore opportunities for surface stormwater improvements (such as green infrastructures).
- Folsom Area Stormwater Improvement Project – The City design team and consultants worked on the 95% design for the Initial Upstream Contract and started the 65% design for the Upstream Sewer Box Contract and Upstream Large Pipe. The project team completed the Categorical Exemption (CatEx) application in preparation for submittal to Planning and continued to make forward progress in negotiating with (3) private property owners and Caltrans for sub-surface easement acquisition and an airspace lease, respectively, to support the project. The project requires extensive staging on private property and permanent improvements through private property in order to be implemented.

Collection System / Other SSIP

- The Large Sewer Condition Assessment and Improvements projects includes eight (8) subprojects in various stages from initiation to design phases and one (1) construction contract was awarded during this quarter.

UPDATE ON PROJECTS IN CONSTRUCTION

SEP Biosolids Digester Facilities Project

Scope I (Demolition and Utility Relocation) – Demolition of existing infrastructure and relocation of the existing utilities and sewers at the project site are complete. Scope I substantial and final completion were reached on November 19, 2020 and Jun 25, 2021, respectively. Scope II (New Biosolids Facilities - Remainder of the construction work) - Soil excavation, dewatering, shoring and installation of piles are on-going, as we proceed with the construction of the foundation work. The balance of the Scope II design was completed in early January 2021.

SEP New Headworks (Grit) Replacement

Scope III (Main Headworks) – Continued demolition of remaining SEP 011 structure. Continued civil work at primary influent distribution area and grit tank/handling area. Completed drilling and rebar cages at influent junction/grit splitter area. Completed installation of temporary tower crane. Issuance of electrical/instrumentation & control, grit tank covers and odor control equipment Work Release Requests.

SEP Seismic Reliability and Condition Assessment Improvements

At SEP 042 (Primary Sedimentation), installation of scum pump and associated conduit, piping and electrical connection is ongoing. Canopy, stairway and 1.5-ton capacity monorail crane has been installed. NTP for JOC 76R-12 (W3 Water Strainer Backwash Flow) was issued on June 9, 2021.

OSP Digester Gas Utilization Upgrade:

Ongoing construction activities include yard utility pipe installation, HVAC, process utility plumbing, and electrical installation at Buildings 620, 800, 820, and 821. During this reporting period, the contractor is focused on installing the new permanent hot water loop system and erection of the new 741 digester gas holder assembly. The contractor continues to prepare key electrical submittals with site specific electrical data and coordination with PG&E remains on-going. The project team targets the Bay Area Air Quality Management District (BAAQMD) Authority To Construct (ATC) conditional permit in July 2021.

WWE Facilities and Infrastructure Program

Five (5) projects are on-going: two (2) projects in construction, two (2) projects in design, and one (1) project in planning.

WWE Renewal and Replacement (R&R) Program

Twenty-two (22) Collection System projects and nine (9) Treatment Facilities project are in construction.

Triple Bottom Line (TBL) Report

None was completed in this quarter.

Enclosure

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

QUARTERLY REPORT

Wastewater Enterprise Programs

April 2021 – June 2021

Published: September 1, 2021

Quarterly Report

Wastewater Enterprise Programs

TABLE OF CONTENTS

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I. Sewer System Improvement Program

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1. PROGRAM DESCRIPTION

The responsibilities of the San Francisco Public Utilities Commission (SFPUC)'s Wastewater Enterprise (WWE) are to manage, operate, and maintain San Francisco's wastewater collection and treatment system. San Francisco's sewer system collects, conveys, and treats both dry and wet weather (urban stormwater) flows.

The Sewer System Improvement Program (SSIP) is the SFPUC's wastewater capital improvement program which includes multiple projects to improve the existing system. The SSIP is the culmination of several years of wastewater system planning efforts, public meetings, and SFPUC Commission workshops, to develop proposed improvements to address the following challenges:

1. Aging infrastructure and the poor condition of existing facilities.
2. Seismic deficiencies and lack of structural integrity.
3. Limited operating flexibility and lack of redundancy.
4. Compliance with operational permits at all times.
5. Managing stormwater in San Francisco's eight urban watersheds.
6. Optimizing system performance and efficiency.
7. Protecting public health, the environment, and conservation goals to safeguard our natural and human environments, and
8. Compliance with the Commission's Environmental Justice and Community Benefits Policy.

The purpose of the SSIP is to upgrade the existing wastewater system so it can meet the challenges of today and the future. The implementation of the SSIP projects and their associated expenditures will be phased over twenty (20) years in an effort to maintain ratepayer affordability and minimize impacts to our communities throughout the City.

In February 2011 the SFPUC Commission directed staff to proceed with the procurement of a program management consultant to assist City staff with the implementation of the SSIP. The AECOM-Parsons Joint Venture was selected and the Program Management Consultant (PMC) team began work on September 6, 2011. The first major task for the PMC was to develop a recommended Program, collectively known as Program Validation. This effort was completed by the PMC and City staff recommending the scope, schedule, and budget of the SSIP treatment and collection system projects, as well as revisions to the SSIP Goals and Levels of Service (LOS). On August 28, 2012, after a series of three public SSIP workshops, the SFPUC Commission officially endorsed the proposed projects in the $6.933 billion 20-year SSIP and the associated Goals and Level of Service and also authorized staff to proceed with planning and development of projects within Phase 1 of the SSIP, representing $2.7 billion.

Subsequently in October 2015 the PMC was assigned to work on refining program scope, budget and schedule based on newly available information and various constraints and challenges. The effort included project re-prioritization, scope refinement, budget re-alignment and schedule re-alignment. The refinement was completed in January 2016 and presented to the SFPUC Commission on March 22, 2016. The refined program scope and budget for $6.976 billion along with the Goals and LOS for all three phases of the SSIP was endorsed by the Commission along with the baseline for scope, schedule and budget for Phase 1 projects totaling $2.910 billion. The revised program is referred to as the "2016 SSIP Baseline".

The endorsed Goals are stated below:

- Provide a compliant, reliable, resilient, and flexible system that can respond to catastrophic events;
- Integrate green and grey infrastructure to manage stormwater and minimize flooding;
- Provide benefits to impacted communities;
- Modify the system to adapt to climate change;
- Achieve economic and environmental sustainability; and

- Maintain ratepayer affordability.

Wastewater System Overview:

The San Francisco wastewater collection and treatment system has been developed over the past two centuries. San Francisco's sewer system dates back to the 1800's when the first sewers were constructed which, at the time, discharged directly into the San Francisco Bay and the Pacific Ocean. The City's major treatment facilities were constructed over several years as part of major capital improvement programs. The existing treatment facilities were built as follows: North Point Facility, 1951; Southeast Plant, 1952; and Oceanside Plant, 1993. The Southeast Plant was enlarged and upgraded to secondary treatment in 1982, and again expanded to treat peak wet-weather flows in 1996.

The Collection System is a network of sewers that collect and transport both sanitary flows and stormwater runoff. The system is designed to take advantage of the City's natural topography wherever possible to maximize the benefits of gravity flow for the collection, transport, treatment, and discharge of wastewater and stormwater. Ninety-two percent of San Francisco is served by a combined sanitary and stormwater system that consists of 24,800 manholes, 25,000 catch basins, 27 pump stations, and approximately 1,000 miles of sewers ranging from 8-inch diameter pipes to large transport structures measuring up to 45 feet deep by 25 feet wide. Flows are conveyed from the collection system through the transport/storage boxes, to two centralized all-weather treatment plants, located in the southeast and southwest sections of the City respectively, the Southeast Water Pollution Control Plant (SEP) and the Oceanside Water Pollution Control Plant (OSP). During wet weather additional flows are conveyed to our wet-weather facility, located in the northeast section of the City, the North Point Wet-Weather Facility (NPF). The collection system storage capacity is over 200 million gallons, comprised of predominantly grey infrastructure at this time. Existing collection system components include:

- Large Sewers*, Tunnels and Odor Control
- Pump Stations and Force Mains
- Transport/Storage Boxes, and
- Combined Sewer Discharge (CSD) Structures

* Large sewers are sewers greater than 36-inhces in diameter (or equivalent size).

The broad components of the wastewater treatment plant facilities include:

- Liquid treatment processes;
- Solids treatment processes; and,
- Deepwater outfalls, located in the San Francisco Bay and Pacific Ocean.

Operating a combined system, WWE treats both sanitary sewage and urban stormwater – commonly referred to as wastewater. The maximum daily treatment capacity of the existing system is 575 million gallons. On an annual basis the system treats approximately 40 billion gallons.

Program Phasing:

The 2016 SSIP Baseline endorsed by the SFPUC Commission is to be implemented in three (3) overlapping phases. A summary of the endorsed Program phases is stated below:

Phase 1: $2,910 million

Planning, environmental review, and final design through proposed construction of projects in the following subprograms:

- Biosolids Digester Facilities Project
- SEP New Headworks
- SEP Improvements
- OSP Improvements
- NPF Improvements
- Interceptors/Tunnels/Odor Control
- Interdepartmental (Collection System)
- Pump Stations and Force Main Improvements
- CSD and Transport/Storage Structures
- Stormwater Management
- Flood Resilience
- Land Reuse

Phase 1 also includes planning through preliminary design for the following projects:

- OSP Condition Assessment Repairs
- Central Bayside System Improvement Project (CBSIP)
- Watershed Stormwater Management
- Flood Resilience

Phase 2: $3,140 million
Final design through proposed construction of the following projects:

- OSP Condition Assessment Repairs
- CBSIP
- Watershed Stormwater Management
- Flood Resilience

Also includes planning, environmental review, and final design through proposed construction of the following projects:

- Demolition of the Existing Southeast Plant Digesters and Southside Renovation
- Southeast Plant Wet-Weather Primary Clarification Replacement
- SEP, OSP, and NPF Seismic and Structural Upgrades
- OSP Grit and Process Upgrades
- NPF Odor, Process and Security Upgrades
- Sewer Improvements
- Interdepartmental (Collection System)
- Pumps and Pump Stations Upgrades
- CSD Structure Improvements and Backflow Prevention

Phase 3: $926 million
Final design through proposed construction for the following projects:

- SEP Process Improvements
- SEP, OSP, and NPF Seismic and Structural Upgrades
- OSP and NPF Grit, Odor and Monitoring Upgrades
- Pumps and Pump Stations Upgrades
- CSD Structure Improvements and Backflow Prevention
- Watershed Stormwater Management

SSIP Phase 1 Revised Baseline:
As reflected in Table 1.1, the SSIP Phase 1 Baseline Budget and Schedule were revised in 2018 and 2020, and these revisions were approved by the San Francisco Public Utilities Commission on April 24, 2018. The revised program is referred to as the "2018 SSIP Revised Baseline". The 2018 Approved Budget for SSIP Phase 1 is $2,979 million, which is about $68 million higher than 2016 Baseline Budget. The 2018 Approved Program Completion is May 2025, which is 18 months earlier than 2016 Baseline Program Completion.

Refer to Appendix 1 for scope description of all projects in Phase 1.

Table 1.1 SSIP Phase I Program Revision

Program Revision	Commission Approval	Budget ($Million)	Schedule*
2016 (Baseline)	March 22, 2016	$2,910.4	10/30/26
2018 (Revised)	April 24, 2018	$2,978.7	05/01/25
2020 (Latest Approved)	December 22, 2020	$3,655.3	08/31/27

* Final Program Completion Date

Table 1.2 Other SSIP Projects

Program Revision	Commission Approval	Budget ($Million)	Schedule*
2018 (Baseline)	December 11, 2018	$430.5	06/30/28
2020 (Latest Approved)	December 22, 2020	$1,197.3	12/26/29

* Final Program Completion Date

2. PROGRAM STATUS

Figure 2.1 shows the total Current Approved Budget for the SSIP Phase 1 projects remaining in each phase of the program as of June 30, 2021. The number of projects currently active in each phase is shown in parentheses.

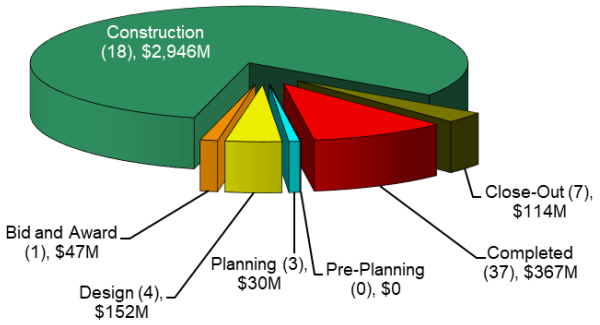

Figure 2.1 Total Current Approved Budget for SSIP Phase 1 Projects Active in Each Phase

Figure 2.2 shows the number of SSIP Phase 1 projects in the following stages of the program as of June 30, 2021: Pre-construction, Construction, and Post-construction.

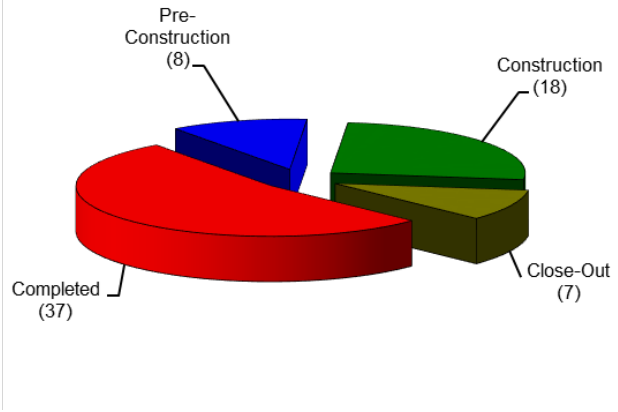

Figure 2.2 Number of SSIP Phase 1 Projects in Pre-construction, Construction, and Post-construction

Figure 2.3 summarizes the environmental review and permitting status of the SSIP Phase 1 projects as of June 30, 2021.

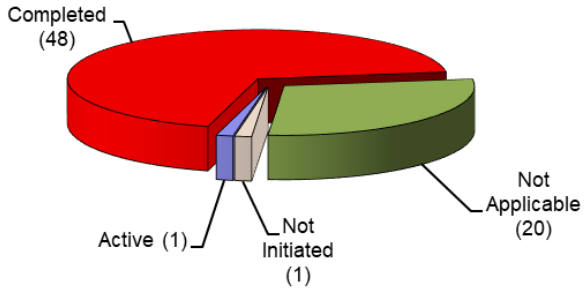

Figure 2.3 Program Environmental and Permitting Status of the SSIP Phase 1 Projects

Figure 2.4 shows the total Current Approved Budget for the Other SSIP projects remaining in each phase of the program as of June 30, 2021. The number of projects currently active in each phase is shown in parentheses.

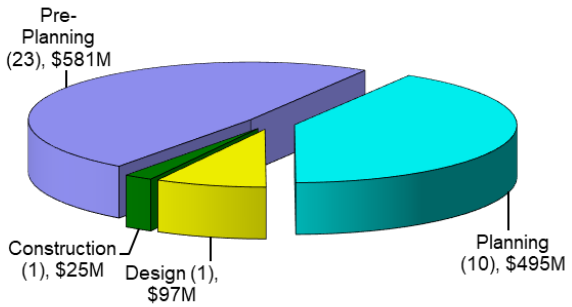

Figure 2.4 Total Current Approved Budget for Other SSIP Projects Active in Each Phase

Figure 2.5 shows the number of Other SSIP projects in the following stages of the program as of June 30, 2021: Pre-construction, Construction, and Post-construction.

Figure 2.6 summarizes the environmental review and permitting status of the Other SSIP projects as of June 30, 2021.

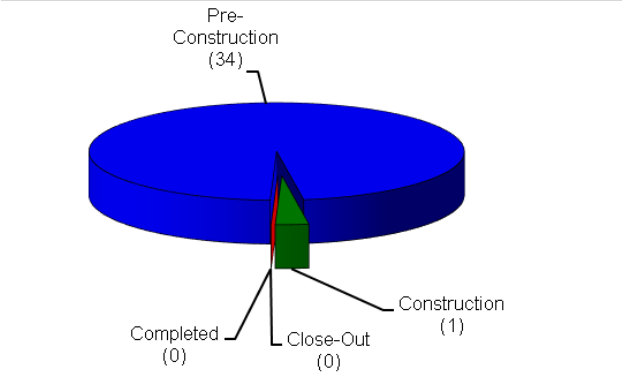

Figure 2.5 Number of Other SSIP Projects in Pre-construction, Construction, and Post-construction

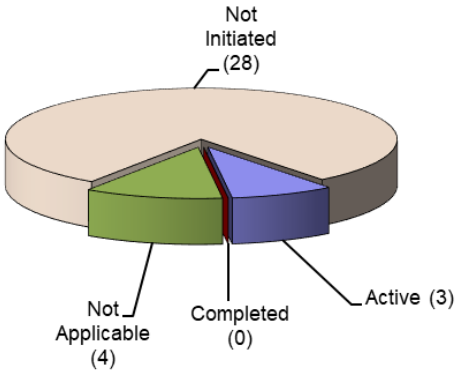

Figure 2.6 Program Environmental and Permitting Status of the Other SSIP Projects

KEY ACCOMPLISHMENTS

Programmatic

- Continued construction on the Southeast Area Major projects which include Biosolids Digester Facility Project (BDFP), Headworks and the Southeast Community Center
- Continued extensive remote work practices and ongoing review of construction activities including site-specific health and safety protocols in response to Shelter-in-Place Public Health Order
- Participated in Infrastructure Week with promotion of ongoing construction projects upgrades and photos
- Conducted Green and Grey Infrastructure workshop for Stormwater Management and Flood Resilience with the Commission in April

In the News

One (1) media mention of the incident of dried sludge igniting at the Southeast Treatment Plant during demolition work.

Highlights of Conducted Outreach

Monthly citywide and District 10 focused email newsletters to 4,500+ recipients providing Project Updates and Community Resources

Southeast Construction Updates Email - bi-weekly email newsletters to 700+ recipients providing construction updates on projects underway in the area

Force Main Rehabilitation at Embarcadero and Jackson Project - ongoing outreach with coordination with other upcoming SFMTA projects along Embarcadero

April – Virtual community presentation to People of Parkside Sunset merchant's association on Westside Pump Station Reliability Improvements project construction

April - Print and digital notices to businesses, residents and property owners for the North Shore Pump Station Wet Weather Improvements start of construction

April – Southeast Treatment Plant Project update to the Bayview Merchants Association

May – 15th Annual Construction Contractors Breakfast

May – Supervisor Melgar District 7 briefing on Westside Pump Station Reliability Project and Wawona and Vicente Street Stormwater and Water Main Replacement Project

May/June – Print and digital notices to Mission district stakeholders for the Mission Brick Sewer Rehabilitation project

May/June – Host virtual weekly project updates with Mission Merchants Association for the Mission Brick Sewer Rehabilitation project

June – Print and digital notices to businesses, residents and property owners for the Westside Pump Station Reliability Improvements project start of construction

June – Supervisor Chan District 1 briefing on Westside Pump Station Reliability Project and Ocean Beach Climate Change Adaptation Project

June – Virtual community presentation to West Portal Merchants Association on Wawona and Vicente Street Stormwater and Water Main Replacement project construction

June – Print and digital notices of upcoming work to businesses, residents and property owners for the New Montgomery, Jessie, Minna, and Mission Street Brick Sewer Rehabilitation project

Upcoming Outreach Events

July – Press Release highlighting Residency Program for Local Youth as Part of Community Engagement for New Southeast Community Center

July – Door-to-door outreach to businesses and street vendors in the vicinity of the Mission Brick Sewer Rehabilitation Project

July – Preconstruction notice and community outreach for start of Wawona and Vicente Street Stormwater and Water Main Replacement project construction

July – Virtual meetings and preconstruction outreach for Westside Pump Station Reliability Improvements Project

July - Preconstruction notice and community outreach for US Army Corps of Engineer Beach Nourishment Project as part of the Ocean Beach Climate Change Adaptation Project short-term improvements phase

July – Pre-construction virtual meetings and in person door-to-door outreach to businesses, residents, and property owners in the immediate project area for the New Montgomery, Jessie, Minna, and Mission Street Brick Sewer Rehabilitation project

July—Biosolids Digester Facility Project: Digester Building (B610) LBE & Prime Networking Event

July/August/September – Coordination meetings with educational facilities and business owners in the project areas of Wawona and Vicente Street Stormwater and Water Main Replacement project

August/September – Joint agency community town hall meeting with Supervisor Mar's office on Ocean Beach project updates for Westside Pump Station Reliability Improvements, Ocean Beach Climate Change Adaptation Project short and long-term phases, and other City agency projects in districts 1, 4 and 7

August – Promote completion of Sunset Boulevard Greenway project

3. PROGRAM COST SUMMARY

Table 3.1 provides a summary of the expenditures to date and cost variances for SSIP Phase 1 projects. The authorized SSIP Budget for Phase 1 is $3,655.3 million and the Current Forecasted Cost (based on the project list shown in Appendix 1) at completion is also $3,655.3 million.

Table 3.2 provides a cost summary of Other SSIP projects. The Current Approved Budget and Current Forecasted Cost Other SSIP projects are $1,197.3 million.

Table 3.1 Phase 1 Cost Summary

Subprograms	Expenditures to Date ($ Million) (A)	Current Approved Budget ($ Million) (B)	Current Forecasted Cost ($ Million) (C)	Cost Variance ($ Million) (D = B - C)
Treatment Plants	**$1,055.1**	**$2,871.1**	**$2,867.4**	**$3.8**
Biosolids Digester Facilities Project	$531.5	$1,680.7	$1,680.7	-
SEP New Headworks (Grit) Replacement	$242.2	$618.8	$618.8	-
Southeast Plant (SEP) Improvements	$195.9	$339.5	$335.7	$3.8
Oceanside Plant (OSP) Improvements	$59.4	$159.0	$159.0	-
North Point Facility (NPF) Improvements	$26.0	$73.2	$73.2	-
Collection System	**$293.7**	**$519.2**	**$512.8**	**$6.4**
Central Bayside System Improvement Project (CBSIP)	$37.7	$64.0	$64.0	-
Interceptors/Tunnels/Odor Control	$25.0	$60.0	$60.0	-
Interdepartmental Projects	$46.6	$96.6	$96.6	-
Pump Stations and Force Main Improvements	$71.8	$82.1	$82.1	-
CSD and Transport/Storage Structures	$15.9	$24.0	$24.0	-
Stormwater Management	$76.6	$142.2	$135.8	$6.4
Flood Resilience Projects	$20.0	$50.2	$50.2	-
Land Reuse Projects	**$85.1**	**$89.9**	**$89.5**	**$0.5**
Program Management (PM)	**$132.6**	**$175.0**	**$185.6**	**($10.6)**
SSIP Phase 1 Total	**$1,566.5**	**$3,655.3**	**$3,655.3**	**-**

Table 3.2 Other SSIP Cost Summary

Subprograms	Expenditures to Date ($ Million) (A)	Current Approved Budget ($ Million) (B)	Current Forecasted Cost ($ Million) (C)	Cost Variance ($ Million) (D = B - C)
Treatment Plants	**$0.42**	**$419.9**	**$419.9**	**-**
Southeast Plant (SEP) Improvements	$0.42	$103.7	$103.7	-
Oceanside Plant (OSP) Improvements	-	$232.1	$232.1	-
North Point Facility (NPF) Improvements	-	$84.1	$84.1	-
Collection System	**$8.49**	**$777.4**	**$777.4**	**-**
Interceptors / Tunnels and Odor Control	$4.05	$96.5	$96.5	-
Pump Stations and Forcemain Improvements	$0.26	$40.3	$40.3	-
CSD and Transport/Storage Structures	$0.07	$54.9	$54.9	-
Watershed Stormwater Management	$1.67	$46.7	$46.7	
Flood Resilience Projects	$2.44	$539.0	$539.0	-
Total for Other SSIP	**$8.91**	**$1,197.3**	**$1,197.3**	**-**

4. PROGRAM SCHEDULE SUMMARY

Figure 4.1 compares the 2016 Baseline, 2020 Approved, and Current Forecasted Schedules for the Phase 1 of the SSIP. Refer to the "Cost and Schedule Status" notes in Section 5 for the criteria associated with the three color-coded Forecast Status levels in Figure 4.1 – Meet Requirements, Need Attention, and Exceed Limits.

Overall completion schedule for the revised SSIP Phase 1 and Other SSIP were approved by the SFPUC Commission in December 2020. The approved schedule completion for the overall SSIP Phase 1 and Other SSIP are in August 2027 and December 2029. The current projects forecasted completion of the SSIP Phase 1 and Other SSIP are in December 2027.

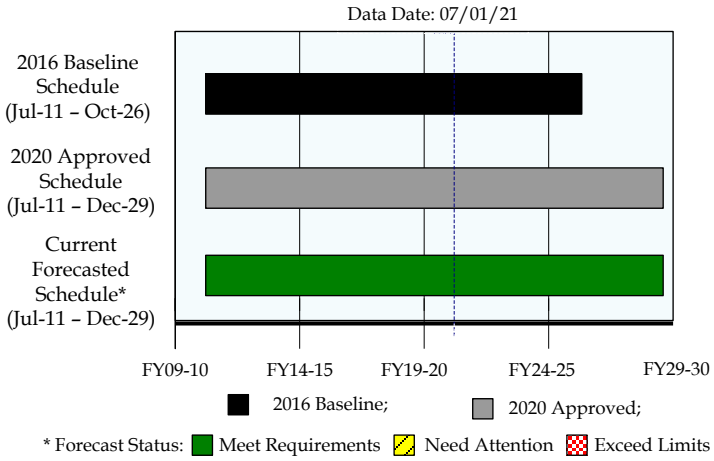

Figure 4.1 SSIP Schedule Summary

5. PROJECT PERFORMANCE SUMMARY*

All costs are shown in $1,000s as of 07/01/21

Project Name	Active Phase (**)	2016 Baseline Budget (a)	‡ 2020 Approved Budget (b)	ǂCurrent Approved Budget (c)	Current Forecasted Cost (d)	Expenditures To Date (e)	Cost Variance (f = c - d)	Cost Status (+)	2016 Baseline Completion (g)	‡ 2020 Approved Completion (h)	ǂCurrent Approved Completion (i)	Current Forecasted Completion (j)	Schedule Variance (k = i - j)	Schedule Status (+)	Project Data Sheet
SSIP Phase 1															
Treatment Facilities															
Biosolids Digester Facilities Project															
CWWSIPDP01 - SEP Biosolids Digester Facilities Project	CN	$ 1,276,447	$ 1,680,693	$ 1,680,693	$ 1,680,693	$ 531,544	-	★	05/01/25	08/31/27	08/31/27	08/31/27	-	★	See Section 10
New Headworks (Grit) Replacement															
CWWSIPSE02 - SEP New Headworks (Grit) Replacement	CN	$ 358,631	$ 618,835	$ 618,835	$ 618,835	$ 242,201	-	★	12/29/23	09/30/24	09/30/24	09/30/24	-	★	See Section 10
Southeast Plant (SEP) Improvements															
CWWSIPSE07 - SEP Facility-wide Distributed Control System Upgrade	DS	$ 62,988	$ 62,988	$ 62,988	$ 62,988	$ 12,044	-	★	08/31/23	08/31/27	08/31/27	08/31/27	-	★	See Section 10
CWWSIPSE08 - SEP Seismic Reliability and Condition Assessment Improvements	CN	$ 53,152	$ 44,152	$ 44,152	$ 44,152	$ 31,594	-	★	12/31/19	09/09/22	09/09/22	09/09/22	-	★	See Section 10
CWWSIPSE10 - SEP Power Feed and Primary Switchgear Upgrades	CN	$ 69,841	$ 95,875	$ 95,875	$ 95,875	$ 19,723	-	★	07/31/20	06/18/24	06/18/24	06/18/24	-	★	See Section 10
Oceanside Plant (OSP) Improvements															
CWWSIPTPOP02 - Westside Pump Station Reliability Improvements	CN	$ 70,500	$ 87,800	$ 87,800	$ 89,300	$ 19,018	($1,500)	⚠	12/02/21	12/31/24	12/31/24	12/31/24	-	★	See Section 6
CWWSIPTPOP03 - OSP Digester Gas Utilization Upgrade	CN	$ 39,688	$ 54,388	$ 54,388	$ 55,577	$ 26,333	($1,189)	⚠	06/15/20	09/14/22	09/14/22	09/14/22	-	★	See Section 6
North Point Facility (NPF) Improvements															
CWWSIPTPNP02 - North Shore Pump Station Wet Weather Improvements	CN	$ 69,803	$ 55,000	$ 55,000	$ 55,000	$ 7,860	-	★	12/31/20	12/29/23	12/29/23	12/29/23	-	★	See Section 10

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∗∗ Phase Status Legend

PL Planning	DS Design
BA Bid & Award	CN Construction

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Collection System															
Interceptors / Tunnels and Odor Control															
10033745 - Mission Street, 16th to Cesar Chavez Streets, Brick Sewer Rehabilitation	CN	$ 20,462	$ 9,875	$ 9,875	$ 9,875	$ 4,463	-	★	11/22/22	11/22/22	11/22/22	11/22/22	-	★	See Section 10
CWWSIPCSSR03 - Kansas and Marin Streets Sewer Improvements	DS	$ 7,734	$ 28,380	$ 28,380	$ 28,380	$ 3,982	-	★	11/27/18	12/29/23	12/29/23	06/28/24	6.0 mo. Late	●	See Section 6
CWWSIPCSSR11 - Cargo Way Sewer Box Odor Reduction	CN	$ 6,442	$ 8,743	$ 8,743	$ 8,743	$ 3,617	-	★	02/11/20	12/30/22	12/30/22	12/30/22	-	★	See Section 10
Interdepartmental Projects															
10033106 - Geary BRT Sewer Improvements Phase 2	PL	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 39	-	★	01/08/18	12/29/23	12/29/23	12/29/23	-	★	See Section 10
CWWSIPCSSR04 - Van Ness BRT Sewer Improvements	CN	$ 14,957	$ 25,000	$ 25,000	$ 25,000	$ 18,206	-	★	06/04/20	12/30/21	12/30/21	12/30/22	12.0 mo. Late	●	See Section 6
CWWSIPCSSR05 - Better Market Street Sewer Improvements - Phase 1	DS	$ 32,405	$ 15,000	$ 15,000	$ 15,000	$ 1,785	-	★	01/24/23	09/30/24	09/30/24	06/30/27	33.0 mo. Late	●	See Section 6
CWWSIPCSSR06 - Geary BRT Sewer Improvements Phase 1	CN	$ 17,043	$ 12,900	$ 12,900	$ 12,900	$ 10,397	-	★	07/15/19	07/12/21	07/12/21	04/29/22	9.6 mo. Late	●	See Section 6
CWWSIPCSSR13 - Taraval Sewer Improvements	CN	$ 20,400	$ 34,693	$ 34,693	$ 34,909	$ 9,413	($216)	★	10/19/20	12/29/23	12/29/23	01/31/25	13.1 mo. Late	●	See Section 6
Pump Stations and Forcemain Improvements															
CWWSIPCSPS02 - Force Main Rehab at Embarcadero and Jackson Streets	CN	$ 5,845	$ 11,009	$ 11,009	$ 11,009	$ 7,697	-	★	12/12/18	09/29/22	09/29/22	09/29/22	-	★	See Section 10
CWWSIPCSPS03 - Mariposa Dry-Weather Pump Station & Force Main Improvements	CN	$ 28,221	$ 31,932	$ 31,932	$ 31,932	$ 25,375	-	★	01/21/21	12/30/22	12/30/22	12/30/22	-	★	See Section 10
CSD and Transport/Storage Structures															
CWWSIPCSCD03 - Beach and Sansome Street CSD Rehabilitation	CN	$ 2,523	$ 6,000	$ 6,000	$ 6,000	$ 4,783	-	★	12/20/19	08/31/21	08/31/21	05/31/22	9.0 mo. Late	●	See Section 6

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PL Planning
DS Design
BA Bid & Award
CN Construction

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Collection System (cont'd)															
CSD and Transport/Storage Structures (cont'd)															
CWWSIPCSCD04 - CSD Backflow Prevention and Monitoring	CN	$ 15,000	$ 12,041	$ 12,041	$ 12,051	$ 5,537	($10)	★	10/01/21	09/30/22	09/30/22	12/30/22	3.0 mo. Late	⚠	See Section 6
Early Implementation Projects															
CWWSIPFCDB01 - Sunset Green Infrastructure	CN	$ 10,746	$ 9,027	$ 9,027	$ 9,027	$ 7,627	-	★	12/31/20	09/30/21	09/30/21	02/28/22	5.0 mo. Late	⚠	See Section 6
CWWSIPFCDB06 - Yosemite Green Infrastructure	PL	$ 12,804	$ 17,101	$ 17,101	$ 17,101	$ 3,663	-	★	12/21/21	06/30/26	06/30/26	06/30/26	-	★	See Section 10
Watershed Stormwater Management															
CWWSIPFCDB12 - Wawona Area Stormwater Improvement Project	BA	$ 22,710	$ 45,000	$ 45,000	$ 38,900	$ 3,486	$ 6,100	★	04/07/20	07/08/24	07/08/24	12/02/24	4.8 mo. Late	⚠	See Section 6
CWWSIPFCGI01 - Watershed Stormwater Management (Planning Only)	PL	$ 7,000	$ 9,000	$ 9,000	$ 9,000	$ 3,994	-	★	07/12/19	06/30/22	06/30/22	06/30/22	-	★	See Section 10
Advanced Rainfall and Operation Decision System															
CWWSIPFCRP03 - Operational Decision System Phase 2	CN	$ 7,798	$ 6,721	$ 6,721	$ 6,721	$ 3,455	-	★	06/26/20	09/30/25	09/30/25	09/30/25	-	★	See Section 10
Flood Resilience Projects															
CWWSIPFCDB14 - Folsom Area Stormwater Improvement Project	DS	$ 36,265	$ 38,000	$ 38,000	$ 38,000	$ 7,843	-	★	11/01/19	01/31/23	01/31/23	01/31/23	-	★	See Section 10

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Other SSIP															
Treatment Facilities															
Southeast Plant (SEP) Improvements															
10037330 - Primary Treatment (SEP 040/041) H&S Improvements	PL		$ 27,382	$ 27,382	$ 27,382	$ 381	-	★		09/30/26	09/30/26	09/30/26	-	★	See Section 10
10037331 - Maintenance Building (SEP 940) Interim Improvement	PL		$ 21,577	$ 21,577	$ 21,577	$ 4	-	★		07/02/26	07/02/26	07/02/26	-	★	See Section 10
10037353 - SEP 550 Booster PS Condition Inspection & Interim	PL		$ 9,893	$ 9,893	$ 9,893	$ 35	-	★		06/30/26	06/30/26	06/30/26	-	★	See Section 10
Oceanside Plant (OSP) Improvements															
10036398 - OSP Condition Improvement Projects - Part 2	PL		$ 105,100	$ 105,100	$ 105,100	$ 0	-	★		07/06/29	07/06/29	07/06/29	-	★	See Section 10
Collection System															
Interceptors / Tunnels and Odor Control															
10034718 - Large Sewer Condition Assessment and Improvements	DS		$ 96,520	$ 96,520	$ 96,520	$ 4,054	-	★		12/07/26	12/07/26	12/07/26	-	★	See Section 10
Pump Stations and Forcemain Improvements															
10037246 - Seacliff No. 2 PS & FM Upgrade	PL		$ 16,836	$ 16,836	$ 16,836	$ 135	-	★		09/21/29	09/21/29	09/21/29	-	★	See Section 10
10037251 - Seacliff No. 1 PS & FM Upgrade	PL		$ 13,062	$ 13,062	$ 13,062	$ 91	-	★		12/26/29	12/26/29	12/26/29	-	★	See Section 10
10037303 - Sunnydale PS Safety Improvements	PL		$ 5,031	$ 5,031	$ 5,031	$ 36	-	★		05/29/26	05/29/26	05/29/26	-	★	See Section 10
CSD and Transport/Storage Structures															
10037244 - Baker (009) Baffle Improvements	PL		$ 2,258	$ 2,258	$ 2,258	$ 19	-	★		03/26/24	03/26/24	03/26/24	-	★	See Section 10

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Collection System															
CSD and Transport/Storage Structures															
10037245 - Brannan (019) CSD Gate & Baffle Rehab	PL		$ 6,935	$ 6,935	$ 6,935	$ 53	-	★		08/18/25	08/18/25	08/18/25	-	★	See Section 10
Watershed Stormwater Management															
10034553 - Green Infrastructure Grant Program (GIGP)	CN		$ 25,000	$ 25,000	$ 25,000	$ 1,669	-	★		06/30/29	06/30/29	06/30/29	-	★	See Section 10
Flood Resilience Projects															
10034360 - Lower Alemany Area Stormwater Improvement Project	PL		$ 286,460	$ 286,460	$ 286,460	$ 2,436	-	★		03/13/28	03/13/28	09/06/28	5.8 mo. Late	⚠	See Section 6

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6. PROJECTS NOT WITHIN BUDGET AND/OR SCHEDULE (THRESHOLD LIMITS)

CWWSIPTPOP02 - Westside Pump Station Reliability Improvements

Description: The project consists of screenings improvements including, replacement of existing bar screens, and addition of screening washing and compaction systems. The project also includes replacement of existing wet-weather pumps to provide pump redundancy. The construction would take place within the existing structure and includes four new submersible pumps and 200 linear feet (LF) of discharge force main. Other improvements under this project include increasing the power feeder capacity at WSS to account for additional wet weather pumping capacity and provide a reliable redundant power source from PG&E, and replacement of the existing odor control units at the WSS with dilution ventilation fans and ducting.

Program: Oceanside Plant (OSP) Improvements	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$87.80 M	Approved Jun-13	Dec-24
Forecast*	$89.30 M	Forecast* Jun-13	Dec-24
Actual	$19.02 M	Project Percent Complete: 23.3%	

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

Key Milestones:	**Environmental** Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	(A) 06/13/13✓ (B) 04/20/17✓	05/06/14✓ 09/08/20✓	10/15/14✓ 04/19/21✓	03/27/17✓ 02/02/24

+ Project includes multiple construction contracts.
(A) WW-572R Westside Pump Station Discharge Pipe Manifold Upgrade; (B) WW-645 Westside Pump Station Reliability Improvements
*** The Environmental Approval for Contract A - Westside Pump Station Discharge Pipe Manifold Upgrade was achieved in Project CWWRNRTF47. The Environmental Approval for Contract B – Westside Pump Station Reliability Improvements is shown in the above table.*

Progress and Status:

(A) Construction Contract WW-572R WSS Discharge Pipe Manifold Upgrade contract closeout has been completed.

