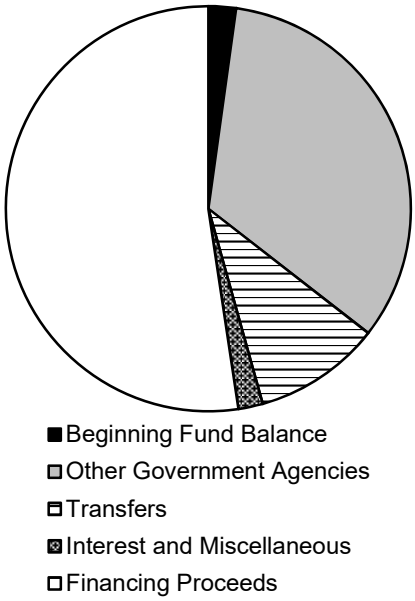
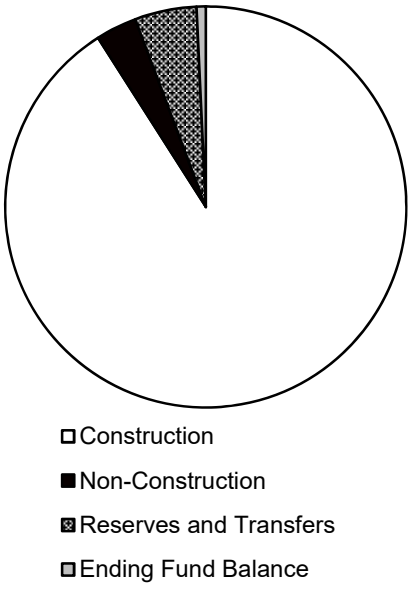
WATER POLLUTION CONTROL
2020-2024 Capital Improvement Program

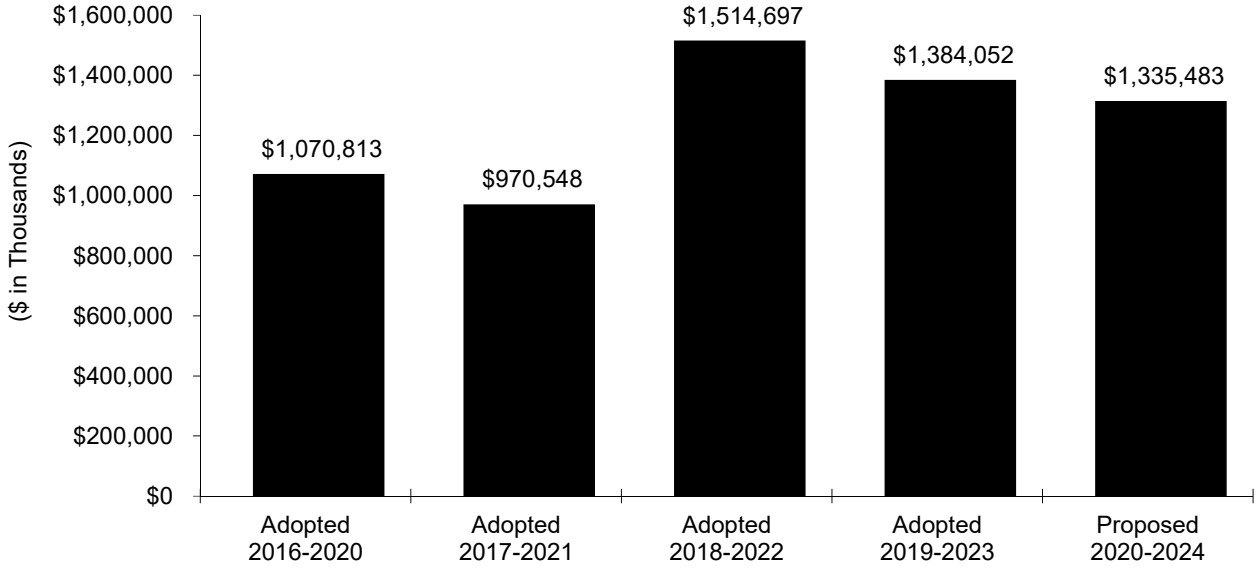
2019-2020 Proposed Source of Funds



2019-2020 Proposed Use of Funds



CIP History



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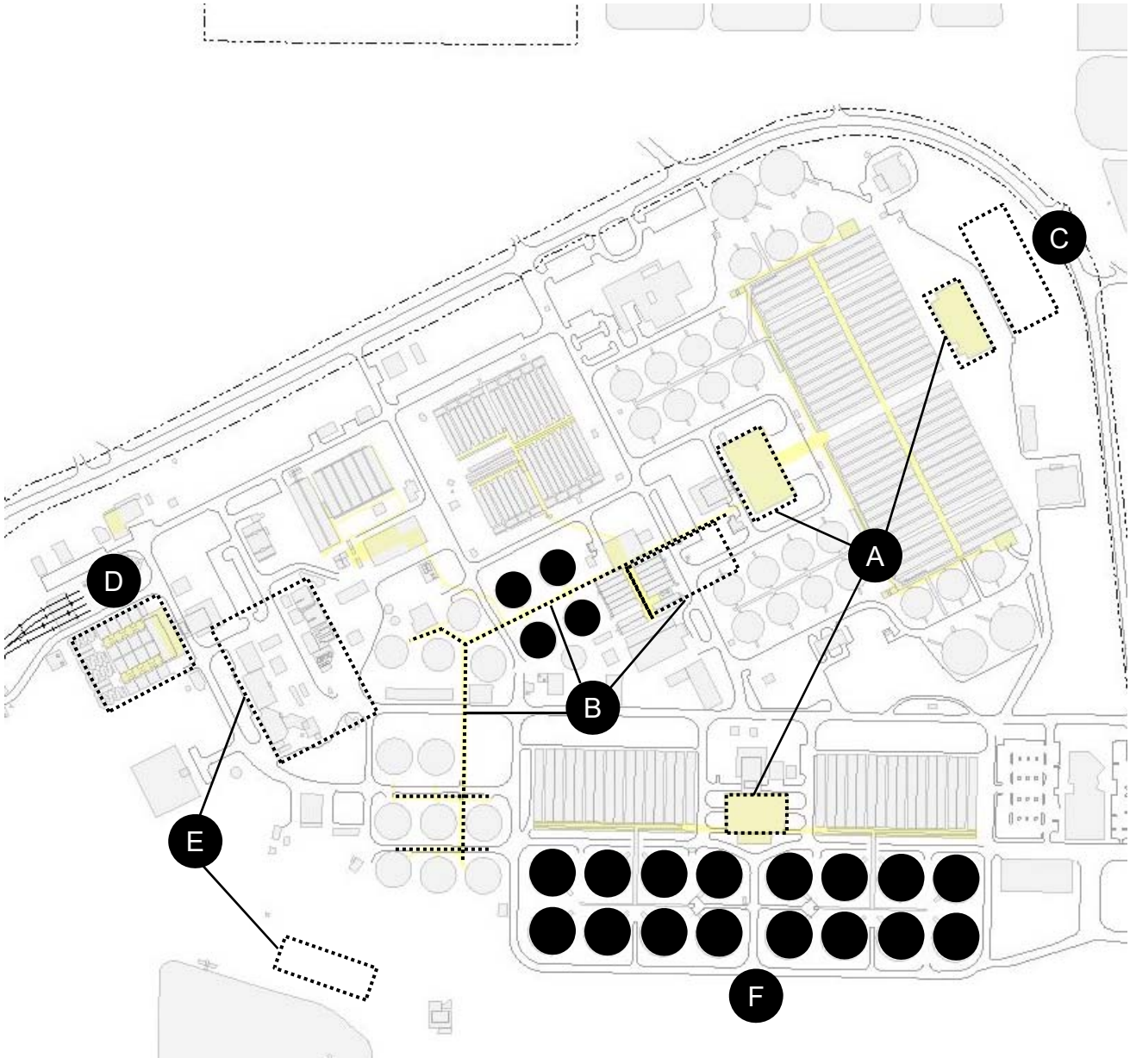
Water Pollution Control

2020-2024 Proposed Capital Improvement Program*

Major Projects

A) Aeration Tanks and Blower Rehabilitation (Blower Improvements)
B) Digester and Thickener Facilities Upgrade
C) Energy Generation Improvements (Cogeneration Facility)
D) Filter Rehabilitation
E) Headworks Improvements and New Headworks
F) Nitrification Clarifier Rehabilitation



* Includes only the first set of projects to be in construction at the Plant. Please see the Source & Use for a full project listing.

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Water Pollution Control Capital Program

2020-2024 Proposed Capital Improvement Program

Overview

INTRODUCTION

PLANT INFRASTRUCTURE	
ACRES OF LAND	2,684
AVERAGE DRY WEATHER INFLUENT CAPACITY (MILLIONS OF GALLONS PER DAY)	167
AVERAGE DRY WEATHER INFLUENT FLOW (MILLIONS OF GALLONS PER DAY)	107
DRY METRIC TONS OF BIOSOLIDS HAULED EACH YEAR	43,500
AVERAGE MEGAWATTS PRODUCED	5.6

The San José-Santa Clara Water Pollution Control Plant (Plant) is a regional wastewater treatment facility serving eight South Bay cities and four special districts including: San José, Santa Clara, Milpitas, Cupertino Sanitary District (Cupertino), West Valley Sanitation District (Campbell, Los Gatos, Monte Sereno, and Saratoga), County Sanitation Districts 2-3 (unincorporated), and Burbank Sanitary District (unincorporated). The Plant is jointly owned by the cities of San José and Santa Clara and is administered and operated by the City of San José's Environmental Services Department (ESD). ESD is also responsible for planning, designing, and constructing capital improvements at the Plant, including water reuse facilities. On March 26, 2013, the City Council approved to change the name of the Plant to the San José-Santa Clara Regional Wastewater Facility (RWF) for use in public communications and outreach.

The 2020-2024 Proposed Capital Improvement Program (CIP) provides funding of $1.3 billion, of which $339.2 million is allocated in 2019-2020. The five-year CIP is developed by City staff, reviewed by the Treatment Plant Advisory Committee (TPAC), and approved by the San José City Council. The budgeted costs are allocated to each agency based on its contracted-for capacity in the Plant. Each agency is responsible for its allocated share of Plant costs, as well as the operation, maintenance, and capital costs of its own sewage collection system; debt service on bonds issued by the agency for sewer purposes; and any other sewer service related costs. Each agency is also responsible for establishing and collecting its respective sewer service and use charges, connection fees, or other charges for sewer service.

This program is part of the Environmental and Utility Services City Service Area (CSA) and supports the following outcomes: *Reliable Utility Infrastructure* and *Healthy Streams, Rivers, Marsh, and Bay.*

PROGRAM PRIORITIES AND OBJECTIVES

The 2020-2024 Proposed CIP is consistent with the goals and policies outlined in the City's Envision San José 2040 General Plan. These include maintaining adequate operational capacity for wastewater treatment to accommodate the City's economic and population growth; adopting and implementing new technologies for wastewater to achieve greater safety, energy efficiency, and environmental benefit; and maintaining and operating the Plant in compliance with all applicable local, state, and federal regulatory requirements.

Water Pollution Control Capital Program

2020-2024 Proposed Capital Improvement Program

Overview

PROGRAM PRIORITIES AND OBJECTIVES

The development of this Proposed CIP is guided by the Plant Master Plan (PMP), a 30-year planning-level document focused on long-term rehabilitation and modernization of the Plant. On April 19, 2011, the City Council approved a preferred alternative for the Draft PMP and directed staff to proceed with a program-level environmental review of the preferred alternative. In November 2013, the City Council approved the PMP and certified the final Environmental Impact Report. In December 2013, Santa Clara's City Council took similar actions.

San José-Santa Clara Regional Wastewater Facility

The PMP recommends more than 114 capital improvement projects to be implemented over a 30-year planning period at an estimated investment level of approximately $2 billion. The PMP assumed an implementation schedule of 2010 through 2040.

On September 24, 2013, the City Council approved a multi-year master services agreement with MWH Americas, Inc. for program management consultant services to assist with managing and implementing the RWF CIP[1]. By February 2014, the consultant program management team, along with City staff, completed a project validation process that included a review and prioritization of PMP projects, along with gap projects identified through discussions with Operations and Maintenance staff. The projects included with this Proposed CIP are based on the outcome of that project validation and the completion of various programmatic studies. On October 17, 2017, the City Council approved an amendment to extend the consultant program management services through 2023 to align with the implementation of the ten-year capital program.

Program priorities for the near term include: obtaining long-term financing (for San José only); continuing to build operating reserves needed for bond issuance; continuing to prioritize projects based on criticality and staffing resources; and actively managing project risks and variables to inform timing and amount of major encumbrances.

Program Funding: Since early 2014, staff has been working with representatives from the City of Santa Clara and the tributary agencies to develop a ten-year funding strategy for the CIP. On May 14, 2015, TPAC recommended approval of, and on June 2, 2015, the City Council approved the Ten-Year Funding Strategy. An update on the Ten-Year Funding Strategy was recommended for approval by TPAC on December 10, 2015 and approved by the City Council on January 12, 2016.[2] The staff reports are available online.[3]

[1] Effective January 1, 2017, MWH Americas, Inc. was acquired and merged with Stantec Consulting Services, Inc.
[2] January 12, 2016 Memo: http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2118&meta_id=550326
[3] June 2, 2015 Memo: http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=732&meta_id=516433

PROGRAM PRIORITIES AND OBJECTIVES

In August 2017, staff provided an update on Clean Water State Revolving Fund (SRF) funding to the City Council, which included news that the State Water Resources Control Board (SWRCB) would not be funding the Digester and Cogeneration projects. Staff will continue to monitor the issue and evaluate further SRF opportunities as appropriate. However, based on the City's recent experience with this program, unless significant changes are made to the funding level, program priorities, program resources, and loan agreement terms, SRF loans do not appear to be a potential source of funding for the RWF CIP.

In October 2017, the City Council approved the establishment of a $300 million interim financing facility to finance San José's portion of the capital costs. As the CIP progresses, the City will periodically pay off the interim financing facility with long-term bonds. This strategy provides funding for the CIP at the lowest possible cost with the least amount of risk. The 2020-2024 Proposed CIP assumes the issuance of long-term bonds in 2020-2021 and the establishment of a second interim financing facility in 2022-2023.

Program/Project Delivery and Implementation: Successful delivery of this large, multi-disciplinary CIP requires an integrated team of City staff, outside consultants, and contractors. The program continues to operate under an integrated project delivery model using a combination of City staff and consultants. The program is being delivered using a mix of City staff from the Environmental Services Department, the Public Works Department, the Planning, Building and Code Enforcement Department, the Finance Department, and the City Attorney's Office, as well as program management consultant staff and various other consultant firms.

With more than two dozen large projects moving through the feasibility/development and design development phases, the program will need to continue to draw from the professional consultant and/or contractor community for program management, project management, subject-matter technical expertise, engineering design, and construction management services. Staff has implemented an owner-controlled insurance program (OCIP), a design and construction management document system (EADOC), and a Building Official Program to support the volume of ongoing and upcoming construction activity.

Developing a construction management resourcing model and plan is a top priority for the 2020-2024 Proposed CIP, with a ramp up in large-scale construction projects expected in 2019-2020 and 2020-2021 that require additional construction management support from Public Works and/or third-party construction managers.

PROGRAM PRIORITIES AND OBJECTIVES

Program/Project Delivery Variables: The program team continues to develop and refine project schedules and budgets and implement regular reporting and centralized document management systems for consistent and efficient program and project delivery. The program team continues to work on developing standardized project delivery tools, design standards and specifications, control system and integration strategies, startup, commissioning, and training.

On the project delivery front, it is important to recognize that many projects in the Proposed CIP are in the feasibility/development or design phases. Staff will continue to develop and refine project scope, schedules, and budgets as the projects progress through scoping, preliminary engineering, detailed design, and bid award. To the extent possible, staff will continue to monitor and implement mitigation measures to minimize impacts to project delivery schedule and cost caused by various factors such as changes in project delivery staffing resources, long lead time items, external permit reviews and approvals, and construction bidding climate.

A number of program tools and resources will be used to counter potential impacts to the overall program delivery; these include employing a program risk and interface manager, program safety officer, and construction coordinator to address project interface issues during design and construction, obtaining local professional cost estimating services, scheduling regular meetings with regulatory and permitting entities, and continuing to implement the CIP Program Delivery Model (PDM) stage gate approvals.

In addition, staff will continue to apply the lessons learned from large construction projects, like the Digester and Thickener Facilities Upgrade project, to future projects. This includes proactively performing subsurface utility investigations, condition assessments, process shutdown verifications, and hazardous materials investigations.

SOURCES OF FUNDING

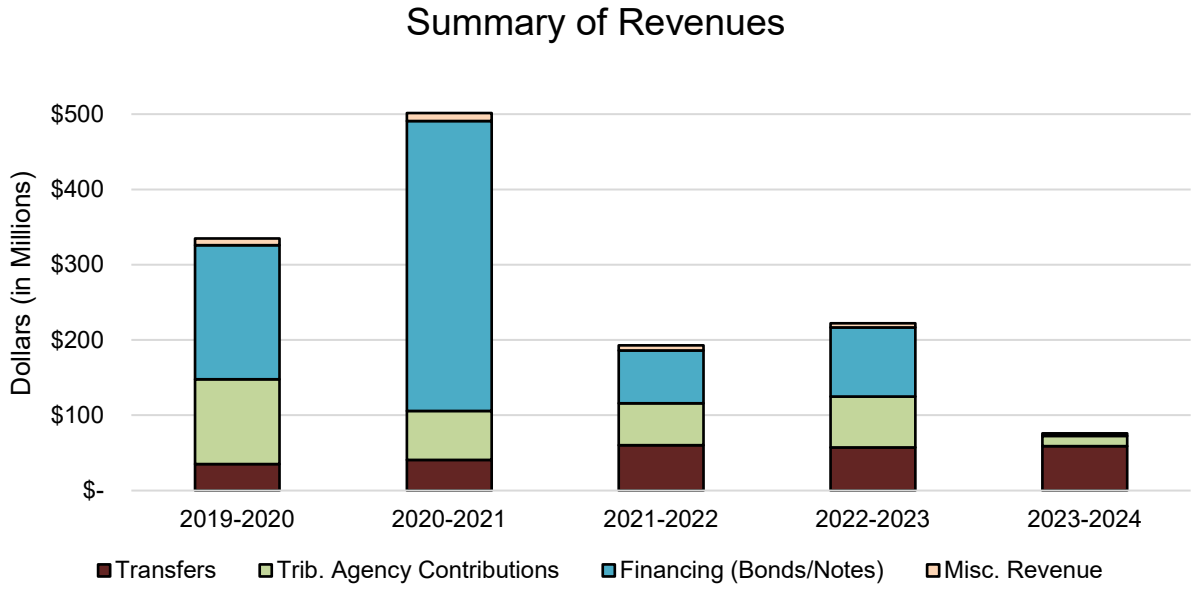
Revenues for the 2020-2024 Proposed CIP are derived from several sources: transfers from the City of San José Sewer Service and Use Charge (SSUC) Fund and Sewage Treatment Plant Connection Fee Fund; contributions from the City of Santa Clara and other tributary agencies; interest earnings; Calpine Metcalf Energy Center Facilities repayments; a federal grant from the U.S. Bureau of Reclamation; and debt-financing proceeds.

The SSUC Fund derives its revenues from fees imposed on San José users of the residential, commercial, and industrial sanitary sewer system. Transfers from this fund to the Plant CIP over the five years total $252.3 million, which represents a $37.4 million (17.4%) increase as compared to the 2019-2023 Adopted CIP.

SOURCES OF FUNDING

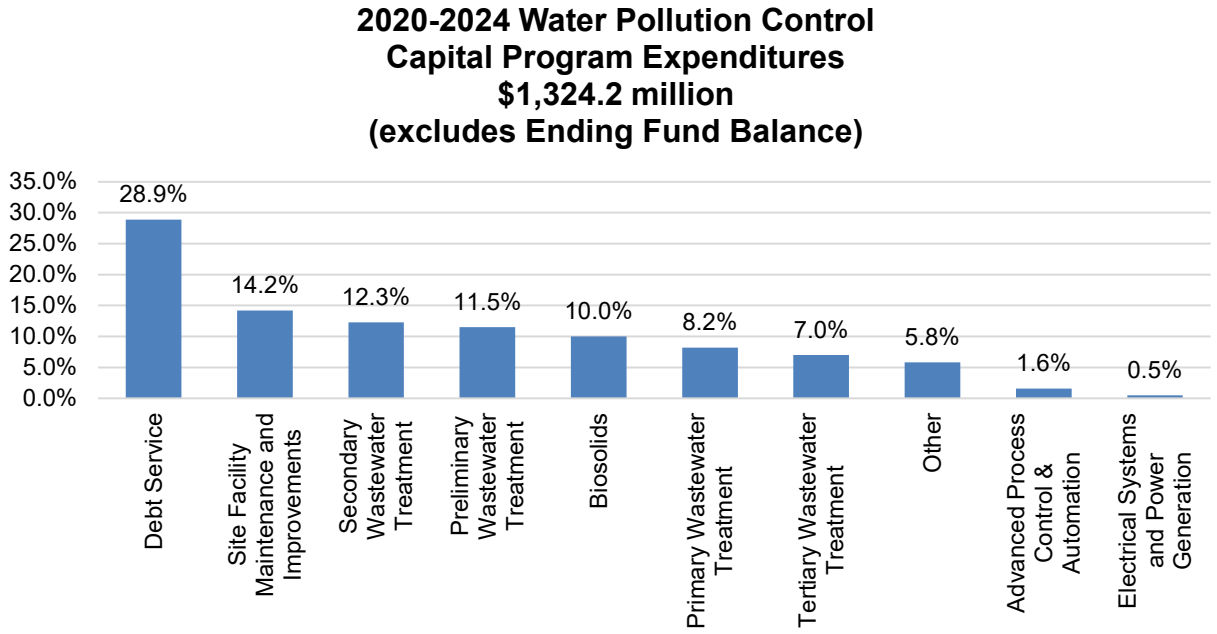
Contributions from the City of Santa Clara and other agencies are determined according to agreements with the participating agencies, based on financing plans, anticipated Plant expenditures, and the amount and characteristics of flows from each agency's connections to the Plant. These contributions reimburse the City for actual project expenditures. In this Proposed CIP, contributions from the City of Santa Clara and other agencies total $314.8 million, which represents a $2.5 million (0.8%) decrease compared to the 2019-2023 Adopted CIP.

To accommodate San José's portion of the project costs for the San José – Santa Clara Regional Wastewater Facility (RWF), wastewater revenue notes and bond proceeds are assumed to cover costs of the RWF improvements in the Proposed CIP for the 2019-2020 through 2023-2024 period. The establishment of an interim financing program, in the form of wastewater revenue notes, was approved in 2017-2018 and provides up to $300 million in interim financing capacity. The notes provide periodic, short-term, flexible funding to meet the cash flow needs of the RWF improvement project. Generally, the notes are repaid within a 3-year period and offer lower interest costs than fixed rate bonds. During this CIP period, bonds will be issued in the amount of $385 million to both repay the wastewater revenue notes issued since 2017-2018 and to cover other CIP project and financing costs. Associated debt service for the wastewater revenue notes and debt service for the bonds is estimated to be $2.6 million in 2019-2020, $4.3 million in 2020-2021, $29.1 million in 2021-2022, $26.0 million in 2022-2023, and $28.1 in 2023-2024. The estimated size of the debt financings and the related debt service are scheduled to cover external third-party capital costs programmed in the 2020-2024 Proposed CIP while avoiding large rate increases that would be required to fund the PMP in a "pay-as-you-go" scenario. City of San José staff costs will be cash-funded and not included in either the wastewater revenue notes program or long-term debt financing. Additional debt financing, in the form of notes and bonds, will likely be needed to fund project costs beyond the Proposed CIP period.