(B) WW-645R Westside Pump Station Reliability Improvements NTP was issued in April 2021. In May 2021, San Francisco Arts Commission art preservation contractor successfully removed existing public art sculptures from the site to make way for project improvements. The public art sculptures will be reinstalled on site near the end of construction. The Contractor continues to submit critical project submittals and has performed site mobilization activities. A pre-construction field meeting with PG&E was completed in May 2021, PG&E expressed concerns regarding the project new dual-power service work.

San Francisco Arts Commission art preservation contractor successfully removed existing public art sculptures in May 2021

Issues and Challenges:

SFPUC is continuing discussions with SF Zoo staff regarding real estate license agreement for construction staging areas required for the project.

CWWSIPTPOP03 - OSP Digester Gas Utilization Upgrade

Description: In this project, the gas storage vessel and digester gas conditioning equipment will be replaced. The existing cogeneration Internal-Combustion units (IC engines) and controls will also be replaced. Other improvements include providing an ancillary exhaust gas conditioning and heat exchanger systems to comply with regulatory air board requirements. Improved reliability and redundancy of hot water and electrical energy production systems, as well as, ventilation upgrades will maximize process efficiency within the energy recovery building. The electrical gear at Sub-Station No. 5 will be replaced to provide parallel electrical gear and power system reliability. A 500 kw standby diesel generator and diesel fuel storage system will also be provided for electrical redundancy of critical plant electrical loads.

Program: Oceanside Plant (OSP) Improvements	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved		$54.39 M
Forecast*		$55.58 M
Actual		$26.33 M

Project Schedule:

Approved Oct-13		Sep-22
Forecast* Oct-13		Sep-22

Project Percent Complete: 66.2%

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

Key Milestones:	Environmental+ Approval	Bid+ Advertisement	Construction NTP+	Construction+ Final Completion
Current Forecast	06/14/17✓	04/25/18✓	11/26/18✓	03/17/22

+ The key milestone dates reflect the main construction contract for this project (WW-639 Oceanside Water Pollution Control Plant Digester Gas Utilization Upgrade)

Progress and Status:

Ongoing construction activities include yard utility pipe installation, HVAC, process utility plumbing, and electrical installation at Buildings 620, 800, 820, and 821. During this reporting period, the Contractor is focused on installing the new permanent hot water loop system and erection of the new 741 digester gas holder assembly. The Contractor continues to prepare key electrical submittals with site specific electrical data and coordination with PG&E remains on-going. The project team targets the Bay Area Air Quality Management District (BAAQMD) Authority To Construct (ATC) conditional permit in July 2021.

Issues and Challenges:

The project team continues to coordinate with PG&E in order to comply with electrical inter-connection agreement requirements to obtain necessary permits.

Contractor began erection of the Building 741 Digester Gas Holder tank assembly in June 2021

CWWSIPCSSR03 - Kansas and Marin Streets Sewer Improvements

Description: The purpose of the Kansas and Marin Streets Sewer Improvements is to address the SSIP Level of Service (LOS) goals of managing stormwater from a statistically derived storm lasting 3-hours, with a total of 1.3-inches of rainfall and defined peak rainfall intensity (5-year 3-hour, LOS storm). The proposed project includes planning, environmental review, right-of-way, design, construction and closeout phases and assumes the following scope of work: Approximately 900 linear feet of 8-foot diameter tunnel installed using micro-tunnel boring machine (MTBM) construction method through SFPW's Maintenance Yard; Two new reinforced concrete junction structures (including angled access manhole structures) to connect with the existing sewers, and design and construct surface restoration improvements associated with project completion.

Program: Interceptors / Tunnels and Odor Control	**Project Status:** Design	**Environmental Status:** Completed (CatEx)**

Project Cost:		**Project Schedule:**	
Approved	$28.38 M	Approved Jun-13	Dec-23
Forecast*	$28.38 M	Forecast* Jun-13	Jun-24
Actual	$3.98 M	Project Percent Complete: 15.3%	

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

Key Milestones:	**Environmental** Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	07/23/19✓	N/A	10/11/22	12/29/23

***Environmental approval (CatEx) was previously obtained for a sewer alignment located under private property, but project team was unsuccessful in negotiating the easement. In 2016, the project was re-baselined with a new sewer tunnel alignment, which is the Revised Project that is reflected in the current CEQA (CatEx) document.*

Progress and Status:

During this quarter, the project team obtained authorization from the Commission for the Memorandum of Agreement (MOA) with Public Works to allow for the tunnel through their operations yard at 2323 Cesar Chavez Street, including mitigations for a future garage structure on top of the tunnel alignment and parking replacement during construction. Also, the project team has completedthe DB-131 Request for Qualifications (RFQ) package for the design-build contract to complete the design and construction for the Kansas Marin project. In the next quarter, the project team intends to obtain signatures for the MOA, advertise the RFQ for DB-131, pre-qualify candidates and prepare the RFP package for DB-131.

Kansas and Marin Micro-Tunnel Boring Machine Receiving Area

Issues and Challenges:

The RFQ package experienced significant delays getting through the review and approval process with the Contract Administration Bureau (CAB), these delays have delayed the overall schedule because this RFQ advertisement is currently on the critical path. Based on the experience with CAB, the project team is also forecasting a longer schedule for the RFP advertisement and has added additional time for project closeout.

CWWSIPCSSR04 - Van Ness BRT Sewer Improvements

Description: The scope of sewer work includes the following: Construct approximately 20,000 LF of 12-inch to 54-inch diameter VCP and RCP sewers or HDPE sewers in steel casing between Mission Street and Lombard Street for a twin sewerage system along the entire corridor; Construct 187 concrete manholes along the new sewer alignment; Repair, replace, or construct approximately 2,215 LF of 6-inch or 8inch side sewers and connect to the newly constructed main sewer; Construct 80 new concrete catch basins to ensure proper overland flow drainage around the proposed platforms and bulb-outs; Install 121 new cast iron water traps for existing catch basins to remain where connections to new main sewers are necessary; Construct approximately 2,200 LF of 10-inch diameter VCP culverts for new catch basins; Inspect newly constructed main sewers, side sewers and culverts by closed-circuit television (CCTV); Plug and fill to abandon approximately 1,800 LF of existing sewers where sewers are to be relocated.

Program: Interdepartmental Projects	**Project Status:** Construction	**Environmental Status:** Completed (EIR)

Project Cost:		**Project Schedule:**	
Approved	$25.00 M	Approved Oct-13	Dec-21
Forecast*	$25.00 M	Forecast* Oct-13	Dec-22
Actual	$18.21 M	Project Percent Complete: 70.5%	

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

Key Milestones:	**Environmental** Approval**	**Bid Advertisement**	**Construction NTP*****	**Construction Final Completion**
Current Forecast	See Note	N/A	01/16/18✓	06/30/22

*** The San Francisco County Transportation Authority (SFCTA) and the Federal Transit Administration (FTA) completed an EIR/EIS for the Van Ness BRT project (NOD filed on September 13, 2013). SFMTA is the project lead and contracting authority. SFCTA prepared an EIR for CEQA approval, which includes the SFPUC funded sewer improvement.*

**** CMGC contract was awarded by SFMTA and NTP was given to Walsh Construction on October 27, 2016. NTP for the sewer work was obtained on January 16, 2018.*

Progress and Status:

Contractor has completed all new sewer installation and sewer abandonment. Therefore, sewer scope is now 100% complete. SFMTA is now targeting Substantial Completion of all remaining scopes by December 2021. Final Completion is likely to be mid-2022.

Claim negotiations, related to schedule delays and differing site conditions, continue between SFMTA and the Contractor. Final resolution of claims has impacted the FC milestone and will likely impact the project budget.

Issues and Challenges:

The project completion has been extended one year due to the contract's SC/FC delays. Claim negotiations, as noted above, are a concern.

Sewer construction along Van Ness

CWWSIPCSSR05 - Better Market Street Sewer Improvements - Phase 1

Description: In line with SSIP's strategy to work with other City and County agencies on projects they initiated to protect value and function of wastewater facilities, SFPUC partnered with SFMTA and SFPW in the Better Market Street (BMS) State of Good Repair Program. This interdepartmental project will replace aging. The SSIP will participate in this Program with the replacement of most of the sewers in Market Street, many of which are made of bricks and are over 100 years old in Market Street.

This project will consist of three blocks project on Market Street between 5th Street and 8th Street.

Program: Interdepartmental Projects	**Project Status:** Design	**Environmental Status:** Completed (EIR)

Project Cost:		**Project Schedule:**	
Approved	$15.00 M	Approved Jan-14	Sep-24
Forecast*	$15.00 M	Forecast* Jan-14	Jun-27
Actual	$1.79 M	Project Percent Complete: 15.7%	

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

Key Milestones:	**Environmental** Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	10/18/19✓	12/13/23	06/03/24	09/04/26

*** SFPW is the project lead and contracting authority. They have received CEQA approval in 12/19, including SFPUC funded sewer improvements.*

Progress and Status:

The Phase 1 contract with full utility scopes is aborted per SFMTA/SFPW Directors' decision. A 1st Contract without any utility scope is being repackaged for advertisement in August 2021. The utility work (including SFPUC's Sewer and Water scopes) will be incorporated into a 2nd Contract to be issued in 3-4 years. The design/advertisement delays had a ripple effect on the NTP and FC milestones.

Issues and Challenges:

Funding and construction scheduling issues are being addressed by SFMTA/SFPW. For now, the project schedule has shifted to show the delay to Contract 2.

Better Market Street – Rendering of proposed project

CWWSIPCSSR06 - Geary BRT Sewer Improvements Phase 1

Description: SFMTA is implementing the Geary Bus Rapid Transit (BRT) Program and SFPUC will be a partner to replace/upgrade sewers along the Geary Corridor. SFPUC had previously determined to separately implement the required sewer rehabilitation and/or sewer replacement as a SFPUC contract.

This project includes replacement or rehabilitation of existing 6-inch to18-inch diameter circular sewers and 3-foot by 5-foot non-circular egg-shaped brick sewers. Approximately 1.5 miles of sewers along this corridor, on Geary Boulevard from Franklin to Masonic (Phase 1 of the BRT Program), and on nearby cross streets, have been identified as possibly needing replacement. The weighted average age of these sewers is 78 years. Cost information provided below is based on the net present value of the initial screening and will change once project proceeds to design phase.

Program: Interdepartmental Projects	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved	$12.90 M
Forecast*	$12.90 M
Actual	$10.40 M

Project Schedule:

Approved	Jan-14	Jul-21
Forecast*	Jan-14	Apr-22

Project Percent Complete: 96.8%

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

Key Milestones:	Environmental** Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	04/17/17✓	(A) 03/21/18✓ (B) N/A	01/07/19✓ 02/19/20✓	01/25/21✓ 10/27/21

*** SFMTA is the project lead. The San Francisco County Transportation Authority (SFCTA) prepared the CEQA approval, except for the sewer and water scopes, which were separately completed by SFPUC. Project has 2 construction contracts: WW-674R and Geary Rapid West Surface.*

Progress and Status:

WW-674R: The Final Completion was obtained on January 25, 2021. The contract work is forecast to be presented for acceptance by the SFPUC Commission at the August 10, 2021 meeting.

Geary Rapid West Surface Contract: The sewer scope was fully completed in March 2021. Contract Substantial Completion (inclusive of all remaining scopes) is now targeted for late August 2021. The Final Completion will likely be this Fall.

Issues and Challenges:

The project completion has been extended about nine months due to the delays to the SC/FC of the Geary West Surface contract.

Geary BRT – Sewer Construction

CWWSIPCSSR13 - Taraval Sewer Improvements

Description: SFMTA is implementing the L Taraval Transit Improvements Program and SFPUC will be a partner to replace/upgrade sewers along the Taraval Corridor. Any sewer work required, whether it is sewer relocation, sewer rehabilitation or sewer replacement, will be undertaken as part of SFMTA's project.
The scope of the sewer work includes replacing approximately 19,000 LF of 12-inch to 36-inch diameter iron stone pipe (ISP), vitrified clay pipe (VCP), reinforced concrete pipe (RCP), or concrete sewers along Taraval Street between 15th Avenue and 46th Avenue, and Ulloa Street between Forest Side Avenue and 15th Avenue for a twin sewerage system.

Program: Interdepartmental Projects	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$34.69 M	Approved Mar-16	Dec-23
Forecast*	$34.91 M	Forecast* Mar-16	Jan-25
Actual	$9.41 M	Project Percent Complete: 26.8%	

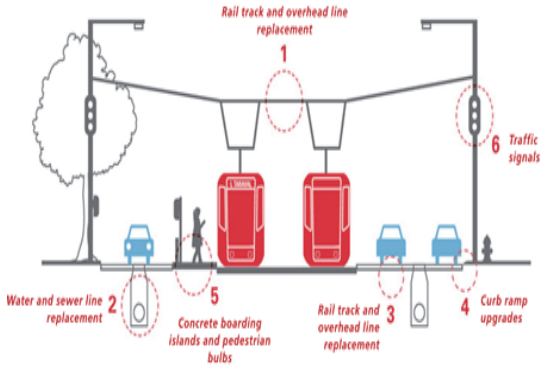
Approved; Actual Cost; * Forecast Status: Meet Requirements Need Attention Exceed Limits

Key Milestones:	**Environmental** Approval**	**Bid*** Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	(A) 04/17/17✓ (B) 04/17/17✓	10/02/18✓ 01/21/21✓	07/01/19✓ 01/18/22	09/30/21 01/23/24

+ Segment A (SF Zoo to Sunset Blvd – No 1306) and Segment B (Sunset Blvd to West Portal – No 1308)
*** SFMTA is the project lead and contracting authority. The San Francisco County Transportation Authority (SFCTA) prepared the CEQA approval, except for the sewer and water scopes, which were separately completed by SFPUC.*
**** Segment B was originally advertised on June 20, 2019 with bid opening held on September 12, 2019 and was re-bid on January 21, 2021.*

Progress and Status:
Contractor completed sewer installation of Segment A in 2020. The Segment A Contract reached SC on March 26, 2021 with FC targeted for this Fall. SFMTA advertised the Segment B contract on January 21, 2021. Bid Opening has been postponed to July 1, 2021. SFMTA anticipates Contract Award by mid-October 2021 and NTP in January 2022.

Issues and Challenges:
The cost savings of $215K from CWWSIPCSSR07 Central Subway and CWWSIPCSSR10 Masonic have been added to Segment B of this project. And the project completion has shifted to reflect the delays with awarding Contract B.



Cross Section Rendering of Taraval Improvement Project

CWWSIPCSCD03 - Beach and Sansome Street CSD Rehabilitation

Description: Scope of work for these CSDs are based on historical performance and WWE Operations video inspection records include: (1) Beach Street CSD: cleaning and specific condition assessment of the asset; providing necessary ventilation; inspecting baffles and restoring baffle, if needed; inspecting weirs and repairing crack at the weir; repairing corroded metal ceiling; and installing a backflow prevention system and (2) Sansome Street CSD: cleaning and specific condition assessment of the asset; providing necessary ventilation; repairing necessary concrete crack and spalling, exposed rebar, and an I-beam; replacing butterfly valve seals; and installing a backflow prevention system.

Program: CSD and Transport/Storage Structures	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$6.00 M	Approved Mar-16	Aug-21
Forecast*	$6.00 M	Forecast* Mar-16	May-22
Actual	$4.78 M	Project Percent Complete: 86.6%	

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

Key Milestones:	**Environmental+ Approval**	**Bid+, ** Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	(A) 02/16/18✓ (B) 07/06/18✓	03/01/18✓ 12/10/18✓	06/29/18✓ 06/17/19✓	12/27/18✓ 01/23/21✓

+ Project includes multiple construction contracts: (A) Beach Street (JOC-59-23, and JOC-59-29 for warranty work) and (B) Sansome Street.

***Sansome Street contract (WW-683R) was re-advertised.*

Progress and Status:

(A) In this quarter, the team approved the contractor's safety plan and the NTP for JOC-59-29 was issued. The pre-construction meeting will be in July 2021. This task order will complete the labor for warranty work for a replacement backflow valve.

(B) The work on closing the contract WW-683R contract continued in this quarter. The agenda item for contract closeout will be submitted for the Commission meeting of July 13, 2021.

Issues and Challenges:

The project completion is being delayed by nine months due to the delay in closing contract WW-683R and late start of JOC-59-29 extended warranty work. WW-683R closeout was delayed due to lack of staffing.

Final walk-through inspection of Sansome St. CSD backflow preventer control valve.

CWWSIPCSCD04 - CSD Backflow Prevention and Monitoring

Description: This project involves developing and implementing a CSD and conveyance monitoring plan to gather data on the salinity in the whole collection network to be able to locate potential infiltration sources in the collection system and then verify performance once improvements (implemented through SFPUC's R&R Program) have been completed. It is anticipated that the monitoring program will consist of CSD monitoring, as well as monitoring of conveyance systems (pump stations, trunk-line, and mobile sites).

The scope also includes planning, design and installation of backflow preventers at selected CSD outfalls, which may include engineering survey of CSD weir elevations and lengths. Backflow preventers will be installed in a phased and monitored approach, with the following priority CSD outfalls considered based on locations with the potential for highest inflow in the system for the same tide: CSD 17 - Jackson Street, CSD 10 - Pierce Street, and CSD 40 - Griffith Street.

The project scope will be fluid and subject to change based on monitoring results.

Program: CSD and Transport/Storage Structures	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$12.04 M	Approved Jul-16	Sep-22
Forecast*	$12.05 M	Forecast* Jul-16	Dec-22
Actual	$5.54 M	Project Percent Complete: 59.8%	

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

Key Milestones:	**Environmental+ Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	10/29/19✓	05/22/20✓	10/19/20✓	01/21/22

+ In addition to monitoring, this project has combined the multiple construction locations: Pierce Street and Jackson & Griffith Street to one construction contract under WW-702R.

Progress and Status:

Construction work for all three CSDs under contract WW-702R continued in this quarter. Pierce CSD was completely abandoned. Surface restoration will be completed in the upcoming quarter. The crack and spalling repair work for Jackson started in this quarter and will continue in the upcoming quarter. The prep work to install the backflow valves on Griffith continued in this quarter and the valves will be installed in mid-July 2021.

The work in the Griffith CSD walls end has stopped due to pending permits from Water Quality Board and BCDC and will likely start in the upcoming quarter.

Concrete crack survey in Jackson Street CSD

Issues and Challenges:

The construction completion has been delayed by three months due to project stoppage pending permits for the work in Griffith CSD.

CWWSIPFCDB01 - Sunset Green Infrastructure

Description: The Sunset Boulevard Greenway project will construct a series of tiered bioretention rain gardens in the western stretch of landscaped parcels along 12 blocks stretching from Golden Gate Park to Lake Merced. The rain gardens will manage stormwater runoff on the west side of Sunset Boulevard from the street, paths, and a portion of the landscaped parcel area. The project will also incorporate a "Learning Lab" to supplement elementary school curriculum. This project is also referred to as "Sunset Boulevard Greenway."

Program: Early Implementation Projects	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$9.03 M	Approved Dec-12	Sep-21
Forecast*	$9.03 M	Forecast* Dec-12	Feb-22
Actual	$7.63 M	Project Percent Complete: 93.2%	

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

Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	12/02/14✓	(A) N/A (B) 04/17/19✓	08/10/15✓ 09/30/19✓	02/24/18✓ 10/29/21

+ (A) Pilot Block & Phase I performed in-house by DPW; (B) Phase II contract

Progress and Status:

This quarter, the contractor continued work on punch list items and performed landscape maintenance.

Issues and Challenges:

Resolving construction punch list items is taking longer than expected resulting in a delay for final completion.

Rain garden view from east from Sunset Blvd.

CWWSIPFCDB12 - Wawona Area Stormwater Improvement Project

Description: The objective of this project is to minimize flooding at the intersection of 15th Avenue and Wawona Street and manage stormwater in the surrounding neighborhood. The intersection of 15th and Wawona has been susceptible to recurring flooding associated with moderate and heavy storms and do not meet the defined SSIP level of service (LOS). This intersection is lower in elevation than the surrounding areas and when the sewers fill to capacity in large storms, the excess stormwater runoff and manhole surcharges travel downstream and reach the intersection, resulting in ponding water on adjacent properties. This project will divert combined sewer flows from the existing sewer upstream of the intersection into a new sewer pipe on Vicente Street, extending from Wawona Street to 34th Ave.

Program: Watershed Stormwater Management	**Project Status:** Bid and Award	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$45.00 M	Approved Jul-16	Jul-24
Forecast*	$38.90 M	Forecast* Jul-16	Dec-24
Actual	$3.49 M	Project Percent Complete: 14.5%	

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

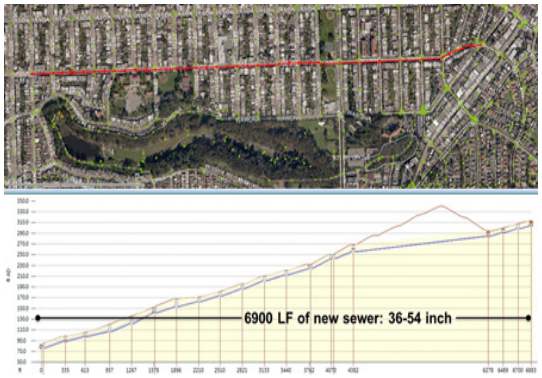
Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	06/01/20✓	10/30/20✓	07/27/21	05/27/24

Progress and Status:

In this quarter, Commission awarded the contract WW-711. In addition to SSIP scope, this project includes water main replacement and Potable Emergency Firefighting Water main. The NTP is expected to be issued in early next quarter.

Issues and Challenges:

The project budget is forecasted less than approved budget due to receiving the construction bid below engineer's estimate. However, construction final completion and project finish date shifted by five (5) months due to required additional time to complete bid and award phase.



New stormwater sewer on Vicente St., to collect the stormwater from upstream of Wawona and 15th, to mitigate flooding at LOS storm

10034360 - Lower Alemany Area Stormwater Improvement Project

Description: The Lower Alemany area surrounding the US 101 and I-280 interchange has been susceptible to recurring flooding associated with moderate and heavy storms and do not meet the defined SSIP level of service (LOS). The primary objective of the Lower Alemany Area Stormwater Improvement Project is to address the SSIP LOS goals of managing stormwater and minimizing flooding from a 5-year 3-hour storm. This project will include planning, design and construction to improve stormwater conveyance away from the Lower Alemany area neighborhood and consequently to minimize flooding during the LOS storm.

Program: Flood Resilience Projects	**Project Status:** Planning	**Environmental Status:** Active (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$286.46 M	Approved Jan-19	Mar-28
Forecast*	$286.46 M	Forecast* Jan-19	Sep-28
Actual	$2.44 M	Project Percent Complete: 1.7%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	01/09/24	08/22/24	01/09/25	03/15/28

Progress and Status:

Staff presented the project as part of a special workshop to the Commission in April 2021. The Commission requested a watershed assessment to be performed for the Upper Islais Creek area to explore opportunities for surface stormwater improvements (such as green infrastructure).

Issues and Challenges:

The duration for planning is extended due to the delay in awarding the specialized engineering consultant contract to facilitate Commissioner's concerns.

Flooding at the I-280/Hwy 101 interchange at Lower Alemany area, during the rainfall of February 13, 2019

7. On-Going Construction**

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion	Current Forecasted Construction Final Completion*	Approved Contract Cost	Current Forecasted Cost*	Schedule (Cal. Days)	Cost	
Biosolids Digester Facilities Project								
CSWWSIPDP01 Bisosolids Digester Facilities Project - Scope II - Remainder Of Scope of Work (Issued POs for 2 Packages)	07/01/20	08/31/26	08/31/26	$ 229,273,649	$ 229,273,649	-	-	64.4%
New Headworks (Grit) Replacement								
CWWSIPSE02 Southeast Water Pollution Control Plant New Headworks Facility - SCOPE III (issued POs for 28 Packages)	07/22/19	02/29/24	02/29/24	$ 250,290,157	$ 250,290,157	-	-	24.5%
Southeast Plant (SEP) Improvements								
CWWSIPSE08 - SEP Seismic Reliability and Condition Assessment Improvements (WW-665)	09/09/19	03/31/21	03/08/22	$ 10,441,321	$ 10,421,800	(342)	$ 19,521	86.0%
CWWSIPSE10 SEP Power Feed and Primary Switchgear Upgrades	02/20/20	12/18/23	12/18/23	$ 30,779,541	$ 30,851,938	-	($72,397)	24.8%

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

** This table is reflecting Active construction contract with original contract amount greater than $1M.

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion	Current Forecasted Construction Final Completion*	Approved Contract Cost	Current Forecasted Cost*	Schedule (Cal. Days)	Cost	
Oceanside Plant (OSP) and Westside Pump Station (WSS) Improvements								
CWWSIPTPOP03 Oceanside Water Pollution Control Plant Digester Gas Utilization Upgrades	11/26/18	05/12/21	03/14/22	$ 40,513,153	$ 40,513,153	(306)	-	37.1%
North Point Facility (NPF) Improvements								
CWWSIPTPNP02 NPF Clarifier Improvements	04/19/21	05/08/23	05/08/23	$ 30,382,865	$ 30,382,865	-	-	7.6%
Interceptors / Tunnels and Odor Control								
10033745 Mission Street, 16th to Cesar Chavez, Brick Sewer Rehabilitation	11/30/20	11/29/21	11/29/21	$ 5,647,127	$ 5,647,127	-	-	53.3%
CWWSICSSR11 PUC Cargo Way Flush Line	07/14/20	12/13/21	12/13/21	$ 4,502,129	$ 4,502,129	-	-	23.7%
Interdepartmental Projects * **								
CWWSIPCSSR13 Taraval Segment A - SF Zoo to Sunset Blvd #1306	07/01/19	03/31/21	09/30/21	$ 5,891,838	$ 5,891,838	(183)	-	95.0%
Pump Stations and Forcemain Improvements								
CWWSICSPS02 Force Main at Embarcadero and Jackson	06/01/20	02/22/22	02/22/22	$ 6,482,317	$ 6,482,317	-	-	75.2%
CWWSICSPS03 Mariposa Dry Weather Pump Station Improvements	01/28/19	09/28/21	09/28/21	$ 17,705,703	$ 17,705,703	-	-	66.3%

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

** This table is reflecting Active construction contract with original contract amount greater than $1M.

*** Contracts performed under SFMTA/SFPW.

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion	Current Forecasted Construction Final Completion*	Approved Contract Cost	Current Forecasted Cost*	Schedule (Cal. Days)	Cost	
Stormwater Management								
CWWSIPFCDB01 Sunset Green Infastructure (Sunset Boulvard Greenway P2 Irving)	09/30/19	07/30/21	07/30/21	$ 2,572,351	$ 2,624,583	-	($52,232)	98.7%
CSD and Transport/Storage Structures								
CWWSIPCSCD04 Jackson, Griffith, and Pierce Streets Combined Sewer Discharge Rehabilitation and Backflow Prevention	10/19/20	01/21/22	01/21/22	$ 3,886,300	$ 3,886,300	-	-	45.6%

Program Total for On-Going Construction	Approved Contract Cost	Current Forecasted Cost	Variance	
			Cost	Percent
	$ 638,368,451	**$ 638,473,559**	**($105,108)**	**0 %**

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

** This table is reflecting Active construction contract with original contract amount greater than $1M.

8. PROJECTS IN CLOSE-OUT

Project Title	2016 Baseline Construction Phase Completion	2020 Approved Construction Phase Completion	Current Approved Construction Phase Completion	Actual Construction Phase Completion	2016 Baseline Construction Phase Budget	2020 Approved Construction Phase Budget	Current Approved Construction Phase Budget	Construction Phase Expenditures To Date
Central Bayside System Improvement Project (CBSIP)								
CWWSIPCT01 - Central Bayside System Improvement Project - Phase 1	N/A	N/A	N/A	N/A	$ 0	$ 0	$ 0	$ 0
Interdepartmental Projects								
CWWSIPCSSR08 - Mission Bay Loop Sewer Improvement	05/03/17	06/29/18	06/30/21	12/01/20	$ 945,000	$ 381,445	$ 306,347	$ 261,347
Pump Stations and Forcemain Improvements								
CWWSIPCSPS06 - Griffith Pump Station Improvements	01/18/19	06/07/19	03/31/21	01/27/21	$ 5,529,000	$ 12,035,100	$ 11,761,006	$ 11,465,247
CSD and Transport/Storage Structures								
CWWSIPCSCD05 - 5th, North 6th and Division Street CSD Rehabilitation	01/14/20	10/31/19	02/26/21	01/23/21	$ 3,008,000	$ 3,589,960	$ 3,375,064	$ 3,617,231
Early Implementation Projects								
CWWSIPFCDB05 - Richmond Green Infrastructure	04/30/21	10/30/20	12/04/20	12/04/20	$ 5,589,250	$ 7,358,939	$ 8,296,812	$ 8,188,493
Flood Resilience Projects								
CWWSIPFCDB16 - Hydraulic and Drainage Sewer Improvements	N/A	06/29/18	09/08/18	09/08/18	$ 0	$ 5,887,270	$ 3,557,202	$ 3,557,202
Land Reuse								
CWWSIPPRPL92 - Land Reuse of 1801 Jerrold Avenue	08/31/17	07/31/18	N/A	N/A	$ 4,221,599	$ 6,386,371	$ 0	$ 0
TOTAL					$ 19,292,849	$ 35,639,085	$ 27,296,431	$ 27,089,520

9. COMPLETED PROJECTS

Project Title	2016 Baseline Project Completion	2020 Approved Project Completion	Current Approved Project Completion	Actual Project Completion	2016 Baseline Project Budget	2020 Approved Project Budget	Current Approved Project Budget	Project Expenditures To Date
Southeast Plant (SEP) Improvements								
CWWBAE01 - Biofuel Alternative Energy	03/31/16	03/31/16	03/31/16	03/31/16	$ 1,855,143	$ 1,862,449	$ 1,862,449	$ 1,862,449
CWWSIPSE01 - SEP Oxygen Generation Plant	06/10/16	06/10/16	06/10/16	06/10/16	$ 11,781,151	$ 11,135,740	$ 11,135,740	$ 11,135,740
CWWSIPSE03 - SEP Existing Digester Roof Repairs	07/29/16	03/03/16	03/03/16	03/03/16	$ 16,625,297	$ 15,438,647	$ 15,438,647	$ 15,438,647
CWWSIPSE04 - SEP Primary and Secondary Clarifier Upgrades	08/31/18	01/21/19	01/21/19	01/21/19	$ 36,016,280	$ 32,890,491	$ 32,890,491	$ 32,583,576
CWWSIPSE05 - SEP 521/522 and Disinfection Upgrades	01/18/19	02/02/21	02/02/21	06/30/21	$ 41,613,516	$ 45,016,932	$ 45,016,932	$ 44,880,060
CWWSIPSE09 - SEP Existing Digester Gas Handling Improvements	03/05/19	02/28/20	02/28/20	02/28/20	$ 22,143,317	$ 19,347,342	$ 19,347,342	$ 15,878,503
CWWSIPSE11 - SEP Oxygen Generation Plant 01	12/31/18	11/21/19	11/21/19	11/21/19	$ 9,030,106	$ 8,697,217	$ 8,697,217	$ 8,697,217
Oceanside Plant (OSP) Improvements								
CWWSIPTPOP05 - OSP Condition Assessment Repairs	06/28/21	12/31/20	12/31/20	01/29/21	$ 15,843,037	$ 13,848,737	$ 13,848,737	$ 11,630,774
CWWSIPTPOP06 - OSP Odor Control Optimization	04/15/22	02/05/20	02/05/20	02/05/20	$ 5,129,029	$ 1,678,517	$ 1,678,517	$ 1,207,197
North Point Facility (NPF) Improvements								
CWWSIPTPNP01 - Northpoint Outfall Refurbishment	08/27/18	10/31/18	10/31/18	10/31/18	$ 17,775,621	$ 18,183,639	$ 18,183,639	$ 18,183,639
Interceptors / Tunnels and Odor Control								
CWWSIPCSSR01 - Richmond Transport Modeling	06/30/14	06/30/14	06/30/14	06/30/14	$ 86,883	$ 86,883	$ 86,883	$ 86,883
CWWSIPCSSR02 - Collection System Condition Assessment	04/09/20	03/31/21	03/31/21	03/31/21	$ 10,912,000	$ 4,933,000	$ 4,933,000	$ 4,909,939
CWWSIPCSSR09 - Drumm and Jackson Streets Sewer System Improvement	12/14/18	12/31/20	12/31/20	12/31/20	$ 11,126,000	$ 6,470,172	$ 6,470,172	$ 6,470,881
CWWSIPCSSR12 - Rutland Sewer Improvements	04/26/18	09/21/18	09/21/18	09/21/18	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ 1,500,000
Interdepartmental Projects								
CWWSIPCSSR07 - Central Subway Sewer Improvements	02/28/17	06/28/19	06/28/19	06/28/19	$ 3,956,000	$ 3,120,000	$ 3,120,000	$ 3,108,430
CWWSIPCSSR10 - Masonic Avenue Sewer Improvements	05/07/18	06/28/19	06/28/19	06/28/19	$ 3,921,000	$ 3,200,000	$ 3,200,000	$ 2,995,772
Pump Stations and Forcemain Improvements								
CWWSIPCSPS01 - Hudson Ave Pump Station and Outfall Improvements	02/28/18	10/31/17	10/31/17	10/31/17	$ 594,000	$ 281,639	$ 281,639	$ 281,639
CWWSIPCSPS04 - Cesar Chavez Pump Station	05/26/16	05/26/16	05/26/16	05/26/16	$ 185,000	$ 178,360	$ 178,360	$ 178,360
CWWSIPCSPS05 - Marin Street Sewer Replacement	08/03/18	01/23/20	01/23/20	01/23/20	$ 3,926,000	$ 5,968,190	$ 5,968,190	$ 5,968,190
CWWSIPNC01 - North Shore to Channel F M Drainage Improvement	06/06/17	06/06/17	06/06/17	06/06/17	$ 29,800,000	$ 17,300,000	$ 17,300,000	$ 17,300,000

Project Title	2016 Baseline Project Completion	2020 Approved Project Completion	Current Approved Project Completion	Actual Project Completion	2016 Baseline Project Budget	2020 Approved Project Budget	Current Approved Project Budget	Project Expenditures To Date
CSD and Transport/Storage Structures								
CWWSIPCSCD01 - Richmond Transport/Storage Tunnel Rehabilitation	05/13/19	12/31/20	12/31/20	12/31/20	$ 4,873,000	$ 600,000	$ 600,000	$ 589,972
Early Implementation Projects								
CWWLID01 - Cesar Chavez Green Infrastructure	06/28/13	06/28/13	06/28/13	06/28/13	$ 1,374,143	$ 1,374,143	$ 1,374,143	$ 1,374,143
CWWLID02/FCDB09 - Islais Creek Green Infrastructure	10/30/26	04/24/18	04/24/18	04/24/18	$ 4,929,908	$ 5,341,855	$ 5,341,855	$ 5,341,855
CWWSIPFCDB02 - North Shore Green Infrastructure	03/31/20	12/31/18	12/31/18	12/31/18	$ 2,493,272	$ 1,716,993	$ 1,716,993	$ 1,715,627
CWWSIPFCDB03 - Lake Merced Green Infrastructure	07/31/20	04/24/18	04/24/18	04/24/18	$ 7,316,074	$ 6,268,452	$ 6,268,452	$ 6,268,452
CWWSIPFCDB04 - Sunnydale Green Infrastructure	11/30/20	09/30/19	09/30/19	09/30/19	$ 4,950,001	$ 5,432,099	$ 5,432,099	$ 5,412,268
CWWSIPFCDB08 - Channel Green Infrastructure	09/17/20	08/31/18	08/31/18	08/31/18	$ 4,569,648	$ 2,227,221	$ 2,227,221	$ 2,189,138
Urban Watershed Assessment								
CWWSIPUW00 - Urban Watershed Assessment and Planning Initiation	06/28/13	06/28/13	06/28/13	06/28/13	$ 3,102,671	$ 3,102,671	$ 3,102,671	$ 3,102,671
CWWSIPUW01 - Urban Watershed Assessment and Planning	04/04/17	06/30/17	06/30/17	06/30/17	$ 14,260,844	$ 14,260,866	$ 14,260,866	$ 14,155,922
Advanced Rainfall and Operation Decision System								
CWWSIPFCRP01 - Advanced Rainfall Prediction - Part 1	06/29/18	06/29/18	06/29/18	06/29/18	$ 3,254,000	$ 1,639,552	$ 1,639,552	$ 1,488,628
CWWSIPFCRP02 - Operational Decision System Phase 1	09/30/16	09/30/16	09/30/16	09/30/16	$ 1,000,921	$ 967,572	$ 967,572	$ 944,709
Flood Resilience Projects								
CWWSIPFCDB07 - 17th and Folsom Wet Weather Storage	03/31/16	05/06/16	05/06/16	05/06/16	$ 1,012,352	$ 898,623	$ 898,623	$ 898,623
CWWSIPFCDB10 - Flood Resilience Analysis (Planning Phase Only)	05/31/17	02/28/17	02/28/17	02/28/17	$ 2,505,999	$ 2,176,246	$ 2,176,246	$ 2,176,246
CWWSIPFCDB11 - Flood Resilience - Early Projects (Planning Phase Only)	12/30/16	12/30/16	12/30/16	12/30/16	$ 5,708,749	$ 4,039,190	$ 4,039,190	$ 4,024,920
CWWSIPFCDB13 - Cayuga Ave Stormwater Detention Project	01/07/20	03/29/19	03/29/19	03/29/19	$ 8,253,000	$ 453,576	$ 453,576	$ 452,053
CWWSIPFCDB15 - 17th and Folsom Permanent Barriers	04/02/18	03/29/19	03/29/19	03/29/19	$ 2,656,000	$ 175,540	$ 175,540	$ 175,540
Land Reuse								
CWWSIPPRPL91 - Land Reuse of 1800 Jerrold Avenue	02/01/19	12/31/19	12/31/19	12/31/19	$ 90,000,000	$ 84,805,836	$ 84,805,836	$ 84,354,151
TOTAL					$ 406,079,962	$ 346,618,389	$ 346,618,389	$ 338,962,813

10. PROJECTS WITHIN BUDGET AND SCHEDULE (THRESHOLD LIMITS)

CWWSIPDP01 - SEP Biosolids Digester Facilities Project

Description: Planning, engineering, and construction of the new solids processing facilities will include solids pretreatment; the thermal hydrolysis process (THP); anaerobic digestion; biosolids dewatering; biosolids product storage and loadout; biogas utilization; odor control; automated control systems; chemical facilities, and associated appurtenances and piping.