PROGRAM HIGHLIGHTS

The Water Pollution Control Capital Program's expenditures are organized to show the use of funds in several categories. The following highlights the major projects in the program. For further information on the program's individual projects, please refer to the Detail Pages.



Nitrification Clarifiers Rehabilitation

The Plant has 26 clarifiers associated with the secondary aeration basins (BNR1) and 16 clarifiers associated with the nitrification aeration basins (BNR2). These clarifiers, together with the aeration basins, form the biological treatment process and function to remove organics from the wastewater. The 16 BNR2 clarifiers are divided into Batteries A and B, and were constructed in the 1970s and 1980s. Each clarifier is a circular reinforced concrete tank measuring 140 feet in diameter and approximately 16 feet deep and containing major mechanical components. Two motor control centers provide power to the clarifiers.

Clarifier Interior and Mechanism

PROGRAM HIGHLIGHTS

Nitrification Clarifiers Rehabilitation (continued)

Condition assessments have shown that many components of the clarifiers are nearing the end of their useful life. The project will rehabilitate the clarifiers and supporting infrastructure to ensure continued operational reliability and efficiency, as well as regulatory compliance, for the next 30 years. The project will be completed in two phases.

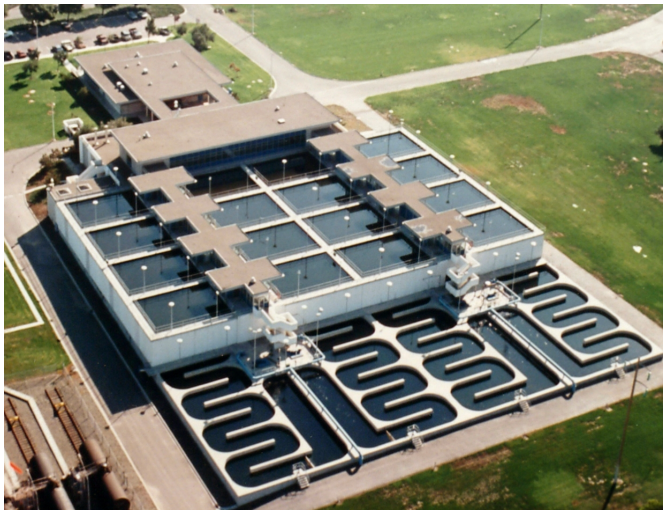
The first phase will replace clarifier mechanisms and appurtenances for eight clarifiers, modify service water system and add wash water piping and hose bibs, repair concrete clarifier walls and slabs, replace drain valves and return activated sludge (RAS) valves serving A-side and B-side clarifiers, rehabilitate clarifier basin groundwater pressure relief valves for the 16 clarifiers, rehabilitate up to eight RAS pipelines, install six groundwater monitoring wells, replace two mixed liquor channel sluice gates, and replace electrical and instrumentation and control equipment for all 16 clarifiers.

The second phase will rehabilitate the remaining eight clarifiers and up to eight of the remaining RAS pipelines.

The 2020-2024 Proposed CIP allocates $91.2 million for design, construction, contingency, and project management costs. The estimated total project cost is $99.8 million, based on 60% design completion. Construction award of Phase 1 is expected in late 2019 and construction completion is anticipated in 2021-2022. Construction award of Phase 2 is expected in early 2022 and construction is anticipated to be finished in 2024-2025.

Filter Rehabilitation

The Plant currently has a tertiary filtration unit process which consists of 16 granular media filters and associated ancillary equipment. The filtration process is one of the final treatment steps at the RWF that results in the production of effluent that is in compliance with the Plant's National Pollutant Discharge Elimination System ("NPDES") regulatory permit. Much of the filtration process and infrastructure were constructed in the 1970s and 1980s and is now in need of significant refurbishment. The Filter Rehabilitation project will rehabilitate the filter influent pump station, supplemental filter influent pump station, filter building, disinfection tanks, backwash equalization tanks, and backwash treatment tanks.



Aerial of Filter Building

PROGRAM HIGHLIGHTS

Filter Rehabilitation (continued)

These improvements will enable continued regulatory compliance and long-term operational reliability. In particular, this project will rehabilitate the structural, mechanical, electrical, and instrumentation/controls components of the filtration process.

The 2020-2024 Proposed CIP allocates $38.6 million for design, construction, contingency, and project management costs. The estimated total project cost is $45.7 million, based on 30% design completion. Construction award is expected in summer 2020 and construction completion is anticipated in 2022-2023.

MAJOR CHANGES FROM THE 2019-2023 ADOPTED CIP

The overall size of the Water Pollution Control CIP has decreased by $52.6 million from $1.38 billion in the 2019-2023 Adopted CIP to $1.33 billion in the 2020-2024 Proposed CIP. The following table outlines the most significant changes to project budgets, including new/augmented allocations and reduced/eliminated allocations.

Project Name	Incr/(Decr)
East Primary Rehabilitation, Seismic Retrofit, and Odor Control	$70.4 million
Nitrification Clarifiers Rehabilitation	$43.9 million
Debt Service Repayment for Plant Capital Improvement Projects	$18.6 million
Tunnel Rehabilitation	($26.1 million)
Additional Digester Upgrades	($51.6 million)
Aeration Tanks & Blower Rehabilitation	($54.2 million)

OPERATING BUDGET IMPACT

Several projects in this Proposed CIP are expected to introduce new operating costs to the Operating Budget. These include: Energy Generation Improvements, Digester and Thickener Facilities Upgrade, and Digested Sludge Dewatering Facility. The operation and maintenance impacts are due to chemical, labor, maintenance consumables (e.g. parts, oil), electrical, and hauling & tipping costs.

OPERATING BUDGET IMPACT

A new Cogeneration Facility (part of the Energy Generation Improvements project) is expected to come online in early 2020 that will introduce a new generator building, new engine generators, a gas treatment system, boilers, chillers, and other ancillary equipment. In addition, a new chilled water system pump station may be incorporated as part of the project.

Depending on the timing of when new facilities come online and existing facilities are decommissioned, there may be a temporary increase in operating costs due to the dual operations.

The Digester and Thickener Facilities Upgrade project will include a new chemical dosing station and new sludge screening facility. It is expected to be in operation by late 2020.

A new Digested Sludge Dewatering Facility is anticipated to be in operation by late 2022, which will include new mechanical dewatering units, feed tank, sludge storage, conveyance, and chemical dosing facilities to be housed in a new building. This facility will allow for the eventual retirement of the current lagoons and sludge drying beds expected to be completed in 2027.

Net operating cost impacts will continue to be evaluated and updated based on final design and operation configurations. The table below summarizes the operating and maintenance impact to the San Jose-Santa Clara Treatment Plant Operating Fund for several projects.

Net Operating Budget Impact Summary

	2020-2021	2021-2022	2022-2023	2023-2024
Digester and Thickener Facilities Upgrade	1,194,000	$2,122,000	$2,202,000	$2,285,000
Digested Sludge Dewatering Facility			7,941,000	12,251,000
Energy Generation Improvements	$89,000	$92,000	$95,000	$97,000
	$1,283,000	$2,214,000	$10,238,000	$14,633,000

Note: The estimated operating costs have been provided by the Environmental Services Department and have not yet been fully analyzed by the City Manager's Budget Office. That analysis may result in different costs when the actual budget for the year in question is developed.

Water Pollution Capital Program
2020-2024 Proposed Capital Improvement Program
Attachment A - Operating Budget Impact

	2020-2021	2021-2022	2022-2023	2023-2024
Water Pollution Capital Program				
Digested Sludge Dewatering Facility			$7,941,000	$12,251,000
Digester and Thickener Facilities Upgrade	$1,194,000	$2,122,000	$2,202,000	$2,285,000
Energy Generation Improvements	$89,000	$92,000	$95,000	$97,000
Total Water Pollution Capital Program	**$1,283,000**	**$2,214,000**	**$10,238,000**	**$14,633,000**

2019-2020 Capital Budget

2020-2024 Capital Improvement Program

Water Pollution Control

Source and Use of Funds Statements

Source of Funds (Combined)

	Estimated 2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	5-Year Total
San José-Santa Clara Treatment Plant Capital Fund (512)							
Beginning Balance	301,152	4,590,755	7,018,755	2,355,755	4,657,755	2,021,755	4,590,755 *
Reserve for Encumbrance	213,655,411						
Transfers							
Transfer for 2009 Debt Service from the Sewer Service and Use Charge Fund (541)	5,369,000	5,372,000	5,371,000				10,743,000
Transfer for Plant CIP Debt Service from Sewer Service and Use Charge Fund (541)	1,310,000	2,625,000	4,376,000	29,144,000	25,991,000	28,096,000	90,232,000
Transfer for Capital Projects from Sewer Service and Use Charge Fund (541)	27,000,000	27,000,000	30,000,000	30,000,000	30,000,000	30,000,000	147,000,000
Transfer for Equipment Replacement from Sewer Service and Use Charge Fund (541)			1,083,000	1,083,000	1,083,000	1,083,000	4,332,000
Transfer from the Sewage Treatment Plant Connection Fee Fund (539)	1,249,000						
TOTAL Transfers	**34,928,000**	**34,997,000**	**40,830,000**	**60,227,000**	**57,074,000**	**59,179,000**	**252,307,000**
Revenue from Use of Money and Property							
Interest Income	3,949,000	8,430,000	7,856,000	6,209,000	4,831,000	2,910,000	30,236,000
TOTAL Revenue from Use of Money and Property	**3,949,000**	**8,430,000**	**7,856,000**	**6,209,000**	**4,831,000**	**2,910,000**	**30,236,000**
Revenue from Local Agencies							
2009 Bond Debt Repayment	155,000	155,000	155,000				310,000
State Revolving Fund - Loan Repayment	555,000						
WPCP Projects and Equipment Replacement	31,307,000	112,636,000	64,769,000	55,905,000	67,706,000	13,476,000	314,492,000

Source of Funds (Combined)

	Estimated 2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	5-Year Total	
TOTAL Revenue from Local Agencies	**32,017,000**	**112,791,000**	**64,924,000**	**55,905,000**	**67,706,000**	**13,476,000**	**314,802,000**	
Revenue from the Federal Government								
U.S. Bureau of Reclamation Grant			2,545,000				2,545,000	
TOTAL Revenue from the Federal Government			**2,545,000**				**2,545,000**	
Other Revenue								
Calpine Metcalf Energy Center Facilities Repayment	389,000	389,000	389,000	389,000	389,000	389,000	1,945,000	
TOTAL Other Revenue	**389,000**	**389,000**	**389,000**	**389,000**	**389,000**	**389,000**	**1,945,000**	
Financing Proceeds								
Wastewater Revenue Notes	98,510,000	178,000,000		70,000,000	92,000,000		340,000,000	
Bond Proceeds			385,000,000				385,000,000	
TOTAL Financing Proceeds	**98,510,000**	**178,000,000**	**385,000,000**	**70,000,000**	**92,000,000**		**725,000,000**	
Total San José-Santa Clara Treatment Plant Capital Fund (512)	**383,749,563**	**339,197,755**	**508,562,755**	**195,085,755**	**226,657,755**	**77,975,755**	**1,331,425,755**	*
South Bay Water Recycling Capital Fund (571)								
Beginning Balance		3,807,000	166,000	191,000	216,000	241,000	3,807,000	*
Transfers								
Transfer from the San José-Santa Clara Treatment Plant Capital Fund	3,691,000							
TOTAL Transfers	**3,691,000**							

Water Pollution Control

2020-2024 Proposed Capital Improvement Program

Source of Funds (Combined)

	Estimated 2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	5-Year Total
Revenue from Use of Money and Property							
Interest Income	24,000	50,000	50,000	50,000	50,000	50,000	250,000
TOTAL Revenue from Use of Money and Property	**24,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**250,000**
Other Revenue							
Various Sources	92,000						
TOTAL Other Revenue	**92,000**						
Total South Bay Water Recycling Capital Fund (571)	**3,807,000**	**3,857,000**	**216,000**	**241,000**	**266,000**	**291,000**	**4,057,000 ***
TOTAL SOURCES	**387,556,563**	**343,054,755**	**508,778,755**	**195,326,755**	**226,923,755**	**78,266,755**	**1,335,482,755 ***

* The 2020-2021 through 2023-2024 Beginning Balances are excluded from the FIVE-YEAR TOTAL SOURCE OF FUNDS to avoid multiple counting of the same funds.

2020-2024 Proposed Capital Improvement Program

Use of Funds (Combined)

	Estimated 2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	5-Year Total
Water Pollution Control							
Headworks Improvements	2,490,961	14,983,000	289,000	259,000	88,000		15,619,000
New Headworks	8,275,103	130,495,000	1,498,000	1,383,000	571,000		133,947,000
Preliminary Wastewater Treatment	**10,766,064**	**145,478,000**	**1,787,000**	**1,642,000**	**659,000**		**149,566,000**
East Primary Rehabilitation, Seismic Retrofit, and Odor Control	1,000,212		10,885,000	94,530,000	686,000	684,000	106,785,000
Iron Salt Feed Station	651,797						
Primary Wastewater Treatment	**1,652,009**		**10,885,000**	**94,530,000**	**686,000**	**684,000**	**106,785,000**
Aeration Tanks and Blower Rehabilitation	54,802,341	1,155,000	2,099,000	1,470,000	59,840,000	1,065,000	65,629,000
Nitrification Clarifier Rehabilitation	3,907,975	53,031,000	2,357,000	2,925,000	30,690,000	2,152,000	91,155,000
Secondary Clarifier Rehabilitation	565,000					2,833,000	2,833,000
Secondary Wastewater Treatment	**59,275,315**	**54,186,000**	**4,456,000**	**4,395,000**	**90,530,000**	**6,050,000**	**159,617,000**
Filter Rehabilitation	4,546,106	34,872,000	1,658,000	1,089,000	943,000		38,562,000
Final Effluent Pump Station & Stormwater Channel Improvements		902,000	5,999,000	1,104,000	37,234,000	1,925,000	47,164,000
Outfall Bridge and Levee Improvements	2,480,037	4,826,000	723,000				5,549,000
Tertiary Wastewater Treatment	**7,026,143**	**40,600,000**	**8,380,000**	**2,193,000**	**38,177,000**	**1,925,000**	**91,275,000**
Additional Digester Upgrades				1,191,000	8,031,000	1,298,000	10,520,000
Digested Sludge Dewatering Facility	13,311,155	2,002,000	105,615,000	2,174,000	1,118,000		110,909,000
Digester and Thickener Facilities Upgrade	102,900,332	6,182,000	1,875,000				8,057,000
Lagoons and Drying Beds Retirement							
Biosolids	**116,211,487**	**8,184,000**	**107,490,000**	**3,365,000**	**9,149,000**	**1,298,000**	**129,486,000**
Combined Heat and Power Equipment Repair and Rehabilitation	88,844						
Energy Generation Improvements	87,960,878	3,335,000	737,000				4,072,000
Plant Electrical Reliability	6,694,304	1,792,000	394,000	493,000			2,679,000

Water Pollution Control

2020-2024 Proposed Capital Improvement Program

Use of Funds (Combined)

	Estimated 2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	5-Year Total
Electrical Systems and Power Generation	**94,744,026**	**5,127,000**	**1,131,000**	**493,000**			**6,751,000**
Advanced Facility Control and Meter Replacement	10,850,783	13,287,000	990,000	408,000	322,000		15,007,000
Treatment Plant Distributed Control System	2,215,600	5,438,000					5,438,000
Advanced Process Control & Automation	**13,066,383**	**18,725,000**	**990,000**	**408,000**	**322,000**		**20,445,000**
Construction-Enabling Improvements	554,287						
Equipment Replacement	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	8,315,000
Facility Wide Water Systems Improvements	2,466,244	2,419,000	389,000	8,737,000	915,000	898,000	13,358,000
Flood Protection	2,456,732	489,000	6,441,000	1,098,000	976,000		9,004,000
Plant Infrastructure Improvements	2,349,422	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
Plant Instrument Air System Upgrade	677,383						
Storm Drain System Improvements	1,470,317	939,000	11,039,000	883,000	653,000		13,514,000
Support Building Improvements	8,074,408	11,325,000	1,350,000	689,000	795,000	360,000	14,519,000
Tunnel Rehabilitation	2,317,309						
Urgent and Unscheduled Treatment Plant Rehabilitation	2,500,000	500,000	500,000	500,000	500,000	500,000	2,500,000
Various Infrastructure Decommissioning	469,000			2,590,000	18,470,000	691,000	21,751,000
Yard Piping and Road Improvements	5,787,369	18,452,000	21,947,000	20,249,000	21,433,000	13,962,000	96,043,000
Site Facility Maintenance and Improvements	**30,785,471**	**36,787,000**	**44,329,000**	**37,409,000**	**46,405,000**	**19,074,000**	**184,004,000**
Hydraulic Capacity Engineering		25,000	25,000	25,000	25,000	25,000	125,000
South Bay Water Recycling		**25,000**	**25,000**	**25,000**	**25,000**	**25,000**	**125,000**
Water Pollution Control - Construction	**333,526,897**	**309,112,000**	**179,473,000**	**144,460,000**	**185,953,000**	**29,056,000**	**848,054,000**
Debt Service Repayment for Plant Capital Improvement Projects	3,828,000	2,625,000	304,274,000	29,144,000	25,991,000	28,096,000	390,130,000
Owner Controlled Insurance Program	7,771,000		3,705,000	3,705,000	1,399,000	1,264,000	10,073,000
Master Plan Updates	3,000,000						
Preliminary Engineering - Water Pollution Control	2,026,614	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000

2020-2024 Proposed Capital Improvement Program

Use of Funds (Combined)

	Estimated 2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	5-Year Total
Program Management - Water Pollution Control	13,039,297	8,122,000	11,738,000	11,712,000	9,794,000	7,426,000	48,792,000
Record Drawings	3,675,000						
General Non-Construction - Water Pollution Control	**33,339,911**	**11,747,000**	**320,717,000**	**45,561,000**	**38,184,000**	**37,786,000**	**453,995,000**
Water Pollution Control - Non Construction	**33,339,911**	**11,747,000**	**320,717,000**	**45,561,000**	**38,184,000**	**37,786,000**	**453,995,000**
Public Art Allocation	443,000						
Public Art Projects	**443,000**						
Capital Program and Public Works Department Support Service Costs	629,000	724,000	420,000	336,000	433,000	69,000	1,982,000
State Revolving Fund Loan Repayment	1,804,000						
Payment for Clean Water Financing Authority Trustee	5,000	5,000	5,000	5,000			15,000
Allocations	**2,438,000**	**729,000**	**425,000**	**341,000**	**433,000**	**69,000**	**1,997,000**
Transfer to the South Bay Water Recycling Capital Fund	3,691,000						
Transfers to Capital Funds	**3,691,000**						
City Hall Debt Service Fund	196,000	89,000	91,000	91,000	91,000	91,000	453,000
Clean Water Financing Authority Debt Service Payment Fund	5,524,000	5,527,000	5,526,000				11,053,000
Transfers to Special Funds	**5,720,000**	**5,616,000**	**5,617,000**	**91,000**	**91,000**	**91,000**	**11,506,000**
Transfers Expense	**9,411,000**	**5,616,000**	**5,617,000**	**91,000**	**91,000**	**91,000**	**11,506,000**
Equipment Replacement Reserve		5,000,000					5,000,000
Hydraulic Capacity Enhancements Reserve		3,666,000					3,666,000
Expense Reserves - Non Construction		**8,666,000**					**8,666,000**
Total Expenditures	**379,158,808**	**335,870,000**	**506,232,000**	**190,453,000**	**224,661,000**	**67,002,000**	**1,324,218,000**
Ending Fund Balance	8,397,755	7,184,755	2,546,755	4,873,755	2,262,755	11,264,755	11,264,755 *
TOTAL	**387,556,563**	**343,054,755**	**508,778,755**	**195,326,755**	**226,923,755**	**78,266,755**	**1,335,482,755 ***

* The 2019-2020 through 2022-2023 Ending Balances are excluded from the FIVE-YEAR TOTAL USE OF FUNDS to avoid multiple counting of the same funds.

2019-2020 Capital Budget

2020-2024 Capital Improvement Program

Water Pollution Control

Detail of Projects

Advanced Facility Control and Meter Replacement

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2010
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2014
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$11,000,000
Appropriation	A7224	**FY Initiated**	2010-2011

Description This project develops and executes a Plant-wide automation master plan; replaces existing flow meters and actuators; and upgrades sensors, controls, and monitoring equipment throughout the Plant.

Justification The Plant currently has hundreds of meters measuring liquid, sludge, and gas streams. Many existing sensors, actuators, and flow meters are inaccurate or unreliable. Due to their age, it is more cost effective to replace them with modern equipment to ensure performance reliability and assure that needed components are available for ongoing maintenance. This project will allow the Plant to move towards improved data capture, resulting in greater operational reliability and flexibility.

Notes This project corresponds to Plant Master Plan No. 90 and Validation Project PA-01.

Major Cost Changes 2012-2016 CIP through 2017-2021 CIP - increase of $16.9 million due to updated cost estimates, revised scope, addition of meter replacement scope, and project validation cost estimate.
2018-2022 CIP - decrease of $4.1 million due to reduction of scope.
2019-2023 CIP - increase of $17.9 million due to an increase in scope and updated construction cost estimate.
2020-2024 CIP - decrease of $7.4 million due to lower than expected construction bids for Phase I, resulting in a reduced expected cost estimate for Phase II.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	1,847	662								2,510
Design	1,314	548								1,862
Bid & Award	85	21	164					164	76	345
Construction	221	9,488	12,997	990	408	226		14,621	4,836	29,166
Post Construction	3	131	126			96		222	25	381
Total	**3,469**	**10,851**	**13,287**	**990**	**408**	**322**		**15,007**	**4,937**	**34,264**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	3,469	10,851	13,287	990	408	322		15,007	4,937	34,264
Total	**3,469**	**10,851**	**13,287**	**990**	**408**	**322**		**15,007**	**4,937**	**34,264**
Annual Operating Budget Impact (000s)										
Total										

Aeration Tanks and Blower Rehabilitation

CSA	Environmental and Utility Services	**Initial Start Date**	1st Qtr. 2015
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	3rd Qtr. 2025
Department	Environmental Services	**Revised Start Date**	2nd Qtr. 2015
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2028
Council Districts	4	**Initial Project Budget**	$114,880,000
Appropriation	A7677	**FY Initiated**	2014-2015

Description This project rehabilitates the secondary and nitrification aeration tanks including structural, mechanical, electrical, and instrumentation upgrades. It also replaces the remaining existing coarse bubble diffusers with fine bubble diffusers; installs partition walls and reconfigures air piping to optimize process treatment capabilities; repairs concrete and applies coatings; installs Variable Frequency Drives (VFDs), new motors, new Motor Control Centers (MCC), and new controls to the electric driven blowers in Building 40 and Tertiary Blower Building; decommissions the engine driven blowers in the Secondary Blower Building; and replaces the S11 switchgear.

Justification The secondary and nitrification aeration tanks were constructed in phases between the 1960s and 1980s. Due to their age and the aggressive and corrosive environment they operate in, extensive rehabilitation is required. Conversion to fine bubble diffusers will increase the oxygen transfer efficiency and decrease energy requirements. Installing VFDs will minimize the impact of starting current on the blowers when the Plant is run on emergency power. Lastly, the S11 switchgear and MCCs are outdated and need to be upgraded to be compatible with the new VFDs.

Notes This project corresponds to Plant Master Plan Project Nos. 20, 24, and 85 and Validation Project PLS-01.