The proposed site for the BDFP facilities is adjacent to the existing SEP at 1800 Jerrold Avenue (former Central Shops) and 1801 Jerrold Avenue (former Asphalt Plant), and on portions of the existing SEP property. Construction staging areas for the BDFP include 1150 Phelps Street (SFPUC's former Greenhouses), 50 Quint Street and may be extended to Pier 94/96 SF Port properties at a later date.

The construction will be completed through a Construction Manager/General Contractor delivery approach under two distinct scopes. Scope I focus on the demolition and utility relocation of existing infrastructure at the project sites. Scope II addresses the construction of the new biosolids facilities (the remainder of the work).

Program: Biosolids Digester Facilities Project	**Project Status:** Construction	**Environmental Status:** Completed (EIR)

Project Cost:		**Project Schedule:**	
Approved	$1,680.69 M	Approved Jul-11	Aug-27
Forecast*	$1,680.69 M	Forecast* Jul-11	Aug-27
Actual	$531.54 M	Project Percent Complete: 31.4%	

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

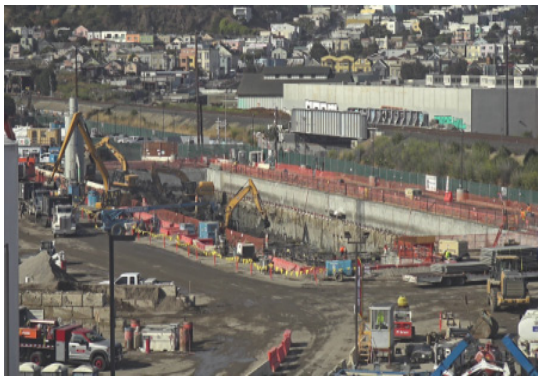
Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	10/12/18✓	(A) N/A (B) N/A	08/26/19✓ 07/01/20✓	06/25/21✓ 08/31/26

+ The project delivery method for this project is Construction Manager/General Contractor (CM/GC).
WW-647R CM/GC Construction contract consists of: (A) Scope I, and (B) Scope II

Progress and Status:

Scope I (Demolition and Utility Relocation) - Demolition of existing infrastructure and relocation of the existing utilities and sewers at the project site are complete. Scope I Substantial and Final Completion were reached on November 19, 2020 and Jun 25, 2021, respectively.

Scope II (New Biosolids Facilities - Remainder of the construction work) - Soil excavation, dewatering, shoring and installation of piles are on-going, as we proceed with the construction of the foundation work. The balance of the Scope II design was completed in early January.



Bldg 610 Excavation

Issues and Challenges:

Two recent bids came in higher than expected. In March, pre-construction bid procurement activities were suspended while project staff re-assess our bid package approach. The bid suspension was lifted in June to allow the Construction Manager/General Contractor (CM/GC) to re-start bidding procurement for the new digester facilities. SFPUC staff is evaluating other possible delivery approaches (such as new design-bid-build contracts) for the remaining biosolids facilities.

CWWSIPSE02 - SEP New Headworks (Grit) Replacement

Description: The new 250 MGD headworks consists of major components / facilities as follows: New Influent Junction Structure and Influent Monitoring; New Primary Influent Distribution Structure; New Bar Screens, Washer-Compacters and Screenings Handling Facility; New Grit Basins, Grit Washers and Grit Handling Facility; A new Odor Control Facility, consisting of a two-stage system with bioscrubbers followed by carbon adsorption; Two new primary substation; Electrical, Instrumentation and Control Rooms/Building; Demolition of both existing Headworks Facilities (SEP-011 and SEP-012); Rehabilitation of the existing Southeast Lift Station; Upgrades to the Bruce Flynn Pump Station.

Program: New Headworks (Grit) Replacement	**Project Status:** Construction	**Environmental Status:** Completed (MND)

Project Cost:		**Project Schedule:**	
Approved	$618.83 M	Approved Mar-13	Sep-24
Forecast*	$618.83 M	Forecast* Mar-13	Sep-24
Actual	$242.20 M	Project Percent Complete: 47.1%	

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

Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	05/31/17✓	(A) N/A (B) N/A (C) N/A (D) TBD	11/15/17✓ 12/17/18✓ 07/22/19✓ 04/23/24	05/01/20✓ 11/14/20✓ 02/29/24 09/30/24

+The project delivery method for this project is Construction Manager/General Contractor (CM/GC).
(A, B, C) WW-628 CM/GC Construction which consist of: (A) Scope I; (B) Scope II.A; and (C) Scope III
(D) Demolition Contract – not yet awarded

Progress and Status:

Scope I (Site Preparation) - Complete
Scope II.A (BFS Improvements) - Complete
Scope III (Main Headworks) - Continued development of SEP-008 (Influent Pumping rehabilitation) and Revised Odor Control Facility 100% design package. Continued demolition of remaining SEP 011 structure. Continued civil work at primary influent distribution area and grit tank/handling area. Completed drilling and rebar cages at influent junction/grit splitter area. Completed installation of temporary tower crane. Issuance of electrical/instrumentation & control, grit tank covers and odor control equipment Work Release Requests.

Grit Handling Building wall construction (Evans Ave view)

Issues and Challenges:

None at this time.

10037330 - Primary Treatment (SEP 040/041) H&S Improvements

Description: This project involves demolition of the building superstructure at South East Plant (SEP) 040/041 and replacement of all remaining deteriorated items. To control odors, the sedimentation tanks would be covered in a similar fashion to the covers on the sedimentation tanks at SEP 042. Ventilation of the covered tanks would be required to protect concrete surfaces from deterioration, and an odor control unit would be required to treat foul air from the covered tanks.

Program: Southeast Plant (SEP) Improvements	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$27.38 M	Approved Jan-21	Sep-26
Forecast*	$27.38 M	Forecast* Jan-21	Sep-26
Actual	$0.38 M	Project Percent Complete: 2.3%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	03/03/23	08/29/23	01/30/24	03/31/26

Progress and Status:
Needs Identification workshop No. 2 with WWE held on 4/2/2021. Final Needs Assessment Report issued on 6/4/2021. Qualitative risk assessment meeting with WWE and design team held on 6/28/2021. Project team to combine AAR/CER deliverable in order to mitigate impact on planning phase schedule.

Issues and Challenges:
None at this time.

Existing SEP-041 wet-weather primary sedimentation building.

10037331 - Maintenance Building (SEP 940) Interim Improvement

Description: Building 940 is a critical interim project for South East Plant (SEP). This is an interim project while the longterm vision and improvements under the SEP Campus Plan is being developed.
Currently these crews are shoehorned into facilities not designed for the maintenance of electronic equipment. A new robust shop area is essential to be able to maintain reliable treatment facilities. The new maintenance shops included under Biosolids Digester Facilities Project (BDFP) do not address these crews.
The following improvements form the basis of this project:

- Space will be modified to include interim Electrical and Instrumentation and Controls (I&C) shop areas.
- HVAC Improvements including evaluation (and installation as-needed) of wet grinder filtration system, condensing unit, and welding exhaust system)
- H&S Improvements (emergency lights, signs, trip hazards, safe roof access)

Program: Southeast Plant (SEP) Improvements	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$21.58 M	Approved Jan-21	Jul-26
Forecast*	$21.58 M	Forecast* Jan-21	Jul-26
Actual	$0.00 M	Project Percent Complete: 1.3%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	04/12/23	08/09/23	01/16/24	12/31/25

Progress and Status:
Project team had field meetings and progress meetings. Project team continues to work on Needs Assessment Report.

Issues and Challenges:
None at this time.

Inside of Bldg SEP 940

10037353 - SEP 550 Booster PS Condition Inspection & Interim

Description: This project includes condition assessment of the influent channel and wet wells (confined space entry), as well as a budget allowance to perform concrete rehab to two wet wells and minor repairs to the influent channel. A firmer estimate to complete the repairs will depend on the results of the inspection. To inspect the influent channel, work must occur during dry weather and the plant must either be shut down or treated effluent diverted to Quint Street Outfall (QSO). Shutdowns may last up to 8 hours, and coordination/approval is needed with the Regional Water Quality Board to allow diversion through QSO. Mechanical equipment rehab is also included as part of the interim improvements. These include: Replace sump pumps; Replace water heater; Replace air relief valves; Replace (3) booster pumps (#1, 2 & 4); Replace all Variable Frequency Drives (VFD). This project also includes moving bioassay to Booster Pump Station.

Program: Southeast Plant (SEP) Improvements	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$9.89 M	Approved Jan-21	Jun-26
Forecast*	$9.89 M	Forecast* Jan-21	Jun-26
Actual	$0.04 M	Project Percent Complete: 0.4%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	TBD	10/06/23	04/11/24	12/31/25

Progress and Status:

Project team continued working on Needs Assessment. Project team had meeting regarding details of staffing and consultant proposal.

Issues and Challenges:

Bid Advertisement and Construction NTP dates have been delayed to be more realistic. Due to resource limitations, it is taking longer than anticipated to initiate the project.

Pumps to be Replaced by Project

CWWSIPSE07 - SEP Facility-wide Distributed Control System Upgrade

Description: This project addresses distributed control system (DCS) upgrades within the Southeast Pollution Control Plant (SEP), Oceanside Pollution Control Plant (OSP), North Point Wet Weather Facility (NPF), Channel Pump Station (CHS), Westside Pump Station (WSS), and Bruce Flynn Pump Station (BFS). Under this project, OSP, NPF, and WSS DCS upgrades include planning/design only to ensure system-wide consistency. Both hardware and software upgrades integrating field instrumentation, control devices, communications hardware, processing hardware, interface hardware, and associated software packages into a unified system are required to provide real-time, system-wide monitoring and control. Coordination of monitoring parameters in various systems to reflect geo-spatial relationships will also be required to maintain compatibility and consistency of the input data used for process control.

Program: Southeast Plant (SEP) Improvements	**Project Status:** Design	**Environmental Status:** Not Applicable

Project Cost:

Approved	$62.99 M
Forecast*	$62.99 M
Actual	$12.04 M

Project Schedule:

Approved	Feb-14	Aug-27
Forecast*	Feb-14	Aug-27

Project Percent Complete: 24.8%

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

Key Milestones:	Environmental** Approval	Bid+ Advertisement	Construction NTP+	Construction+ Final Completion
Current Forecast	See Note	See Note+	12/31/18✓	02/26/27

+ The project delivery method for this project is Progressive Design-Build with pre-design/design components. Construction NTP represents start of fabrication/manufacturing.

*** BEM has determined upgrades to the DCS Controls involves primarily computer hardware and software which do not fall within the definition of a "project" under CEQA because there would be no physical change in the environment.*

Progress and Status:

Planning and scoping activities to replace/upgrade the existing DCS at Oceanside facilities began during this reporting quarter. Meanwhile, design and coordination activities progressed for the DCS project at Southeast. A notice to proceed was issued under the WW-685R Northshore Pump Station contract to renovate one of the existing DCS server rooms.

Issues and Challenges:

None at this time.

Updated Bruce Flynn Pump Station Control Room

CWWSIPSE08 - SEP Seismic Reliability and Condition Assessment Improvements

Description: As part of the condition assessment effort, numerous seismic, conditional and operational issues associated with the existing facilities will require remedial attention before other program projects are completed. This project represents immediate improvements to the existing facilities at SEP identified as part of the condition assessment effort that are not specifically included as part of another near-term SSIP Phase 1 project. This project includes items for rehabilitation such as concrete spalling repair and seismic retrofit of priority process buildings. Seismic retrofit and structural repairs to the Sedimentation Building and channel structures (SEP 530 Contact Channel, SEP 540 Effluent Control Structure, 6' reinforced concrete pipe from SEP 540 to Booster Pump Station, Conduits C/D/E, SEP 525 Box Channel, and 9' reinforced concrete pipe to Junction Structure #5) will be completed.

Program: Southeast Plant (SEP) Improvements	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved	$44.15 M
Forecast*	$44.15 M
Actual	$31.59 M

Project Schedule:

Approved Jun-13	Sep-22
Forecast* Jun-13	Sep-22

Project Percent Complete: 74.1%

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

Key Milestones:	Environmental Approval	Bid+ Advertisement	Construction NTP+	Construction+ Final Completion
Current Forecast	03/25/16✓	(A) 07/01/17✓ (B) 03/04/19✓	09/04/18✓ 09/09/19✓	05/01/20✓ 03/08/22

Project includes multiple construction contracts.
(A) Southeast Water Pollution Control Plant New Headworks Facility – Scope 1 (North side, WW-628)
(B) Seismic Reliability and Condition Assessment Improvements (WW-665)

Progress and Status:

At SEP 042 (Primary Sedimentation), installation of scum pump and associated conduit, piping and electrical connection is ongoing. Canopy, stairway and 1.5-ton capacity monorail crane has been installed.

NTP for JOC 76R-12 (W3 Water Strainer Backwash Flow) was issued on June 9, 2021.

Issues and Challenges:

None at this time.

Scum System Installation

CWWSIPSE10 - SEP Power Feed and Primary Switchgear Upgrades

Description: The project is intended to address the deficiency of the existing medium voltage power distribution system (MV PDS), obtain a second redundant power feed from PG&E to upgrade the treatment plant with redundant electrical feeds, construct a new main switchgear sized to provide adequate power to new facilities, replace aging unit substations, and integrate the electric services of the nearby pump stations to the SEP medium voltage network. The project consists of installing a new redundant PG&E service, upgrading the existing Hunters Point feed to 12 MW, upgrading the main switchgear, and replacing fifteen aging existing primary unit substations at SEP. Additionally, it involves integration of Bruce Flynn Station and Booster Pump Station to SEP MV PDS, enhanced Energy Monitoring and Management System (EMMS), coordination with other SEP projects (particularly BDFP) to plan the need for emergency generators for critical processes, and construction of a new duct bank from the main switchgear to an electrical manhole.

Program: Southeast Plant (SEP) Improvements	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$95.87 M	Approved Jun-14	Jun-24
Forecast*	$95.88 M	Forecast* Jun-14	Jun-24
Actual	$19.72 M	Project Percent Complete: 18.8%	

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

Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	02/22/18✓	03/05/19✓ - 02/20/20 ✓	10/05/20✓	12/18/23

Contract WW-662 was originally advertised in March 2019 and was re-advertised in February 2020.

Progress and Status:

Project team continues to review submittals and RFIs from the contractor. Contractor completed the pile foundation and structural steel framing for the new Primary Switchgear Building SEP 032. On June 1, contractor also mobilized at Bruce Flynn pump station to start conduit work.

Issues and Challenges:

None at this time.

SEP Building 032 Conceptual Rendering

I. SSIP Quarterly Report

10036398 - OSP Condition Improvement Projects - Part 2

Description: The OSP Condition Assessment Repairs project will include major improvements to the plant, aimed to address the reliability of existing assets that have deteriorated over the years. This project includes planning, design and environmental review of improvements to address the age, deterioration and reliability of existing assets at OSP that are not specifically included in the other SSIP projects. This project includes rehabilitation of building structures, rehabilitation or replacement of mechanical and electrical equipment, and seismic retrofit of process tanks and buildings. Improvements focus on maintaining operational reliability and extending the service life of buildings that are required to remain in operation for 30 years or more.

Program: Oceanside Plant (OSP) Improvements	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:

Approved	$105.10 M
Forecast*	$105.10 M
Actual	$0.00 M

Project Schedule:

Approved	Jan-21	Jul-29
Forecast*	Jan-21	Jul-29

Project Percent Complete: 0.4%

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	03/06/26	01/27/23 - 07/30/26	06/28/23 - 12/31/26	06/27/25 - 01/03/29

Progress and Status:

WWE engineering has assembled contract documents to replace four (4) uninterruptable power supply (UPS) systems.

Additionally, the project will fund the Construction Phase of Contract WW-648 Oceanside Water Pollution Control Plant Building 042 Primary Clarifier Improvements.

Issues and Challenges:

None at this time.

OSP Site Aerial Photo

CWWSIPTPNP02 - North Shore Pump Station Wet Weather Improvements

Description: The purpose-of this project is to provide redundant effluent pumping capacity at North Shore Pump Station (NSS) during wet weather. This project will replace existing four (4) dry weather pumps with larger capacity units so that 3 of the 4 pumps are capable of pumping 75 MGD during wet weather. The project also includes upgrades to the motor control centers (MCCs) and distributed control system (DCS). The implementation of this project will ensure reliable and efficient operation in keeping with the LOS and maintain regulatory compliance.

Program: North Point Facility (NPF) Improvements	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved	$55.00 M
Forecast*	$55.00 M
Actual	$7.86 M

Project Schedule:

Approved	Aug-13	Dec-23
Forecast*	Aug-13	Dec-23

Project Percent Complete: 16.5%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	10/13/17✓	06/14/19✓ - 10/08/20 ✓	04/19/21✓	05/08/23

Progress and Status:

Major mechanical (pumps/screens) submittals and RFI's review on-going. Contractor initiated mobilization. City and Contractor field offices delivered and installed outside NPF 010 (NPF south side). Notice-to-Proceed for SEP 930 DCS scope of work issued on 6/30/2021.

Issues and Challenges:

None at this time.

Existing Dry Weather (DW) Pump

10033745 - Mission Street, 16th to Cesar Chavez Streets, Brick Sewer Rehabilitation

Description: Based on the outcome from SSIP Project CWWSIPCSSR02, Collection System Assessment, "Mission Street, 16th to Cesar Chavez, Brick Sewer Rehabilitation" (Mission BSR), and "New Montgomery Brick Sewer Rehabilitation" (NM BSR) projects were identified. The planning work for Mission BSR was completed with CWWSIPCSSR02, and the planning work for NM BSR was completed in this project. The remaining project phases for Mission BSR are included in this project. Other large-diameter sewer improvement projects will be implemented with other capital projects, such as Project No. 10034718.

The purpose of this proposed project is to rehabilitate the certain existing main sewers located on Mission Street (between 16th and Cesar Chavez Streets). This proposed project includes design, right-of-way, environmental, bid and award, construction and closeout phases to rehabilitate approximately 5,000 linear-feet of the large-diameter sewers, located on Mission Street, between 16th and Cesar Chavez Streets, utilizing trenchless rehabilitation methods (cured-in-place liner, spray-mortaring or slip-lining).

Program: Interceptors / Tunnels and Odor Control	**Project Status:** Construction	**Environmental Status:** Not Applicable (StatEx)

Project Cost:		**Project Schedule:**	
Approved	$9.87 M	Approved Jul-18	Nov-22
Forecast*	$9.87 M	Forecast* Jul-18	Nov-22
Actual	$4.46 M	Project Percent Complete: 51.1%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	12/02/19✓	05/14/20✓	11/30/20✓	11/29/21

Progress and Status:

During this quarter, contract WW-703, Mission, 16th to Cesar Chavez Streets, Brick Sewer Rehabilitation, began the cured-in-placed lining process for the existing large sewer. The project team is working with the contractor to minimize potential schedule impacts due to the delay in long lead items because of the pandemic.

Issues and Challenges:

None at this time.

Performed Cured-In-Placed lining process along Mission Street

10034718 - Large Sewer Condition Assessment and Improvements

Description: This is a collection of sewer improvement projects that will rehabilitate and/or replace Large Diameter Sewers (sewers greater than 36-inches in diameter or equivalent diameter) that has been prioritized using Collection System Asset Management Program (CSAMP) data with the highest risk level for failure. These set of projects (or subprojects) were identified from the efforts of SSIP Phase 1 projects, CWWSIPCSSR02 - Collection System Condition Assessment.

Included is one subproject to construct an intertie to convey combined sewage between the existing 66-inch diameter Channel Force Main to the Islais Creek Transport/Storage Box.

Program: Interceptors / Tunnels and Odor Control	**Project Status:** Design	**Environmental Status:** Active (Various)

Project Cost:		**Project Schedule:**	
Approved	$96.52 M	Approved Aug-19	Dec-26
Forecast*	$96.52 M	Forecast* Aug-19	Dec-26
Actual	$4.05 M	Project Percent Complete: 5.2%	

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

Key Milestones:	**Environmental+ Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	(A) 03/25/22 (B) 08/06/20✓ (C) 01/14/22 (D) 03/23/21✓ (E - H) TBD	11/04/22 01/19/21✓ 04/05/22 01/07/22 TBD	05/26/23 09/17/21 08/24/22 07/05/22 TBD	11/27/24 12/12/22 08/25/23 01/22/24 TBD

+Project includes multiple construction contracts: (A) Channel Force Main Intertie; (B) New Montgomery, Mission, Jessie & Minna Streets Brick Sewer; (C) Panhandle and Inner Sunset Sewer Improvements (D) Tenderloin and Nob Hill Large Sewer Rehabilitation; (E) Chinatown and North Beach Large Diameter Sewer; (F) Castro and Mission Districts Sewer Improvements; (G) South Van Ness Ave (join with Paving project); and (H) East SOMA. Future projects may be added when they are initiated and if funds are available.

Progress and Status:

During this quarter:

Subproject (A): CER approved by the TSC and the Planning phase was completed. Design phase was initiated and proceeding towards 35% design.

Subproject (B): Contract was awarded in May 2021 and anticipates issuing construction NTP next quarter. Cost-savings were realized from the completion of the pre-construction phase for this subproject.

Subproject (C): Design was initiated and is proceeding towards 35% design.

Subproject (D): Project team is proceeding towards 65% design. Delays in lateral inspection, coordination with the adjacent project (Better Market Street) and coordination of utility conflicts are delaying the subproject, including advertisement and construction milestones.

Subproject (E): CER approved by the TSC and the Planning phase was completed. Design phase was initiated and proceeding towards 35% design.

Subproject (F): CER approved by the TSC and the Planning phase was completed. Design phase was initiated and proceeding towards 35% design.

Subproject (G): Design is proceeding towards 100%, and will be included in a joint contract, led by Public Works Paving Program.

Subproject (H): Funds were available based on actual bid prices from subproject B. Therefore, this new subproject was initiated to address large-diameter sewers identified to be in need of rehabilitation.

Issues and Challenges:

None at this time.

CWWSIPCSSR11 - Cargo Way Sewer Box Odor Reduction

Description: This project will install a new flush line to convey effluent flows from the existing Booster Pump Station to an existing sewer located on Cargo Way. The scope of work includes: Installation of approximately 4,000 LF of new HDPE pipe; Installation of backflow preventer at the flush line discharge; Utility coordination and relocation to make room for the flush line; Obtain CEQA approval (CatEx) and other necessary permits (such as Maher and BCDC) to implement the project; Establish MOU and agreements with SFMTA and SF Port; and Conduct public outreach to the community, including SF Port and its stakeholder.

Program: Interceptors / Tunnels and Odor Control	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved	$8.74 M
Forecast*	$8.74 M
Actual	$3.62 M

Project Schedule:

Approved	Apr-15	Dec-22
Forecast*	Apr-15	Dec-22

Project Percent Complete: 44.8%

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

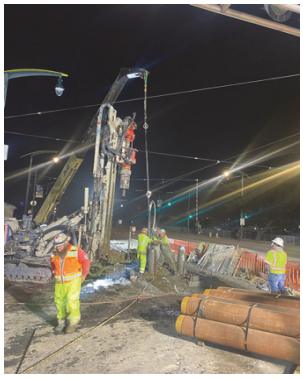
Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	07/23/19✓	11/18/19✓	07/14/20✓	12/13/21

Progress and Status:

During this quarter, construction continues for Contract WW-696, Cargo Way Flushline, and piping installation work within an existing structure began, which is only permitted during the dry weather season. The team continues to coordinate with other contract work within the vicinity.

Issues and Challenges:

None at this time.



Driving Micropiles for Offset Manhole

10033106 - Geary BRT Sewer Improvements Phase 2

Description: SFMTA is implementing the Geary Bus Rapid Transit (BRT) Program and SFPUC will be a partner to replace/upgrade sewers along the Geary Corridor. Any sewer work required, whether it is sewer relocation, sewer rehabilitation or sewer replacement, will be undertaken as part of SFMTA's project.

SFPW has started the pre-planning effort in determining sewers that may need replacement due to age and/or condition. Approximately 2.2 miles of sewers on this Geary corridor, from Stanyan Street to 34th Avenue (Phase 2 of the BRT Program), and on nearby cross streets, have been identified as possibly needing replacement. The weighted average age of these sewers is 74 years.

Program: Interdepartmental Projects	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$2.00 M	Approved Mar-18	Dec-23
Forecast*	$2.00 M	Forecast* Mar-18	Dec-23
Actual	$0.04 M	Project Percent Complete: 2.0%	

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

Key Milestones:	**Environmental** Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	07/03/23	N/A	N/A	N/A

+ All construction related activities will be completed under Phase 2 of SSIP.

*** SFMTA is the project lead. The San Francisco County Transportation Authority (SFCTA) prepared the CEQA approval, except for the sewer and water scopes, which will be completed separately by SFPUC.*

Progress and Status:

Project continues to be on hold by SFMTA due to funding and other challenges. Design and CEQA initiation cannot be determined until receiving direction from SFMTA.

Issues and Challenges:

None at this time.

10037246 - Seacliff No. 2 PS & FM Upgrade

Description: The purpose of this project is to rehabilitate Seacliff No. 2 PS and FM, in accordance with the Operational Reliability Level-of-Service Goals (State of Good Repair). This project includes Planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), for the following scope of work and assumptions: assume existing PS can be rehabilitated and upgraded to meet current building codes; replace the three submersible pumps in kind (47 horsepower pumps); replace other mechanical and process equipment, including existing crane, bubbler system, piping, valves, inlet gate and operator, water system components, and washdown pump; provide protective coating to all exposed metal piping, fittings, and valves; replace all electrical equipment; upgrade fiber optic connection; address PS security needs, including providing perimeter camera, access key box at gate, egress compliant gate hardware and level lockset or panic hardware exit devise and solid panel surrounding lock; and replace existing eight-inch force main with 16-inch force main in the same alignment.

Program: Pump Stations and Forcemain Improvements	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$16.84 M	Approved Dec-20	Sep-29
Forecast*	$16.84 M	Forecast* Dec-20	Sep-29
Actual	$0.14 M	Project Percent Complete: 0.9%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	11/20/23	05/27/25	12/15/25	09/19/28

Progress and Status:

During this quarter, the planning phase continued and project team has reviewed and completed gathering the existing information available. The project team began evaluating the information and alternatives.

Issues and Challenges:

None at this time.

Seacliff No. 2 Pump Station and the CSD 007 discharge location at Baker Beach

10037251 - Seacliff No. 1 PS & FM Upgrade

Description: The purpose of this project is to replace Seacliff No. 1 PS and FM, in accordance with the Operational Reliability LOS Goal (Performance Requirements & Water Quality). This project includes planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), design, right-of-way, environmental, bid and award, construction and closeout phases. Although the project scope depends on the outcome from the planning phase and scope freeze efforts, the current schedule and budget include the following assumptions and scopes of work: Replacement of pump station and wet-well at its existing location; Replacement of approximately 930 linear feet of 8-inch force main at the same alignment; Installation of a new connection from new pump station to CSD 005; Installation of flow monitoring devices for post-storm evaluation; Installation of floatable controls at the overflow structure to CSD 005; Installing a redundant pump for "˜n+1′ redundancy during wet weather.

As the current sewer assets are partially located on Federal/GGNRA property, substantial efforts with right-of-way coordination, environmental and other permitting is required. Potential impacts from the permitting and ROW coordination will be better quantified as the project progresses.

Program: Pump Stations and Forcemain Improvements	**Project Status:** Planning	**Environmental Status:** Active

Project Cost:		**Project Schedule:**	
Approved	$13.06 M	Approved Dec-20	Dec-29
Forecast*	$13.06 M	Forecast* Dec-20	Dec-29
Actual	$0.09 M	Project Percent Complete: 0.7%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	02/09/24	02/26/25	09/11/25	12/21/28

Progress and Status:

During this quarter, the project team began the Needs Assessment process.

Issues and Challenges:

None at this time.

Seacliff Pump Station No.1

10037303 - Sunnydale PS Safety Improvements

Description: The purpose of this project is to meet the Health, Safety and Security Level-of-Service Goal. Longer-term improvements at this station are in a separate project and scheduled later in the capital improvement program. This project includes Planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), Design, Right-of-Way, Environmental, Bid and Award, Construction and Closeout Phases. Although the project scope depends on the outcome of the Planning Phase, the project includes the following scope of work and assumptions: Address safety risks from groundwater intrusion; Address Security Concerns, including: Install new security signage and upgrade lighting to dusk-activated LED lighting; Upgrade card readers and door contacts at all perimeter doors; Add interior presence sensing, connected to an intrusion detection panel and alarming to security; Furnish, install and configure video recording servers, management server and analytic servers including uninterruptable power supplies; Install video camera units and local recording; Evaluate and add gas detection system; Add site lighting at egress penthouse and entrance to station.

Program: Pump Stations and Forcemain Improvements	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:

Approved	$5.03 M
Forecast*	$5.03 M
Actual	$0.04 M

Project Schedule:

Approved Dec-20	May-26
Forecast* Dec-20	May-26

Project Percent Complete: 1.5%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	03/14/23	08/03/23	02/26/24	05/27/25

Progress and Status:

During this quarter, the project team is continuing with the planning phase which includes site visits, meeting with Operations and Maintenance staff, and reviewing existing information to help define scope of work for the project.

Issues and Challenges:

None at this time.

Sunnydale Pump Station

CWWSIPCSPS02 - Force Main Rehab at Embarcadero and Jackson Streets

Description: This project consists of: Rehabilitate approximately 190 LF of the NSFM that is located outside the Jackson Street Transport/Storage Box (JST) by installing a 28-inch outside diameter, DR26 HDPE pipe; Replace approximately 50 LF of the NSFM that is located outside the JST and underneath the Jackson combined sewer discharge; Construction of a valve, valve-vault and associated mechanical/electrical controls to allow WWE Operations to direct combined sewage flows to either the NSCFM or to the existing NSFM; Establish a Memorandum of Understanding and agreements with SF Port and the Port's tenant for the temporary construction and permanent O&M easement for the NSFM asset; Obtain CEQA approval (Mitigated Negative Declaration - MND) for the project; Perform public outreach to the community, including stakeholders along SF Port's waterfront area; Implement bike lane detour; Mitigate unforeseen site conditions; and Relocate utility conflicts.

Program: Pump Stations and Forcemain Improvements	**Project Status:** Construction	**Environmental Status:** Completed (MPM)

Project Cost:

Approved	$11.01 M
Forecast*	$11.01 M
Actual	$7.70 M

Project Schedule:

Approved	Jul-14	Sep-22
Forecast*	Jul-14	Sep-22

Project Percent Complete: 73.7%

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

Key Milestones:	Environmental Approval	Bid** Advertisement	Construction NTP	Construction Final Completion
Current Forecast	08/16/16✓	08/06/19✓	06/01/20✓	02/22/22

*** Contract was originally advertised on 5/15/17 and will be re-bid after the field investigations are completed under CWWSIPCSSR09.*

Progress and Status:

During this past quarter, the contractor continued with the construction of the new valve-vault, started installation of mechanical and electrical equipment, and installed additional sections of the new force main. When installing new sections of the force main, the Contractor noticed a possible deformation of the existing force main at the point of connection. Depending on the condition of the existing force main, it may delay the contract work. Currently, investigative work is being initiated under the contract to determine the condition of the existing force main.

New Force Main and Appurtenances Inside New Valve Vault

Issues and Challenges:

None at this time.

CWWSIPCSPS03 - Mariposa Dry-Weather Pump Station & Force Main Improvements

Description: The proposed project consists of the following: Increase the dry weather pump capacity to handle a peak flow rate of 5.0 MGD; Demolish existing pump station building, underground structure, wet well, electrical system, and associated assets to make room for a new pump station; Obtain Art Commission approval; Obtain CEQA (CatEx) approval and other necessary permits (BCDC, Maher's Ordinance, etc.) to construct the improvements; Construct a new pump station building, underground structures, and wet well by expanding the existing easement with SF Port; Construct new MCCs, DCS, PLC, panels, power service, and level monitoring system; Obtain permanent power supply from Power Enterprise; Replace the existing dry weather force main with a new larger diameter force main; Utility coordination and/or relocation related to the force main enlargement; Revise the existing MOU with SF Port to include additional permanent ROW needed for the new pump station (with an upfront payment for the 66-year lease); and Conduct public outreach to the community, including SF Port and its stakeholders.

Program: Pump Stations and Forcemain Improvements	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved	$31.93 M
Forecast*	$31.93 M
Actual	$25.37 M

Project Schedule:

Approved Jul-14	Dec-22
Forecast* Jul-14	Dec-22

Project Percent Complete: 84.0%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	04/25/17✓	04/04/18✓	01/28/19✓	09/28/21

Progress and Status:

During this quarter, pump station construction continues to progress, and the building structure is completed, and main pumps were installed. The installation of the electrical and mechanical work continues to progress. The construction of force main work under Contract DB-128R2 has been completed, and staff continues to negotiate construction claims with the design-builder, and work towards final completion.

Issues and Challenges:

None at this time.

Main pumps are installed in the Pump Room.

10037244 - Baker (009) Baffle Improvements

Description: The components of the project at Baker CSD involve the following: install a baffle on the east overflow weir; repair or replace western array of valves to stop leaking; repair eastern array of valves to prevent leaking; repair or replace deteriorated metal plumbing pipes; repair minor defects including missing aggregate and infiltration in connecting sewer; and patch and coat minor exposed aggregate in former DAF chamber.

Program: CSD and Transport/Storage Structures	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:

Approved	$2.26 M
Forecast*	$2.26 M
Actual	$0.02 M

Project Schedule:

Approved Dec-20	Mar-24
Forecast* Dec-20	Mar-24

Project Percent Complete: 1.0%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	07/01/22	10/27/22	05/18/23	11/17/23

Progress and Status:

In this quarter, the team continued to clarify the scope of the project, specifically the additional owner request items. The exact scope of added items and their costs are needed to be able to present the project change to the Change Control Board for approval.

Issues and Challenges:

None at this time.

Baker St. CSD damaged backflow preventer valve

10037245 - Brannan (019) CSD Gate & Baffle Rehab

Description: Scope of work for these CSDs are based on historical performance and WWE Operations video inspection records. The butterfly discharge valve is not working properly, thus the combined flow discharge get interrupted, when valve is not opening. In addition, the flap valve at the end of is stuck in open position and the CSD lacks baffle to control the floatables.

The components of the project at Brannan Combined Sewer Discharge (CSD) involves: Improving the discharge system either by restoring the weirs and passive system or repair of mechanical system and valve and actuator; Replace the flap gate with an inline check valve or another flap gate; Install baffle for floatables control; Conduct concrete patching and repair works and repair exposed rebar; Replace the access ladder.

Program: CSD and Transport/Storage Structures	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$6.93 M	Approved Dec-20	Aug-25
Forecast*	$6.93 M	Forecast* Dec-20	Aug-25
Actual	$0.05 M	Project Percent Complete: 0.5%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	11/29/22	03/20/23	10/03/23	10/03/24

Progress and Status:

The work on running hydraulic models for different options (mechanical gate vs. weir, or complete closure) continued in this quarter. Draft of the technical memo that will lead the team for recommendation of alternatives, will be issued in the upcoming quarter.

Issues and Challenges:

None at this time.

Non-operational butterfly valve at Brannan CSD

CWWSIPFCDB06 - Yosemite Green Infrastructure

Description: The upper reach of the Yosemite Creek Daylighting project would daylight the creek along a portion of the historic creek path, from Yosemite Marsh in McLaren Park to Woolsey and Hamilton Streets. This project diverts flows from the sewer using swales, vegetated channels, rain gardens, piped sections and a constructed wetland/detention basin/bio-swale system. This project is also referred to as "Upper Yosemite Creek Daylighting". This project will provide plant establishment and/or monitoring of the following GI projects, Islais Creek, Sunset, North Shore, Lake Merced, Sunnydale, Richmond, Channel and Yosemite.

Program: Early Implementation Projects	**Project Status:** Planning	**Environmental Status:** Completed (CatEx)

Project Cost:

Approved		$17.10 M
Forecast*		$17.10 M
Actual		$3.66 M

Project Schedule:

Approved	Dec-12	Jun-26
Forecast*	Dec-12	Jun-26

Project Percent Complete: 23.0%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	08/15/17✓	03/06/23	08/02/23	07/03/25

Progress and Status:

The RFP PRO.0123 - Engineering Services for Green Infrastructure was advertised on April 15. 2021 and two proposals were received on June 9, 2021. Next quarter, proposals will be reviewed and evaluated.

Issues and Challenges:

The design and construction MOU with the San Francisco recreation & Park Department (SFRPD) slowed due to a change of SFRPD personnel and is still in progress.

Yosemite Station along Wayland Street provides outdoor educational opportunities for creek restoration and ecology.

10034553 - Green Infrastructure Grant Program (GIGP)

Description: The Green Infrastructure Grant Program (GIGP) offers grants to large public and private property owners to manage stormwater onsite and improve the performance of the collection system during wet weather. The Green Infrastructure Grant Program (GIGP) was established with several objectives: to manage stormwater using green infrastructure, to manage stormwater cost effectively, and to provide customers impacted by the anticipated stormwater cost allocation a mechanism to reduce their stormwater runoff and fees. The grant will cover the costs of design and construction of an approved stormwater management feature, such as rain gardens, permeable pavement, cisterns, and vegetated roofs. The maximum grant award is $765,000 per acre of impervious surface managed, up to $2 million in funding. Maintenance responsibility for the GI lies with the property owner and inspection responsibility with the SFPUC. In order for an application to be considered for funding, the project must meet minimum criteria including: managing stormwater runoff from a minimum impervious area of 0.5 acres; capturing the 90th percentile storm (0.75-inch depth) with the proposed green infrastructure features; and providing co-benefits to the community. The SFPUC has allocated $25M from FY18 - FY27 for the program. The program will be administered by the SFPUC Wastewater Enterprise with project management support from the Infrastructure Division.

Program: Watershed Stormwater Management	**Project Status:** Construction	**Environmental Status:** Not Applicable

Project Cost:

Approved		$25.00 M
Forecast*		$25.00 M
Actual		$1.67 M

Project Schedule:

Approved	Jul-18	Jun-29
Forecast*	Jul-18	Jun-29

Project Percent Complete: 6.9%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	N/A	N/A	N/A	N/A

Progress and Status:

During the second quarter of 2021, the PUC awarded more than $2.9M in green infrastructure grants for new grant projects at three locations: St. Thomas the Apostle, St. Monica School and Church and St. Anne of the Sunset School. Two awarded projects, St. Thomas More School and Lycee Francais SF Ortega Campus continued project design during the second quarter. The SFPUC technical assistance team continued to perform socially distanced site visits, completing two new site visits.

Issues and Challenges:

None at this time.

Bessie Carmichael Middle School Playground with Green Infrastructure Complete

CWWSIPFCGI01 - Watershed Stormwater Management (Planning Only)

Description: This project includes planning and preliminary design support for the watershed stormwater management and implementation of green infrastructure projects. This Watershed Stormwater Management Project planning effort will conduct ongoing smaller and localized watershed assessments as needed to ensure that the prioritized projects are responsive to changing neighborhood conditions and new data. Issues continuing to evolve include: changes in regulations, ordinances and codes such as the Non-potable Ordinance, drought, reductions in dry weather flow, the development of surface flooding solutions, sea level rise, emerging one water technologies and the formation of new neighborhood plans and district As a result of this work GI capital project planning will reflect the best state of knowledge about the Collection System.

Program: Watershed Stormwater Management	**Project Status:** Planning	**Environmental Status:** Not Applicable

Project Cost:

Approved		$9.00 M
Forecast*		$9.00 M
Actual		$3.99 M

Project Schedule:

Approved Jul-16		Jun-22
Forecast* Jul-16		Jun-22

Project Percent Complete: 64.0%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	N/A	N/A	N/A	N/A

Progress and Status:

Similar to last quarter, the project team provided technical support for Flood Resilience Programmatic Strategies, green infrastructure projects and programs, and billing system upgrades. Flood resilience work included interdepartmental coordination for FEMA floodplain management/flood resilient building code modifications, development of flood elevations for the 100-Year Storm Flood Risk Map, and development of a flood resilience voluntary buyout strategy. Green infrastructure support included development of materials for a residential green infrastructure (downspout disconnect) grant pilot, expected to launch and of Q2 FY21-22, and the project evaluation of the Buchanan Street Mall Neighborhood GI project.

Issues and Challenges:

None at this time.

CWWSIPFCRP03 - Operational Decision System Phase 2

Description: This project would integrate available data in the collection system (levels, flows, pump status, etc.) with rainfall prediction data (from National Oceanic and Atmospheric Administration). The rainfall prediction data will be coupled with WWE's collection system hydraulic model to project the likely impact of approaching storms and generate specific operational recommendations for managing flows. Phase 2 builds upon Phase 1 (CWWSIPFCRP02) for a citywide installation.

Program: Advanced Rainfall and Operation Decision System	**Project Status:** Construction	**Environmental Status:** Not Applicable

Project Cost:		**Project Schedule:**	
Approved	$6.72 M	Approved Feb-17	Sep-25
Forecast*	$6.72 M	Forecast* Feb-17	Sep-25
Actual	$3.46 M	Project Percent Complete: 55.7%	

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

Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	N/A	12/18/17✓	02/22/18✓	06/30/25

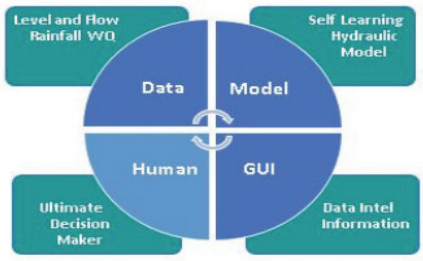
+This is a software development project. NTP represents the date of award for software development agreement.

Progress and Status:

Quality assurance and quality control (QA/QC) of raw data gathered from these newly installed flow monitoring devices are ongoing. The project team provided progress updates to the various project stakeholders this quarter.

Issues and Challenges:

The lack of rain this past wet weather season resulted to minimal amount of raw data that can be used to adequately perform QA/QC of the newly installed flow monitoring devices and testing the ODS algorithm itself. Hence, a six-month extension was approved to continue QA/QC work until the next wet weather season. The time extension will have no impact on the overall project forecast at completion.



Operational Decision System (ODS) Graphic Screen Mock-up

CWWSIPFCDB14 - Folsom Area Stormwater Improvement Project

Description: This project includes the planning and design phases to improve stormwater conveyance away from the 17th and Folsom neighborhood to minimize flooding. The scope consists of: Design of approximately 12,500 LF of new combined sewer boxes and pipes in the neighborhood immediately adjacent to 17th and Folsom; Design of approximately 5,100 LF of 12' I.D. tunnel bore; Environmental clearance for both the upstream traditional open cut work and the tunnel bore; Modification of a Caltrans foundation to allow the tunnel to pass through; Launch shaft and staging area for the tunnel bore in the proximity of Florida Street and Alameda Street; Turning shaft for the tunnel boring machine in the vicinity of De Haro and Alameda Street; Underpinning of the Division Sewer Box to allow crossing of the tunnel bore; Receiving shaft for the tunnel bore in the vicinity of the Channel Transport and Storage Box; Due to the uncertainty of Caltrans approval and property acquisition for the approved tunnel alignment on Alameda Street, the project also developed an alternative tunnel route on 17th Street. The 17th Street alternative may be adopted into the project scope in the event the Alameda route becomes infeasible, at some point in the future.

Program: Flood Resilience Projects	**Project Status:** Design	**Environmental Status:** Active (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$38.00 M	Approved Jul-16	Jan-23
Forecast*	$38.00 M	Forecast* Jul-16	Jan-23
Actual	$7.84 M	Project Percent Complete: 51.0%	

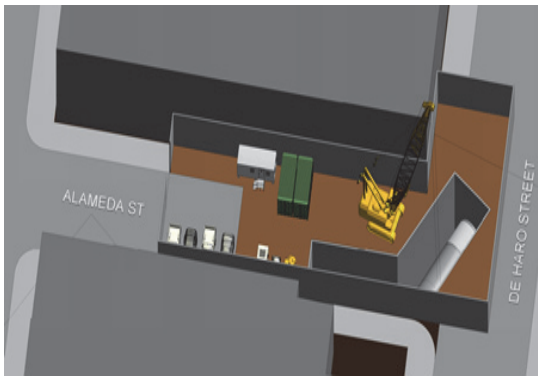
Approved; Actual Cost; * Forecast Status: Meet Requirements Need Attention Exceed Limits

Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP+**	**Construction+ Final Completion**
Current Forecast	09/30/21	N/A	N/A	N/A

+ Project includes Planning, Environmental, and Design Phases only.

Progress and Status:

In this quarter, the City design team and consultants worked on the 95% design for the Initial Upstream Contract, and started the 65% design for the Upstream Sewer Box Contract and Upstream Large Pipe. The project team also completed the Categorical Exemption (CatEx) application in preparation for submittal to Planning. The project team continued to make forward progress in negotiating with (3) private property owners and Caltrans for sub-surface easement acquisition and an airspace lease, respectively, to support the project. The project requires extensive staging on private property and permanent improvements through private property in order to be implemented.



3D graphic of proposed rotation shaft site for the tunnel boring machine at Alameda and De Haro

Issues and Challenges:

None at this time.

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II. Facilities and Infrastructure Program

1. PROGRAM DESCRIPTION

The Wastewater Facilities and Infrastructure Program will encompass those capital improvements that fall outside of the Sewer System Improvement and Renewal and Replacement Programs. These capital projects are intended to provide for necessary upgrades to aging facilities which are not addressed by the SSIP or R&R to maintain their intended functions. Projects will include improvement to Treasure Island wastewater facilities and improvements to wastewater support facilities (office consolidation, Southeast Community Facility).

The Wastewater Facilities and Infrastructure Program will address the following challenges:

- Uphold the SFPUC Wastewater Enterprise Levels of Service (LOS);
- Protect the structural integrity of critical City infrastructure;
- Streamline core operational functions and processes;
- Employ energy efficiency components, stormwater management enhancements, seismic upgrades, spatial improvements, safety and security improvements, and other essential improvements to modernize existing facilities to current standards;
- Provide benefits to surrounding communities.

2. PROGRAM STATUS

This Quarterly Report presents the progress made on the Facilities and Infrastructure program between April 1, 2021 and June 30, 2021.

The approved project budget and schedule were developed and approved by the appropriate June 30, 2021. This is based on the project team's assessment at this time. However, it should be noted that the project team is currently focused on validating these estimates.

3. PROGRAM COST SUMMARY

Table 3.1 provides an overall program-level cost summary of the Facilities and Infrastructure Program. It shows the Expenditures to Date, Current Approved Budget and Current Forecasted Cost; and the Cost Variance between the Approved Budget and Forecasted Budgets. The Current Approved Budget is $662.6 million and the currently Forecast Cost (based on the proposed project list) at completion is also $662.6 million.

Table 3.1 Program Cost Summary

Program	Expenditures to Date ($ Million) (A)	Current Approved Budget ($ Million) (B)	Current Forecasted Cost ($ Million) (D)	Cost Variance ($ Million) (E = B - D)
Facilities and Infrastructure Program	$148.67	$662.61	$662.61	-

4. PROGRAM SCHEDULE SUMMARY

Figure 4.1 and Table 4.1 compare the Current Approved, Current Forecasted Schedules for the Facilities and Infrastructure Program. Refer to the "Cost and Schedule Status" notes in Section 5 for the criteria associated with the three color-coded Forecast Status Levels in Figure 4.1 – Meet Requirements, Need Attention, and Exceed Limits. The Program schedule is under development, the overall time frame is 20-30 years.

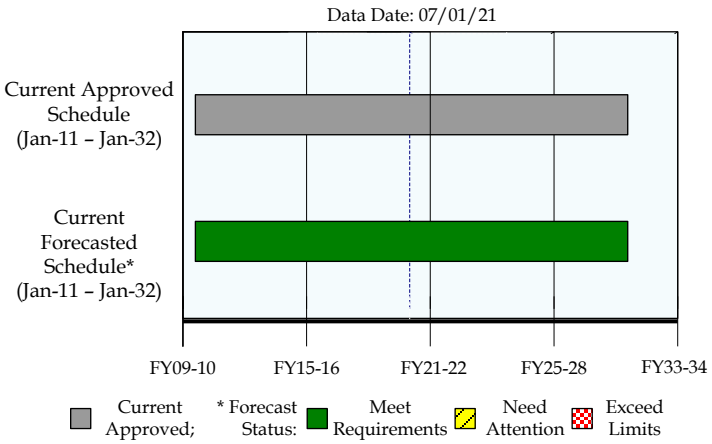


Figure 4.1 Program Schedule Summary

Table 4.1 Current Approved vs. Current Forecasted Schedule Dates

Program	Current Approved Project Start	Actual Start	Current Approved Completion	Current Forecasted Completion	Schedule Variance (Months)
Facilities and Infrastructure Program	01/01/11	01/01/11✓	01/29/32	01/29/32	-

5. PROJECT PERFORMANCE SUMMARY*

All costs are shown in $1,000s as of 07/01/21

Project Name	Active Phase (**)	Current Approved Budget (a)	Current Forecasted Cost (b)	Expenditures To Date (c)	Cost Variance (d= a - b)	Cost Status (+)	Current Approved Completion (e)	Current Forecasted Completion (f)	Schedule Variance (g = e - f)	Schedule Status (+)	Project Data Sheet
Facilities and Infrastructure											
10033820 - Southeast Outfall Condition Assessment & Rehabilitation	PL	$ 33,775	$ 33,775	$ 796	-	★	04/01/30	04/01/30	-	★	See Section 10
CWP11001 - New Treasure Island Wastewater Treatment Plant	DS	$ 202,208	$ 202,208	$ 7,572	-	★	05/23/25	05/23/25	-	★	See Section 10
CWWFAC01 - Ocean Beach Climate Change Adaptation Project	CN	$ 169,923	$ 169,923	$ 17,238	-	★	07/01/27	07/01/27	-	★	See Section 10
CWWFAC03 - Southeast Community Center @ 1550 Evans	CN	$ 114,000	$ 114,000	$ 74,729	-	★	12/29/23	12/29/23	-	★	See Section 10
CWWFAC04 - Southeast Bay Outfall Islais Creek Crossing Replacement	DS	$ 67,600	$ 67,600	$ 10,151	-	★	06/03/26	06/03/26	-	★	See Section 10

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

**** Phase Status Legend**

PL Planning | DS Design | BA Bid & Award | CN Construction | MP Multi-Phases

+ Cost and Schedule Status

★ Meet Requirements: Forecasted Cost/Schedule is within Approved Budget/Schedule.

⚠ Need Attention: Forecasted Cost is over Approved Budget by greater than 1% and less than 10%. Or Forecasted Schedule is over Approved Schedule by greater than 2 months and both less than 6 months and less than 10%.

● Exceed Limits: Forecasted Cost is over Approved Budget by 10% or more. Or Forecasted Schedule is over Approved Schedule by greater than 6 months or 10% or more.

6. PROJECT NOT WITHIN BUDGET AND/OR SCHEDULE

All projects are within the current approved budget and schedule.

7. On-Going Construction**

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion	Current Forecasted Construction Final Completion*	Approved Contract Cost	Current Forecasted Cost*	Schedule (Cal. Days)	Cost	
Facilities and Infrastructure								
CWWFAC03 Southeast Community Center @ 1550 Evans	01/13/20	12/31/22	12/31/22	$ 71,051,372	$ 73,187,961	-	($2,136,589)	66.0%

Program Total for On-Going Construction	Approved Contract Cost	Current Forecasted Cost	Variance	
			Cost	Percent
	$ 71,051,372	**$ 73,187,961**	**($2,136,589)**	**(3.0%)**

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

** This table is reflecting Active construction contract with original contract amount greater than $1M.

8. PROJECTS IN CLOSE-OUT

Project Title	2016 Baseline Construction Phase Completion	2020 Approved Construction Phase Completion	Current Approved Construction Phase Completion	Actual Construction Phase Completion	2016 Baseline Construction Phase Budget	2020 Approved Construction Phase Budget	Current Approved Construction Phase Budget	Construction Phase Expenditures To Date
Facilities and Infrastructure								
CWWFAC02 - Collection Division Consolidation (Griffith Yard Improvements)	N/A	02/15/19	05/22/19	05/22/19	$ 0	$ 27,361,789	$ 16,629,029	$ 16,629,029
TOTAL					$ 0	$ 27,361,789	$ 16,629,029	$ 16,629,029

9. COMPLETED PROJECTS

No projects are currently completed.

10. PROJECTS WITHIN BUDGET AND SCHEDULE (THRESHOLD LIMITS)

10033820 - Southeast Outfall Condition Assessment & Rehabilitation

Description: This Wastewater Enterprise Capital Improvement Program project will include extensive condition assessment and rehabilitation of the Southeast Water Pollution Control Plant (SEP) effluent force main. The Booster pump station was constructed in 1967 and last upgraded in 2002. The Booster Pump Station receives treated effluent from Southeast Treatment Plant via 72" gravity conduit. The discharge system from Booster Pump Station consists of 42" and 36" parallel force mains under Islais Creek that ultimately discharge into 60" Southeast Outfall. The effluent outfall discharges into the San Francisco Bay through the series of pipes at Pier 80. The outfall ends with 36" pipe and diffuser system that was replaced in 2012 using JOC Contract. The treated effluent flow conveyance is 50-60 million gallons per day(MGD) average and 110 MGD peak through the Southeast Outfall System. The underwater crossings have exhibited leaks 3 times in past 6 years and were repaired with JOC Contracts. The last limited condition assessment was performed in 2010-2011 and the report recommended the near-term and long-term actions for the entire Outfall system. The short-term action recommended that Islais Creek Underwater Crossings replacement within 5 years and long-term action recommended the re-inspection and re-habilitation of the remaining system within 10 years. The Islais Creek underwater crossings replacement is currently at 35% design phase under separate project FAC04 Facilities and Infrastructure Program. This new project will thoroughly and completely evaluate the condition and remaining life expectancy of the Southeast Outfall System and implement the rehabilitation solutions to extend the useful life.

Program: Facilities and Infrastructure	**Project Status:** Planning	**Environmental Status:** Not Initiated

Project Cost:		**Project Schedule:**	
Approved	$33.78 M	Approved Jul-19	Apr-30
Forecast*	$33.78 M	Forecast* Jul-19	Apr-30
Actual	$0.80 M	Project Percent Complete: 3.5%	

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

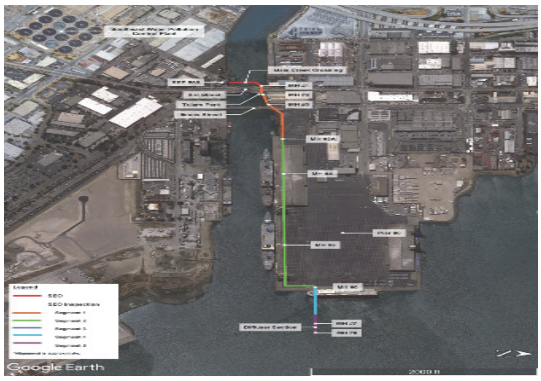
Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	TBD	04/30/25	09/29/25	09/28/29

Progress and Status:

Project team in coordination with the Islais Creek Crossing project team and consultant team completed the Technical Memorandum on Southeast Bay Outfall Alternatives Evaluation. The findings were presented to the Technical Steering Committee, SSIP Director and Infrastructure AGM. Project team also continues the development of field work as-found condition inspection goals, objectives, and inspection technologies for the project.

Issues and Challenges:

None at this time.



Southeast Outfall Segments

CWP11001 - New Treasure Island Wastewater Treatment Plant

Description: The objective of the project is to build a new wastewater treatment plant that will provide reliable service for the Treasure Island residents and meet the recycled water demands of the future redevelopment on the island. The existing facility was built by the United States Navy over 50 years ago and is past its useful life and no longer reliable. The existing facility is also not capable of providing recycled water and meeting the needs of the residents on the redeveloped island.

Program: Facilities and Infrastructure	**Project Status:** Design	**Environmental Status:** Completed (EIR)

Project Cost:		**Project Schedule:**	
Approved	$202.21 M	Approved Jan-11	May-25
Forecast*	$202.21 M	Forecast* Jan-11	May-25
Actual	$7.57 M	Project Percent Complete: 6.7%	

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

Key Milestones:	**Environmental Approval**	**Bid Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	04/18/19✓	N/A	01/18/23	11/22/24

Progress and Status:

Similar to the last quarterly, the new wastewater treatment plant and associated recycled water facility are in the planning phase of the project. The Design Build Request for Qualifications was released in August 2020 with qualification packages submitted on September 22nd and the approved Contractor list issued on November 12th. The Request for Proposals has concluded an internal review, with the team currently addressing all comments. The an anticipated release date for the RFP is the end of 2021. Coordination is ongoing with site preparation, geotechnical improvements, and other project activities with Treasure Island Community Development (TICD), Treasure Island Development Authority (TIDA), and the project team.

Issues and Challenges:

The RFP issuance is delayed to December 2021 to evaluate the impact of current market conditions on the procurement approach.

Rendering of the proposed Treasure Island Wastewater Treatment Plant

CWWFAC01 - Ocean Beach Climate Change Adaptation Project

Description: The project will develop a comprehensive shoreline management and protection plan against bluff erosion and climate-change induced sea level rise along Ocean Beach south of Sloat Boulevard consistent with the recommendations in the 2012 Ocean Beach Master Plan (OBMP). This project is necessary to protect the integrity of wastewater assets built to protect public health and the environment, including the Lake Merced Tunnel, the Westside Pump Station and the Oceanside Treatment Plant. The project includes a) Short-term Improvements [STI] to provide interim (2015-2022) erosion protection and improved beach access [e.g., sand backpass/stabilization and placement of sand bags], b) Army Corps of Engineers Section 204 beach nourishment [ACOE] (e.g., beneficial reuse of dredged sand to provide erosion protection), and c) Long-term Improvements [LTI] that will address a comprehensive shoreline management and protection plan.

Program: Facilities and Infrastructure	**Project Status:** Construction	**Environmental Status:** Active (EIR)

Project Cost:

Approved	$169.92 M
Forecast*	$169.92 M
Actual	$17.24 M

Project Schedule:

Approved	Jul-12	Jul-27
Forecast*	Jul-12	Jul-27

Project Percent Complete: 11.3%

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

Key Milestones:	Environmental Approval	Bid Advertisement	Construction NTP	Construction Final Completion
Current Forecast	(A) 09/10/14✓ (B) 02/09/21✓ (C) 09/26/22	09/14/15✓ N/A 08/11/22	01/07/16✓ 07/16/21 01/03/23	03/05/21✓ 01/24/22 12/31/26

(A) Short Term Improvements (STI) represent multi-year, as-needed contracts WW-607, WW-667 and WW-714. (B) The Army Corps of Engineers (ACOE) will be responsible for construction (no Bid & Award) © Long Term Improvements (LTI)

Progress and Status:

A) STI: Annual monitoring report is under development. A new RFP for was advertised for this work in March 2021. The SFPUC received 7 bids for the work. Award of the contract, WW-714, is expected to go to the Commission for approval in July 2021.

B) ACOE: The ACOE awarded a contract for Beneficial Reuse of dredged sand at South Ocean Beach. The project is expected to mobilize for construction in July 2021 and will place 225,000 CY of material on Ocean Beach.

C) LTI: This is the first CCSF Climate Change Adaptation Project requiring a high level of coordination with other CCSF Agencies; negotiations on funding continues at a very slow rate and is impacting progress on 65% design; the Final ADEIR is under review.

Issues and Challenges:

SFPUC continues discussions with the SF Zoo regarding project impacts to ingress and egress from their parking lot; negotiations reached a draft agreement late last year to include access upgrades at the existing Sloat Entrance. Formalization of the agreement is still in process. Additionally, funding for non-SFPUC components continues to be unresolved.

Rendering of open space elements near Sloat Boulevard

CWWFAC03 - Southeast Community Center @ 1550 Evans

Description: The Southeast Community Center project will serve to address the SFPUC's commitment to the mitigation measure for the expansion of the Southeast Plant (SEP) by constructing a new community center at 1550 Evans. The project will include a childcare center, café, multipurpose space for meetings, events, and workshops, and co-working office and classroom space for community-based organizations providing workforce development services. It will also include parking and over two acres of landscaped open space, with play areas, an amphitheater, picnic areas and gardens. The new center will provide a wide range of social services supporting workforce development and education for Southeast residents of all ages.

Program: Facilities and Infrastructure	**Project Status:** Construction	**Environmental Status:** Completed (CatEx)

Project Cost:		**Project Schedule:**	
Approved	$114.00 M	Approved Jul-12	Dec-23
Forecast*	$114.00 M	Forecast* Jul-12	Dec-23
Actual	$74.73 M	Project Percent Complete: 60.0%	

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

Key Milestones:	**Environmental Approval**	**Bid+ Advertisement**	**Construction NTP**	**Construction Final Completion**
Current Forecast	10/30/18✓	N/A	01/13/20✓	12/31/22

+ The project delivery method for this project is construction Manager/General Contractor (CM/GC).

Progress and Status:

The project is 66% complete and construction is proceeding with enclosing the walls and the building. LBE, local workforce and community participation are reported in monthly newsletters and on the project website, www.southeasecommunitycenter.com.

Issues and Challenges:

Early indication that there will be a delay in getting permanent power from PG&E. The team will continue to pursue and follow up in the next report.

Work in Progress

CWWFAC04 - Southeast Bay Outfall Islais Creek Crossing Replacement

Description: This Wastewater Enterprise Capital Improvement Program project will include improvements to the Southeast Water Pollution Control Plant (SEP) effluent force main crossings at Islais Creek and modifications to the Booster Pump Station. SEP is the SFPUC's largest wastewater facility treating almost 80% of the City's dry and wet weather flows.

Major improvements are planned to ensure that the SEP facilities maintain permit compliance and operate reliably. This project primarily addresses the portion of effluent discharge outfall into the San Francisco Bay through the series of pipes at Pier 80. Following improvements are needed to address aging infrastructure:

- Pipeline replacement within the Islais Creek
- Restoration of access manholes for future inspection and maintenance
- Improving flow velocity with new pipeline material
- Providing redundancy and flexibility for operation
- Piping isolation improvements to the Booster Pump Station

Program: Facilities and Infrastructure	**Project Status:** Design	**Environmental Status:** Active (MND)

Project Cost:		**Project Schedule:**	
Approved	$67.60 M	Approved Sep-16	Jun-26
Forecast*	$67.60 M	Forecast* Sep-16	Jun-26
Actual	$10.15 M	Project Percent Complete: 19.1%	

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

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

Progress and Status:

After presenting the alternatives to management, the project has been put on hold. Project is being re-evaluated as part of upcoming Capital planning efforts.

Issues and Challenges:

As mentioned previously, due to challenging alternatives evaluation process, the project scope is currently being reconsidered, thus schedule and budget is impacted and yet to be determined.

Current pipeline crossing at Islais Creek

III. Renewal and Replacement Program

1. PROGRAM DESCRIPTION

The Wastewater Enterprise (WWE) Renewal and Replacement Program (R&R) is a continuing annual program that seeks to address deficiencies in two wastewater infrastructure categories: R&R Collection System and R&R Treatment Facilities. The goal of the R&R Program is to meet the endorsed levels of service goals, regulatory permit compliance, system reliability and functionality, and sustainable operations of the City's sewer system. The R&R Program also complies with the State requirement that a provision be made for the periodic repair and replacement of sewer system facilities.

San Francisco's sewer collection system was installed in phases beginning in the early 1870's. Many of the sewers are near the end of their useful life and are in need of urgent attention in order to continue to function at proper capacity and to meet regulatory standards. An asset management approach was developed to prioritize which assets within the sewer system should get attention first. For the R&R Collection System, the asset management base approach factors in the physical condition of the sewer, age, location, risk, public safety, Department of Public Work's street paving schedule, and various other factors. Approximately 12.4 miles of sewer replacement work was awarded in FY 13-14. In FY 14-15 the sewer replacement mileage target subsequently increases to 15 miles to meet Commission endorsed Level of Service goals.

The R&R Treatment Facilities projects are prioritized based upon regulatory compliance, condition assessments, Operation staff recommendations, and Level of Service goals. These projects seek to extend the useful life of treatment facility assets throughout San Francisco by helping to maintain their treatment capacity and performance and enable WWE to maintain regulatory compliance with Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) permits and Bay Area Air Quality Management District (BAAQMD) requirements.

2. PROGRAM STATUS

This Quarterly Report presents the progress made on the Renewal and Replacement Program (R&R) projects between April 1, 2021 and June 30, 2021.

The approved project budget and schedule were developed and approved by the appropriate Wastewater Enterprise Manager on June 30, 2021. This is based on the project team's best assessment of the projects at this time. However, it should be noted that the project team is currently focused on validating these estimates.

Figures 2.1 and 2.2 show the total number of active projects remaining in each phase of the R&R Collection systems and R&R Treatment Facilities programs as of June 30, 2021.

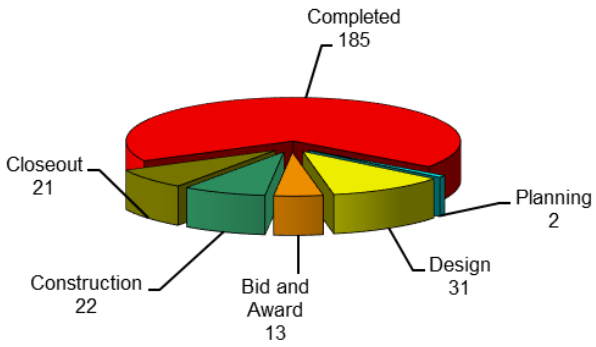


Figure 2.1 Total Number of Active R&R Collection Systems Projects in R&R Program

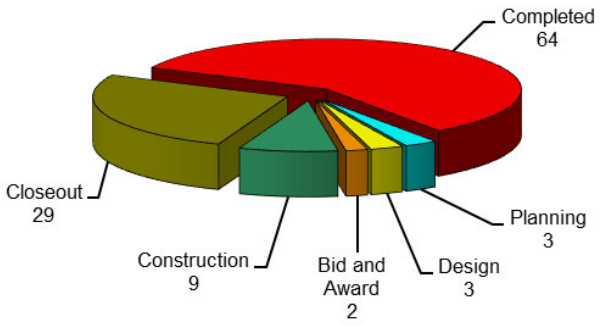
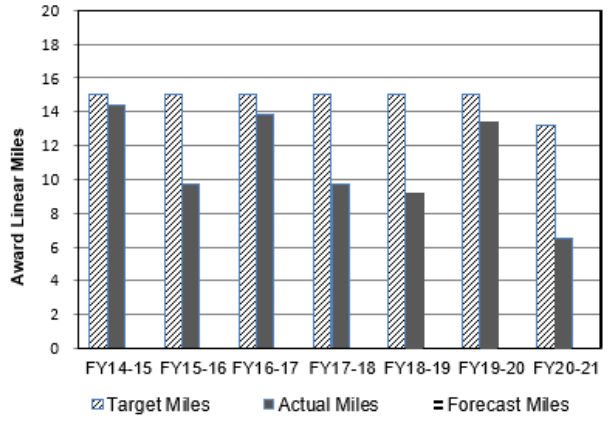


Figure 2.2 Total Number of Active R&R Treatment Facilities Projects in R&R Program

The Wastewater R&R Collection System Sewer Replacement Program has an annual budget of $76.3 million in FY21 to award a target of 13.2 miles of sewer replacement work in San Francisco.

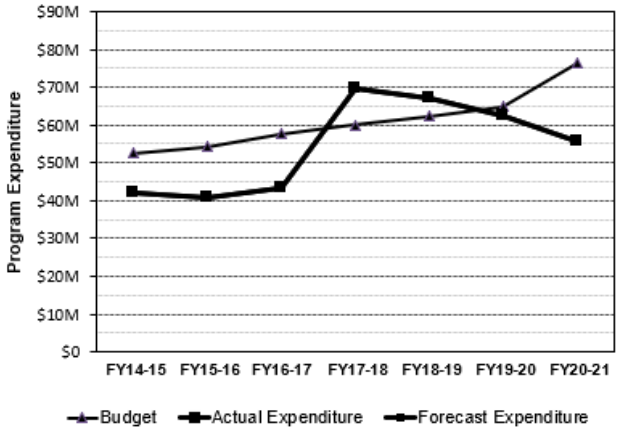
Figure 2.3 shows the target and actual award miles of sewer improvement projects that have been awarded to date and are forecasted to be awarded. The Wastewater R&R Collection System Sewer Replacement Program has awarded approximately 6.5 miles of sewer replacement work in FY21.



	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21
Target Miles	15.0	15.0	15.0	15.0	15.0	15.0	13.2
Actual Miles	14.4	9.7	13.8	9.7	9.2	13.4	6.5
Forecast Miles							

Figure 2.3 Wastewater R&R Collection System - Sewer Improvements - Award Linear Miles by Fiscal Year

Figure 2.4 shows the annual total program expenditure by fiscal year for the R&R Collection System Sewer Replacement program.



	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21
Budget	$52.5M	$54.3M	$57.6M	$59.9M	$62.3M	$64.8M	$76.3M
Actual Expenditure	$42.1M	$40.8M	$43.4M	$69.7M	$67.0M	$62.4M	$55.5M
Forecast Expenditure							

Figure 2.4 Wastewater R&R Collection System - Sewer Improvements - Program Expenditure by Fiscal Year

3. PROGRAM COST SUMMARY

Table 3.1 provides an overall program-level cost summary of the R&R Program. It shows the Expenditures to Date; Current Approved Budget and Current Forecasted Cost; and the Cost Variance between the Approved Budget and Forecasted Cost.

The total Approved Budget for the R&R Program is $956.7 million and the Current Forecasted Cost at completion is $946.5 million ($10.2 million under the Current Approved Budget).

Table 3.1 Program Cost Summary

Sub-Program	Expenditures to Date ($ Million) (A)	Current Approved Budget ($ Million) (B)	Current Forecasted Cost ($ Million) (C)	Cost Variance ($ Million) (D = B - C)
R&R Collection Systems	$633.16	$793.64	$783.44	$10.20
R&R Treatment Facilities	$132.24	$163.04	$163.04	-
Program Total	**$765.40**	**$956.68**	**$946.48**	**$10.20**

4. PROGRAM SCHEDULE SUMMARY

Figure 4.1 and Table 4.1 compare the Current Approved and Current Forecasted Schedules for the R&R program. Refer to the "Cost and Schedule Status" notes in Section 5 for the criteria associated with the three color-coded Forecast Status levels in Figure 4.1 – Meet Requirements, Need Attention, and Exceed Limits.

The Approved Schedule completion for the overall R&R program is March 2022. The overall R&R Program is currently forecasted to be completed in March 2022.

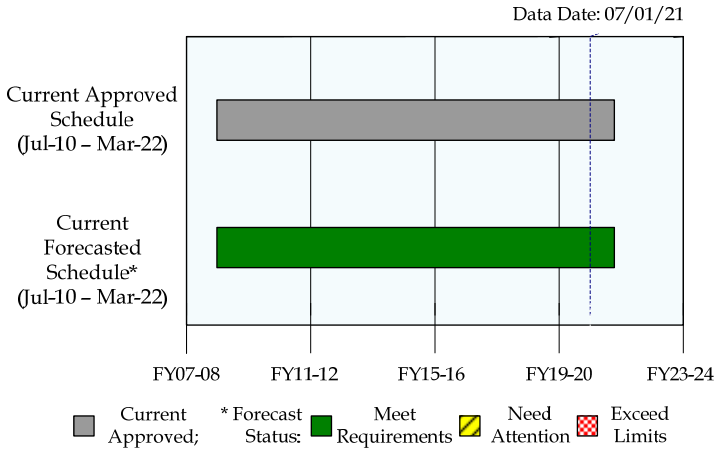


Figure 4.1 Program Schedule Summary

Table 4.1 Current Approved vs. Current Forecasted Schedule Dates4-4

Sub-Program	Current Approved Project Start	Actual Start	Current Approved Completion	Current Forecasted Completion	Schedule Variance (Months)
R&R Collection Systems	07/01/10	07/01/10✓	03/31/22	03/31/22	-
R&R Treatment Facilities	07/01/10	07/01/10✓	02/12/22	02/12/22	-
Overall Program	**07/01/10**	**07/01/10✓**	**03/31/22**	**03/31/22**	**-**

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5. PROGRAM PERFORMANCE SUMMARY*

All costs are shown in $1,000s as of 07/01/21

Program Name	Active Phase (**)	Current Approved Budget (a)	Current Forecasted Cost (b)	Expenditures To Date (c)	Cost Variance (d= a - b)	Cost Status (+)	Current Approved Completion (e)	Current Forecasted Completion (f)	Schedule Variance (g = e - f)	Schedule Status (+)	Project Data Sheet
Renewals and Replacements											
CWWRNRCS - R&R Collection Systems	MP	$ 793,640	$ 783,440	$ 633,160	$ 10,200	★	03/31/22	03/31/22	-	★	See Section 10
CWWRNRTF - R&R Treatment Facilities	MP	$ 163,035	$ 163,035	$ 132,240	-	★	02/14/22	02/14/22	-	★	See Section 10

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

**** Phase Status Legend**

PL Planning | DS Design | BA Bid & Award | CN Construction | MP Multi-Phases

+ Cost and Schedule Status

★ Meet Requirements: Forecasted Cost/Schedule is within Approved Budget/Schedule.

⚠ Need Attention: Forecasted Cost is over Approved Budget by greater than 1% and less than 10%. Or Forecasted Schedule is over Approved Schedule by greater than 2 months and both less than 6 months and less than 10%.

● Exceed Limits: Forecasted Cost is over Approved Budget by 10% or more. Or Forecasted Schedule is over Approved Schedule by greater than 6 months or 10% or more.

6. PROGRAMS NOT WITHIN BUDGET AND/OR SCHEDULE

All programs are within the current approved budget and schedule.

7. On-Going Construction**

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion	Current Forecasted Construction Final Completion*	Approved Contract Cost	Current Forecasted Cost*	Schedule (Cal. Days)	Cost	
R&R Collection System								
10015681-As-Needed Sewer Sealing (WW-644)	02/06/17	10/08/21	10/08/21	$ 4,032,199	$ 4,032,199	-	-	94.1%
10033120-Various Locations Sewer Replacement No. 6 (WW-677)	06/15/20	05/20/21	08/31/21	$ 4,107,325	$ 4,107,325	(103)	-	86.0%
10033122-Various Locations Sewer Replacement No. 8 (WW-679)	01/04/21	03/04/22	03/04/22	$ 4,409,287	$ 4,409,287	-	-	41.9%
10034355-As-Needed Spot Sewer Replacement No. 40 (WW-693)	11/30/20	01/03/22	01/03/22	$ 9,689,823	$ 9,689,823	-	-	53.3%
10034564-As-Needed Sewer Cleaning and Inspection (FY20) (WW-695)	09/03/19	11/21/21	11/21/21	$ 2,052,122	$ 2,052,122	-	-	82.2%
10034813-As-Needed Main Sewer Replacement No. 8 (WW-697)	11/30/20	01/03/22	01/03/22	$ 7,373,000	$ 7,373,000	-	-	53.3%
10034814-As-Needed Spot Sewer Replacement No. 41 (WW-698)	05/24/21	06/27/22	06/27/22	$ 8,155,118	$ 8,155,118	-	-	9.5%
10034829-As-Needed Sewer Cleaning and Inspection (FY21) (WW-700)	11/23/20	06/15/22	06/15/22	$ 1,915,287	$ 1,915,287	-	-	38.6%

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

** This table is reflecting Active construction contract with original contract amount greater than $1M.

III. WWE R&R Quarterly Report — Q4-FY2020-2021 (04/01/21 - 06/30/21)

Construction Contract	Schedule			Budget		Variance (Approved - Forecast)		Actual % Complete
	NTP Date	Approved Construction Final Completion	Current Forecasted Construction Final Completion*	Approved Contract Cost	Current Forecasted Cost*	Schedule (Cal. Days)	Cost	
R&R Treatment Plants								
10035390 - OSP Egg-Shaped Digester Interior Lining Rehabilitation (WW-706)	10/01/20	09/20/22	09/20/22	$ 2,461,000	$ 2,461,000	-	-	45.0%

Program Total for On-Going Construction	Approved Contract Cost	Current Forecasted Cost	Variance	
			Cost	Percent
	$ 44,195,160	**$ 44,195,160**	**$0**	**0 %**

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

** This table is reflecting Active construction contract with original contract amount greater than $1M.

8. PROGRAMS IN CLOSE-OUT

No program is currently under close-out.

9. COMPLETED PROGRAMS

No Program is currently completed.