Major Cost Changes
2016-2020 CIP - increase of $4.4 million due to escalation of construction costs.
2018-2022 CIP - increase of $4.5 million due to a revised scope and cost estimate.
2019-2023 CIP - increase of $26.5 million due to an updated construction cost estimate.
2020-2024 CIP - decrease of $16.9 million due to updated construction estimate and lower than expected construction bids.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	5,267	3,097								8,365
Design	4,255	7,222		878	707			1,585		13,062
Bid & Award	81	513				327		327		922
Construction		43,838	1,155	1,221	655	59,513	1,065	63,609	3,182	110,629
Post Construction		132			108			108	133	373
Total	**9,603**	**54,802**	**1,155**	**2,099**	**1,470**	**59,840**	**1,065**	**65,629**	**3,315**	**133,350**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	9,603	54,802	1,155	2,099	1,470	59,840	1,065	65,629	3,315	133,350
Total	**9,603**	**54,802**	**1,155**	**2,099**	**1,470**	**59,840**	**1,065**	**65,629**	**3,315**	**133,350**
Annual Operating Budget Impact (000s)										
Total										

Digested Sludge Dewatering Facility

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2012
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2013
Department	Environmental Services	**Revised Start Date**	3rd Qtr. 2014
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$1,000,000
Appropriation	A7452	**FY Initiated**	2012-2013

Description This project will construct a new mechanical dewatering facility and support systems to replace the existing sludge storage lagoons and open air solar drying beds. All new mechanical dewatering units, feed tank, storage, conveyance, and chemical dosing facilities will be housed in an odor-controlled building.

Justification This project responds to a recommendation in the adopted Plant Master Plan to consolidate the Plant's operational area by reducing the biosolids process footprint. It also provides greater flexibility in biosolids disposal options in anticipation of the potential Newby Island landfill closure in 2025, responds to stricter regulations for landfilling and alternative daily cover, and addresses odor, noise, and aesthetics concerns from the operations of the lagoons and sludge drying beds.

Notes This project corresponds to Plant Master Plan Project Nos. 44, 54, 57-60 and Validation Project PS-03.

Major Cost Changes
2014-2018 CIP - increase of $325.0 million due to accelerated project start and compressed implementation schedule.
2015-2019 CIP - decrease of $256.8 million due to creation of separate biosolids projects through project validation.
2016-2020 CIP - increase of $1.6 million due to escalation of construction costs.
2017-2021 CIP - increase of $28.1 milion due to increased scope and revised cost estimate.
2019-2023 CIP - increase of $18.3 million due to an updated construction cost estimate.
2020-2024 CIP - increase of $11.8 million due to an increase in scope and updated construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	4,691	1,244								5,934
Design	10	10,479	1,986	518				2,504		12,993
Bid & Award	181	1,588								1,770
Construction			16	105,097	2,174	794		108,081		108,081
Post Construction						324		324		324
Total	**4,882**	**13,311**	**2,002**	**105,615**	**2,174**	**1,118**		**110,909**		**129,102**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	4,882	13,311	2,002	105,615	2,174	1,118		110,909		129,102
Total	**4,882**	**13,311**	**2,002**	**105,615**	**2,174**	**1,118**		**110,909**		**129,102**

Annual Operating Budget Impact (000s)		
Operating	7,791	12,019
Maintenance	150	232
Total	**7,941**	**12,251**

Digester and Thickener Facilities Upgrade

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2006
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2008
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2021
Council Districts	4	**Initial Project Budget**	$1,000,000
Appropriation	A4127	**FY Initiated**	2006-2007

Description This project rehabilitates four digesters and modifies the system to operate as a two-phase Temperature Phased Anaerobic Digestion (TPAD) system. The project also rehabilitates and modifies six dissolved air flotation units for sludge co-thickening, pressure saturation tanks, pipes, pumps, and ancillary equipment. A new odor control system, primary sludge screening facility, heat exchangers, biogas flare, and polymer dosing facility will be constructed. A new rack mounted digester gas conveyance system will also be constructed above grade to replace existing piping in the digester tunnels.

Justification The Plant has 16 anaerobic digesters constructed between 1956 and 1983, of which six are permanently out of service. This project is needed to ensure safe and reliable operation of the digester facilities including the gas conveyance system. The upgrade to TPAD provides the facility with the ability to increase biogas production and produce Class A biosolids (if required by future regulations).

Notes This project corresponds to Plant Master Plan Project Nos. 45 - 53 and Validation Project PS-01. Prior to 2015-2019, this project was titled "Digester Rehabilitation".

Major Cost Changes 2008-2012 CIP through 2019-2023 CIP - increase of $168.3 million due to increased scope, realignment of project, higher than projected construction costs, inclusion of scope from other projects, and unforeseen conditions during construction, including air board regulatory requirements, major utility relocations, and a 78" SES line.
2020-2024 CIP - increase of $31.5 million due to unforeseen conditions and increased construction management costs.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	707	1								708
Design	14,888	2,932								17,820
Bid & Award	115									115
Construction	74,265	99,967	6,182	1,222				7,404		181,636
Post Construction				653				653		653
Total	**89,975**	**102,900**	**6,182**	**1,875**				**8,057**		**200,933**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	89,975	102,900	6,182	1,875				8,057		200,933
Total	**89,975**	**102,900**	**6,182**	**1,875**				**8,057**		**200,933**

Annual Operating Budget Impact (000s)						
Operating		1,012	1,798	1,865	1,934	
Maintenance		182	324	337	351	
Total		**1,194**	**2,122**	**2,202**	**2,285**	

East Primary Rehabilitation, Seismic Retrofit, and Odor Control

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2009
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	4th Qtr. 2012
Department	Environmental Services	**Revised Start Date**	3rd Qtr. 2010
Location	Water Pollution Control Plant	**Revised End Date**	3rd Qtr. 2028
Council Districts	4	**Initial Project Budget**	$3,605,000
Appropriation	A7226	**FY Initiated**	2010-2011

Description This project rehabilitates the existing primary clarifiers, including the coating of concrete and replacement of clarifier mechanisms with corrosion resistant materials. It also includes structural retrofits to allow new covers to be installed over a portion or all of the primary treatment area to contain odors. A new odor extraction and treatment system will also be constructed.

Justification This project restores the mechanical and structural integrity of the aging clarifiers and provides odor control measures.

Notes This project corresponds to Plant Master Plan Project Nos. 9, 10, and 11 and Validation Project PLP-02.

Major Cost Changes 2012-2016 CIP - increase of $80.1 million; $16.6 million due to increase of scope to incorporate master planning recommendations for seismic upgrades and odor control measures; $63.5 million reflects the addition of the Beyond 5-Year expense not previously programmed.
2013-2017 CIP - decrease of $1.7 million due to revised cost estimate.
2015-2019 CIP - increase of $27.5 million due to revised project validation cost estimate.
2016-2020 CIP - increase of $3.6 million due to escalation of construction costs.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	56	1,000		1,361				1,361		2,417
Design	30			9,386	1,211			10,597		10,627
Bid & Award				138	70			208		208
Construction					92,582	686	684	93,952	4,603	98,555
Post Construction					667			667	500	1,167
Total	**86**	**1,000**		**10,885**	**94,530**	**686**	**684**	**106,785**	**5,103**	**112,974**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	86	1,000		10,885	94,530	686	684	106,785	5,103	112,974
Total	**86**	**1,000**		**10,885**	**94,530**	**686**	**684**	**106,785**	**5,103**	**112,974**
Annual Operating Budget Impact (000s)										
Total										

Energy Generation Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2012
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2013
Department	Environmental Services	**Revised Start Date**	1st Qtr. 2012
Location	Water Pollution Control Pant	**Revised End Date**	2nd Qtr. 2021
Council Districts	4	**Initial Project Budget**	$1,300,000
Appropriation	A7454	**FY Initiated**	2012-2013

Description This project will install new, lower-emission engine-generators to replace the aged existing engine-generators and allow the aged engine-driven blowers to be retired. It includes a new generator building, gas cleaning and blending systems, piping, control system, and motor control centers. This project will also install emergency diesel generators and storage tanks to provide backup power in the event of an extended PG&E power outage.

Justification Energy generation capacity and operational reliability are significant issues at the Plant. The outdated engine-generators are increasingly difficult to maintain. Moreover, while the existing systems meet current air regulations, they will not meet the stricter regulations anticipated in the future. Replacing these facilities with new lower-emission engine-generators will reduce the risk of operational failure and permit violations while providing reliable energy generating facilities to power the Plant for decades.

Notes This project corresponds to Plant Master Plan Nos. 74, 75, and 76 and Validation Projects PE-01 and PE-02. Prior to 2014-2018, this project was titled "Combined Heat and Power Technology Evaluation".

Major Cost Changes
2014-2018 CIP - increase of $100.0 million due to acceleration of the implementation schedule.
2015-2019 CIP - increase of $24.5 million due to revised program validation cost estimate.
2016-2020 CIP - decrease of $10.4 million due to reduction of project scope and revised cost estimate.
2017-2021 CIP - increase of $4.9 million due to revised cost estimate.
2018-2022 CIP - increase of $7.5 million due to revised construction cost estimate.
2020-2024 CIP - increase of $2.5 million due to increased construction management costs.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	2,274	31								2,306
Design	9,662	1,056								10,718
Bid & Award	1,375	93								1,468
Construction	26,855	86,781	3,335	387				3,722		117,357
Post Construction	257			350				350		607
Total	**40,423**	**87,961**	**3,335**	**737**				**4,072**		**132,456**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	40,423	87,961	3,335	737				4,072		132,456
Total	**40,423**	**87,961**	**3,335**	**737**				**4,072**		**132,456**

Annual Operating Budget Impact (000s)						
Operating	45	46	48	49	50	
Maintenance	42	43	44	46	47	
Total	**87**	**89**	**92**	**95**	**97**	

Facility Wide Water Systems Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2014
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	1st Qtr. 2022
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2024
Council Districts	4	**Initial Project Budget**	$14,130,000
Appropriation	A7679	**FY Initiated**	2014-2015

Description This project rehabilitates, replaces, and/or extends the Plant's four water systems including piping, valves, pumps, controls, and other ancillary equipment. The scope of work will be based on hydraulic modeling and study of existing and future water demands at the Plant. The project may be constructed in phases based on the outcome of the study and priority of needs.

Justification The Plant's four water systems include potable water, groundwater, process/fire protection water, and recycled water. These were constructed over time with various Plant expansions and are in need of rehabilitation and upgrade due to age, condition, worker safety, plant reliability, and code compliance requirements. In addition, changes to water uses and demands have not all been addressed over time. An updated hydraulic model and assessment of current and future water demands will allow for the proper sizing of these systems to improve current and future performance and reduce risk of damage to pumping equipment.

Notes This project corresponds to Plant Master Plan Project No. 105 and Validation Project PF-06.

Major Cost Changes 2016-2020 CIP - increase of $1.6 million due to escalation of construction costs.
2018-2022 CIP - increase of $2.1 million due to revised project delivery cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	1,573	1,389	125					125		3,087
Design	7	1,052	1,689	322				2,011		3,070
Bid & Award	6	25	30	38	58			126		157
Construction			575	29	8,679	915	763	10,961		10,961
Post Construction							135	135		135
Total	**1,586**	**2,466**	**2,419**	**389**	**8,737**	**915**	**898**	**13,358**		**17,410**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	1,586	2,466	2,419	389	8,737	915	898	13,358		17,410
Total	**1,586**	**2,466**	**2,419**	**389**	**8,737**	**915**	**898**	**13,358**		**17,410**
Annual Operating Budget Impact (000s)										
Total										

Filter Rehabilitation

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2011
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2013
Department	Environmental Services	**Revised Start Date**	3rd Qtr. 2014
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$3,506,000
Appropriation	A7227	**FY Initiated**	2010-2011

Description This project will replace filter media, valves, actuators, and electrical controls for all filters. It will also replace the existing surface wash system with a new air scour system, rehabilitate electrical switchgears and related motor control consoles, upgrade pipes, and make concrete repairs.

Justification The existing filter complex was constructed in the 1970s and requires significant refurbishment. The filter media, consisting of anthracite and sand, needs to be replaced and some of the mechanical and electrical components need to be upgraded. These critical improvements are needed to ensure continued regulatory compliance and operational reliability until a new filter complex is constructed.