10. PROGRAMS WITHIN BUDGET AND SCHEDULE

CWWRNRCS - R&R Collection Systems

Description: The purpose of the Wastewater Enterprise (WWE) Renewal and Replacement Program (R&R) Collection System Sewer Improvements project is to maintain the existing functionality of the sewage collection system and address planned and emergency projects for repair and replacement of structurally inadequate sewers. This project consists of the following sub-projects: small diameter (less than and equal to 36-inch) sewer improvements, small diameter (less than and equal to 36-inch) sewer condition assessment, spot sewer replacement, large diameter (greater than 36-inch) sewer condition assessment, large diameter (greater than 36-inch) sewer improvements and sewer transport storage box condition assessment. By utilizing an asset management approach, which factors in: physical condition, age, location, risk, public safety, paving schedule and other factors, aging and failed portions of the collection system are identified and replaced.

Program: Renewals and Replacements	**Program Status:** Multiple Phases	**Environmental Status:** Completed

Project Cost:

Approved		$793.64 M
Forecast*		$783.44 M
Actual		$633.16 M

Project Schedule:

Approved Jul-10		Mar-22
Forecast* Jul-10		Mar-22

Project Percent Complete: 80.0%

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

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

+ See Section 7 for the active construction contracts information.

++On-Going Construction Projects identified in Section 7. were all covered under exemption determinations.

Progress and Status:

The summary below shows the total number of projects in each phase of the program as of June 30, 2021.

The two-hundred sixty (274) WWE Collection Systems projects are distributed as follows:

Planning: 2
Design: 31
Bid & Award: 13
Construction: 22
Closeout: 21
Completed: 185

During this Quarter, 2 new projects were initiated, 6 projects were advertised, 3 projects were awarded/awaiting NTP, 1 project received NTP, 3 projects completed construction and 6 projects closed out.

Issues and Challenges:

None at this time.

CWWRNRTF - R&R Treatment Facilities

Description: The purpose of the Wastewater Enterprise (WWE) Renewal and Replacement (R&R) Treatment Program is to extend the useful life of the WWE treatment facility assets. The R&R Treatment Facilities projects are prioritized based upon regulatory compliance, condition assessments, Operation staff recommendations and Level Of Service goals.

Program: Renewals and Replacements	**Program Status:** Multiple Phases	**Environmental Status:** On-going

Project Cost:

Approved	$163.04 M
Forecast*	$163.04 M
Actual	$132.24 M

Project Schedule:

Approved	Jul-10	Feb-22
Forecast*	Jul-10	Feb-22

Project Percent Complete: 83.0%

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

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

+ See Section 7 for the active construction contracts information.

++ Projects will be reviewed for CEQA compliance as they proceed.

Progress and Status:

The summary below shows the total number of the remaining projects in each phase of the program as of June 30, 2021.

The one-hundred nine (110) active WWE Treatment Facility Repair projects distributed as follows:

Planning: 3
Design: 3
Bid/Award: 2
Construction: 9
Closeout: 29
Completed: 64

Equipment Purchase FY21 to Date: 38 equipment purchases completed totaling $1,324,145.60.

Issues and Challenges:

None at this time.

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APPENDICES

1. **PROJECT DESCRIPTIONS**
2. **APPROVED PROJECT-LEVEL SCHEDULE**
3. **LIST OF ACRONYMS**

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APPENDIX 1. PROJECT DESCRIPTION

APPENDIX 1.1 SEWER SYSTEM IMPROVEMENT PROGRAM

TREATMENT FACILITIES

Southeast Treatment Plant (SEP) Improvements

CWWSIPDP01 - SEP Biosolids Digester Facilities Project

Planning, engineering, and construction of the new solids processing facilities will include solids pretreatment; the thermal hydrolysis process (THP); anaerobic digestion; biosolids dewatering; biosolids product storage and loadout; biogas utilization; odor control; automated control systems; chemical facilities, and associated appurtenances and piping.

Key BDFP facilities and processes consist of:

- Primary sludge (PS) and waste sludge (WAS) pumping to the solids treatment processes, which includes improvement to the existing WAS pumping facilities.
- A consolidated Solids Pretreatment building that incorporates the following processes/equipment: o WAS thickening using gravity belt thickeners (GBTs) (3 units).
  - o Blending of thickened activated sludge (TAS) and PS to produce combined primary and active sludge (CPAS).
  - o Screening of CPAS using inline strainpress-type screens (5 units).
  - o Pre-THP Cake Storage (3 hoppers).
  - o Pre-THP dewatering of screened CPAS using centrifuges (5 units).
- Thermal hydrolysis of dewatered, screened CPAS using Cambi THP process (3 THP units) and cooling of the thermally hydrolyzed sludge (THS).
- Mesophilic anaerobic digestion and digested sludge (DS) storage using digesters (5 silo-shaped digesters).
- A Biosolids Dewatering building that will include the following processes/equipment:
  - o Dewatering of digested biosolids using belt filter presses (BFPs) (4 units),
  - o Storage (4 silos) and load-out of dewatered biosolids product using screw conveyors, and truck hauling.
- Beneficial use of the biogas produced during the digestion process. Biomethane Pipeline Injection is being considered as an alternative biogas end use. The biogas will be treated to natural gas quality, injected into an existing PG&E gas line, and then sold as a renewable natural gas or vehicle fuel in a potential Public-Private Partnership (P3) contract. This alternate biogas end use would provide the SFPUC its highest value and reduce local air emissions in the SEP neighborhood due to the elimination of electricity-producing combustion engines.
- Odor control facilities consisting of biofilters, carbon units and ammonia scrubbers
- Process systems to support the BDFP facilities including No. 2 water (W2 – chlorinated and filtered plant secondary effluent) system upgrade, plant air, polymer systems, and cooling water system. Ancillary facilities will also include a ferric chloride facility for struvite control, as well as pumped plant recycle (PPR) pumping to convey the liquids return streams from thickening, pre-THP dewatering, and biosolids dewatering.

The proposed site for the BDFP facilities is adjacent to the existing SEP at 1800 Jerrold Avenue (former Central Shops) and 1801 Jerrold Avenue (former Asphalt Plant), and on portions of the existing SEP property. Possible construction staging areas for the BDFP include 1150 Phelps Street (SFPUC's former Greenhouses), 50 Quint Street and/or Pier 94/96 SF Port properties.

The construction will be completed through a Construction Manager/General Contractor delivery approach under two distinct scopes. Scope I focus on the demolition and utility relocation of existing infrastructure at the project sites. Scope II addresses the construction of the new biosolids facilities (the remainder of the work).

CWWSIPSE02 - SEP New Headworks (Grit) Replacement

The new 250 MGD headworks consists of major components / facilities as follows:

- New Influent Junction Structure and Influent Monitoring:

o Construction of a new Influent Junction Structure that will include a temporary overflow weir for excess wet weather flow.
o Construction of a temporary connection between the Influent Junction Structure and Influent Control Structure.
o Construction of a new connection from Influent Junction Structure to the new bypass,
o Demolition of the existing Influent Control Structure.
o Installation of a new influent monitoring and sampling system including: influent flowmeters, pH and conductivity insertion probes, automatic samplers, and manual sample ports.
• A new Primary Influent Distribution Structure:
o Construction of a new bypass around the wet weather Headworks facility from the Influent Control Structure to the primary influent conduits that lead to the wet weather primary sedimentation basins (SEP 040/041).
• Upgrades to the Bruce Flynn Pump Station:
o Modifications to sewer connections and mechanical/electrical modifications.
o Addition of new bar screens and upgrades to the electrical system.
o Upon completion of these modifications, demolish the Southeast Lift Station (SELS).
• A new Bar Screens, Washer-Compacters and Screenings Handling Facility consisting of four multi-rake bar fine screens (three duty plus one standby), four screenings washer compactors, two shuttle hoppers, and a grit influent splitter structure.
• A new Grit Basins, Grit Washers and Grit Handling Facility using either the HeadCell (modular multi-tray grit tanks) or Pista360 (grit vortex) technology. This includes 12 HeadCell grit tanks with 24 grit pumps or six Pista360 tanks with 18 grit pumps. Both technologies involve 6 grit washers and two grit storage hoppers.
• A new Odor Control Facility, consisting of a two-stage system with bioscrubbers followed by carbon adsorption.
• New 50 mgd influent pump station, including influent piping and effluent force main, electrical building and odor control.
• Two new primary substations, each with a 15-kV vacuum circuit breaker, substation type, liquid-filled transformer, and a low-voltage power circuit breaker on the secondary side of the transformer.
• Electrical, Instrumentation and Control Rooms/Building.
• Demolition of both existing Headworks Facilities (SEP-011 and SEP-012).

10037330 - Primary Treatment (SEP 040/041) H&S Improvements

This project involves demolition of the building superstructure at South East Plant (SEP) 040/041 and replacement of all remaining deteriorated items. To control odors, the sedimentation tanks would be covered in a similar fashion to the covers on the sedimentation tanks at SEP 042. Ventilation of the covered tanks would be required to protect concrete surfaces from deterioration, and an odor control unit would be required to treat foul air from the covered tanks.

10037353 - SEP 550 Booster PS Condition Inspection & Interim

This project includes condition assessment of the influent channel and wet wells (confined space entry), as well as a budget allowance to perform concrete rehab to two wet wells and minor repairs to the influent channel. A firmer estimate to complete the repairs will depend on the results of the inspection. To inspect the influent channel, work must occur during dry weather and the plant must either be shut down or treated effluent diverted to Quint Street Outfall (QSO). Shut downs may last up to 8 hours, and coordination/approval is needed with the Regional Water Quality Board to allow diversion through QSO. Mechanical equipment rehab are also included as part of the interim improvements. These include:
• Replace sump pumps
• Replace water heater
• Replace air relief valves
• Replace (3) booster pumps (#1, 2 & 4)
• Replace all Variable Frequency Drives (VFD) (4)

CWWSIPSE01 - SEP Oxygen Generation Plant (Completed)

As a result of the Clean Water Act of 1972, the secondary treatment process, which is achieved through the use of high purity oxygen (HPO),

was implemented at Southeast Plant. During wet weather the regulatory permit requires that the Southeast Plant treat up to 150 million gallons per day, to the secondary level. The two existing, 66 tons per day (TPD), cryogenic oxygen generation plants that were placed in operation in 1981 are becoming extremely difficult to maintain, and have failed two times in the past year. Replacing the antiquated oxygen plants with two technologically advanced 45 TPD oxygen generation plants, will allow WWE Operations to have optimum control on the utilization of oxygen (based on the influent variations), thus significantly reducing the energy consumption.

CWWSIPSE03 - SEP Existing Digester Roof Repairs (Completed)

As part of the SSIP, a new biosolids handling facility will be built to replace the existing system. However, the existing digesters and associated facilities must continue to handle all biosolids generated by primary and secondary treatment operations at SEP until all planning, design, construction, and commissioning activities for new facilities are completed. Under this project, work will be completed to maintain existing digestion facilities in operation with sufficient capacity and reliability to produce Class B biosolids until new facilities are available for service. The project consists of repairs to the existing floating roof and associated appurtenances (Digester 8), and replacement of the existing floating roofs and associated appurtenances (Digesters 4, 6, 7 and Cake Bins 3 & 4). This project is currently at the closeout stage.

CWWSIPSE04 - SEP Primary and Secondary Clarifier Upgrades (Completed)

This project will upgrade the mechanical, structural and electrical components at the primary and secondary sedimentation tanks (clarifiers) at SEP to address operational reliability and compliance with regulatory requirements for liquid treatment. The major upgrades taking place at the primary sedimentation tanks include replacing key mechanical and electrical equipment and addressing structural repairs such as concrete repairs and coating seven tanks and influent channel. Covers for the primary sedimentation tanks and ventilation system will also be installed. Similarly, major upgrades for the secondary clarifiers include replacing key equipment and retrofitting existing secondary clarifiers (8 of 16 included in this project). Structural repairs will also be addressed including concrete crack repairs and coating.

CWWSIPSE05 - SEP 521/522 and Disinfection Upgrades

The major components of the project are as follows:

• SEP 521 Post-Chlorination building upgrades

o Replacement of four electrically actuated sluice gates (96" x 96") with new sluice gates and hydraulic actuators.

o Modifications to the existing SEP 521 building to include a new Effluent Sampling Station, new DCS Control Station, and upgrade to the existing bathroom for ADA compliance.

o Electrical work (e.g. distribution panels, transformers, power to various mechanical equipment, refeeding source power from SEP 522, and lighting).

o Mechanical work (e.g. effluent sampling stations, pumps, pipes and valves, HVAC and plumbing system).

o Instrumentation & Control (I&C) work (e.g. chemical analyzers, new DCS workstations, display screens, I/O cards, switches, associated programming).

o Installation of related structural work (e.g. demolition, equipment pad, anchorage).

o Demolition of two mud valves and actuators.

o Construction of new concrete access ramp and modifications to sidewalk grating system.

• New building (SEP 522) to house electrical and hydraulic controls

o Construction of a new Electrical and HPU building (architectural, structural, and civil).

o I&C work (e.g. new PLC panel, I/O cards, security system, network switches and associated programming; and connecting various equipment with control and monitoring system to plant DCS system).

o Mechanical work (e.g. new HPU, Compressor, HVAC and Plumbing System and associated piping work).

o Electrical work including (e.g. six new variable

frequency drives for W3 pump motors, MCCs, switchboards, an emergency generator, distribution panels and lighting).

• Improvements to the No. 3 Water System (SEP-920)

o Installation of six new 200 HP W3 pumps and motors, associated piping and valves as well as control and monitoring systems. This includes related civil work such as site drainage, grading and paving around the W3 pump area.

o Demolition and modification of portions of the exiting site security wall and fence, including installation of new vehicle gates and temporary asphalt vehicle access path.

o Removal of four existing W3 pumps, two strainers, appurtenances, associated valves and piping in SEP-540.

• Replace wood stop logs at SEP 540 – Effluent Control Structure.

• Replace gates and actuators in SEP-200 Aeration Tanks, SEP-525 Primary Effluent and Disinfection Facility, SEP-540 Effluent Control Structure, and SEP-545 Vault V.

• Replace valves and improve actuators/structures at SEP 530 – Chlorine Contact Channel related to W3 pump system.

• Replace dewatering pump and submersible sump pump, and install new hydraulic panel in SEP-526 Junction Structure.

CWWSIPSE07 - SEP Facility-wide Distributed Control System Upgrade

This project addresses distributed control system (DCS) upgrades within the Southeast Pollution Control Plant (SEP), Oceanside Pollution Control Plant (OSP), North Point Wet Weather Facility (NPF), Channel Pump Station (CHS), Westside Pump Station (WSS), and Bruce Flynn Pump Station (BFS). Under this project, OSP, NPF, and WSS DCS upgrades include planning/design only to ensure system-wide consistency. Both hardware and software upgrades integrating field instrumentation, control devices, communications hardware, processing hardware, interface hardware, and associated software packages into a unified system are required to provide real-time, system-wide monitoring and control. Coordination of monitoring parameters in various systems to reflect geo-spatial relationships will also be required to maintain compatibility and consistency of the input data used for process control.

CWWSIPSE08 - SEP Seismic Reliability and Condition Assessment Improvements

As part of the condition assessment effort, numerous seismic, conditional and operational issues associated with the existing facilities will require remedial attention before other program projects are completed. This project represents immediate improvements to the existing facilities at SEP identified as part of the condition assessment effort that are not specifically included as part of another near-term SSIP Phase 1 project. This project includes items for rehabilitation such as concrete spalling repair and seismic retrofit of priority process buildings. Seismic retrofit and structural repairs to the Sedimentation Building and channel structures (SEP 530 Contact Channel, SEP 540 Effluent Control Structure, 6' reinforced concrete pipe from SEP 540 to Booster Pump Station, Conduits C/D/E, SEP 525 Box Channel, and 9' reinforced concrete pipe to Junction Structure #5) will be completed.

CWWSIPSE09 - SEP Existing Digester Gas Handling Improvements (Completed)

The project consists of:

• Process upgrades addressing deficiencies related to Digester Gas Compressors, Heat Exchangers and Controllers, Combined Primary Activated Sludge (CPAS) Tank, Boiler and Boiler Stacks, Waste Flare and Cogeneration Cooling Water System, and B100 Biofuel Tank (EPA permit compliance).

• Building systems and odor control unit (OCU) upgrades such as replacing Roof Drains, OCUs and upgrading ventilation and OCUs, Roof Replacement and Air Compressor (BAAQMD Permit Application).

• Electrical Upgrades related to External Lighting Upgrades and installing Fire Alarm Building 800 (safety).

• Control Upgrades such as installing CO Gas Monitors and Replacing Digester Gas Flow Meters (safety).

• 300 feet of waste gas piping and appurtenances.

CWWSIPSE10 - SEP Power Feed and Primary Switchgear Upgrades
The project consists of:
• A new redundant power service from the Potrero substation provided by the Power Enterprise.
• Upgrade existing Hunters Point feed to 12 MW by PG&E.
• Upgrade main switchgear to provide adequate power for all existing SEP electrical loads and SSIP SEP projects demands and peak loads.
• Replacement/upgrade fifteen (15) aging existing primary unit substations at SEP.
• Integration of Bruce Flynn Station and Booster Pump Station in to SEP MV PDS to take advantage of SEP redundant power feed instead of separate second feeds for these facilities from PG&E.
• Enhanced Energy Monitoring and Management System (EMMS) for the MV power distribution system.
• Coordination with other SEP projects and Biosolids Digester Facilities Project (BDFP) in particular to coordinate construction of a unified emergency power distribution system for SEP in place of the several emergency generators that are currently being utilized and/or in the process of being constructed to provide emergency power for critical processes.
• Construct a duct bank from the main switchgear to an electrical MH, in close proximity to the BDFP, where BDFP will extend the power supply to its facility.

CWWSIPSE11 - SEP Oxygen Generation Plant 01 (Completed)
The new liquid oxygen (LOX) facility scope of work is as follows:
• Demolition Work
o Removal of three existing LOX storage tanks
o Removal of four existing vaporizers
o Removal of two existing Cryogenic Oxygen Plants
• Structural Work
o Torque down piles
o Concrete foundation floor slabs for LOX storage tanks and vaporizers
o Concrete trench
• Installation Work
o Installation of four vertical LOX storage tanks
o Installation of four LOX vaporizers
o Installation of a vacuum insulated piping for the package system
o Installation of a LOX Unloading Station

CWWBAE01 - Biofuel Alternative Energy (Completed)
A recent trend in the wastewater industry involves the addition of fats, oil, and grease (FOG) or other high-strength waste (HSW) directly into digesters to increase digester gas production and maximize the amount of renewable energy production from cogeneration. Due to the existing capacity constraints and condition of the biosolids facilities at the SEP, the addition of large quantities of FOG or other HSW is not currently feasible. While inedible kitchen grease (IKG) is currently accepted at the SEP Yellow Grease Facility, only the marginal grease is directly injected to the digesters, which consists of residual solids and moisture that is removed from the raw IKG and represents less than one percent of the daily volatile suspended solids loading to the digesters. Therefore, while not an option for the existing biosolids facilities, FOG and HSW addition could be a component of the new biosolids digesters project. The Biofuel Alternative Energy Project aims to determine if it is feasible and cost-effective for the SFPUC to generate bioenergy (e.g. biofuel or cogenerated power) as a byproduct of processing the FOG and/or food waste collected throughout the City. This project was originally initiated in 2011 before SSIP Phase 1 validation efforts began in 2012, but has been placed on hold until considered necessary.

SEP - 13 - Maintenance Building (SEP 940) Interim Improvement
Building 940 is a critical interim project for South East Plant (SEP). This is an interim project while the long-term vision and improvements under the SEP Campus Plan is being developed. Currently these crews are shoehorned into facilities not designed for the maintenance of electronic equipment. A new robust shop area is essential to be able to maintain reliable treatment facilities.

The new maintenance shops included under Biosolids Digester Facilities Project (BDFP) do not address these crews. The following improvements form the basis of this project:

- Space will be modified to include interim Electrical and Instrumentation and Controls (I&C) shop areas.
- HVAC Improvements including evaluation (and installation as-needed) of wet grinder filtration system, condensing unit, and welding exhaust system)
- H&S Improvements (emergency lights, signs, trip hazards, safe roof access)

SEP - 2 - SEP, Booster PS, & BFS Security Enhancements

The project involves the following security upgrades:

- Upgrading card readers and door contacts at all perimeter doors and ensuring proper operation
- Replacing and furnishing gates and gate operators including structural support, electrical power and controls
- Adding protective cages around outdoor chemical and electrical equipment, including an allowance for replacing/repairing the existing perimeter fence and fence support as needed
- Furnishing, installing, and configuring servers for video recording, management and analytics
- Configuring security fiber optic connectivity and adding video camera units and local recording
- Pruning the landscaping to establish clear zones, adding new security signage, and upgrading to dusk- activated LED lighting
- Establishing a visitor management system and installing turnstiles
- Monitoring improvements (e.g. developing mobile tablet security video monitoring capability, establishing a security monitoring center, a tablet-based security incident response reporting template and setting up an automatic video archiving process across all Wastewater Enterprise (WWE) sites)
- Providing interior intrusion detection of critical assets
- Adding interior presence sensing connected to an intrusion detection panel and alarming to security
- Upgrading UPS backup power to serve security components
- Adding new security signage with "No Trespassing", applicable penal code and emergency contact information
- Adding a main distribution frame (MDF) to BFS.

This project also includes SEP Fire Alarm, PA system, business network and radio communications.

SEP - 3 - Oxygen Generation (SEP 275) Reliability Upgrades

An evaluation of the VPSA oxygen generation system is required and should include a root cause analysis to determine why the existing oxygen system is not operating per design. Measures to reliably meet current oxygen demands and long-term alternatives such as adding or replacing VPSA modules, or replacing the entire system with an alternative oxygen supply system, should also be evaluated. Future projected oxygen demands should be considered, which may change based on plant operation modifications. If more stringent nutrient removal regulations are imposed in the future, South East Plant (SEP) will no longer employ a pure oxygen process. The cost allowance for the project is based on adding a third module to the current VPSA system to provide redundancy, although this is not necessarily the preferred outcome for the project.

SEP - 4 - SEP Facilities Interim H&S Imp (SEP 850 & 930)

The project at SEP 850, SEP 930 and SEP 940 involve completing health and safety improvements, including: Engineering Building (SEP 850) Health & Safety Improvements (Install power assisted door opening devices; Address leakage and structural rehabilitation works on water damaged walls and ceilings; Install fall protection where required; Replace or upgrade the HVAC system) A seismic evaluation will be undertaken at a later stage as part of the "Seismic Evaluation and Retrofit" Project, which will assess and recommend seismic improvements to SEP 850. Admin Building (SEP 930) Health & Safety Improvements (Install emergency exit lighting

and other required safety equipment; Install power assisted door opening devices, if required; Install fall protection where required; Replace or upgrade HVAC system and ventilation including lab fume hoods, where required; Remove or relocate fire-corridor obstructions; Address water ponding issues) A seismic evaluation will be undertaken at a later stage as part of the "Seismic Evaluation and Retrofit" Project, which will assess and recommend seismic improvements to SEP 930. Maintenance Building (SEP 940) Health & Safety Improvements (Install emergency lighting and exit signs at access door to roll-up door; Remove tripping hazards at threshold (uneven door landing on pull side))

SEP - 8 - SEP Condition Improvement Projects - Part 1

Specific rehabilitation and mechanical equipment related work includes the following:

Primary Sed Tanks (SEP 042) Rehab:

• Evaluate primary effluent butterfly valves and isolation sluice gates, • Repair exposed aggregate and concrete spalling on deck, • Evaluate influent gates A, B & C on top of deck (gate C is leaking on Headworks construction site), • Install emergency lighting in the below grade gallery.

Plant Effluent Control Structure (SEP 540) Rehab:

• Repair piping and evaluate mixers.

Sodium Bisulfite Tanks (SEP 515) Rehab:

• Replace sump pumps, recirculation pump, storage tanks, valves on transfer pumps, and address corrosion on pump unit, • Evaluate feasibility of relocating the system closer to the Headworks area, • Assess health and safety signage on tank (was observed to be inconsistent) and replace if required, • Evaluate safety barrier at top of ladder (none observed) and install if required.

Oceanside Treatment Plant (OSP) Improvements

CWWSIPTPOP02 - Westside Pump Station Reliability Improvements

The project consists of:

• Replacement of existing bar screens and addition of screening washing and compaction systems.

• Construct an interconnection between the existing dry weather and wet weather channels downstream of the new screens.

• New HVAC system (cooling improvements) to manage rejected heat from electrical equipment.

• Replacement of existing wet weather pumps to provide pump redundancy. The construction would take place within the existing structure and includes the following major components:

o Four new submersible pumps

o 200 linear feet of 54-inch force main

• Increasing the power feeder capacity at WSS to account for additional wet weather pumping capacity to allow power source redundancy. The two new power sources from PG&E would run approximately 3,000 feet along the Sloat Blvd.

• Replacement of the existing odor control units (OCUs) at the WSS with dilution ventilation fans and ducting. An improved ventilation system would be installed within the pump station.

CWWSIPTPOP03 - OSP Digester Gas Utilization Upgrade

The project consists of:

• Replacement of the gas storage vessel and digester gas condition equipment. The gas cleaning system includes a 350 cfm system for moisture, H2S, and siloxanes removal. The project includes replacement of the gas holder with new gas holding tank that will provide compressed digester gas storage at an average digester gas production of approximately 450,000 cf/day.

• Replacement of the existing cogeneration Internal-Combustion units (IC engines) and controls. The existing IC engines will be replaced by three (2)-new 620 kW IC engines to accommodate the amount of digester gas anticipated during the maximum month condition.

• Provide ancillary exhaust gas conditioning system and heat exchanger systems to comply with regulatory air board requirements, maximize process efficiency and hot water production.

• Upgrade ventilation within the energy recovery building.

• Replace electrical gear at Sub-Station No. 5; provide paralleling electrical gear and power system reliability improvements.

• 500 kw standby diesel generator and diesel fuel

storage system.

CWWSIPTPOP05 - OSP Condition Assessment Repairs

The OSP Condition Assessment Repairs project will include planning, design, and environmental review of major improvements to the plant including: rehabilitation of building structures, rehabilitation or replacement of mechanical and electrical equipment, and seismic retrofit of process tanks and buildings. Improvements focus on maintaining operational reliability and extending the service life of buildings that are required to remain in operation for 30 years or more. A preliminary evaluation identified improvements to be addressed in various phases of the project, including those at the following buildings:

- 011 – Pretreatment/Solids
- 042 – Primary Clarifiers
- 200 – Aeration Basins
- 230 – Secondary Clarifiers
- 510 – Chemical Storage
- 530 – Chlorine Contact Channels
- 620 – Digester Operations
- 630, 640, 650, 660 – Digesters 1, 2, 3 and 4
- 741 – Digester Gas Holder
- 800 – Co-Generation
- 821 – Gas Burner
- 920 – Pipe Gallery
- 930 – Administration and Laboratory
- 961/962 – Parking and West Entrance Tunnel/East Entrance Tunnel

CWWSIPTPOP06 - OSP Odor Control Optimization (Completed)

This project includes planning, design, environmental review and construction/upgrades to inefficiencies identified in Building 042 (Primary Clarifiers). Currently, the air from the entire building is exchanged and scrubbed for odor. In order to significantly reduce the volume of air treated for odor, the primary clarifiers should be covered and only air from the primary clarifier basins scrubbed. The main components of this project included:

- New covers for the five primary clarifiers (each cover would be approximately 190 feet long by 38 feet wide).
- Duct work to connect the head space in each clarifier basin to the odor control system.

Current plans involve the completion of an odor control study as part of the Alternative Analysis Report (AAR) planning phase. Opportunities may exist for reducing energy consumption while maintaining effective performance and meeting offsite odor limits. These include optimizing system operation, consideration of different reduced backpressure media, implementation of new lower energy usage technologies, and ventilation strategies including reduced turnover, covers for reducing volume, and air transfer. Based on the results of the alternative analysis, the project will forego covering the primary clarifiers and implement other optimization measures in its place.

OSP - 4 - OSP Condition Improvement Projects - Part 2

A wide range of mechanical equipment related improvements were identified as part of the OSP Condition Assessment Repairs Project. Specific work that forms part of the basis for this work includes the following (note that additional improvements are in progress or completed):

Digestion (620) Health and Safety Improvements

- Add handrails to the open risers at east end of stairs to bring into building code compliance.
- Replace insulation on digester hot water piping related to Pumps 49P22-1 to 4 and Heat Exchangers 43M34-1 to 4.
- Replace traction elevator due to corrosion/damage caused by water intrusion.

Digestion Operations (620) Mechanical

- Replace the six (6) sump pumps (620-SP-01 to 06), increase the capacity of the sumps and sump pumps 620-SP-03 & 04 to match 620-SP-01 & 02, and address area classification issues. (Please note that ventilation improvements as a result of the HVAC ventilation study findings may be made which could result in an electrical reclassification of the OSP 620 area).
- Replace the four (4) digester sludge transfer pumps 43P19-1 to 4 and valves and address area classification issues. (Please note that ventilation improvements as a result of the HVAC ventilation study findings may be made which could result in an electrical reclassification of the OSP 620 area).

• Install additional instrumentation for monitoring and control of the digester sludge day tank.
• Replace the level sensors on the digester sludge day tank.
• Install an automatic drip trap on the iron sponge piping.
• Replace the four (4) odor control units connected to the PRVs on top of each digester.
• Replace the four (4) digester hot water pumps (49P22-1 to 4) Polymer & Ferric Chloride (011) Replacement:
• Replace all ferric chloride equipment (10 metering pumps, piping, valves & pipe supports) with new skid systems. Replace with VFDs rated for constant torque where appropriate. Ensure the controls are located outside of the containment area.
• Replace the seven (7) polymer feed pump systems (mixed liquor, GBT, and screw press polymer feed).
• Replace the three (3) neat polymer and three (3) mixed polymer transfer pumps.
• Evaluate the condition of the six (6) polymer tanks (2 - 9,200 gal Neat Polymer Storage tanks, 2 - 2,000 gal Polymer Mix Tanks, 2 - 2,000 gal Polymer Feed Tanks) and replace as necessary.
Primary Clarifiers (042) Structural Refurbishment
• Patch and coat concrete areas and address structural defects per CER "Confined Space Wetted Concrete Condition Assessment and Repair Report"
Primary Clarifiers (042) Mechanical
• Replace the five (5) clarifier influent inlet valves and flowmeters (to be coordinated with R&R Program)
• Replace the five (5) clarifier drain valves
• Replace the five (5) clarifier sludge collectors (longitudinal and transverse
• Replace the ten (10) primary sludge pumps
Aeration Tanks (200) Structural Refurbishment
• Patch and coat concrete areas and address structural defects per CER "Confined Space Wetted Concrete Condition Assessment and Repair Report"
Aeration (200) Mechanical
• Replace the three (3) aeration tank influent sluice gates
• Replace the two (2) aeration tank dewatering pumps
• Replace the eighteen (18) aeration tank mixer gear boxes• Replace the three (3) primary effluent bypass valves and associated pneumatic actuators and controls
• Provide one (1) strap on doppler-type flow meter for installation on the bypass line at a suitable location
• Potentially add up to three (3) additional aeration tank mixers
• Replace the aeration tank purity sensors and mixed liquor channel air diffusing system piping
UPS Battery Replacement
• Design and install a new plant-wide UPS system to replace the five (5) temporary plant-wide UPS battery systems associated with the following control panels:
o CP- 4, Secondary clarification process
o CP-5, RAS Pumps
o CP-6, W3 Water Pumps
o CP-17, HVAC exhaust in the primary and secondary clarifier areas
o CP-23, Plant air system
Cogeneration Building (800) Mechanical
• Replace the sump discharge piping associated with sump pumps 800-SP-01 & 02
Additionally, this project will fund the construction of the following two projects from the R&R Program:
• OSP 042 Primary Clarifier Improvements (Helical Scum Skimmer)
• OSP Grit Classifier & Influent Gates Replacement

OSP-11 - Gaseous Oxygen System (OSP 011) Upgrades

The appropriate technology and alternative would be explored in the project's planning phase, but as a basis for this project, replacement of the PSA units with vacuum pressure swing adsorption (VPSA) units is assumed. PSA reduces the desorption pressure compared to VPSA, which allows for a higher percentage of available oxygen to be recovered and less air to be processed. This project includes the replacement/upgrade of the existing gaseous oxygen (GOX) system at OSP as detailed below: 1. Demolish/remove the three (3) existing 10 ton per day PSAs 2. Install two (2) new 10 ton per day

VPSAs 3. Replace the GOX line connecting the VPSAs to the OSP 200 Aeration Basins

OSP-2 - Solids Thickening (OSP 011) Process Upgrade

Depending on the status of the R&R project (CWWRNRTFA8) to replace the GBT with RDT, an alternatives evaluation should be performed to confirm the selected thickening technology. As a basis, this project assumes replacement of the two remaining GBTs and installation of two new RDTs that can thicken a combination of primary sludge, waste activated sludge, and secondary scum. The scope of the project also includes the replacement of corroded pipe, room fixtures, demolition of the existing units and ventilation improvements as detailed below: 1.Demolish/remove the two (2) existing GBTs. 2.Install two (2) new 2 RDTs and associated controls. 3.Replace the three (3) existing washwater booster pumps, piping and appurtenances to meet the RDT flushing requirements. 4.Install hot water lines to supply hot water for flushing the RDTs. 5.Install a redundant primary scum skimmer. 6.Redesign the drains on existing and new drum screens to improve venting and add flushing connections. 7.Install a new ultrasonic pulsar level sensor in the TPAS tank and improve the mixing system in the tank. 8.Replace the three (3) thickened sludge pumps 42P6-1,2&3. 9.Replace all corroded pipe, and all rusted window frames and doors. 10.Replace floor grates and tiles. 11.Upgrade electrical components and DCS control of the new system. 12.Install a new ventilation system, including exhaust fans and duct work for both the new and existing RDTs, and improve the ventilation in both the sludge thickening and sludge dewatering rooms. Coordinate work with the OSP Ventilation Upgrades Project. 13.Install two fixed hydrogen sulfide sensors in the Gravity Belt Thickener Room (OSP 01-028). Address any residual thickening area odor issues that were not addressed by the OSP Ventilation (HVAC) Upgrades Project.

OSP-3 - OSP Plant-wide Ventilation (HVAC) Upgrades

A wide range of HVAC-related improvements were identified as part of the OSP Condition Assessment Repairs Project. It was determined that a plant-wide air handling performance evaluation be conducted in order to determine if the ventilation systems are meeting code requirements and to better identify needed HVAC improvements.

Specific HVAC-related work includes the following:

Plant-Wide Air Handling Performance Evaluation: Conduct a plant-wide air handling performance evaluation.

OSP 011:

• Replace inadequate duct supports in OSP 011 hallway areas

• Duct supports within exhaust fan room at OS70EF1-1 thru -3 and OS70EF1-5 and -6 needs to be refastened / replaced

• Coordination HVAC evaluation, design and construction under the OSP Solids Thickening Process Upgrades project

OSP 530:

Look at ventilation issues if keeping the temporary chemical station from the Recycle Water Project. OSP 620:

• Replace all HVAC equipment. Based on results of the plant-wide air handling performance evaluation, make provisions for increasing air ventilation rates in order to declassify area from Class 1 Division 1 to Class 1 Division 2.

• Replace FRP ducts in digester basement serving fans 70EF19-1, 2. OSP 042: Replace HVAC ductwork

OSP 230: Replace HVAC supply ductwork

OSP 930: Replace all HVAC equipment

OSP-5 - OSP Odor Control Upgrades

Specific work includes the following: Primary Odor Control System Improvements: 1.Covering of the influent and effluent channels in OSP 042. The primary clarifiers would remain open and uncovered. 2.Refurbishment of the existing Odor Control Units (OCUs) serving OSP 042. 3.Installation of heating coils to be used to pre-heat the foul air extracted from below the covered channels, OSP 042 building space, and the aeration basin channels prior to treatment through the OCUs. 4.Other miscellaneous improvements include new variable frequency

drives (VFDs) at the supply fans, new odor control fans with VFDs, duct repairs at odor control fans, replacement of fan differential pressure switches and automated ventilation modulation. Secondary Odor Control System Improvements: 1.Sealing the inlet weir channel openings and effluent channel openings with aluminum checker plate hatch covers. The secondary clarifiers would remain open and uncovered. 2.The air from the channel head spaces would be extracted and treated by two existing OCUs. 3.The room air will contain very low odor/moisture concentrations and will be transferred to OSP 530 as makeup air and then exhausted outdoors without treatment. 4.A heating coil will be installed to pre-heat the foul air prior to the OCUs. 5.Other miscellaneous improvements include new VFDs at supply fans, a new odor control fan, new space exhaust fans with VGDs, rebalancing existing odor control fans, blank-off plates at existing ductwork, replacement of motor control center (MCC) exhaust fan along with associated ductwork and disconnect switch, replacement of fan differential pressure switches and automated ventilation modulation. Replacement of High Head Loss Fittings: 1.Replacement of two rectangular elbows in a Z-type configuration which supply HVAC supply air to the second floor Gravity Belt Thickening Area in OSP 011 with two smooth radius elbows with a splitter vane.

OSP-7 - Admin Bldg (OSP 930) Health & Safety Improvements

A wide range of health and safety related improvements were identified as part of the Oceanside Plant (OSP) Condition Assessment Repairs Project. Specific work includes the following: Repair concrete deficiencies, water infiltration, and drainage issues within OSP 930 per conceptual engineering report (CER) "Concrete Surface Condition Assessment and Repair TM". Replace the three (3) OSP 930 building sump pumps. Replace the nine (9) Laboratory Fume Hoods. Replace the laboratory and freight elevators (freight elevator is higher priority).

OSP-8 - OSP DCS Upgrade (Construction)

This project will replace the aging control system infrastructure at OSP and other satellite wastewater facilities like WSS as the existing DCS equipment are obsolete. The upgrades include converting all existing DCS, Wonderware HMI, and programmable logic controllers (PLCs) to Emerson-based systems as specified by the Facility-Wide DCS Control Upgrades Project, and upgrades to OSP's aging control panels, annunciator panels, sensors, disconnect switches, bare grounding wiring and control devices. The DCS supplier will provide design and installation services. In addition to the needed DCS upgrades to the specified Emerson-based systems, a wide range of DCS-related improvements were identified as part of the OSP Condition Assessment Repairs Project. These are listed below, but should be further evaluated during planning and design by the DCS Contractor.

OSP 011 Building • Replace local control panels LP-02-2, LP-03-3, LP-12-1. Replace control panels CS-02/03-1, CS-47-1 and CS-47-3. Replace panel FP12-1. Refurbish CP-1, CP-9, CP-10, CP-12, CP-14, CP-15 and CP-19. Replace 25 standard disconnect switches in the Bar Screen Room. Replace 20 Class 1/Division 1 disconnect switches in the Bar Screen Room.

OSP 042 Primary Clarifiers • Replace 21 disconnect switches and all bare copper grounding wire. OSP 200 Aeration Tanks • Replace/Refurbish control panels CP-2 and CP-3 with new annunciator panels and LED lights. • Replace existing FP-10-1 next to CP-3. This aeration panel has a PLC and internal relay boards that are identical to the FP12-1.

OSP 230 Secondary Clarifiers • Replace local control panel (CP-13) and refurbish the annunciator panel.

OSP 620 Digestion Operations • Replace control panels CP-22, LP-47-20 and Day Tank Bubbler Panel for code compliance. Please note that these control panels may not require replacement if ventilation improvements are made which result in an electrical reclassification of the OSP 620 area. Recycled Water Facility • Interface with the PLC

OSP-9 - OSP & WSPS Security Enhancements

The project involves the following security

upgrades: Upgrading card readers and door contacts at all perimeter doors and ensuring proper operation Replacing and furnishing gate and gate operator including structural support, electrical power and controls Adding protective cages around outdoor chemical and electrical equipment, including an allowance for replacing/repairing the existing perimeter fence and fence support as needed Furnishing, installing, and configuring servers for video recording, management and analytics Configuring security fiber optic connectivity and adding video camera units and local recording Establishing prune landscaping, adding new security signage, and upgrading lighting to dusk-activated LED lighting Adding interior presence sensing connected to an intrusion detection panel and alarming to security

North Point Wet Weather Facility Projects

CWWSIPTPNP01 - Northpoint Outfall Refurbishment (Completed)

Rehabilitation of the outfall system includes removal of sediment/debris inside subterranean reinforced concrete sewers and repair of concrete spalls, cracks and damaged linings with epoxy. Rust formations will also be removed, followed by re-lining of existing cast-iron pipes (CIPs) with epoxy lining that provides the protection against the extreme corrosive marine environment and strength to withstand operating and hydrodynamic loads. In addition, sediments deposited inside and around the diffuser pipes will be removed and disposed of, along with associated steel supporting brackets. The project will also include installation of a new cathodic protection system for the Outfall System CIPs, ductile iron pipes (DIPs), and Outfall support structures under Piers 33 and 35; repair of damaged coating of Outfall pipes and supports; and installation of air vents and air relief valves on the outfall to release entrapped air.

CWWSIPTPNP02 - North Shore Pump Station Wet Weather Improvements

The project scope consists of:

- Demolition of the Materials Testing Lab within the North Shore Pump Station.
- Replace four Dry Weather (DW) pumps with larger units so that 3 of the 4 pumps are capable of pumping 75 mgd during wet weather.
- Replace/extend discharge piping as needed for new flow path.
- Upgrade dewatering system, personnel elevator, bridge cranes, ventilation system and odor control system.
- Replace dry weather bar screens.
- Upgrade electrical systems.
- Full-range flow meter for each discharge pipe for measurement and regulatory requirements.
- Upgrades to existing standby generator to operate any one (1) of the dry weather pumps.
- Upgrades to the existing ferrous chloride system with double walled tanks, metering pumps and secondary containment system.
- Corrosion control and concrete coating at inlet channels and wet well.
- Re-roof North Shore Pump Station.

NPF-1 - Sedimentation (NPF 040/041) Tanks Condition Improvements

The project will perform condition improvements and upgrades to the sedimentation tanks, including the following components: NPF 040 & NPF 041 Sedimentation Buildings No. 1 & 2 Improvements:

- Concrete structural rehabilitation (patch and coat basin concrete and repair cracks)
- Replace doors that are in poor condition
- Evaluate HVAC system and ventilation and install a new heating system for locker rooms
- Replace building hot water system
- Building structural repairs, including replacement of roof (consider the presence of solar panels)
- Address NFPA 820 area classification issues in the locker room, control room & basement
- Rehabilitate locker rooms. Evaluate separating personnel areas from process areas
- Repair/replace deteriorated piping, equipment supports and other corroded metallic components
- Upgrade non-compliant stairs and hand/guardrails.Guards noncompliant at sedimentation tanks
- Provide no-flow cutoff for sludge pumps to protect pumps from running dry
- Replace building sump pumps and two (2) air

compressors in NPF 041
• Upgrade NPF 041 server room to prevent foul air and water from entering
• Remove all abandoned-in-place equipment
NPF 043 Grease & Scum Removal Building Improvements:
• Concrete structural rehabilitation (repair cracks and spalling, patch and coat areas exposed to wet conditions)
• Building structural repairs, including roof replacement, general piping and corroded metal items
• Replace all roll-up doors
NPF 060 Sludge Control Building (including NPF 061, NPF 062, NPF 063, NPF 064) Improvements:
• Concrete structural rehabilitation
• Building structural repairs, including roof and door replacement, repair general piping, handrails, metal items corrosion
• HVAC/ventilation upgrade • Replace doors, a dewatering pump, and sump pumps
• Replace elevator (evaluate industrial-type elevator) and MCC
• Remove abandoned-in-place equipment, particularly electrical and modernize control room and "lab" room

NPF-2 - Admin Bldg (NPF 930) Evaluation & Interim H&S Improvements
This project involves an evaluation of NPF 930 to provide safe working conditions for employees. The interim rehabilitation components will be identified during the planning stage of the project, but as a basis, the following items are assumed:
• Interim structural repairs (repair deteriorated concrete)
• Replace roll-up doors and make make entrance ADA accessible
• Replace UPS for the emergency lighting system
• Replace elevator
• Rehabilitate HVAC system (including heating, vent fans, and ducting)
• Electrical improvements needed for Southside buildings to serve lower voltage applications
• Assess need for crane, replace if appropriate (used to access dewatering sump pumps)
• Evaluate area and use of dewatering sump pumps; replace pumps, piping, valves, EI&C, if appropriate
• Inspect/replace guardrails/handrails
• Install fire sprinklers/alarms and exit lighting, replace and install new lighting

NPF-3 - Dechlorination Process (NPF 500) Evaluation & Interim Rehab
The interim rehabilitation components of the project at NPF 500 are as follows:
• Repair deteriorated concrete surfaces
• Leakage into the lower level pump room needs to be addressed
• Repair or replacement of Palmer-Bowlus flume (effective flow monitoring is needed and currently not available)
• Assess the dewatering system pumps and piping; dewatering pumps and suction lines to be inspected and repaired/replaced
• Repair general piping, metal items corrosion
• Upgrade/replace the HVAC systems
• Evaluate if new sampling system is needed. If required, replace sample pumps and ISCO samplers, or provide a sampling system
• Assess functional need for replacement of chlorine residual analyzers (currently not in use)
• Assess disinfection (hypo contact) and dechlorination (bisulfite contact) functional needs
• Evaluate condition of two seal water pumps In addition, a process evaluation of the facility should be undertaken, which will involve evaluation of the long-term plan for the facility. This will determine whether the Roundhouse should be upgraded, or eliminated and replaced by another type of disinfection & dichlorination system.

NPF-5 - NPF & NSS Security Enhancements
The components of the project are as follows:
• Upgrade continental card reader access control
• Replace and furnish gate and gate operator including structural support, electrical power and controls
• Add protective cages around outdoor equipment, & repair/replace perimeter fence
• Furnish, install and configure servers
• Configure security fiber optic connectivity & add video camera units
• Add signage, lighting and prune landscaping
• Provide interior presence sensing connected to

intrusion detection panel

NPF-6 - NPF DCS Upgrades (Construction)
This project will replace the aging control system infrastructure at NPF as the existing DCS equipment are obsolete. The needed upgrades include converting all existing DCS control systems to Emerson-based systems as specified by the Facility-Wide DCS Control Upgrades Project, and upgrades to the aging control panels, annunciator panels, sensors, disconnect switches, bare grounding wiring and control devices.

The DCS supplier will provide the following design services:
- Network configuration and architecture design
- Equipment location and layout design
- DCS panel layouts and wiring diagrams
- Loop drawing development
- Control narrative development support
- Human Machine Interface (HMI) screen standards development
- DCS application software development

The DCS supplier will provide the following equipment:
- Process control module panels
- Remote I/O (RIO) panels
- Server equipment and racks
- Main fiber distribution rack panels
- Marshalling panels or "B" panels
- Fiber optic patch panels and terminal panel
- Network switches and routers

COLLECTION SYSTEM

Central Bayside System Improvement Project

CWWSIPCT01 - Central Bayside System Improvement Project - Phase 1
The Central Bayside System Improvement Project (CBSIP) will provide collection system enhancements to both the Channel and Islais Creek watersheds including redundancy for the existing 66-inch Channel Force Main, infrastructure improvements to sewers and pump stations, and stormwater management. Major components of the project consist of a tunnel to transport (via gravity) dry and wet weather flows from the Channel and North Shore watersheds to the SEP, a large all-weather pump station to lift the flows into the SEP, improvements to Channel Pump Station (CHS), and infrastructure improvements within the watersheds. This project will provide planning, environmental review, and preliminary design for the improvements. Design and construction of CBSIP will be completed in Phase 2 of SSIP.
The Channel Tunnel will include a gravity tunnel approximately 24-feet in diameter and up to 10,000 feet long, extending from the existing CHS near Mission Creek to the SEP. It will also include a new Channel Tunnel Lift Station (CTLS) with approximately 120 MGD capacity, located in the vicinity of the SEP at the southern end of the Channel Tunnel. The existing CHS will be retrofitted to include additional pumping functions, potential grit removal, and potential odor control.

Interceptors/Tunnels/Odor Control

10033106 - Geary BRT Sewer Improvements Phase 2
SFMTA is implementing the Geary Bus Rapid Transit (BRT) Program and SFPUC will be a partner to replace/upgrade sewers along the Geary Corridor. Any sewer work required, whether it is sewer relocation, sewer rehabilitation or sewer replacement, will be undertaken as part of SFMTA's project.
SFPW has started the pre-planning effort in determining sewers that may need replacement due to age and/or condition. Approximately 2.2 miles of sewers on this Geary corridor, from Stanyan Street to 34th Avenue (Phase 2 of the BRT Program), and on nearby cross streets, have been identified as possibly needing replacement. The weighted average age of these sewers is 74 years.

10033745 - Mission Street, 16th to Cesar Chavez Streets, Brick Sewer Rehabilitation
Based on the outcome from SSIP Project CWWSIPCSSR02, Collection System Assessment, "Mission Street, 16th to Cesar Chavez, Brick Sewer Rehabilitation" (Mission BSR), and "New Montgomery Brick Sewer Rehabilitation" (NM BSR) projects were identified. The planning work

for Mission BSR was completed with CWWSIPCSSR02, and the planning work for NM BSR was completed in this project. The remaining project phases for Mission BSR are included in this project. Other large-diameter sewer improvement projects will be implemented with other capital projects, such as Project No. 10034718.

The purpose of this proposed project is to rehabilitate the certain existing main sewers located on Mission Street (between 16th and Cesar Chavez Streets). This proposed project includes design, right-of-way, environmental, bid and award, construction and closeout phases to rehabilitate approximately 5,000 linear-feet of the large-diameter sewers, located on Mission Street, between 16th and Cesar Chavez Streets, utilizing trenchless rehabilitation methods (cured-in-place liner, spray-mortaring or slip-lining).

10034718 - Large Sewer Condition Assessment and Improvements

This is a collection of sewer improvement projects that will rehabilitate and/or replace Large Sewers (sewers greater than 36-inches in diameter or equivalent diameter) that has been prioritized using Collection System Asset Management Program (CSAMP) data with the highest risk level for failure. The collection of projects (or subprojects) were identified from the efforts of SSIP Phase 1 projects, CWWSIPCSSR02 - Collection System Condition Assessment.

Included as one subproject to construct an intertie between the existing 66-inch diameter Channel Force Main sewage conveyance line to the Islais Creek Transport/Storage Box.

CWWSIPCSSR01 - Richmond Transport Modeling (Completed)

Historically, gseysering and blown manholes have been observed in the Richmond Transport/Storage Tunnel and upstream sewer system during large storms. These phenomena may be due to surge activity in the system, release of trapped air pockets, or excessive venting relative to the available vents. Various hydraulic models were performed using InfoWorks and some physical improvements to the system have been made over the last 15 years. The hydraulic modeling performed could not account for air pockets or potential bores in the system; therefore, WWE and SFPW/Hydraulics agreed that consultant support was needed to provide numeric modeling that can stimulate the known situation and provide recommendations for capital improvements to address the system issues.

This project included the review of two separate models: the InfoWorks Integrated Catchment Model (ICM) of the San Francisco collection system, and a Transient Analysis Program (TAP) model of the Richmond Transport/Storage Tunnel and associated sewers and amenities. Recommendations for improving the system and addressing the identified issues were developed in a technical memorandum (TM). Since the completion of the TM, a new project was initiated to evaluate and determine which recommendations from the TM would be implemented through construction. This project ended at the Planning Phase.

CWWSIPCSSR02 - Collection System Condition Assessment

This project consists of:

- Performed condition assessments and confirmed the needs for rehabilitation or replacement of approximately 10-miles of sewers.
- The following condition assessment steps are taken:
  - o Identified goals for condition assessment,
  - o Determined the type and level of condition assessment needed,
  - o Performed asset inspection,
  - o Performed data analysis, and
  - o Provided recommendations for projects to be rehabilitated through SSIP Project 10033745, 10034718, and potentially future capital projects or R&R projects.
- Completed the planning phase, including the CER, for the first group of large-diameter sewers located on Mission Street, between 16th and Cesar Chavez Streets, with the remaining project work for Mission Brick Sewer Rehab will be implemented through FSP Project No. 10033745.

CWWSIPCSSR03 - Kansas and Marin Streets Sewer Improvements

The purpose of the Kansas and Marin Streets Sewer Improvements is to address the SSIP Level of Service (LOS) goals of managing stormwater from a statistically derived storm lasting 3-hours, with a total of 1.3-inches of rainfall and defined peak rainfall intensity (5-year 3-hour, LOS storm). The proposed project includes planning, environmental review, right-of-way, design, construction and closeout phases and assumes the following scope of work:

- Entering into a Memorandum of Understanding (MOU) with San Francisco Public Works (SFPW) to allow the sewer construction and permanent sewer alignment within their Cesar Chavez Maintenance Yard, and providing for temporary staff parking to replace spots displaced by the construction
- Utilizing design-build method (vs. design-bid-build) project delivery method; where, a Request for Qualification will be followed by a Request for Bid, and the selected bidder or design-builder will complete the design from 65% to 100% design and also construct the approved design and project.
- The design-builder will design and construct approximately 900 linear feet of 8-foot diameter tunnel installed using micro-tunnel boring machine (MTBM) construction method in the MOU through SFPW's Maintenance Yard.
- The design-builder will design and construct two new reinforced concrete junction structures (including angled access manhole structures) to connect with the existing sewers, and design and construct surface restoration improvements associated with project completion.

CWWSIPCSSR04 - Van Ness BRT Sewer Improvements

The scope of sewer work includes the following:

- Construct approximately 20,000 LF of 12-inch to 54-inch diameter VCP and RCP sewers or HDPE sewers in steel casing between Mission Street and Lombard Street for a twin sewerage system along the entire corridor.
- Construct 187 concrete manholes along the new sewer alignment.
- Repair, replace, or construct approximately 2,215 LF of 6-inch or 8inch side sewers and connect to the newly constructed main sewer.
- Construct 80 new concrete catch basins to ensure proper overland flow drainage around the proposed platforms and bulb-outs.
- Install 121 new cast iron water traps for existing catch basins to remain where connections to new main sewers are necessary.
- Construct approximately 2,200 LF of 10-inch diameter VCP culverts for new catch basins.
- Inspect newly constructed main sewers, side sewers and culverts by closed-circuit television (CCTV).
- Plug and fill to abandon approximately 1,800 LF of existing sewers where sewers are to be relocated.

CWWSIPCSSR05 - Better Market Street Sewer Improvements - Phase 1

In line with SSIP's strategy to work with other City and County agencies on projects they initiated to protect value and function of wastewater facilities, SFPUC partnered with SFMTA and SFPW in the Better Market Street (BMS) State of Good Repair Program. This interdepartmental project will replace aging. The SSIP will participate in this Program with the replacement of most of the sewers in Market Street, many of which are made of bricks and are over 100 years old in Market Street.

This project will consist of three blocks project on Market Street between 5th Street and 8th Street.

CWWSIPCSSR06 - Geary BRT Sewer Improvements Phase 1

SFMTA is implementing the Geary Bus Rapid Transit (BRT) Program and SFPUC will be a partner to replace/upgrade sewers along the Geary Corridor. SFPUC had previously determined to separately implement the required sewer rehabilitation and/or sewer replacement as a SFPUC contract.

This project includes replacement or rehabilitation of existing 6-inch to18-inch diameter circular sewers and 3-foot by 5-foot non-circular egg-shaped brick sewers. Approximately 1.5 miles of sewers along this corridor, on Geary Boulevard from Franklin to Masonic (Phase 1 of the BRT Program), and on nearby cross streets,

have been identified as possibly needing replacement. The weighted average age of these sewers is 78 years. Cost information provided below is based on the net present value of the initial screening and will change once project proceeds to design phase.

CWWSIPCSSR07 - Central Subway Sewer Improvements (Completed)

This project is related to the SFMTA Central Subway Phase 2 of the Third Street Long Range Transportation Plan Project that will extend rail service from Fourth and King Streets to a northern terminal at Stockton and Jackson Streets. The purpose of this project is to include sewer improvements to avoid conflicts with the proposed light rail scope and to minimize future repair and replacement impacts. The sewer improvement project includes reconstructing existing 78-inch sewer (Fourth Street between Brannan Street and King Street), and relocating/ replacing existing 30-inch force main (Fourth Street between Bryant Street and King Street) and 48-inch gravity sewer (Fourth Street between Bryant Street and Brannan Street).

CWWSIPCSSR08 - Mission Bay Loop Sewer Improvement

SFMTA's Mission Bay Loop Project will install light rail track on Illinois Street between 18th and 19th Streets. The improvements will support the future operations of the Third Street Light Rail in anticipation of the activation of the new Central Subway segment. The existing gravity sewers and force mains on Illinois Street will need to be relocated and/or replaced to avoid future conflicts with light rail operations. This sewer improvement project includes planning, environmental review, design, and construction phases.

Revisions to 2018/New for 2020:

The sewer work has been completed and partial Substantial Completion for the sewer work has been issued in October 2019.

CWWSIPCSSR09 - Drumm and Jackson Streets Sewer System Improvement

The purpose of the Drumm and Jackson Streets Sewer Improvements is to address the SSIP Level of Service (LOS) goals of Operational Reliability (State of Good Repair). The project includes planning, environmental review, design, bid and award, construction and closeout phases for the following scope of work:

- Completed trenchless rehabilitation of the following sewers using spray-mortaring and epoxy coating:
  - o Approximately 800 feet of the Drumm Street Box Sewer (7'6" x 6'0").
  - o Approximately 200 feet of the Jackson Street Box Sewer (8'6" x 7'0").
- Completed associated work with the rehabilitation, including:
  - o Performed sewer cleaning prior to the trenchless rehabilitation.
  - o Bypassed sewer flow by damming and piping through the existing box sewer.
  - o Performed surface restoration.
  - o Coordinated work with WWE to ensure worker safety and prevent any wet weather impacts.
- Completed CEQA approval and public outreach of the project.
- Entered into a Memorandum of Understanding with SF Port for the work near the intersection of The Embarcadero and (the paper street) Jackson Street.

CWWSIPCSSR10 - Masonic Avenue Sewer Improvements (Completed)

The proposed sewer work is as follows:

- Furnish and install approximately 4,747 LF of 12-inch, 15-inch, 18-inch, 21-inh, and 24-inch vitrified clay pipe (VCP)
- Line existing 12-inch diameter VCP sewer with cured-in-place liner
- Construct 6 and/or 8-inch side sewer connections
- Cast-in-place or precast manholes and catch basins
- Clean/mortar existing manholes

CWWSIPCSSR11 - Cargo Way Sewer Box Odor Reduction

The proposed project consists of:

- Preparation of a Needs Assessment Report to identify odor control opportunities in the Bayside collection system based on the WATS model evaluation. (Completed).

• Odor control improvements identified by Operations for sewer box located at Cargo Way include the following:
o Identification of flow sources and potential Infiltration and Inflow (I&I) issues
o Installation of tee at Booster Pump Station Effluent manifold
o Trenchless installation of 50 LF of 12-inch Ductile Iron Pipe (DIP) inside 18" steel casing beneath SFMTA tracks
o Installation of 3,950 LF of 12-inch DIP
o Installation of backflow preventer and control valves
• Obtain CEQA approval (CatEx is assumed) and other necessary permits as necessary to implement project (such as Maher and BCDC application)
• Establish construction and long-term MOU with SFMTA and SF Port
• Conduct public outreach to the community, including SF Port and its stakeholder

CWWSIPCSSR12 - Rutland Sewer Improvements (Completed)
Under this project, the hydraulic capacity of the sewers in the project area will be increased to meet the SSIP Level of Service storm. The project will consist of multiple improvements along Rutland Street (from Visitacion Avenue to Sunnydale Avenue) including replacing the existing sewer with a larger reinforced concrete pipe, constructing a wet weather diversion structure, and conveying water passing over a weir inside this underground structure during a large storm event through new piping and discharging into a deep wet weather tunnel (Sunnydale Sewer Tunnel). To minimize construction impacts to the community, this sewer work will be constructed with the Visitacion Valley Green Nodes Project.

CWWSIPCSSR13 - Taraval Sewer Improvements
SFMTA is implementing the L Taraval Transit Improvements Program and SFPUC will be a partner to replace/upgrade sewers along the Taraval Corridor. Any sewer work required, whether it is sewer relocation, sewer rehabilitation or sewer replacement, will be undertaken as part of SFMTA's project.
The scope of the sewer work includes replacing approximately 19,000 LF of 12-inch to 36-inch diameter iron stone pipe (ISP), vitrified clay pipe (VCP), reinforced concrete pipe (RCP), or concrete sewers along Taraval Street between 15th Avenue and 46th Avenue, and Ulloa Street between Forest Side Avenue and 15th Avenue for a twin sewerage system.

Pump Stations and Force Mains Improvement Projects

10037246 - Seacliff No. 2 PS & FM Upgrade
Pump Station Scope of Work: Electrical equipment, power service, generator system, level monitoring system, process equipment, buildings, underground structures, wet wells, and surrounding site.
Seacliff No. 2 Pump Station (PS) was constructed in 1940 and conveys dry and wet weather flows with three submersible pumps. An eight-inch diameter force main (FM), approximately 1,060 linear feet long, connects the pump station to an existing sewer on El Camino Del Mar Drive and drains to the Richmond Transport Tunnel. The overflow structure for Combined Sewer Discharge (CSD) 007 is located in Seacliff No. 2 PS, and permitted overflows from CSD 007 drain to Baker Beach.
The purpose of this project is to rehabilitate Seacliff No. 2 PS and FM, in accordance with the Operational Reliability Level-of-Service Goals (State of Good Repair). This project includes Planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), for the following scope of work and assumptions:
1. Assume existing PS can be rehabilitated and upgraded to meet current building codes, including:
a. Perform seismic retrofit of the existing pump station building and associated mechanical and electrical equipment, piping, and fittings.
b. Address fire, emergency and health and safety requirements.
c. Assume damaged concrete and exposed rebars can be repaired.
d. Assume deterioration of the existing wet-wells

can be repaired.
2. Replace the three submersible pumps in kind (47 horsepower pumps).
3. Replace other mechanical and process equipment, including: existing crane, bubbler system, piping, valves, inlet gate and operator, water system components, and washdown pump.
4. Provide protective coating to all exposed metal piping, fittings, and valves.
5. Replace all electrical equipment.
6. Upgrade fiber optic connection.
7. Address PS security needs, including providing: perimeter camera, access key box at gate, egress compliant gate hardware and level lockset or panic hardware exit devise and solid panel surrounding lock.
8. Replace existing eight-inch force main with 16-inch force main in the same alignment.

10037251 - Seacliff No. 1 PS & FM Upgrade
Seacliff No. 1 Pump Station (PS) was constructed in 1929 and operates in dry and wet weather and has two pumps. An eight-inch diameter force main (FM) connects the pump station to an existing sewer on El Camino Del Mar Drive that drains to the Richmond Transport Tunnel. An overflow structure for Combined Sewer Discharge No. 005 (CSD 005) is located within Seacliff No. 1 PS, and permitted overflows from CSD 005 drains to China Beach.
The purpose of this project is to replace Seacliff No. 1 PS and FM, in accordance with the Operational Reliability LOS Goal (Performance Requirements & Water Quality). This project includes planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), design, right-of-way, environmental, bid and award, construction and closeout phases. Although the project scope depends on the outcome from the planning phase and scope freeze efforts, the current schedule and budget include the following assumptions and scopes of work:
1. Replacement of pump station and wet-well at its existing location. The new pump station would be a new, single-story above grade building (approximately 100 square-feet).
2. Replacement of approximately 930 linear feet of 8-inch force main at the same alignment.
3. Installation of a new connection from new pump station to CSD 005.
4. Installation of flow monitoring devices for post-storm evaluation.
5. Installation of floatable controls at the overflow structure to CSD 005.
6. Installing a redundant pump for 'n+1' redundancy during wet weather.
As the current sewer assets are partially located on Federal/GGNRA property, substantial efforts with right-of-way coordination, environmental and other permitting is required. Potential impacts from the permitting and ROW coordination will be better quantified as the project progresses.

10037303 - Sunnydale PS Safety Improvements
Sunnydale Pump Station (PS) was constructed in 1991 and operates in wet weather to manage flows within the Sunnydale Drainage Basin. This PS is prone to groundwater intrusion, which has corroded the building structure, electrical and mechanical equipment.
The purpose of this project is to meet the Health, Safety and Security Level-of-Service Goal. Longer-term improvements at this station are in a separate project and scheduled later in the capital improvement program. This project includes Planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), Design, Right-of-Way, Environmental, Bid and Award, Construction and Closeout Phases. Although the project scope depends on the outcome of the Planning Phase, the project includes the following scope of work and assumptions:
1. Address safety risks from groundwater intrusion, including:
a. Repair structural deficiencies observed including repair of cracks and leaks.
b. Upgrade and repair manifold room (including: piping, PRVs, lighting, instruments, equipment).
c. Address water leakage in manifold room and Motor Control Center (MCC).
d. Repair leaking door.
e. Perform electrical repairs.
f. Replace HVAC equipment that are corroded due to water intrusion.
2. Address Security Concerns, including:

a. Install new security signage and upgrade lighting to dusk-activated LED lighting.
b. Upgrade card readers and door contacts at all perimeter doors.
c. Add interior presence sensing, connected to an intrusion detection panel and alarming to security.
d. Furnish, install and configure video recording servers, management server and analytic servers including uninterruptable power supplies (UPS).
e. Install video camera units and local recording.
3. Address Other Safety Concerns, including:
a. Evaluate and add gas detection system, as necessary.
b. Add site lighting at egress penthouse and entrance to station.
4. Other assumptions:
a. Construction work will be performed during dry-weather when the PS is offline; therefore, no diversion is needed.
b. All work is considered as replacement-in-kind work, and is not expected to affect future operations.
c. Longer-term improvements not included in above scope may be performed in future and separate projects.

CWWSIPCSPS01 - Hudson Ave Pump Station and Outfall Improvements (Completed)

The original project scope of work included replacing an existing pump with a new pump station to convey combined sewer flows from an easement sewer (located inside private properties) to the SFPUC sewer system. During the needs assessment and alternative analysis phases, the project team confirmed that only two properties located on Innes Avenue are served by the existing pump. Therefore, the selected solution was a "no project" alternative, where it was recommended that Wastewater Enterprise (WWE) de-activate the existing pump and easement sewer, because this would be the most cost-effective option. Wastewater Enterprise would need to work with the Department of Building Inspection and the affected property owners to re-route the sewer flows to the existing sewers located in the Innes Avenue. Therefore, this project completed the Alternative Analysis Report (AAR) and any remaining work is deferred to WWE for implementation.

CWWSIPCSPS02 - Force Main Rehab at Embarcadero and Jackson Streets

This project consists of the following:
• Rehabilitate approximately 190 LF of the NSFM that is located outside the Jackson Street Transport/Storage Box (JST) by installing a 28-inch outside diameter, DR26 HDPE pipe.
• Replace approximately 50 LF of the NSFM that is located outside the JST and underneath the Jackson combined sewer discharge (not via sliplining).
• Construction of a valve, valve-vault and associated mechanical/electrical controls to allow WWE Operations to direct combined sewage flows to either the NSCFM or to the existing NSFM.
• Establish a Memorandum of Understanding with SF Port (and/or its tenant) for the temporary construction and permanent O&M easement for the NSFM asset.
Obtain CEQA approval (Mitigated Negative Declaration - MND) for the project.
• Perform public outreach to the community, including stakeholders along SF Port's waterfront area.

CWWSIPCSPS03 - Mariposa Dry-Weather Pump Station & Force Main Improvements

The proposed project consists of the following:
• Increase the dry weather pump capacity to handle a peak flow rate of 5.0 MGD
• Demolish existing pump station building, underground structure, wet well, electrical system, and associated assets to make room for a new pump station.
• Obtain CEQA (CatEx) approval for the project, and apply for necessary permits (BCDC, Maher's Ordinance, etc.) to construct the improvements.
• Construct a new pump station building, underground structures, and wet well within existing SFPUC land and an expansion of the existing SF Port easement, including:
o Replacing the deteriorated main discharge valve.
o Replacing the crane system with one capable of supporting the larger, new pumps.
o Providing security cameras.

o Providing emergency access key box at gate and main entry door.
o Providing accessible egress gate and improving Vactor truck access by modifying perimeter fence.
o Providing code-compliant emergency exit lighting with battery backup along egress path of travel and at exterior door landing.
• Construct new MCCs, DCS, PLC, panels, power service, and level monitoring system, including:
• Upgrading and/or replacing power service to the pump station to accommodate power requirement for new dry weather pumps.
• Evaluating PLC replacement as part of ongoing effort to replace PLCs system-wide.
• Replacing the compressor and receiver to maintain system reliability during the service life of the building and evaluating Ultrasonic Level Detection as primary control instrument.
• Construct new HVAC and Odor Control System, including:
o Investigating the adequacy of the current HVAC system to provide necessary ventilation and replacing HVAC equipment as required.
o Replacing odor control unit and ducting. New odor control unit type will be decided by WWE O&M for system-wide consistency of odor control equipment and operations.
• Obtain permanent power supply from Power Enterprise.
• Replace the existing dry weather force main with a new larger diameter force main downstream of the new dry weather pump station. Utility coordination and/or relocation may be necessary with the replacement of the force main.
• Establish MOU or apply for encroachment permit for temporary construction easement within SF Port's jurisdiction.
• Conduct public outreach to the community, including SF Port and its stakeholders.

CWWSIPCSPS04 - Cesar Chavez Pump Station (Completed)
Under this project, stormwater and groundwater that collects under the Cesar Chavez freeway underpass within a bounded area will be conveyed to SEP. As this is not an all-weather pump station, WWE determined that this project is a lower priority than other all-weather pump stations. The remaining needs of the project may be added to the WWE R&R program list for consideration. After the NAR and the Draft AAR were completed, it was determined that this project is less critical than other dry-weather or all-weather pump station improvements. Therefore, this project will complete the Draft AAR and any remaining work is to be deferred to the WWE R&R program for consideration. This SSIP project will end at the Draft AAR phase.

CWWSIPCSPS05 - Marin Street Sewer Replacement (Completed)
The purpose of the project is to upsize the existing 24-inch diameter sewers (located between the intersection of 3rd Street and Marin Street and the Marin Street Outfall Structure, or Project Location) to handle additional dry-weather flows projected from the tributary area. The wet-weather conveyance associated with this sewer system would also be evaluated but no wet-weather conveyance issues were included in this project.
Hydraulic studies of the watershed area was performed to determine the hydraulic adequacy of the pipelines in the area based on expected flows from approved developments, as well as to confirm the necessary pipe size. Based on the results from the hydraulic studies, the existing 24-inch diameter sewers at the Project Location were replaced with 30-inch diameter sewers. CEQA approval was obtained, along with other necessary permits such as BCDC and Caltrans permits. A MOU was executed with the SFMTA to execute this work as a portion of the Project Location is located within SFMTA jurisdiction.

CWWSIPCSPS06 - Griffith Pump Station Improvements
The project consists of:
• Replacing the dry weather and wet weather pumps, including installation of new sump pumps to maintain the existing capacity of 11.5 MGD and 120 MGD.
• Installation of new bar screens (including motors, VFDs, housing, control panel, hardware, etc.).
• Installation of two new bridge cranes in the manifold room and main pump area.

• Replacement of the bar rack room crane with a new monorail system.
• Perform structural modifications, as necessary, in support of mechanical systems installations, including: Replacement of the dry weather manifold piping and associated appurtenances with HDPE pipes (associated appurtenances include check valves and knife gate valves, and pipe supports [flowmeter will be salvaged]).
• Modification of the manifold room stairway and catwalk to accommodate a new crane system and widening of manifold room access hatch.
• Downsize the OCU exhaust fans to match capacity rating of OCU (to better facilitate removal of hydrogen sulfide).
• Modification of the HVAC system to increase the hourly air changes in the bar rack area, in accordance with WWE standards and NFPA 820.
• Removal of most of the dry weather manifold piping in manifold room. This would include check valves and knife gate valves, while flowmeters would be salvaged.
• Construction of two canopy systems to protect outdoor equipment, including chemical tanks, metering pumps, ultraviolet light, and associated deteriorating elements.
• Installation of a tamper-proof roof access ladder.
• Replace and improve electrical work; including a new station switchgear, MCCs, one ATS, and refurbish existing standby generator.
• Upgrade existing station with new automation and instrumentation equipment, control devices, and programmable controllers.
• Obtained CatEx (CEQA approval) for the project.

CWWSIPNC01 - North Shore to Channel F M Drainage Improvement (Completed)

North Shore Force Main (NSFM) provides critical conveyance of combined sewage and stormwater flows from the northeastern quadrant of San Francisco to SEP. Before this project, this force main did not have any redundancy and could only be taken out of service for no more than 22-hours to meet the NPDES permit requirements. Approximately 2,750 LF of the 8,000 LF of this force main were located in The Embarcadero Roadway and either constructed of steel pipe or ductile iron pipe (both are susceptible to corrosion). After emergency repairs in 2008, a project was initiated under the Wastewater Capital Improvement Program to construct a redundant force main (North Shore to Channel Force Main [NSCFM]), so the 2,750 LF of the existing NSFM may be taken out of service for a complete repairs. As the construction work progressed, many unforeseen site conditions, including discovery of seven underground storage tanks, caused significant delays to the project and additional funding was needed to complete the construction contract. Since the project contributes to the SSIP Level of Service of ensuring critical functions are built with redundant infrastructure, the project team obtained approval from SFPUC to reallocate funds from SSIP to provide additional construction and construction management funds.

The NSCFM is now in service and combined sewage flows are diverted to the NSCFM; thereby, allowing the remaining 240 LF of the DIP section of the NSFM to be rehabilitated. The construction contract became a joint-project between SFPUC Wastewater Enterprise and SFPW Paving Program and was led by SFPUC.

PS-4 - Pump Station Security Upgrades (CCS, GFS,CHS, MMS)

The scope of security upgrades at the four pump stations is provided below:

Cesar Chavez Pump Station (CCS): Upgrade card readers and door contacts at all perimeter doors; Add interior presence sensing, connect to an intrusion detection panel and alarm security; Provide allowance for replacing / repairing existing perimeter fence and fence support as needed; Add protective cage around outdoor chemical and electrical equipment; Furnish, install and configure video recording servers, management server and analytic servers including uninterruptable power supplies (UPSs); Configure security fiber optic connectivity back to Southeast Plant (SEP) to enable live video connection; Upgrade lighting to dusk-activated (non-motion) LED lighting; Add new security signage.

Griffith Street Pump Station (GFS): Add bullet

resistant glass at perimeter windows; Upgrade card readers and door contacts at all perimeter doors; Add interior presence sensing, connected to an intrusion detection panel and alarm security; Install two (2) new gates, replace and furnish gate and gate operator at one (1) gate location including structural support and electrical power and controls; Provide allowance for replacing / repairing existing perimeter fence and fence support as needed; Add protective cage around outdoor chemical and electrical equipment; Furnish, install and configure video recording servers, management server, and analytic servers including uninterruptable power supply (UPS); Upgrade lighting to dusk-activated (non-motion) LED lighting; Add new security signage; Add video camera units and local recording.

Channel Pump Station (CHS): Repair card reader operation at motorized swing gate; Repair or refurbish any door contacts requiring upgrade to doors; Upgrade card readers and door contacts at all perimeter doors and ensure proper operation; Add interior presence sensing, connected to an intrusion detection panel and alarming to security; Replace and furnish gate and gate operator at one (1) gate location including structural support and electrical power and controls; Provide allowance for replacing / repairing existing perimeter fence and fence support as needed; Furnish, install and configure video recording servers, management server, and analytic servers including UPS; Furnish, install, and configure wireless mesh network; Configure security fiber optic connectivity back to SEP to enable live video connection; Upgrade lighting to dusk-activated (non-motion) LED lighting; Add new security signage; Add video camera units and local recording.

Merlin Morris Pump Station (MMS): Add new security signage; Upgrade lighting to dusk-activated (non-motion) LED lighting; Convert roof and perimeter fencing to be non-porous to protect staff from freeway debris and safety and security risks posed by the public.

PS-5 - Geary Underpass PS Safe Access Enhancements

This project aims to improve access in and around the Geary Underpass Pump Station, in accordance with the Health, Safety, and Security LOS goal. This includes:

- Investigate options to improve maintenance access
- Improve lighting and accessibility improvements to remove and replace pumps
- Verify overhead mounted underpass lighting and install lighting near entrance, if none is present
- Add handrail at entry steps, add ladder fall protection, and upgrade the guardrail at the well opening
- Modify or replace stair guardrails where openings exceed 21 inches clear and at height < 42 inches
- Provide handrails on both sides of stairs

Geary Underpass Pump Station (PS) was constructed in 1960 and operates in wet weather to manage overland flows that collect at the Geary Boulevard underpass located near Fillmore Street. Existing access to this PS poses a hazard to operation and maintenance staff, who must walk beside high traffic areas and on a narrow pathway to reach the PS.