Notes This project corresponds to Plant Master Plan Project Nos. 31, 32, and 33 as well as Validation Project PLF-01 and PLF-02.

Major Cost Changes
2014-2018 CIP - decrease of $2.7 million due to the removal of scope that is dependent on the evaluation of the demonstration project.
2015-2019 CIP - increase of $26.9 million due to revised scope and project validation cost estimate.
2016-2020 CIP - increase of $6.5 million due to revised cost estimate and escalation of construction costs.
2017-2021 CIP - increase of $2.5 million due to increased project scope.
2019-2023 CIP - increase of $6.9 million due to a revised construction cost estimate.
2020-2024 CIP - increase of $2.5 million due to a revised construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	2,037	59								2,096
Design	711	4,309	370					370		5,390
Bid & Award	2	178	229					229		409
Construction	227		34,173	1,658	1,089	394		37,314		37,541
Post Construction			100			549		649		649
Total	**2,977**	**4,546**	**34,872**	**1,658**	**1,089**	**943**		**38,562**		**46,085**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	2,977	4,546	34,872	1,658	1,089	943		38,562		46,085
Total	**2,977**	**4,546**	**34,872**	**1,658**	**1,089**	**943**		**38,562**		**46,085**
Annual Operating Budget Impact (000s)										
Total										

Final Effluent Pump Station & Stormwater Channel Improvements

CSA	Environmental and Utility Services
CSA Outcome	Reliable Utility Infrastructure
Department	Environmental Services
Council Districts	4
Appropriation	TEMP_146

Initial Start Date	3rd Qtr. 2019
Initial End Date	3rd Qtr. 2025
Revised Start Date	
Revised End Date	
Initial Project Budget	$47,358,000
FY Initiated	2019-2020

Description This project designs and constructs a new pump station to hydraulically push the Plant's final treated effluent to Coyote Creek. Additionally, it will improve the existing stormwater channel by rehabilitating the flapper gates and embankments.

Justification The U.S. Army Corps of Engineers (USACE) will be constructing a new shoreline levee and closure structure near the Plant's outfall channel to protect the region against future sea level rise from the San Francisco Bay. The USACE project will install a tide gate closure structure with two new flapper gates just north of the Plant's outfall bridge, which will inhibit the Plant's treated wastewater discharge into Coyote Creek. A new final effluent pump station is required to lift the treated wastewater to the projected higher water surface elevations that will be held back by the new levee and tide gate in Coyote Creek.

Notes This project corresponds to Validation Project PLD-03.

Major Cost Changes

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development			902	278				1,180		1,180
Design				3,640	1,099			4,739		4,739
Bid & Award				63	5	26		94		94
Construction				1,752		37,208	1,919	40,879		40,879
Post Construction				266			6	272	194	466
Total			**902**	**5,999**	**1,104**	**37,234**	**1,925**	**47,164**	**194**	**47,358**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)			902	5,999	1,104	37,234	1,925	47,164	194	47,358
Total			**902**	**5,999**	**1,104**	**37,234**	**1,925**	**47,164**	**194**	**47,358**
Annual Operating Budget Impact (000s)										
Total										

Flood Protection

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2017
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2021
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$9,136,000
Appropriation	A402M	**FY Initiated**	2017-2018

Description This project provides 100-year flood protection for the Plant by constructing engineered earthen berms on the northern and eastern sides of the Plant.

Justification The Plant is a critical facility located within a Federal Emergency Management Agency (FEMA) defined flood zone and will experience significant flooding during a 100-year flood event. Until the South Bay Shoreline Project is completed by the US Army Corps of Engineers, the Plant remains at risk of flooding. This project will provide immediate protection from a 100-year flood event.

Notes

Major Cost Changes 2020-2024 CIP - increase of $2.1 million due to an updated construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	38	594	327					327		959
Design		1,513	162	361				523		2,036
Bid & Award		50		151	28			179		229
Construction		300		5,929	1,070	654		7,653		7,953
Post Construction						322		322		322
Total	**38**	**2,457**	**489**	**6,441**	**1,098**	**976**		**9,004**		**11,499**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	38	2,457	489	6,441	1,098	976		9,004		11,499
Total	**38**	**2,457**	**489**	**6,441**	**1,098**	**976**		**9,004**		**11,499**
Annual Operating Budget Impact (000s)										
Total										

Headworks Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2012
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2015
Department	Environmental Services	**Revised Start Date**	1st Qtr. 2013
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$5,975,000
Appropriation	A7448	**FY Initiated**	2012-2013

Description This project will modify Headworks No. 2 (HW2) to accommodate all dry weather flow. Improvements include re-routing some inlet and recycle flow piping, new storm water pump stations, and other mechanical enhancements to improve reliability and operation performance.

Justification HW1 was built in the mid-1950s and early 1960s and is the Plant's duty headworks. HW2 was built in 2008 and designed to operate in parallel with HW1 to handle peak hour wet weather flow. This project will improve the functional reliability of HW2.

Notes This project corresponds to Plant Master Plan Project Nos. 1, 2, and 7 and Validation Project PLH-01.

Major Cost Changes
2015-2019 CIP - increase of $23.7 million due to incorporation of a portion of Headworks No. 2 Enhancement project.
2016-2020 CIP - increase of $863,000 due to revised cost estimate.
2018-2022 CIP - decrease of $9.0 million due to reduction of scope to eliminate a condition assessment of HW1.
2020-2024 CIP - increase of $1.3 million due to revised construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	1,440	114								1,553
Design	297	1,721	310					310		2,328
Bid & Award	412	224								636
Construction	1,815	221	14,598	289	259	70		15,216		17,252
Post Construction		211	75			18		93		304
Total	**3,964**	**2,491**	**14,983**	**289**	**259**	**88**		**15,619**		**22,074**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	3,964	2,491	14,983	289	259	88		15,619		22,074
Total	**3,964**	**2,491**	**14,983**	**289**	**259**	**88**		**15,619**		**22,074**
Annual Operating Budget Impact (000s)										
Total										

New Headworks

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2012
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2013
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$79,400,000
Appropriation	A7449	**FY Initiated**	2012-2013

Description This project will construct a new headworks to serve as the Plant's duty headworks. It also involves lining the emergency overflow basin and installing spraydown systems to facilitate cleaning. The project will also be tasked with odor control over select areas, such as junction boxes and grit collection. This project will need to be coordinated with the modifications made to the Headworks 2 hydraulics and the eventual decommissioning of Headworks 1.

Justification Headworks No. 1 was built in the mid-1950s and further expanded in the 1960s. Due to its age and condition, extensive structural rehabilitation and mechanical rehabilitation would be needed to operate it as the Plant's long-term duty headworks. Based on previous studies, building a new duty headworks facility would be more cost effective and provide greater operational reliability and enhanced treatment, potentially piping and hydraulic simplification, addressing some of the operational issues currently experienced at the Plant, such as the deposition of grit in downstream processes.

Notes This project corresponds to Plant Master Plan Project Nos. 1, 3, 4, 5, and 8 and Validation Project PLH-02.

Major Cost Changes
2015-2019 CIP - increase of $11.8 million due to incorporation of a portion of Headworks No. 2 Enhancement project.
2016-2020 CIP - increase of $4.8 million due to revised cost.
2018-2022 CIP - increase of $27.0 million due to revised project cost estimate.
2020-2024 CIP - increase of $19.4 million due to an updated construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	3,447	340								3,787
Design	1	7,316	1,762					1,762		9,079
Bid & Award	1,020	618								1,638
Construction			128,308	1,498	1,383	470		131,659		131,659
Post Construction			425			101		526		526
Total	**4,468**	**8,275**	**130,495**	**1,498**	**1,383**	**571**		**133,947**		**146,690**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	4,468	8,275	130,495	1,498	1,383	571		133,947		146,690
Total	**4,468**	**8,275**	**130,495**	**1,498**	**1,383**	**571**		**133,947**		**146,690**
Annual Operating Budget Impact (000s)										
Total										

Nitrification Clarifier Rehabilitation

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2009
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2024
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	4th Qtr. 2025
Council Districts	4	**Initial Project Budget**	$26,701,000
Appropriation	A7074	**FY Initiated**	2009-2010

Description This project includes phased rehabilitation of the 16 nitrification clarifiers. Structural improvements may include concrete repairs and coating, new clarifier mechanisms and baffle installations, pipe support and meter vault replacements, and walkway improvements. Mechanical improvements may include piping, valve and actuator replacements, spray water system replacements, scum skimmer system upgrades, and return activated sludge piping lining. Electrical and instrumentation improvements may include motor control center replacements, new wiring, and other electrical equipment upgrades. Other incidental work may include grouting, painting, coating, and other surface treatments.

Justification The Plant's 16 nitrification clarifiers have been in service for 30 to 40 years depending on the year of construction. A condition assessment study, completed in 2011, recommended phased rehabilitation of the nitrification clarifiers. The improvements are needed to address structural, mechanical, electrical, and instrumentation deficiencies and will extend the useful life of the clarifier assets for an additional 30 years.

Notes This project corresponds to Plant Master Plan Project No. 21 and Validation Project PLS-02. This project is planned to be completed in multiple phases.

Major Cost Changes
2014-2018 CIP - increase of $13.0 million due to revised estimate.
2015-2019 CIP - increase of $22.0 million due to revised project validation cost estimate.
2016-2020 CIP - decrease of $8.5 million due to revised scope and cost estimate.
2017-2021 CIP - decrease of $1.6 million due to revised cost estimate.
2020-2024 CIP - increase of $46.4 million due to an increase in the amount of rehabilitation required and updated construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	3,788	88								3,876
Design	243	3,653		323	833			1,156		5,052
Bid & Award	4	167	132		213			345		517
Construction			52,648	2,034	1,064	30,500	2,152	88,398	1,110	89,508
Post Construction			251		815	190		1,256	764	2,020
Total	**4,036**	**3,908**	**53,031**	**2,357**	**2,925**	**30,690**	**2,152**	**91,155**	**1,874**	**100,973**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	4,036	3,908	53,031	2,357	2,925	30,690	2,152	91,155	1,874	100,973
Total	**4,036**	**3,908**	**53,031**	**2,357**	**2,925**	**30,690**	**2,152**	**91,155**	**1,874**	**100,973**
Annual Operating Budget Impact (000s)										
Total										

Outfall Bridge and Levee Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2014
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2019
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2021
Council Districts	4	**Initial Project Budget**	$8,120,000
Appropriation	A7678	**FY Initiated**	2014-2015

Description This project includes a condition assessment, bridge repairs or replacement, levee and levee gate repairs, and electrical transformer refurbishment.

Justification The existing outfall bridge and instrumentation supports are in poor condition. In addition, the west-side levee of Pond A-18 is experiencing significant erosion. This project will improve the aging facilities to ensure reliability at the outfall compliance point.

Notes This project corresponds to Validation Project PLD-02.

Major Cost Changes
2016-2020 CIP - increase of $1.7 million due to escalation of construction costs.
2018-2022 CIP - decrease of $776,000 due to reduction of project scope.
2019-2023 CIP - decrease of $764,000 due to revised cost estimates.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	254	1,320								1,574
Design	6	338								344
Bid & Award	1	25	113					113		138
Construction	3	797	4,713	524				5,237		6,037
Post Construction				199				199		199
Total	**263**	**2,480**	**4,826**	**723**				**5,549**		**8,292**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	263	2,480	4,826	723				5,549		8,292
Total	**263**	**2,480**	**4,826**	**723**				**5,549**		**8,292**
Annual Operating Budget Impact (000s)										
Total										

Plant Electrical Reliability

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2003
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2014
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2022
Council Districts	4	**Initial Project Budget**	$7,671,000
Appropriation	A4341	**FY Initiated**	2003-2004

Description This project replaces substations and switches, modifies power distribution buses and cabling, and provides backup systems to enhance the overall safety and reliability of the Plant electrical systems. The project includes a multi-phase construction schedule based upon a study completed in 2004.

Justification The current power distribution network has grown in a patched manner over the years, and many electrical system components have reached the end of their service life. This project addresses immediate safety needs and provides for future reliability needs.