The purpose of this project is improve access to and within the Geary Underpass PS, in accordance with the Health, Safety and Security Level-of-Service Goal. This project includes Planning (including condition assessment, needs identification, alternative analysis and conceptual engineering), Design, Right-of-Way, Environmental, Bid and Award, Construction and Closeout Phases. Although the project direction depends on the outcome of the Planning Phase, it includes the following scope of work and assumptions:

1. Investigate options to improve maintenance access.
2. Improve lighting and accessibility improvements to remove and replace pumps.
3. Verify overhead mounted underpass lighting and install lighting near entrance, if none is present.
4. Add handrail at entry steps, add ladder fall protection, and upgrade the guardrail at the well opening.
5. Modify or replace stair guardrails where openings exceed 21 inches clear and at height < 42

inches.
6. Provide handrails on both sides of stairs.

Combined Sewer Discharge (CSD) and Transport/Storage (T/S) Structure Projects

10037244 - Baker (009) Baffle Improvements
The components of the project at Baker CSD involve the following: install a baffle on the east overflow weir; repair or replace western array of valves to stop leaking ; repair eastern array of valves to prevent leaking ; repair or replace deteriorated metal plumbing pipes; repair minor defects including missing aggregate and infiltration in connecting sewer ; patch and coat minor.

10037245 - Brannan (019) CSD Gate & Baffle Rehab
Scope of work for these CSDs are based on historical performance and WWE Operations video inspection records. The butterfly discharge valve is not working properly, thus the combined flow discharge get interrupted, when valve is not opening. In addition, the flap valve at the end of is stuck in open position and the CSD lacks baffle to control the floatables.
The components of the project at Brannan Combined Sewer Discharge (CSD) involves:
• Improving the discharge system either by restoring the weirs and passive system or repair of mechanical system and valve and actuator
• Replace the flap gate with an inline check valve or another flap gate
• Install baffle for floatables control
• Conduct concrete patching and repair works and repair exposed rebar
• Replace the access ladder

CSD-3 - System-wide CSD & T/S Monitoring Equipment Assessment
The project involves a system-wide assessment of WWE's CSD monitoring equipment for wet weather operations and reporting. The assessment may provide recommendations for replacement or relocation of sensors, calibration needs, technology upgrades, transfer from hard-wired to radio, new installations, additional access, or other recommendations. As an allowance, the project cost assumes replacement and conversion to wireless communication for existing sensors at the following CSD locations: CSD 001 – Lake Merced (3 sensors), CSD 002 – Vicente (3 sensors), CSD 003 – Lincoln (3 sensors), CSD 005 – Seacliff 1 (3 sensors), CSD 007 – Seacliff 2 (2 sensors), CSD 009 – Baker (1 sensor, relocated from Pierce CSD), CSD 025 – 6th Street (1 sensor), CSD 029 – Mariposa (3 sensors), CSD 031A – Islais Creek (1 sensor), CSD 041 – Yosemite (1 sensor) and CSD 043 – Sunnydale (1 sensor). An additional allowance of $2,0000,000 is also included for reliability improvements of sensors at other CSD locations based on the assessment results.

CSD-4 - CSD Structure Rehab & Upgrades - Part 1
A detailed condition inspection should be undertaken prior to design to confirm the scope of structural rehabilitation works. The components of the projects at Laguna (CSD 011), Howard (CSD 018), Fourth St N (CSD 023), Mariposa (CSD 029), Evans (037), Lake Merced (001) and Lincoln (003) are detailed as follows. Laguna CSD Consolidation: This project involves planning, design and construction of Laguna CSD consolidation. For costing purposes, it is assumed that Laguna CSD will be filled with lightweight cellular concrete, with a bulkhead installed at the Marina T/S box and at the sea wall. The following general project elements are assumed: clean and prepare the pipe for decommissioning; remove debris and loose materials, and seal infiltration cracks and holes; demolish existing items as required to facilitate construction activities; relocate and/or cap any existing utilities into the CSD; install a permanent bulkhead at the seawall and a permanent bulkhead at Marina T/S box; apply anticorrosive coating to all exposed ferrous metals; perform dewatering within the CSD as required; install lightweight cellular concrete; remove access manholes and backfill Howard CSD Rehab: Improve floatables control on flows discharging through the butterfly valve; repair leaking butterfly valve; replace conduit for valve control; patch and coat concrete defects and exposed rebar; investigate potential void and repair; repair missing bricks and mortar; seal

major cracks and fractures Fourth St North CSD Rehab: Patch and coat concrete defects and exposed rebar; investigate potential pipe sag; repair missing bricks and mortar; seal major cracks and fractures Mariposa CSD Rehab: Patch and coat concrete defects and exposed rebar; seal infiltration cracks and holes; repair major cracks and fractures; repair or replace manhole cover and ladder rungs; replace monitoring line brackets Evans (037) CSD Rehab: Seal infiltration cracks and holes; patch and repair concrete defects; patch and repair exposed rebar and missing aggregate; repair or replace baffle brackets if necessary Lake Merced (001) CSD Rehab: Seal infiltration cracks and holes; patch and coat concrete defects and exposed rebar Lincoln (003) CSD Rehab: Seal infiltration cracks and holes, patch and coat concrete defects and exposed rebar; seal major cracks and fractures, remove abandoned-in-place flow monitoring equipment and cables

CWWLID01 - Cesar Chavez Green Infrastructure (Completed)

The purpose of this streetscape and sewer improvement project, which focused on the segment between Guerrero Street and Hampshire Street, was to improve the safety, aesthetics, and infrastructure and transit efficiency of the corridor. This project also turned Cesar Chavez into a sustainable "green street" by increasing the number of street trees, implementing Low Impact Development (LID) practices, and installing stormwater planters to add green landscaping pockets and provide for stormwater management. The project widened the existing median to allow for many more street trees and landscaping; provided left turn pockets for turning vehicles; widened the sidewalk at the corners; and upgraded the street lighting along the corridor to LED to provide brighter, whiter light and reduce energy consumption. Permeable paving and bioretention were also integrated into the street design. This strategy fuses infrastructure with urban design, allowing the streetscape to become part of the solution to drainage problems. This project has been completed.

CWWLID02/FCDB09 - Islais Creek Green Infrastructure (Completed)

This project incorporates green stormwater management into an urban design to meet the neighborhood's needs and the stormwater performance goals for the Islais Creek watershed (i.e. manage the first 0.75 inch of rainfall for a 5-year, 3-hour storm event within the 2.2 acre drainage management area). The project will also provide secondary benefits by creating new plazas that can serve as neighborhood gathering spaces, greening of the neighborhood by adding more vegetated areas within the right-of-way (ROW), and adding curb bulb-outs to enhance pedestrian and bicyclist safety. Additional work includes construction of bioretention and a subsurface infiltration gallery, and developing parking spaces and traffic lane configurations based on recommendations from SFMTA & SF Planning.

CWWSIPCSCD01 - Richmond Transport/Storage Tunnel Rehabilitation

The scope of this project includes the evaluation of rehabilitation methods for the Richmond/Transport Storage Tunnel to confirm the previous findings and recommendations included in the physical modeling performed by PMC and presented in October 2013 to resolve historical surge issues identified. The model identified the causes of geysering through vent holes and dislodging manhole covers in various areas and included modification recommendations including odor solutions that will be verified during the Planning Phase of this project.

CWWSIPCSCD02 - Baker/Laguna/Pierce CSD & Outfall (Completed)

Project has been deferred to Phase 2.

CWWSIPCSCD03 - Beach and Sansome Street CSD Rehabilitation

Scope of work for these CSDs are based on historical performance and WWE Operations video inspection records include:

Beach Street CSD:

- Cleaning and specific condition assessment of the asset
- Provide necessary ventilation

• Inspection of baffles and restore baffle, if needed
• Inspect weirs and repair crack at the weir
• Repair corroded metal ceiling
• Install a backflow prevention system

Sansome Street CSD:

• Cleaning and specific condition assessment of the asset
• Provide necessary ventilation
• Repair necessary concrete crack and spalling, exposed rebar, and an I-beam
• Replace butterfly valve seals
• Install a backflow prevention system

CWWSIPCSCD04 - CSD Backflow Prevention and Monitoring

Collection system assets that contribute to saltwater intrusion fall into two categories: conveyance (groundwater infiltration through defects) and CSD structures (tidal backflow, inflow through defects, or groundwater infiltration). A component of this project involves developing and implementing a CSD and conveyance monitoring plan to gather data on the salinity in the whole collection network to be able to locate potential infiltration sources in the collection system and then verify performance once improvements (implemented through SFPUC's R&R Program) have been completed. It is anticipated that the monitoring program will consist of CSD monitoring, as well as monitoring of conveyance systems (pump stations, trunk-line, and mobile sites).

The scope also includes planning, design and installation backflow preventers at selected CSD outfalls, which may include engineering survey of CSD weir elevations and lengths. Backflow preventers will be installed in a phased and monitored approach, with the following priority CSD outfalls considered based on locations with the potential for highest inflow in the system for the same tide:

• CSD 17 – Jackson Street
• CSD 10 – Pierce Street
• CSD 40 – Griffith Street
• CSD 31A – Islais Creek North
• CSD 32 – Marin Street
• CSD 33 – Selby Street
• CSD 41 – Yosemite
• CSD 35 – 3rd Street South

The project scope will be fluid and subject to change based on monitoring results.

CWWSIPCSCD05 - 5th, North 6th and Division Street CSD Rehabilitation

Hydraulic modeling of the three CSDs will be performed as their functions are related. Scope of work for these CSDs are based on historical performance and WWE Operations video inspection records and include:

• Cleaning and specific condition assessment of the asset
• Provide necessary ventilation
• Repair necessary concrete crack and spalling and exposed rebar

In addition to the work common to all three CSDs noted above, the following will also be completed:

• Provide safe access, rehab/replace the flap gate at 5th St. CSD and North 6th St. CSD
• Refurbish gates at Division CSD
• Repair the baffle at Division CSD
• Installation of a backflow prevention system at the 5th Street CSD structure
• Installation of a backflow prevention system at the 6th Street CSD structure

CWWSIPFCDB01 - Sunset Green Infrastructure

Sunset Boulevard is a large arterial roadway with three lanes of traffic in each direction, a central vegetated median, and large City-owned landscaped parcels with walking paths fronting either side. The Sunset Boulevard Greenway project will construct a series of tiered bioretention rain gardens in the western stretch of landscaped parcels along 12 blocks stretching from Golden Gate Park to Lake Merced. The rain gardens will manage stormwater runoff on the west side of Sunset Boulevard from the street, paths, and a portion of the landscaped parcel area. The project will also incorporate a "Learning Lab" to supplement elementary school curriculum.

CWWSIPFCDB01 - Sunset Green Infrastructure

Sunset Boulevard is a large arterial roadway with three lanes of traffic in each direction, a central vegetated median, and large City-owned landscaped parcels with walking paths fronting

either side. The Sunset Boulevard Greenway project will construct a series of tiered bioretention rain gardens in the western stretch of landscaped parcels along 12 blocks stretching from Golden Gate Park to Lake Merced. The rain gardens will manage stormwater runoff on the west side of Sunset Boulevard from the street, paths, and a portion of the landscaped parcel area. The project will also incorporate a "Learning Lab" to supplement elementary school curriculum.

CWWSIPFCDB02 - North Shore Green Infrastructure (Completed)

Stormwater will route to flow-through bioretention planters with surfaces set lower than the surrounding grade. During large storm events, ponded water at the surface of the planters will reach a maximum depth of 6 inches before it crests an overflow weir, either to a lower planter tier or to a concrete valley gutter running the length of the alley. To protect the adjacent building foundations, an impermeable waterproof liner will be placed along the bottom and sides of the planters. New street surfacing and furnishings will provide improved community space for local residents and visitors. The project is designed to manage runoff from 0.1 acres, removing around 300,000 gallons of stormwater in a typical year.

CWWSIPFCDB03 - Lake Merced Green Infrastructure (Completed)

The project on Holloway Avenue starts at the Ashton Avenue intersection and extends along eight blocks to the Lee Avenue intersection. Corner bulb-outs containing bioretention planters will be installed on the downstream ends of six of the blocks. On the remaining two blocks, roadside bioretention planters adjacent to the curb will manage stormwater in lieu of corner bulb-out planters, which are infeasible due to driveway conflicts. The bioretention planters are sized to manage stormwater runoff from the sidewalk and only a portion of intersection areas in order to minimize their size and the associated parking loss from the new bulb-outs. Permeable pavement installed within the existing parking lanes on both sides of Holloway Avenue will manage runoff from the roadway. The project is designed to manage runoff from 2.1 acres, removing 1.0 million gallons of stormwater in a typical year.

CWWSIPFCDB04 - Sunnydale Green Infrastructure (Completed)

The Visitacion Valley Green Nodes project is comprised of two subprojects ("nodes") at different locations within the neighborhood. The first node, identified as the Leland Avenue Rain Garden, is on an open-space parcel owned by the San Francisco Recreation and Park Department at the end of Leland Avenue. The project creates a large terraced bioretention facility that will capture, store, and infiltrate runoff from the impervious roadway and an adjacent vegetated sloped area. This location will also provide community benefits by enhancing an adjacent existing community vegetable garden and creating a pedestrian connection to McLaren Park. The second node, identified as the Sunnydale Avenue Mini-Plaza, consists of large midblock and corner bulb-outs containing bioretention planters at a busy T-intersection at Rutland Street in front of a church/school. The planters remove stormwater while also providing traffic calming and pedestrian safety. The small urban plaza and landscaping will provide a pleasant community space for the neighborhood. The project is designed to manage runoff from 1.8 acres, removing 0.8 million gallons of stormwater in a typical year. Approximately one block of local sewer work on Rutland Street will be included into the construction contract to minimize construction impact. The project cost of that sewer improvement is accounted for separately.

CWWSIPFCDB05 - Richmond Green Infrastructure

At El Camino Del Mar, the following will be completed under this project:

- New pedestrian crosswalk.
- Sixteen terraced rain gardens adjacent to crosswalks from the Legion of Honor parking lot down to the Lands End Trailhead, including debris traps at the inlets to capture the abundant vegetative litter.
- Subsurface infiltration galleries connected to the northern and southern planters on either side of the road.

• Soil stabilization techniques in selected locations on the southern slope of El Camino Del Mar.
• Sewer main upsizing between Lands End Trailhead and manhole east of 32nd Avenue.
• Upgrade existing crosswalks to comply with the Americans with Disabilities Act.

At Beach Terrace, the following will be completed under this project:
• Sea Cliff Avenue:
o Permeable pavement in the parking strips between 25th & 26th Avenues.
o Three rain garden bulb outs at the eastern & western ends of the permeable pavement
o One flow-through (under-drained) rain garden at the southeast corner of the intersection with 26th Ave., where soils were found to have low infiltration rates
o Two traditional (infiltrative) rain garden bulb-outs at the southwest corner and eastern edge of the intersection with 25th Ave., where infiltration rates are much higher
o Improved catch basins on Sea Cliff Avenue west of the 26th Ave. intersection
• GGNRA land:
o One large, traditional rain garden at the top of the stairway to Baker Beach from the 25th Ave. North cul-de-sac

CWWSIPFCDB05 - Richmond Green Infrastructure

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• Subsurface infiltration galleries connected to the northern and southern planters on either side of the road.
• Soil stabilization techniques in selected locations on the southern slope of El Camino Del Mar.
• Sewer main upsizing between Lands End Trailhead and manhole east of 32nd Avenue.
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o Improved catch basins on Sea Cliff Avenue west of the 26th Ave. intersection
• GGNRA land:
o One large, traditional rain garden at the top of the stairway to Baker Beach from the 25th Ave. North cul-de-sac

CWWSIPFCDB06 - Yosemite Green Infrastructure

Reach 1 - Yosemite Marsh:
• Overflow structure to direct Yosemite Marsh overflow into creek channel (with CSS backup).
• Earthen channel constructed within McLaren Park flow from the Yosemite Marsh to the streetscape right-of-way (ROW) approximately mid-block on Oxford Street between Bacon & Wayland St. & then south along Oxford St. & east along Wayland St.
• Small tributary channel extending southwest from intersection of Oxford & Wayland St.
• Periodic drop structures downstream of the confluence along Wayland St.
• Proposed path running east along Wayland between creek channel and street.
• Conversion of 500 block of Oxford St. & 1400 block of Wayland St. to one-way streets.
• Relocation of a low-pressure fire hydrant from McLaren Park at the corner of Oxford & Wayland St. to the ROW directly across the street.
• Underground creek channel from southwest corner of Wayland and Cambridge St. to McLaren Park east of Yale St.

Reach 2 - Louis Sutter Softball Fields:
• Bioretention facility located near the west side

of the soccer field.
• Earthen channel that meanders across the southern edge of the soccer field.
• Subsurface storage tanks located west of soccer field and northwest of ball field.
• Regraded slopes north and east of the ball field.
• Soccer field will be reset with drainage improvements and replaced irrigation system.
• New overflow structure (to creek channel with CSS backup) constructed on the northern side of McNab Lake.
• Earthen creek channel conveying flows eastward in the ROW north of the ball field to University St., then south down toward Woolsey St.
• Series of channel drop structures on University St.
• Culvert under University St.
• Removal of trees in poor health.
• Wooden deck northwest of the ball field on Wayland.
• Bioretention/ponding area northwest of the intersection of University and Woolsey.
• Provide plant establishment and/or monitoring for the following GI Projects: Islais Creek, Sunset, North Shore, Lake Merced, Sunnydale, Richmond, Channel, and Yosemite.

CWWSIPFCDB08 - Channel Green Infrastructure (Completed)
The Wiggle neighborhood is a collection point for stormwater flow, both from surface runoff and from the collection system. It is also the focus of a project by the SFMTA to repair roadways and aid the flow of motor vehicles, bicycles, and pedestrians. Many of these traffic calming features provide opportunities for the inclusion of green infrastructure. The purpose of the Wiggle Neighborhood Green Corridor project is to implement low impact stormwater management along the Wiggle bike route between Oak and Baker Streets, along Scott and Page Streets, ending at Waller and Steiner Streets. The project is designed to manage runoff from 4 acres, removing 1.1 million gallons of stormwater in a typical year. Key features of this project will include installation of bulb-outs on selected street corners, bioretention planters, and permeable pavement.

Watershed Stormwater Management

10034553 - Green Infrastructure Grant Program (GIGP)
The Green Infrastructure Grant Program (GIGP) offers grants to large public and private property owners to manage stormwater onsite and improve the performance of the collection system during wet weather. The Green Infrastructure Grant Program (GIGP) was established with several objectives: to manage stormwater using green infrastructure, to manage stormwater cost effectively, and to provide customers impacted by the anticipated stormwater cost allocation a mechanism to reduce their stormwater runoff and fees. The grant will cover the costs of design and construction of an approved stormwater management feature, such as rain gardens, permeable pavement, cisterns, and vegetated roofs. The maximum grant award is $765,000 per acre of impervious surface managed, up to $2 million in funding. Maintenance responsibility for the GI lies with the property owner and inspection responsibility with the SFPUC. In order for an application to be considered for funding, the project must meet minimum criteria including: managing stormwater runoff from a minimum impervious area of 0.5 acres; capturing the 90th percentile storm (0.75-inch depth) with the proposed green infrastructure features; and providing co-benefits to the community. The SFPUC has allocated $25M from FY18 – FY27 for the program. The program will be administered by the SFPUC Wastewater Enterprise with project management support from the Infrastructure Division.

CWWSIPFCDB12 - Wawona Area Stormwater Improvement Project
The purpose of this project is to convert the Arden Wood Natural Area to a flood water detention basin by collecting the upstream surface water and diverting it into the area, using series of pipe and inlet systems on the upstream, and a large pipe/micro-tunnel at the intersection of Wawona and 15th.

CWWSIPFCGI01 - Watershed Stormwater Management (Planning Only)
This project includes planning and preliminary design support for the watershed stormwater management and implementation of green infrastructure projects. This Watershed Stormwater Management Project planning effort will conduct ongoing smaller and localized watershed assessments as needed to ensure that the prioritized projects are responsive to changing neighborhood conditions and new data. Issues continuing to evolve include: changes in regulations, ordinances and codes such as the Non-potable Ordinance, drought, reductions in dry weather flow, the development of surface flooding solutions, sea level rise, emerging one water technologies and the formation of new neighborhood plans and district As a result of this work GI capital project planning will reflect the best state of knowledge about the Collection System.

CWWSIPFCRP01 - Advanced Rainfall Prediction - Part 1 (Completed)
The purpose of this project was to provide rainfall forecast information to SFPUC WWE staff automatically in real-time. This project included planning, design, and environmental review for three new radar equipment stations to collect additional data that would feed into the rainfall prediction modeling for short-term and long-term precipitation forecasts. In September 2017, this project was cancelled and recommended to be placed on hold as the potential benefit of the project to Wastewater Operations did not merit the significant project costs.

CWWSIPFCRP02 - Operational Decision System Phase 1 (Completed)
SFPUC desires a more consistent and transparent basis for making decisions that make best use of available data in an automated way. This project would integrate available data in the collection system (levels, flows, pump status, etc.) with rainfall prediction data (from National Oceanic and Atmospheric Administration, or in the future improved through the Advanced Rainfall Prediction project). The real-time data will be coupled with WWE's collection system hydraulic model to project the likely impact of approaching storms and generate specific operational recommendations for managing flows.

CWWSIPFCRP03 - Operational Decision System Phase 2
This project would integrate available data in the collection system (levels, flows, pump status, etc.) with rainfall prediction data (from National Oceanic and Atmospheric Administration). The rainfall prediction data will be coupled with WWE's collection system hydraulic model to project the likely impact of approaching storms and generate specific operational recommendations for managing flows. Phase 2 builds upon Phase 1 (CWWSIPFCRP02) for a citywide installation.

CWWSIPUW00 - Urban Watershed Assessment and Planning Initiation (Completed)
Many of the SSIP's proposed projects are focused on improvements to surface drainage and collection system management in San Francisco. The SSIP Urban Watershed Assessment Task will evaluate and recommend alternatives that balance the use of grey (for example, pipelines) versus green infrastructure (for example, low impact design) for improvements to watershed surface drainage and collection system management. The SSIP will utilize an integrated watershed management approach to investigate the health of the City's watershed and identify potential opportunities for stormwater capture, conveyance, detention and possible reuse to address issues of flooding as wells as combined sewage conveyance and storage. Project implementation will require the hydrologic and hydraulic analysis of each of the eight drainage basins and will include: identification of various solutions to each basin's unique set of flooding challenges; evaluation of the social, economic and environmental values of alternatives that meet the level of service with a triple bottom line tool and the optimization and prioritization of projects for each basin. The work will address life cycle costs and detailed operation and maintenance requirements.

CWWSIPUW01 - Urban Watershed Assessment

and Planning (Completed)
The UWA is the comprehensive watershed-based planning process developed to diagnose challenges and design solutions for the surface drainage and collection/conveyance portion of the City's sewer system. The UWA emphasizes holistic urban watershed-scale planning and the development of multiple-function solutions to sewer system challenges. These solutions are evaluated using a comprehensive Triple Bottom Line (TBL) tool that employs societal and environmental benefits and costs with the goal of delivering more holistic investment decisions. Project implementation will require the hydrologic and hydraulic analysis of each of the eight drainage basins and will include identification of various solutions to each basin's unique set of flooding and other challenges; evaluation of the social, economic and environmental values of alternatives using the TBL tool; optimization and prioritization of projects for each basin; and life cycle costs with detailed operation and maintenance requirements.

GI-1 - Balboa High School Regional Runoff Reduction Project
The regional stormwater project is centered around Balboa High School in the Balboa Park Neighborhood.This Project involves regional stormwater collection from, San Miguel Child Development Center, Civic Center Secondary School, James Denman Middle School, the Balboa High School campus and some surrounding streets. Runoff from 17.3 acres is routed by 1,200 ft of separate storm pipe to divert flows from upstream parcels to various green infrastructure improvements.

GI-3 - Regional School/Park: Giannini Middle School
AP Giannini Middle School is located above the Westside Groundwater Basin and has well draining soils. The project site is 8 acres of mostly impervious roofs and pavement including over 2.5 acres of play yard. There is an opportunity to remove impervious paving to promote infiltration while greening the school yard. Green infrastructure BMPs such as permeable paving, bioretention planters, and infiltration trenches will be installed to reduce the volume and rate of water entering SFPUC's sewer system.

Flood Resilience Projects

10034360 - Lower Alemany Area Stormwater Improvement Project
The Lower Alemany area surrounding the US 101 and I-280 interchange has been susceptible to recurring flooding associated with moderate and heavy storms and do not meet the defined SSIP level of service (LOS). The primary objective of the Lower Alemany Area Stormwater Improvement Project is to address the SSIP LOS goals of managing stormwater and minimizing flooding from a 5-year 3-hour storm. This project will include planning, design and construction to improve stormwater conveyance away from the Lower Alemany area neighborhood and consequently to minimize flooding during the LOS storm.

CWWSIPFCDB07 - 17th and Folsom Wet Weather Storage (Completed)
The neighborhood surrounding 17th Street, 18th Street and Folsom Street has been experiencing over a foot of water on the streets, sidewalks and into their houses during rain events, resulting in property damages to the residents. The 17th and Folsom Wet Weather Storage project was originally intended to provide interim flood mitigation to the neighborhood while SSIP is working on identifying long-term solutions through capital improvement projects. The proposed interim flood mitigation alternatives consisted of a storage basin, pump station, and collection facilities to be built underneath the proposed future 17th & Folsom Park. However, the project was cancelled and defunded except for residual funds for ongoing response activities as directed by management, including certain outreach activities related to flooding.

CWWSIPFCDB10 - Flood Resilience Analysis (Planning Phase Only) (Completed)
The Flood Resilience Analysis Project will focus on developing a framework for identifying multiple storm scenarios; quantifying risks and

cost implications associated with mitigating flooding across the aforementioned storm scenarios; and defining the extent and scope of the City's responsibility, based on consequences of extreme storms. To minimize flood risks citywide and meet SFPUC objectives, this project will also develop programs and policies beyond what the collection system can manage, and make recommendations on prioritization of structural, non-structural, and operational measures.

CWWSIPFCDB11 - Flood Resilience - Early Projects (Planning Phase Only) (Completed)

The City of San Francisco has experienced multiple significant storms in the last decade, which have led to flooding in various parts of the City. While Flood Resilience Analysis is being conducted by SFPUC, early infrastructure projects are being planned at three critical areas (Cayuga, Wawona, and Folsom neighborhoods) subjected to high flood risk. This project focuses on planning and developing stormwater detention and conveyance concepts specific to each of the aforementioned critical neighborhoods.

CWWSIPFCDB13 - Cayuga Ave Stormwater Detention Project (Completed)

The neighborhood surrounding the northeastern end of Cayuga Avenue has been susceptible to recurring flooding associated with moderate to heavy storms. Due to its low land topography, the area can experience up to a few feet of water on the streets and sidewalks during rain events. This project will improve the stormwater detention by re-grading the I-280 embankment at the foot of Cayuga to create a low lying detention field. This project will provide surface detention of flows during flooding and includes an overflow relief connection into the College Hill Tunnel as well and a retaining wall to support the roadway.

CWWSIPFCDB14 - Folsom Area Stormwater Improvement Project

This project includes just the planning and design phases to improve stormwater conveyance away from the 17th and Folsom neighborhood to minimize flooding in the Level of Service storm. The project scope consists of:

- The design of approximately 12,500 linear feet of new combined sewer boxes and pipes in the neighborhood immediately adjacent to 17th and Folsom in order to increase capacity of the existing CS systems through either upsizing existing facilities or adding auxiliary facilities.
- The design of approximately 5,100 linear feet of 12' I.D. tunnel bore by a consultant under contract PRO.0101. The tunnel is downstream of the pipe and box upsizing
- Environmental clearance for both the upstream traditional open cut work and the tunnel bore.
- Modification of a Caltrans foundation to allow the tunnel to pass through.
- Launch shaft and staging area for the tunnel bore in the proximity of Florida Street and Alameda Street.
- Turning shaft for the tunnel boring machine in the vicinity of De Haro and Alameda Street
- Underpinning of the Division Sewer Box to allow crossing of the tunnel bore.
- Receiving shaft for the tunnel bore in the vicinity of the Channel Transport and Storage Box
- Due to the uncertainty of Caltrans approval and property acquisition for the approved tunnel alignment on Alameda Street, the project also developed an alternative tunnel route on 17th Street. The 17th Street alternative may be adopted into the project scope in the event that the Alameda route becomes infeasible, at some point in the future.

CWWSIPFCDB15 - 17th and Folsom Permanent Barriers (Completed)

SFPUC has purchased off-the-shelf plastic temporary flood barriers for 2015 and 2016 wet seasons. At locations where temporary plastic flood barriers were installed and proven effective in mitigating floods, SFPUC plans to install more durable custom aluminum or steel barriers before a permanent solution (Folsom Area Stormwater Improvement Project) can be implemented. The aluminum or steel barriers would be installed during wet seasons and removed during dry seasons. The sidewalk would be graded and outfitted with recessed and covered receptacles for mounting flood barrier poles. Interlocking aluminum logs would be installed between the poles. The flood barrier system would be custom built based on site-specific pole intervals, barrier

height, and other characteristics.

CWWSIPFCDB16 - Hydraulic and Drainage Sewer Improvements

This project includes implementing small stormwater capture and conveyance improvements at critical flood-prone neighborhoods The scope of construction includes improvement of drainage features, upsizing/expansion of sewer pipes, and surface grading modifications in Joost/Foerster/Mangels and Urbano/Victoria neighborhoods.

FR-1 - Folsom Area Stormwater Imp. Project Phase 2

This project will include planning, design, and construction of an improved stormwater conveyance from the 17th and Folsom neighborhood to Mission Creek, minimizing stormwater inundation in the level of service storm. This project will include the construction of 5,100 LF of a new 12-foot diameter tunnel along Alameda Street, from Treat and 16th to the Channel Transport/Storage Box near the intersection of 7th and Berry Streets. In addition to the tunnel component, some upstream sewer pipes and sewer boxes will be rerouted or upsized to convey the level of service storm to the tunnel.

LAND REUSE

CWWSIPPRPL91 - Land Reuse of 1800 Jerrold Avenue (Completed)

This project includes jurisdictional transfer of 1800 Jerrold Avenue property ("Central Shops") from the Office of Contract Administration (OCA) to SFPUC. This 6.04-acre site is located adjacent to the SEP at the northwest corner of Quint Street/Jerrold Avenue intersection, and is currently used by OCA as central shops for city vehicle maintenance and repair.

A new location to move the existing Central Shops to was identified, and planning is underway to complete design and construction. Upon approval of the Jurisdictional Transfer, the relocation will involve the purchase of two properties, lease of a third property, and construction agreements to complete improvements. This requires extensive cooridnation and cooperation between multiple City departments.

S ubsequent to the relocation of the Central Shops by the OCA, the 1800 Jerrold Avenue property would be acquired by SFPUC. Upon completion of geotechnical and environmental hazardous materials investigation, a demolition and remediation plan will be developed. The site is currently being considered for construction of the new SEP biosolids facilities.

CWWSIPPRPL92 - Land Reuse of 1801 Jerrold Avenue

Reuse of the site requires a negotiated transfer of the site and subsequent demolition of the abandoned asphalt plant facilities and site remediation. Following the completion of geotechnical and environmental hazardous materials investigations, a demolition and remediation plan will be developed. Demolition will include the removal of all of the structures currently occupying the space including the existing asphalt plant equipment, storage silos and outbuildings. The remediation plan will be dependent on findings from the site investigation. Presently, the relocation of SFPW's Street Repair from the Asphalt Plant site to a property adjacent to the SFPW Yard is pending the relocation of SFPUC Sewer Operations (Sewer Ops) from 160 Napoleon (on a portion of Lot 31). Planning is currently underway to relocate Sewer Ops to a new location at Griffith Yard, and then to move the Asphalt Plant occupants to 160 Napoleon.

APPENDIX 1.2. FACILITIES AND INFRASTRUCTURE

10033820 - Southeast Outfall Condition Assessment & Rehabilitation

This Wastewater Enterprise Capital Improvement Program project will include extensive condition assessment and rehabilitation of the Southeast Water Pollution Control Plant (SEP) effluent force main. The Booster pump station was constructed in 1967 and last upgraded in 2002. The Booster Pump Station receives treated effluent from Southeast Treatment Plant via 72" gravity conduit. The discharge system from Booster Pump Station consists of 42" and 36" parallel force mains under Islais Creek that ultimately discharge into 60" Southeast Outfall. The effluent outfall discharges into the San Francisco Bay through the series of pipes at Pier 80. The outfall ends with 36" pipe and diffuser system that was replaced in 2012 using JOC Contract. The treated effluent flow conveyance is 50-60 million gallons per day(MGD) average and 110 MGD peak through the Southeast Outfall System. The underwater crossings have exhibited leaks 3 times in past 6 years and were repaired with JOC Contracts. The last limited condition assessment was performed in 2010-2011 and the report recommended the near-term and long-term actions for the entire Outfall system. The short-term action recommended that Islais Creek Underwater Crossings replacement within 5 years and long-term action recommended the re-inspection and re-habilitation of the remaining system within 10 years. The Islais Creek underwater crossings replacement is currently at 35% design phase under separate project FAC04 Facilities and Infrastructure Program. This new project will thoroughly and completely evaluate the condition and remaining life expectancy of the Southeast Outfall System and implement the rehabilitation solutions to extend the useful life.

CWP11001 - New Treasure Island Wastewater Treatment Plant

The objective of the project is to build a new wastewater treatment plant that will provide reliable service for the Treasure Island residents and meet the recycled water demands of the future redevelopment on the island. The existing facility was built by the United States Navy over 50 years ago and is past its useful life and no longer reliable. The existing facility is also not capable of providing recycled water and meeting the needs of the residents on the redeveloped island.

CWWFAC01 - Ocean Beach Climate Change Adaptation Project

The project will develop a comprehensive shoreline management and protection plan against bluff erosion and climate-change induced sea level rise along Ocean Beach south of Sloat Boulevard consistent with the recommendations in the 2012 Ocean Beach Master Plan (OBMP). This project is necessary to protect the integrity of wastewater assets built to protect public health and the environment, including the Lake Merced Tunnel, the Westside Pump Station and the Oceanside Treatment Plant. The project includes a) Short-term Improvements [STI] to provide interim (2015-2022) erosion protection and improved beach access [e.g., sand backpass/stabilization and placement of sand bags], b) Army Corps of Engineers Section 204 beach nourishment [ACOE] (e.g., beneficial reuse of dredged sand to provide erosion protection), and c) Long-term Improvements [LTI] that will address a comprehensive shoreline management and protection plan.

CWWFAC02 - Collection Division Consolidation (Griffith Yard Improvements)

The initial WWE Collection System Division Facilities Consolidation Project intended to consolidate the Collection System Division Administrative and Sewer Operations staff to a centralized location at 1550 Evans. The current plan is to relocate Sewer Operations to the WWE Griffith Yard Facility, adjacent to the Griffith Yard Pump Station. The project is now the Griffith Yard Improvement Project. Relocating the 107 employees currently dispatched from Napoleon Yard to Griffith Yard is required in order to exchange the Napoleon Yard for SFPW's Asphalt Plant property at the Southeast Plant (SEP) through an inter-department jurisdictional transfer. The project will also include relocation of

the Vactor Waste Station (VWS), currently located at SEP, to co-locate the VWS with Sewer Operations and reduce overcrowding at SEP; a Confined Space Training Facility; and a bio-retention system for stormwater control. This project is critical path for making space available for SSIP Projects at the Southeast Plant. Improvements to the 4.4 acre yard will transform the underutilization of this property from storage and stockpiling to productive operations.

The second part of this project includes Greenhouses Demolition. In 2015, an assessment of current condition of the Greenhouses was conducted. It was determined that the facilities, in their current state of disrepair weren't salvageable. An interim grant program was established until a permanent replacement plan is determined. The interim use of the site is part of the modernization of the Southeast Water Pollution Treatment Plant through the Sewer System Improvement Program (SSIP). The Greenhouses demolition project will demolish the existing greenhouses, attached ancillary building, and prepare the site for staging to be used by other SSIP projects in the area.

CWWFAC03 - Southeast Community Center @ 1550 Evans

The Southeast Community Center project will serve to address the SFPUC's commitment to the mitigation measure for the expansion of the Southeast Plant (SEP) by constructing a new community center at 1550 Evans. The project will include a childcare center, café, multipurpose space for meetings, events, and workshops, and co-working office and classroom space for community-based organizations providing workforce development services. It will also include parking and over two acres of landscaped open space, with play areas, an amphitheater, picnic areas and gardens. The new center will provide a wide range of social services supporting workforce development and education for Southeast residents of all ages.

CWWFAC04 - Southeast Bay Outfall Islais Creek Crossing Replacement

This Wastewater Enterprise Capital Improvement Program project will include improvements to the Southeast Water Pollution Control Plant (SEP) effluent force main crossings at Islais Creek and modifications to the Booster Pump Station. SEP is the SFPUC's largest wastewater facility treating almost 80% of the City's dry and wet weather flows.

Major improvements are planned to ensure that the SEP facilities maintain permit compliance and operate reliably. This project primarily addresses the portion of effluent discharge outfall into the San Francisco Bay through the series of pipes at Pier 80. Following improvements are needed to address aging infrastructure:

- Pipeline replacement within the Islais Creek
- Restoration of access manholes for future inspection and maintenance
- Improving flow velocity with new pipeline material
- Providing redundancy and flexibility for operation
- Piping isolation improvements to the Booster Pump Station

SWOO - Southwest Ocean Outfall (SWOO)

The Southwest Ocean Outfall was last inspected in 1996, although sediments prevented a full internal inspection. An exterior inspection was performed in 2005 (diffusers, caps, etc.). This project includes the condition assessment of the outfall, as well as an allowance to perform repairs.