Notes This project replaces a formerly ongoing allocation titled "Electrical System Improvements".

Major Cost Changes
2005-2009 CIP - increase of $33.5 million to fund construction/rehabilitation costs due to increased project scope.
2007-2011 CIP - increase of $15.6 million to fund construction/rehabilitation costs due to increased project scope.
2008-2012 CIP - increase of $26.5 million to fund construction/rehabilitation costs due to increased project scope.
2009-2013 CIP - decrease of $3.0 million to reflect a project scope change.
2011-2015 CIP - increase of $11.4 million due to increased project scope.
2013-2017 CIP - decrease of $64.7 million due to removal of the Gas Turbine/Internal Combustion Engine project scope, which is being refined and will be included as part of the Energy Generation Improvements project.
2014-2018 CIP - decrease of $1.4 million due to decreased project scope.
2015-2019 CIP - increase of $6.0 million due to revised project validation cost estimate.
2017-2021 CIP - decrease of $1.2 million due to revised project scope.
2020-2024 CIP - increase of $2.2 million due to revised construction cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	669	25								694
Design	1,170	1,942	102					102		3,215
Bid & Award	49	41	43					43		133
Construction	20,512	4,686	1,647	394	362			2,403		27,601
Post Construction	23				131			131		154
Total	**22,424**	**6,694**	**1,792**	**394**	**493**			**2,679**		**31,797**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	22,424	6,694	1,792	394	493			2,679		31,797
Total	**22,424**	**6,694**	**1,792**	**394**	**493**			**2,679**		**31,797**
Annual Operating Budget Impact (000s)										
Total										

Storm Drain System Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2017
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2021
Department	Environmental Services	**Revised Start Date**	4th Qtr. 2017
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2023
Council Districts	4	**Initial Project Budget**	$10,195,000
Appropriation	A404V	**FY Initiated**	2017-2018

Description This project upgrades the existing Plant stormwater drainage system to meet current City standards. The project includes modifying existing drainage facilities and constructing new storm system facilities to meet the City's 10-year design standard.

Justification The Plant's stormwater drainage facilities do not meet the City's 10-year storm event standard. Upgrades to the existing systems are needed to prevent stormwater flooding in and around the Plant's operational area.

Notes

Major Cost Changes 2019-2023 CIP - increase of $3.7 million due to an escalation of construction costs.
2020-2024 CIP - increase of $1.2 million due to revised condition assessment and construction management estimates.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	126	957								1,083
Design		113	939	91				1,030		1,143
Bid & Award		100		113				113		213
Construction		250		10,835	883	487		12,205		12,455
Post Construction		50				166		166		216
Total	**126**	**1,470**	**939**	**11,039**	**883**	**653**		**13,514**		**15,110**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	126	1,470	939	11,039	883	653		13,514		15,110
Total	**126**	**1,470**	**939**	**11,039**	**883**	**653**		**13,514**		**15,110**
Annual Operating Budget Impact (000s)										
Total										

Support Building Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	1st Qtr. 2015
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	3rd Qtr. 2023
Department	Environmental Services	**Revised Start Date**	2nd Qtr. 2015
Location	Water Pollution Control Plant	**Revised End Date**	1st Qtr. 2028
Council Districts	4	**Initial Project Budget**	$55,590,000
Appropriation	A7681	**FY Initiated**	2014-2015

Description This project constructs various tenant improvements to the administration, operations, engineering, and other support buildings located throughout the Plant. It may include floor, ceiling, wall, partition, plumbing, heating, ventilation and air conditioning upgrades, fire protection, and security improvements, as well as ancillary landscaping improvements. It also constructs new warehousing facilities and an electronic warehouse management system which may include new computers, a central database, barcode scanners, mobile tablets, and other technology improvements. This project will be constructed in phases based on a detailed tenant improvement study, warehouse design study, and priority of needs.

Justification Most of the buildings at the Plant are between 30 and 50 years old and are in need of refurbishment to improve worker health, safety, and environment. The tenant improvements are also needed to bring the buildings into compliance with current building and safety codes. The new warehousing facility and warehouse management system will improve operational efficiency through better control of the movement and storage of materials, including shipping, receiving, material stocking, use, and distribution.

Notes This project corresponds to Plant Master Plan Project Nos. 94, 95, 96, 98, 106, and 107 and Validation Project PF-02.

Major Cost Changes 2016-2020 CIP - decrease of $856,000 due to revised cost estimate.
2018-2022 CIP - increase of $2.2 million due to revised project delivery cost estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
General Administration	0									0
Project Feasibility Development	1,226	3,898							1,848	6,972
Design	42	1,610	356					356	4,193	6,201
Bid & Award	6	218	152					152	493	869
Construction		2,348	10,817	1,237	689	518		13,261	25,202	40,811
Post Construction				113		277	360	750	1,141	1,891
Equipment, Materials and Supplies	346									346
Total	**1,620**	**8,074**	**11,325**	**1,350**	**689**	**795**	**360**	**14,519**	**32,877**	**57,090**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	1,620	8,074	11,325	1,350	689	795	360	14,519	32,877	57,090
Total	**1,620**	**8,074**	**11,325**	**1,350**	**689**	**795**	**360**	**14,519**	**32,877**	**57,090**
Annual Operating Budget Impact (000s)										
Total										

Treatment Plant Distributed Control System

CSA	Environmental and Utility Services	**Initial Start Date**	1st Qtr. 2012
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2016
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr. 2020
Council Districts	4	**Initial Project Budget**	$4,065,000
Appropriation	A7394	**FY Initiated**	2012-2013

Description This project will upgrade and convert the existing Distributed Control System (DCS) at the Plant. The system is composed of a network of field controllers, workstations, and servers that control most aspects of Plant operations. This project consists of three phases. Phase I is completed and ensured that the system was upgraded and will be supported by the vendor. The wiring and replacement of field communication hardware will be done in Phase II, and a new controller and programming will be added in Phase III.

Justification Upgrading this system is vital to maintaining efficient operations and improving monitoring capabilities.

Notes

Major Cost Changes
2014-2018 CIP - increase of $499,000 due to higher than expected consultant costs.
2015-2019 CIP - decrease of $163,000 due to lower than expected construction costs.
2016-2020 CIP - increase of $894,000 due to inclusion of an additional project phase that will convert and configure the hardware for 18 distributed control unit controllers.
2017-2021 CIP - increase of $1.6 million due to revised cost estimate.
2019-2023 CIP - increase of $2.8 million due to revised cost estimate.
2020-2024 CIP - increase of $1.9 million due to an increase in the number of components impacted and updated agreement estimate.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Design	320									320
Construction	3,669	2,216	5,438					5,438		11,323
Total	**3,989**	**2,216**	**5,438**					**5,438**		**11,643**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	3,989	2,216	5,438					5,438		11,643
Total	**3,989**	**2,216**	**5,438**					**5,438**		**11,643**
Annual Operating Budget Impact (000s)										
Total										

Various Infrastructure Decommissioning

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2018
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	2nd Qtr. 2022
Department	Environmental Services	**Revised Start Date**	2nd Qtr. 2019
Location	Water Pollution Control Plant	**Revised End Date**	1st Qtr. 2025
Council Districts	4	**Initial Project Budget**	$22,220,000
Appropriation	A410S	**FY Initiated**	2018-2019

Description This project will decommission and remove equipment, structures, and piping located in Building 40, Pump and Engine Building, Sludge Control Building, digester campus, and tunnels.

Justification The decommissioning and removal of obsolete and abandoned equipment, structures, and piping will free up valuable space for future equipment or systems and improves operational and maintenance efficiencies of existing systems. The majority of the infrastructure and equipment at the Plant is more than 60 years old. It is best practice to remove obsolete facilities and equipment to avoid ongoing maintenance, comply with permit requirements, and to free up space for new equipment.

Notes

Major Cost Changes

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Design		469			2,560			2,560		3,029
Bid & Award					30			30		30
Construction						18,470	628	19,098		19,098
Post Construction							63	63		63
Total		**469**			**2,590**	**18,470**	**691**	**21,751**		**22,220**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)		469			2,590	18,470	691	21,751		22,220
Total		**469**			**2,590**	**18,470**	**691**	**21,751**		**22,220**
Annual Operating Budget Impact (000s)										
Total										

Yard Piping and Road Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	3rd Qtr. 2011
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	4th Qtr. 2026
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	2nd Qtr 2028
Council Districts	4	**Initial Project Budget**	N/A
Appropriation	A7396	**FY Initiated**	2011-2012

Description This project will rehabilitate and/or replace process piping systems, valves, and related appurtenances throughout the Plant. The work will be completed in phases based on the outcome of a detailed condition assessment, physical testing, and prioritization of needs. This project will also make roadway and drainage-related improvements throughout the Plant's main operations and residual management areas.

Justification The Plant has approximately 300,000 linear feet of piping along with associated valves and related appurtenances. The pipes range in diameter from 8 inches to 144 inches and carry gas, liquids, sludge, air, steam, and other process streams to and from the various treatment areas. The pipes vary in age, material, condition, reliability, and redundancy. Over 70 percent of the piping was installed more than 25 years ago and is in need of rehabilitation or replacement due to age, failure, and/or excessive maintenance. The Plant also has an extensive roadway network, nearly 40,000 linear feet of paved surfaces, that needs rehabilitation and/or replacement due to excessive wear, heavy vehicle traffic, and drainage issues.

Notes This project corresponds to Plant Master Plan Project Nos. 98 and 100 and Validation Project PF-04. Prior to 2018-2022, this project was ongoing in nature; it has since become a finite project.

Major Cost Changes 2019-2023 CIP - decrease of $14.3 million due to a decrease in project scope and a 78" SES pipe that will be replaced in the Digester and Thickener Facilities Upgrade project.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
Project Feasibility Development	994	1,956	286					286		3,236
Design	154	1,471	4,854	1,660	1,535	4,998	975	14,022	1,664	17,311
Bid & Award	35	141	229	130	10	10		379		555
Construction	935	2,190	12,929	19,997	18,704	16,425	12,987	81,042	15,134	99,301
Post Construction		29	154	160				314	606	949
Total	**2,118**	**5,787**	**18,452**	**21,947**	**20,249**	**21,433**	**13,962**	**96,043**	**17,404**	**121,352**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	2,118	5,787	18,452	21,947	20,249	21,433	13,962	96,043	17,404	121,352
Total	**2,118**	**5,787**	**18,452**	**21,947**	**20,249**	**21,433**	**13,962**	**96,043**	**17,404**	**121,352**
Annual Operating Budget Impact (000s)										
Total										

Equipment Replacement

CSA	Environmental and Utility Services	**Initial Start Date**	Ongoing
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	Ongoing
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	
Council Districts	4	**Initial Project Budget**	
Appropriation	A4332		

Description This allocation provides for the urgent replacement of equipment at the Plant that is not identified in any other project.

Justification The replacement and rehabilitation of Plant equipment are necessary as a result of wear or obsolescence and will ensure continued efficient operation of the Plant facilities.

Notes Project schedule dates and selected budget information are not provided due to the ongoing nature of this project.

Major Cost Changes

	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL
Expenditure Schedule (000s)							
Construction							
Equipment, Materials and Supplies	1,663	1,663	1,663	1,663	1,663	1,663	8,315
Total	**1,663**	**1,663**	**1,663**	**1,663**	**1,663**	**1,663**	**8,315**

Funding Source Schedule (000s)							
San José-Santa Clara Treatment Plant Capital Fund (512)	1,663	1,663	1,663	1,663	1,663	1,663	8,315
Total	**1,663**	**1,663**	**1,663**	**1,663**	**1,663**	**1,663**	**8,315**

Annual Operating Budget Impact (000s)
Total

Hydraulic Capacity Engineering

CSA	Environmental and Utility Services	**Initial Start Date**	Ongoing
CSA Outcome	Safe, Reliable, and Sufficient Water Supply; Reliable Utility Infrastructure	**Initial End Date**	Ongoing
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	
Council Districts	4	**Initial Project Budget**	
Appropriation	A411B		

Description This allocation funds the expansion of the South Bay Water Recycling (SBWR) system through the construction of pipeline and ancillary distribution system projects. Use of these funds will be dedicated towards the design, engineering, and inspection for the connection of new developments to the recycled water utility system. SBWR's hydraulic capacity engineering is limited to extensions that are justified by projected water revenues, grant funding, or funds from developers or other government agencies (e.g. Santa Clara Valley Water District). No revenue from Plant Tributary Agencies or City Sanitary Sewer rate payers will be used to fund this project.