APPENDIX 1.3. RENEWALS AND REPLACEMENTS

CWWRNRCS - R&R Collection Systems

The purpose of the Wastewater Enterprise (WWE) Renewal and Replacement Program (R&R) Collection System Sewer Improvements project is to maintain the existing functionality of the sewage collection system and address planned and emergency projects for repair and replacement of structurally inadequate sewers. This project consists of the following sub-projects: small diameter (less than and equal to 36-inch) sewer improvements, small diameter (less than and equal to 36-inch) sewer condition assessment, spot sewer replacement, large diameter (greater than 36-inch) sewer condition assessment, large diameter (greater than 36-inch) sewer improvements and sewer transport storage box condition assessment. By utilizing an asset management approach, which factors in: physical condition, age, location, risk, public safety, paving schedule and other factors, aging and failed portions of the collection system are identified and replaced.

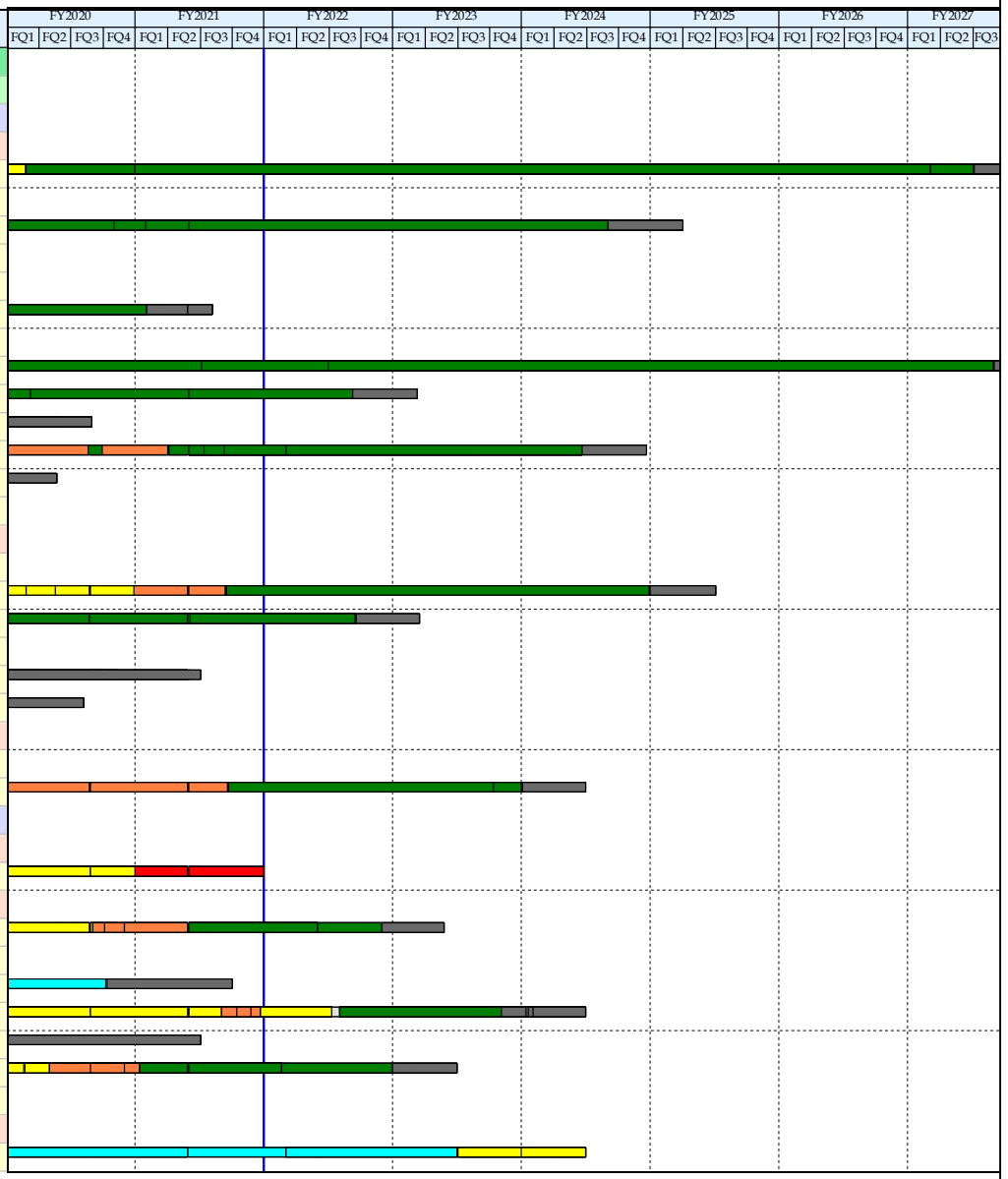
CWWRNRTF - R&R Treatment Facilities

The purpose of the Wastewater Enterprise (WWE) Renewal and Replacement (R&R) Program Treatment Plant Improvement projects is to maintain the capacity and reliable performance of the wastewater treatment facilities owned/operated by the Wastewater Enterprise. This is a continuing annual program to extend the useful life of the WWE treatment assets. Treatment Facility Wastewater Enterprise Assets include: Transport Boxes, Discharge Structures, Pump Stations, Force Mains, Tunnels and Treatment Plants. The R&R Treatment Facilities projects are prioritized based upon regulatory compliance, condition assessments, Operation staff recommendations and Level Of Service goals. Planned WWE R&R Program Treatment Plant Improvement projects will address aging infrastructure at the wastewater enterprise treatment facility assets.

Planned WWE R&R Program Treatment Plant Improvement projects are prioritized based on risk to permit compliance, safety and urgency. The current list of projects includes: WWE Treatment Facility Repairs: Richmond hypochlorite pipe repair; Southeast Community Facility Hot Water Pipe Repairs; Southeast Building Roof repairs; Oceanside Bar Screen Repairs; Southeast Plant Fixed Gas Monitor Upgrades; Sunnydale Pump Station Adjustable Frequency Drive Upgrades; WWE Recycled Water Station Upgrades; Oceanside Plant Air Compressor Replacements; Griffith Pump Station Adjustable Frequency Drive Upgrades; Southeast Plant Building 062 Motor Starter Upgrades; and Oceanside Dry Polymer System Upgrades. Project priorities are revisited on a monthly basis.

Appendix 2.1 Sewer System Improvement Program (SSIP) - Approved Project-Level Schedules

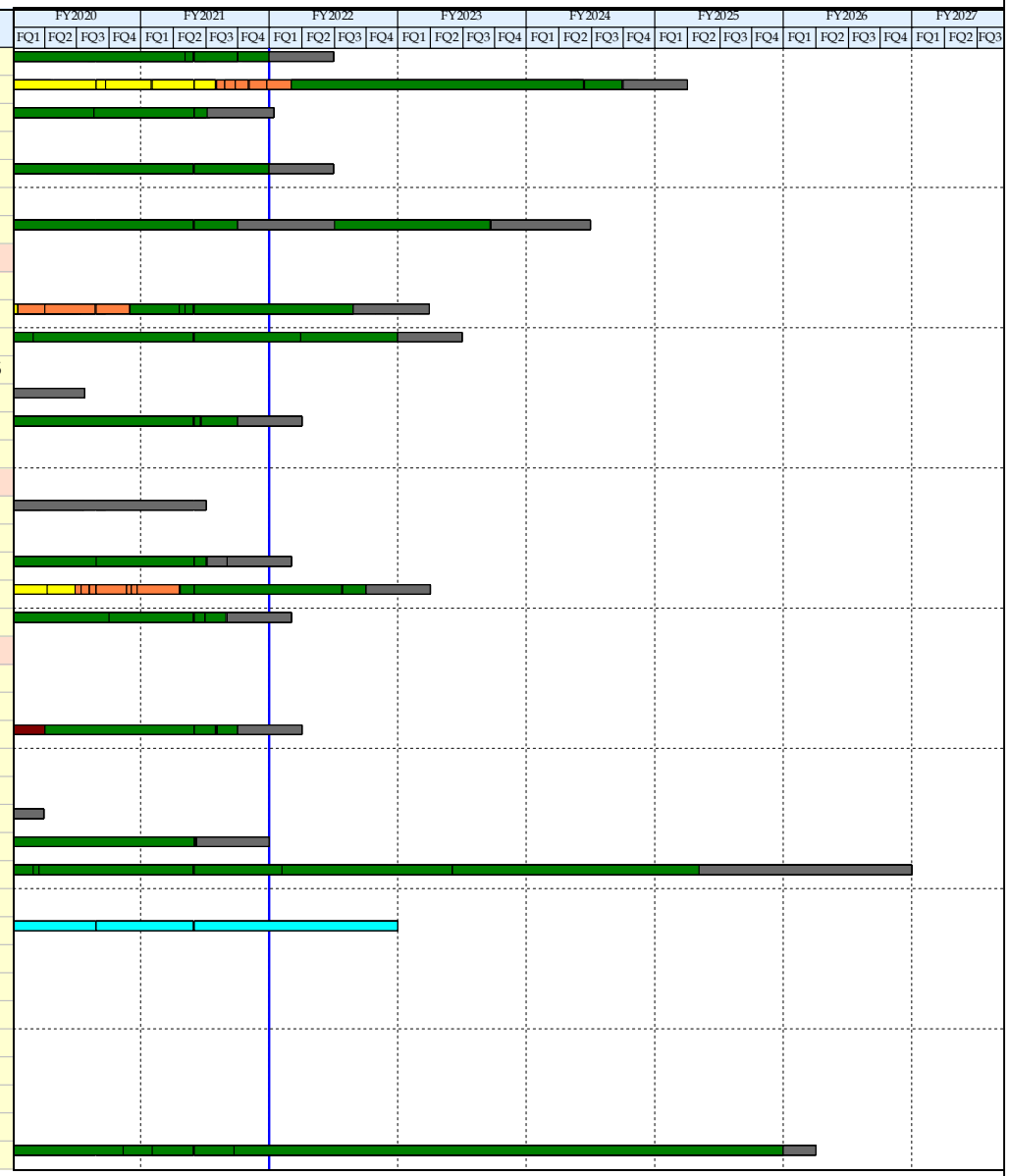
Project Name	Start	Finish
Sewer System Improvement Program (SSIP)	01-Jul-11	26-Dec-29
SSIP Phase 1	01-Jul-11	31-Aug-27
Treatment Facility Projects	01-Jul-11	31-Aug-27
Southeast Plant (SEP) Improvements	01-Jul-11	31-Aug-27
CWWSIPDP01 SEP Biosolids Digester Facilities Project	01-Jul-11	31-Aug-27
CWWSIPSE01 SEP Oxygen Generation Plant	17-Sep-12	10-Jun-16
CWWSIPSE02 SEP New Headworks (Grit) Replacement	01-Mar-13	30-Sep-24
CWWSIPSE03 SEP Existing Digester Roof Repairs	01-Apr-13	03-Mar-16
CWWSIPSE04 SEP Primary and Secondary Clarifier Upgrades	01-Jul-13	21-Jan-19
CWWSIPSE05 SEP 521/522 and Disinfection Upgrades (SEP Building 52	03-Jun-13	02-Feb-21
CWWSIPSE06 SEP Primary Sludge Handling Improvements	03-Jun-13	10-Feb-16
CWWSIPSE07 SEP Facility-wide Distributed Control System Upgrade	13-Feb-14	31-Aug-27
CWWSIPSE08 SEP Seismic Reliability and Condition Assessment Improv	03-Jun-13	09-Sep-22
CWWSIPSE09 SEP Existing Digester Gas Handling Improvements	16-Jun-14	28-Feb-20
CWWSIPSE10 SEP Power Feed and Primary Switchgear Upgrades	23-Jun-14	18-Jun-24
CWWSIPSE11 SEP Oxygen Generation Plant 01	01-Apr-16	21-Nov-19
CWWBAE01 Biofuel Alternative Energy	01-Jul-11	31-Mar-16
Oceanside Plant (OSP) Improvements	13-Jun-13	31-Dec-24
CWWSIPTPOP01 OSP Fine Screen and Grit Removal Enhancements	01-Jul-13	20-Nov-15
CWWSIPTPOP02 Westside Pump Station Reliability Improvements	13-Jun-13	31-Dec-24
CWWSIPTPOP03 OSP Digester Gas Utilization Upgrade	01-Oct-13	14-Sep-22
CWWSIPTPOP04 Westside Pump Station Redundant Force Main Improv	02-Jan-14	29-Jan-16
CWWSIPTPOP05 OSP Condition Assessment Repairs	31-Jul-14	31-Dec-20
CWWSIPTPOP06 OSP Odor Control Optimization	31-Jul-14	05-Feb-20
North Point Facility (NPF) Improvements	22-May-13	29-Dec-23
CWWSIPTPNP01 Northpoint Outfall Refurbishment	22-May-13	31-Oct-18
CWWSIPTPNP02 North Shore Pump Station Wet Weather Improvements	15-Aug-13	29-Dec-23
Collection System	01-Jul-11	30-Jun-26
Central Bayside System Improvement Project (CBSIP)	02-Jul-12	30-Jun-21
CWWSIPCT01 Central Bayside System Improvement Project - Phase 1	02-Jul-12	30-Jun-21
Interceptors / Tunnels and Odor Control	25-Mar-13	29-Dec-23
10033745 Mission Street, 16th to Cesar Chavez Streets, Brick Sewer Reh	02-Jul-18	22-Nov-22
CWWSIPCSSR01 Richmond Transport Modeling	25-Mar-13	30-Jun-14
CWWSIPCSSR02 Collection System Condition Assessment	09-May-13	31-Mar-21
CWWSIPCSSR03 Kansas and Marin Streets Sewer Improvements	10-Jun-13	29-Dec-23
CWWSIPCSSR09 Drumm and Jackson Streets Sewer System Improveme	26-May-15	31-Dec-20
CWWSIPCSSR11 Cargo Way Sewer Box Odor Reduction	13-Apr-15	30-Dec-22
CWWSIPCSSR12 Rutland Sewer Improvements	30-Oct-17	21-Sep-18
Interdepartmental Projects	01-Oct-13	30-Sep-24
10033106 Geary BRT Sewer Improvements Phase 2	15-Mar-18	29-Dec-23



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

Appendix 2.1 Sewer System Improvement Program (SSIP) - Approved Project-Level Schedules

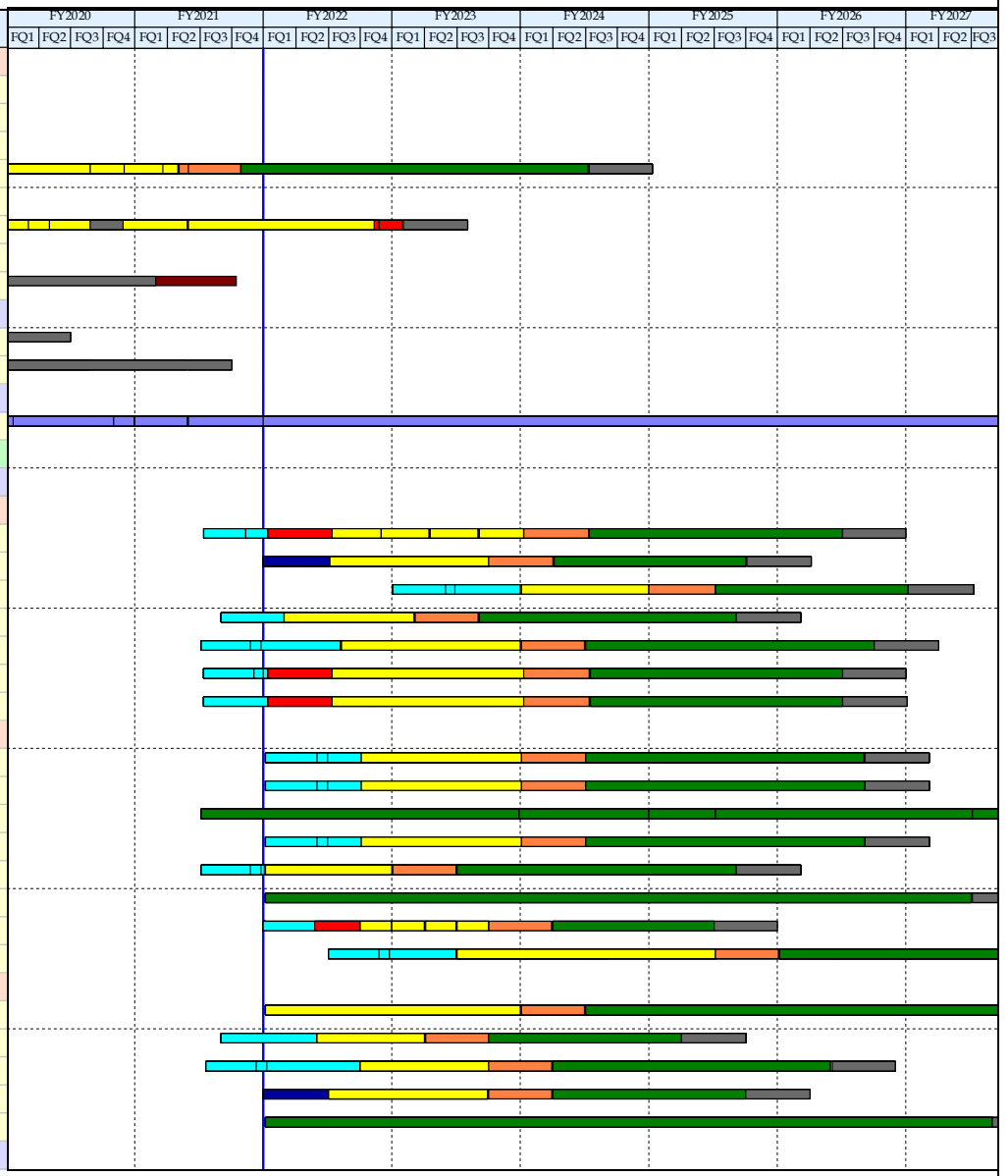
Project Name	Start	Finish
CWWSIPCSSR04 Van Ness BRT Sewer Improvements	01-Oct-13	30-Dec-21
CWWSIPCSSR05 Better Market Street Sewer Improvements - Phase 1	06-Jan-14	30-Sep-24
CWWSIPCSSR06 Geary BRT Sewer Improvements Phase 1	06-Jan-14	12-Jul-21
CWWSIPCSSR07 Central Subway Sewer Improvements	06-Jan-14	28-Jun-19
CWWSIPCSSR08 Mission Bay Loop Sewer Improvement	02-May-14	30-Dec-21
CWWSIPCSSR10 Masonic Avenue Sewer Improvements	27-Oct-14	28-Jun-19
CWWSIPCSSR13 Taraval Sewer Improvements	14-Mar-16	29-Dec-23
Pump Stations and Forcemain Improvements	29-May-12	30-Dec-22
CWWSIPCSPS01 Hudson Ave Pump Station and Outfall Improvements	31-Mar-14	31-Oct-17
CWWSIPCSPS02 Force Main Rehab at Embarcadero and Jackson Streets	07-Jul-14	29-Sep-22
CWWSIPCSPS03 Mariposa Dry-Weather Pump Station & Force Main Im	01-Jul-14	30-Dec-22
CWWSIPCSPS04 Cesar Chavez Pump Station	08-Sep-14	26-May-16
CWWSIPCSPS05 Marin Street Sewer Replacement	01-Jul-15	23-Jan-20
CWWSIPCSPS06 Griffith Pump Station Improvements	14-Mar-16	30-Sep-21
CWWSIPNC01 North Shore to Channel F M Drainage Improvement	29-May-12	06-Jun-17
Combined Sewwer Discharge (CSD) and Transport/Storage Structures	01-Jun-15	30-Sep-22
CWWSIPCSCD01 Richmond Transport/Storage Tunnel Rehabilitation	01-Jun-15	31-Dec-20
CWWSIPCSCD02 Baker/Laguna/Pierce CSD & Outfall	29-Jun-15	20-Nov-15
CWWSIPCSCD03 Beach and Sansome Street CSD Rehabilitation	14-Mar-16	31-Aug-21
CWWSIPCSCD04 CSD Backflow Prevention and Monitoring	25-Jul-16	30-Sep-22
CWWSIPCSCD05 5th, North 6th and Division Street CSD Rehabilitation	01-Jul-16	31-Aug-21
Stormwater Management	01-Jul-11	30-Jun-26
CWWLID01 Cesar Chavez Green Infrastructure	01-Apr-13	28-Jun-13
CWWSIPLID02/FCDB09 Islais Creek Green Infrastructure	04-Sep-12	24-Apr-18
CWWSIPFCDB01 Sunset Green Infrastructure	03-Dec-12	30-Sep-21
CWWSIPFCDB02 North Shore Green Infrastructure	03-Dec-12	31-Dec-18
CWWSIPFCDB03 Lake Merced Green Infrastructure	03-Dec-12	24-Apr-18
CWWSIPFCDB04 Sunnydale Green Infrastructure	03-Dec-12	30-Sep-19
CWWSIPFCDB05 Richmond Green Infrastructure	03-Dec-12	30-Jun-21
CWWSIPFCDB06 Yosemite Green Infrastructure	03-Dec-12	30-Jun-26
CWWSIPFCDB08 Channel Green Infrastructure	21-Feb-14	31-Aug-18
CWWSIPFCGI01 Watershed Stormwater Management (Planning Only)	11-Jul-16	30-Jun-22
CWWSIPUW00 Urban Watershed Assessment and Planning Initiation	01-Jul-11	28-Jun-13
CWWSIPUW01 Urban Watershed Assessment and Planning	07-Oct-11	30-Jun-17
CWWSIPUW02 Fulton St Sewer	01-Jul-11	31-Oct-12
CWWSIPUW03 Lake Merced Drainage	01-Jul-11	31-Oct-12
CWWSIPUW04 Major Trunk Sewers	01-Jul-11	31-Oct-12
CWWSIPFCRP01 Advanced Rainfall Prediction - Part 1	01-Apr-13	29-Jun-18
CWWSIPFCRP02 Operational Decision System Phase 1	01-Aug-13	30-Sep-16
CWWSIPFCRP03 Operational Decision System Phase 2	01-Feb-17	30-Sep-25



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

Appendix 2.1 Sewer System Improvement Program (SSIP) - Approved Project-Level Schedules

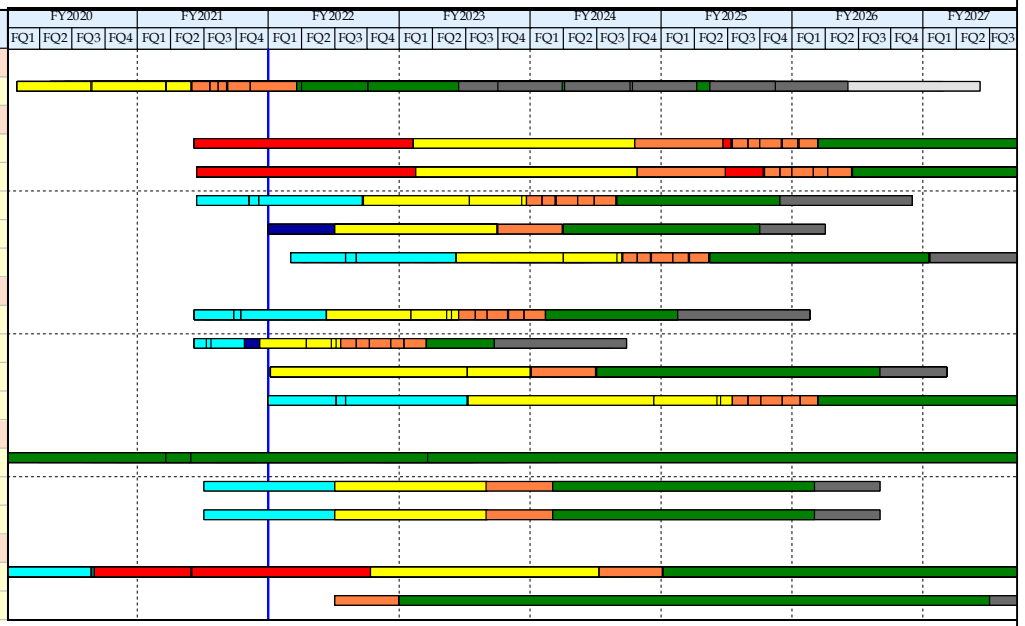
Project Name	Start	Finish
Flood Resilience Projects	01-Apr-13	08-Jul-24
CWWSIPFCDB07 17th and Folsom Wet Weather Storage	01-Apr-13	06-May-16
CWWSIPFCDB10 Flood Resilience Analysis (Planning Phase Only)	30-Jun-15	28-Feb-17
CWWSIPFCDB11 Flood Resilience - Early Projects (Planning Phase Only	26-Oct-15	30-Dec-16
CWWSIPFCDB12 Wawona Area Stormwater Improvement Project	01-Jul-16	08-Jul-24
CWWSIPFCDB13 Cayuga Ave Stormwater Detention Project	01-Jul-16	29-Mar-19
CWWSIPFCDB14 Folsom Area Stormwater Improvement Project	01-Jul-16	31-Jan-23
CWWSIPFCDB15 17th and Folsom Permanent Barriers	20-May-16	29-Mar-19
CWWSIPFCDB16 Hydraulic and Drainage Sewer Improvements	01-Jul-16	15-Apr-21
Land Reuse Projects	17-Sep-13	31-Mar-21
CWWSIPPRPL91 Land Reuse of 1800 Jerrold Avenue	17-Sep-13	31-Dec-19
CWWSIPPRPL92 Land Reuse of 1801 Jerrold Avenue	30-Sep-13	31-Mar-21
SSIP Program Management	01-Sep-11	31-Aug-27
CWWSIPPL01, PRPL01 SSIP Progam Management	01-Sep-11	31-Aug-27
Other SSIP	01-Jul-18	26-Dec-29
Treatment Facility Projects	04-Jan-21	06-Jul-29
Southeast Plant (SEP) Improvements	04-Jan-21	07-Jan-27
SEP-1 SEP 550 Booster PS Condition Inspection & Interim	12-Jan-21	30-Jun-26
SEP-2 SEP, Booster PS, & BFS Security Enhancements	01-Jul-21	02-Oct-25
SEP-3 Oxygen Generation (SEP 275) Reliability Upgrades	05-Jul-22	07-Jan-27
SEP-4 SEP Facilities Interim H&S Imp (SEP 850 & 930)	01-Mar-21	05-Sep-25
SEP-5 Primary Treatment (SEP 040/041) H&S Improvements	04-Jan-21	30-Sep-26
SEP-8 SEP Condition Improvement Projects - Part 1	12-Jan-21	30-Jun-26
10037331 Maintenance Building (SEP 940) Interim Improvement	12-Jan-21	02-Jul-26
Oceanside Plant (OSP) Improvements	04-Jan-21	06-Jul-29
OSP-2 Solids Thickening (OSP 011) Process Upgrade	06-Jul-21	03-Sep-26
OSP-3 OSP Plant-wide Ventilation (HVAC) Upgrades	06-Jul-21	03-Sep-26
10036398 OSP Condition Improvement Projects - Part 2	04-Jan-21	06-Jul-29
OSP-5 OSP Odor Control Upgrades	06-Jul-21	03-Sep-26
OSP-7 Admin Bldg (OSP 930) Health & Safety Improvements	04-Jan-21	04-Sep-25
OSP-8 OSP DCS Upgrade (Construction)	06-Jul-21	02-Jul-27
10037777 OSP & WSPS Security Enhancements	01-Jul-21	30-Jun-25
OSP-11 Gaseous Oxygen System (OSP 011) Upgrades	03-Jan-22	07-Mar-28
North Point Facility (NPF) Improvements	19-Jan-21	01-Sep-28
NPF-1 Sedimentation (NPF 040/041) Tanks Condition Improvements	06-Jul-21	01-Sep-28
NPF-2 Admin Bldg (NPF 930) Evaluation & Interim H&S Improvements	01-Mar-21	31-Mar-25
NPF-3 Dechlorination Process (NPF 500) Evaluation & Interim Rehab	19-Jan-21	29-May-26
10037904 NPF & NSS Security Enhancements	01-Jul-21	29-Sep-25
NPF-6 NPF DCS Upgrades (Construction)	06-Jul-21	02-Sep-27
Collection System	01-Jul-18	26-Dec-29



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

Appendix 2.1 Sewer System Improvement Program (SSIP) - Approved Project-Level Schedules

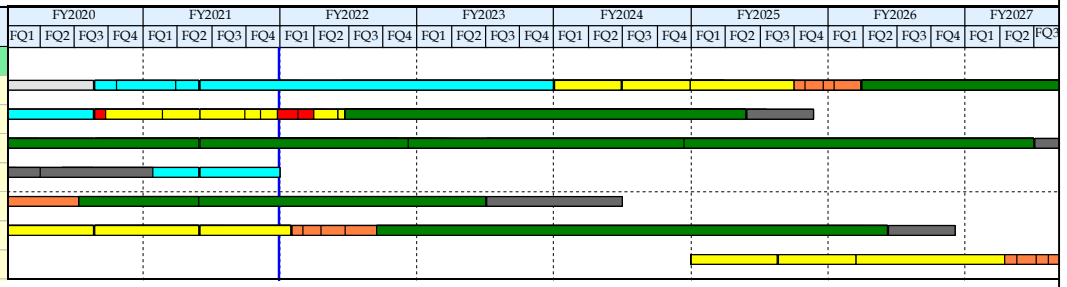
Project Name	Start	Finish
Interceptors / Tunnels and Odor Control	01-Aug-19	07-Dec-26
10034718 Large Sewer Improvements	01-Aug-19	07-Dec-26
Pump Stations and Forcemain Improvements	07-Dec-20	26-Dec-29
PS-1 Seacliff No. 1 PS & FM Upgrade	07-Dec-20	26-Dec-29
PS-2 Seacliff No. 2 PS & FM Upgrade	14-Dec-20	21-Sep-29
PS-3 Sunnydale PS Safety Improvements	14-Dec-20	29-May-26
PS-4 Pump Station Security Upgrades (Cesar Chavez, Griffith, Channel, &	01-Jul-21	30-Sep-25
PS-5 Geary Underpass PS Safe Access Enhancements	01-Sep-21	21-Jul-27
Combined Sewwer Discharge (CSD) and Transport/Storage Structures	07-Dec-20	20-Sep-28
CSD-1 Brannan (019) CSD Gate & Baffle Rehab	07-Dec-20	18-Aug-25
CSD-2 Baker (009) Baffle Improvements	07-Dec-20	26-Mar-24
CSD-3 System-wide CSD & T/S Monitoring Equipment Assessment	06-Jul-21	03-Sep-26
CSD-4 CSD Structure Rehab & Upgrades - Part 1	01-Jul-21	20-Sep-28
Stormwater Management	01-Jul-18	30-Jun-29
10034553 Green Infrastructure Grant Program	01-Jul-18	30-Jun-29
GI-1 Balboa High School Regional Runoff Reduction Project	01-Jan-21	01-Mar-26
GI-3 Regional School/Park: Giannini Middle School	01-Jan-21	01-Mar-26
Flood Resilience Projects	02-Jan-19	13-Mar-28
10034360 Lower Alemany Area Stormwater Improvement Project	02-Jan-19	13-Mar-28
FR-1Folsom Area Stormwater Imp. Project Phase 2	03-Jan-22	30-Jun-27



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

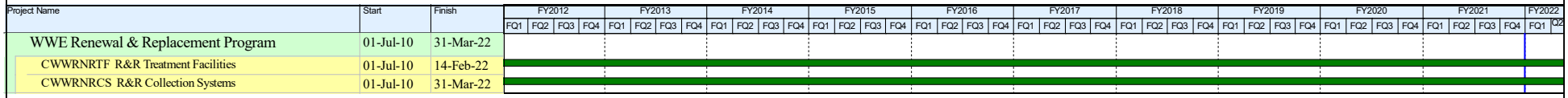
APPENDIX 2.2. WWE F&I Project-Level Approved Schedule

Project Name	Start	Finish
WWE Facilities and Infrastructure Program	01-Jan-11	29-Jan-32
10033820 Southeast Outfall Condition Assessment & Rehabilitatio	01-Jul-19	01-Apr-30
CWP11001 New Treasure Island Wastewater Treatment Plant	01-Jan-11	23-May-25
CWWFAC01 Ocean Beach Climate Change Adaptation Project	23-Jul-12	01-Jul-27
CWWFAC02 Collection Division Consolidation (Griffith Yard Impr	01-Mar-13	30-Jun-21
CWWFAC03 Southeast Community Center @ 1550 Evans	26-Jul-12	29-Dec-23
CWWFAC04 Southeast Bay Outfall Islais Creek Crossing Replacen	26-Sep-16	03-Jun-26
SWOO Southwest Ocean Outfall (SWOO)	01-Jul-24	29-Jan-32



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

APPENDIX 2.3. WWE R&R Project-Level Approved Schedule



Project Management
Environmental
Bid & Award
Construction
Planning
Design
Construction Mgmt
Closeout

APPENDIX 3. LIST OF ACRONYMS

AAR	Alternative Analysis Report
ACOE	Army Corps of Engineers (also shown as USACE)
ACT	Authority To Construct
ADA	Americans with Disabilities Act
ADEIR	Administrative Draft Environmental Impact Report
AGM	Assistant General Manager
BAAQMD	Bay Area Air Quality Management District
BCDC	Bay Conservation and Development Commission
BDFP	Biosolids Digester Facilities Project
BEM	Bureau of Environmental Management
BFS	Bruce Flynn Pump Station
BMS	Better Market Street
BRT	Bus Rapid Transit
CAB	Contract Administration Bureau
Caltrans	California Department of Transportation
CATEX	Categorical Exemption
CBSIP	Central Bayside System Improvement Project
CCSF	City and County of San Francisco
CCTV	Closed-Circuit Television
CEQA	California Environmental Quality Act
CER	Conceptual Engineering Report
CHS	Channel (Street) Pump Station
CIP	Capital Improvement Program; Cast-Iron Pipe
CM/GC	Construction Manager/General Contractor
COVID-19	Coronavirus Disease of 2019
CPAS	Combined Primary Activated Sludge
CPMC	California Pacific Medical Company
CSAMP	Collection System Asset Management Program
CSD	Combined Sewer Discharge
CTLS	Channel Tunnel Lift Station
DCS	Distributed Control System
DIP	Ductile Iron Pipe
DW	Dry Weather
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMMS	Energy Monitoring and Management System
EPA	Environmental Protection Agency
F&I	Facilities and Infrastructure
FAT	Factory Acceptance Testing
FC	Final Completion
FEMA	Federal Emergency Management Agency
FOG	Fats, Oils, and Grease
FTA	Federal Transit Administration
FY	Fiscal Year
GBT	Gravity Belt Thickener
GFS	Griffith Pump Station
GGNRA	Golden Gate National Recreation Area
GI	Green Infrastructure
GIGP	Green Infrastructure Grant Program
GOX	Gaseous Oxygen
GPS	Griffith Pump Station
HDPE	High Density Polyethylene
HMI	Human Machine Interface
HPO	High Purity Oxygen
HSW	High-Strength Waste
HVAC	Heating, Ventilation and Air Conditioning
I&C	Instrumentation and Controls
I&I	Infiltration and Inflow
IC	Internal Combustion
ICM	Integrated Catchment Model
ICT	Islais Creek Transport/Storage
IKG	Inedible Kitchen Grease
ISP	Iron Stone Pipe
JOC	Job Order Contract
JST	Jackson Street Transport/Storage Box
KV	Kilovolt
LBE	Local Business Enterprise
LED	Light-Emitting Diode
LF	Linear Feet
LID	Low Impact Development
LOS	Levels of Service
LOX	Liquid Oxygen
LTI	Long-term Improvements
MCC	Motor Control Center
MDF	Main Distribution Frame
MG	Million Gallons
MGD	Million Gallons per Day

MND	Mitigated Negative Declaration
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPM	Minor Project Modification
MPS	Mariposa Pump Station
MTA	Municipal Transportation Agency (also shown as SFMTA)
MTBM	Micro-Tunnel Boring Machine
MV PDS	Medium Voltage Power Distribution System
MW	Megawatt
N/A	Not Applicable
NAR	Needs Assessment Report
NEG DEC	Negative Declaration (also shown as ND)
NOD	Notice of Determination
NPDES	National Pollutant Discharge Elimination System
NPF	Northpoint (Wet-Weather) Facility
NSCFM	North Shore to Channel Force Main
NSFM	North Shore Force Main
NSS	Northshore Pump Station (also shown as NSPS)
NTP	Notice to Proceed
O&M	Operations and Maintenance
OBMP	Ocean Beach Master Plan
OCA	Office of Contract Administration
OCU	Odor Control Unit
ODS	Operational Decision System
OEM	Operations, Engineering, and Maintenance
Ops	Operations
OSP	Oceanside Water Pollution Control Plant
OSWPCP	Oceanside Water Pollution Control Plant
PLC	Programmable Logic Controller
PM	Program Management; Project Manager
PMC	Program Management Consultant
PS	Pump Station
PUC	Public Utilities Commission
QA	Quality Assurance
QC	Quality Control
QSO	Quint Street Outfall
R&R	Renewal and Replacement (also shown as RnR)
RCP	Reinforced Concrete Pipe
RFP	Request for Proposal
RFQ	Request for Qualification
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SELS	Southeast Lift Station
SEP	Southeast Plant; Southeast Water Pollution Control Plant
SEWPCP	Southeast Water Pollution Control Plant
SF	San Francisco
SFCTA	San Francisco County Transportation Authority
SFMTA	San Francisco Municipal Transportation Agency (also shown as MTA)
SFPORT	Port of San Francisco
SFPUC	San Francisco Public Utilities Commission
SFPW	San Francisco Public Works (formerly SFDPW)
SFRPD	San Francisco Recreation & Parks Department (also shown as RPD)
SFUSD	San Francisco Unified School District
SSIP	Sewer System Improvement Program
SSMP	Sewer System Master Plan
STATEX	Statutory Exemption
STI	Short-term Improvements
SWOO	Southwest Ocean Outfall
T/S	Transport and Storage
TAP	Transient Analysis Program
TBD	To be determined
TBL	Triple Bottom Line
TICD	Treasure Island Community Development
TIDA	Treasure Island Development Authority
TM	Technical Memorandum
TPD	Tons Per Day
TSC	Technical Steering Committee
UPS	Uninterruptable Power Supply
USEPA	United States Environmental Protection Agency
UWA	Urban Watershed Assessment
VCP	Vitrified Clay Pipe
VFD	Variable Frequency Drives
VPSA	Vacuum Pressure Swing Adsorption
VWS	Vactor Waste Station

WSPS	West Side Pump Station (also shown as WSS)
WSS	Westside Pump Station (also shown as WSPS)
WWE	Wastewater Enterprise
WWE CIP	Wastewater Enterprise Capital Improvement Program
WWTP	Wastewater Treatment Plant

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