Justification Funding for SBWR's hydraulic capacity engineering includes extensions to the existing recycled water distribution system that will provide additional capacity. This annual allocation is necessary to accommodate development and the expenditures funded by developers or other government agencies.

Notes Project schedule dates and selected budget information are not provided due to the ongoing nature of this project. Per the contract with the Santa Clara Valley Water District (SCVWD), which began on July 1, 2010, the City and the SCVWD will review the net costs of operating the SBWR and the Advanced Water Treatment Facility (AWTF) beginning in 2012. This is a cost-sharing project with City costs not to exceed $2 million annually. Annual Operating Budget impacts are evaluated on an ongoing basis. Prior to the 2013-2017 CIP this project was titled "Revised South Bay Action Plan - SBWR Extension".

Major Cost Changes

	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL
Expenditure Schedule (000s)							
Construction		25	25	25	25	25	125
Total		**25**	**25**	**25**	**25**	**25**	**125**
Funding Source Schedule (000s)							
South Bay Water Recycling Capital Fund (571)		25	25	25	25	25	125
Total		**25**	**25**	**25**	**25**	**25**	**125**
Annual Operating Budget Impact (000s)							
Total							

Plant Infrastructure Improvements

CSA	Environmental and Utility Services	**Initial Start Date**	Ongoing
CSA Outcome	Reliable Utility Infrastructure	**Initial End Date**	Ongoing
Department	Environmental Services	**Revised Start Date**	
Location	Water Pollution Control Plant	**Revised End Date**	
Council Districts	4	**Initial Project Budget**	
Appropriation	A5690		

Description This allocation provides for improvements, rehabilitation, or replacement of existing Plant infrastructure. Examples of the ongoing replacement and rehabilitation work include handrail replacement, concrete repairs, telecommunication systems upgrade, and Plant support system improvements.

Justification Many mechanical, electrical, and structural assets at the Plant are in poor condition due to age and wear. Rehabilitation, improvements, and replacement of capital infrastructure are necessary to maintain process viability and to ensure regulatory compliance, structural integrity, reliability, functionality, and safety of Plant buildings and process facilities.

Notes Project schedule dates and selected budget information are not provided due to the ongoing nature of this project.

Major Cost Changes

	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL
Expenditure Schedule (000s)							
Construction	2,349	1,000	1,000	1,000	1,000	1,000	5,000
Total	**2,349**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**
Funding Source Schedule (000s)							
San José-Santa Clara Treatment Plant Capital Fund (512)	2,349	1,000	1,000	1,000	1,000	1,000	5,000
Total	**2,349**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**
Annual Operating Budget Impact (000s)							
Total							

Urgent and Unscheduled Treatment Plant Rehabilitation

CSA	Environmental and Utility Services
CSA Outcome	Reliable Utility Infrastructure
Department	Environmental Services
Location	Water Pollution Control Plant
Council Districts	4
Appropriation	A7395

Initial Start Date	Ongoing
Initial End Date	Ongoing
Revised Start Date	
Revised End Date	
Initial Project Budget	

Description This ongoing allocation is used to investigate, prioritize, and rehabilitate structures and systems at the Water Pollution Control Plant. This funding will be used to respond to the Plant's urgent maintenance and rehabilitation needs that cannot be programmed during the annual CIP budget process.

Justification This allocation is required due to the deterioration of structures and systems at the Plant.

Notes Project schedule dates and selected budget information are not provided due to the ongoing nature of this project.

Major Cost Changes

	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL
Expenditure Schedule (000s)							
Construction	2,500	500	500	500	500	500	2,500
Total	**2,500**	**500**	**500**	**500**	**500**	**500**	**2,500**

Funding Source Schedule (000s)							
San José-Santa Clara Treatment Plant Capital Fund (512)	2,500	500	500	500	500	500	2,500
Total	**2,500**	**500**	**500**	**500**	**500**	**500**	**2,500**

Annual Operating Budget Impact (000s)
Total

Debt Service Repayment for Plant Capital Improvement Projects

CSA Environmental and Utility Services
CSA Outcome Reliable Utility Infrastructure
Department Environmental Services
Council Districts N/A
Appropriation A402C

Description This allocation provides for the repayment of financing proceeds, including short-term wastewater revenue notes and long-term bonds, drawn for the Plant Capital Improvement Projects.

Notes The use of Wastewater Revenue Notes for funding began in October 2017.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
General Administration	845	3,828	2,625	304,274	29,144	25,991	28,096	390,130	676,221	1,071,024
Total	**845**	**3,828**	**2,625**	**304,274**	**29,144**	**25,991**	**28,096**	**390,130**	**676,221**	**1,071,024**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	845	3,828	2,625	304,274	29,144	25,991	28,096	390,130	676,221	1,071,024
Total	**845**	**3,828**	**2,625**	**304,274**	**29,144**	**25,991**	**28,096**	**390,130**	**676,221**	**1,071,024**

Owner Controlled Insurance Program

CSA Environmental and Utility Services
CSA Outcome Reliable Utility Infrastructure
Department Environmental Services
Council Districts N/A
Appropriation A401B

Description This allocation provides funding for a centrally managed insurance and risk control program for construction projects in the Water Pollution Control CIP.

Notes Funding allocated in 2018-2019 is intended to cover expenses in 2018-2019 and possible expenses in 2019-2020 via rebudgeting.

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
General Administration	2,831									2,831
Construction	273	7,771		3,705	3,705	1,399	1,264	10,073		18,117
Total	**3,104**	**7,771**		**3,705**	**3,705**	**1,399**	**1,264**	**10,073**		**20,948**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	3,104	7,771		3,705	3,705	1,399	1,264	10,073		20,948
Total	**3,104**	**7,771**		**3,705**	**3,705**	**1,399**	**1,264**	**10,073**		**20,948**

Payment for Clean Water Financing Authority Trustee

CSA Environmental and Utility Services
CSA Outcome Reliable Utility Infrastructure
Department Environmental Services
Council Districts 4
Appropriation A6584

Description This allocation provides for administrative costs of the San José/Santa Clara Clean Water Financing Authority related to bond issuances.

Notes

	PRIOR YEARS	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL	BEYOND 5 YEARS	PROJECT TOTAL
Expenditure Schedule (000s)										
General Administration	437	5	5	5	5			15		457
Bid & Award	15									15
Total	**452**	**5**	**5**	**5**	**5**			**15**		**472**
Funding Source Schedule (000s)										
San José-Santa Clara Treatment Plant Capital Fund (512)	452	5	5	5	5			15		472
Total	**452**	**5**	**5**	**5**	**5**			**15**		**472**

Preliminary Engineering - Water Pollution Control

CSA Environmental and Utility Services
CSA Outcome Reliable Utility Infrastructure
Department Environmental Services
Council Districts 4
Appropriation A7456

Description This allocation provides funding to support preliminary engineering for Plant-related projects, including studies, pilots, and field verifications to evaluate impacts on operations.

Notes Selected budget information is not provided due to the ongoing nature of this project.

	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL
Expenditure Schedule (000s)							
Project Feasibility Development	2,027	1,000	1,000	1,000	1,000	1,000	5,000
Total	**2,027**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**
Funding Source Schedule (000s)							
San José-Santa Clara Treatment Plant Capital Fund (512)	2,027	1,000	1,000	1,000	1,000	1,000	5,000
Total	**2,027**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**

Program Management - Water Pollution Control

CSA Environmental and Utility Services
CSA Outcome Reliable Utility Infrastructure
Department Environmental Services
Council Districts 4
Appropriation A7481

Description This allocation funds the administration and management of the Water Pollution Control CIP.

Notes Selected budget information is not provided due to the ongoing nature of this project.

	FY19 EST	FY20	FY21	FY22	FY23	FY24	5 YEAR TOTAL
Expenditure Schedule (000s)							
General Administration	12,908	8,122	11,738	11,712	9,794	7,426	48,792
Project Feasibility Development	0						
Construction	132						
Total	**13,039**	**8,122**	**11,738**	**11,712**	**9,794**	**7,426**	**48,792**
Funding Source Schedule (000s)							
San José-Santa Clara Treatment Plant Capital Fund (512)	13,039	8,122	11,738	11,712	9,794	7,426	48,792
Total	**13,039**	**8,122**	**11,738**	**11,712**	**9,794**	**7,426**	**48,792**

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2019-2020 Capital Budget

2020-2024 Capital Improvement Program

Water Pollution Control

Summary of Projects that Start After 2019-2020

Summary of Reserves

Explanation of Funds

Summary of Projects that Start After 2019-2020

Project Name	Additional Digester Upgrades	**Initial Start Date**	3rd Qtr. 2021
5-Yr CIP Budget	$ 10,520,000	**Initial End Date**	2nd Qtr. 2028
Total Budget	$ 64,475,000	**Revised Start Date**	
Council Districts	4	**Revised End Date**	

Description This project will rehabilitate up to six existing anaerobic digesters, including installation of new covers and mixers, upgrades the existing sludge distribution piping, and upgrades the digester heat supply system. The project may also include the installation of batch tanks to produce Class A biosolids (if required by future regulations).

Project Name	Secondary Clarifier Rehabilitation	**Initial Start Date**	1st Qtr. 2017
5-Yr CIP Budget	$ 2,833,000	**Initial End Date**	2nd Qtr. 2024
Total Budget	$ 26,455,000	**Revised Start Date**	3rd Qtr. 2022
Council Districts	4	**Revised End Date**	4th Qtr. 2028

Description The Plant has 26 secondary clarifiers configured with peripheral mix liquor feed channel, and either central or peripheral launders. The first phase of this project rehabilitates one secondary (BNR1) clarifier and retrofits it to receive a new baffle configuration based on computational fluid dynamic (CFD) modeling results. The new configuration is expected to improve clarifier performance and efficiency. The subsequent phases of the project will rehabilitate and convert the remaining 25 clarifiers based on the results of the first phase. Rehabilitation will include structural, mechanical, electrical, and instrumentation improvements.

Summary of Reserves

Project Name	Equipment Replacement Reserve	**Initial Start Date**	N/A
5-Yr CIP Budget	$ 5,000,000	**Initial End Date**	N/A
Total Budget	$ 5,000,000	**Revised Start Date**	
Council Districts	4	**Revised End Date**	
Description	This reserve provides for unforeseen replacement and rehabilitation of equipment that, due to age, wear, or obsolescence, must be replaced for the efficient operation of the Plant.		

Project Name	Hydraulic Capacity Enhancements Reserve	**Initial Start Date**	Ongoing
5-Yr CIP Budget	$ 3,666,000	**Initial End Date**	Ongoing
Total Budget	$ 3,666,000	**Revised Start Date**	
Council Districts	4	**Revised End Date**	
Description	SBWR Hydraulic Capacity Enhancement Reserve. This reserve is for future design, engineering, and inspection for the connection of new developments to the recycled water utility system.		

Explanation of Funds

Revenues and expenditures for the operation and maintenance of the San José-Santa Clara Water Pollution Control Plant (Plant) are accounted for by the City of San José, as the administering agency, through the San José-Santa Clara Treatment Plant Operating Fund (Operating Fund) and the San José-Santa Clara Treatment Plant Capital Fund (Capital Fund).

Revenues from tributary agencies of the San José-Santa Clara Water Pollution Control Plant are recorded directly into the Operating and Capital Funds. The tributary agencies include the City of Milpitas, City of Cupertino, Burbank Sanitary District, County Sanitation District No. 2-3, and West Valley Sanitation District.

Tributary agencies are assessed for their share of annual operation, maintenance, equipment, and facilities replacement and capital costs, based on their respective flow and strength of sewage conveyed to the Plant.

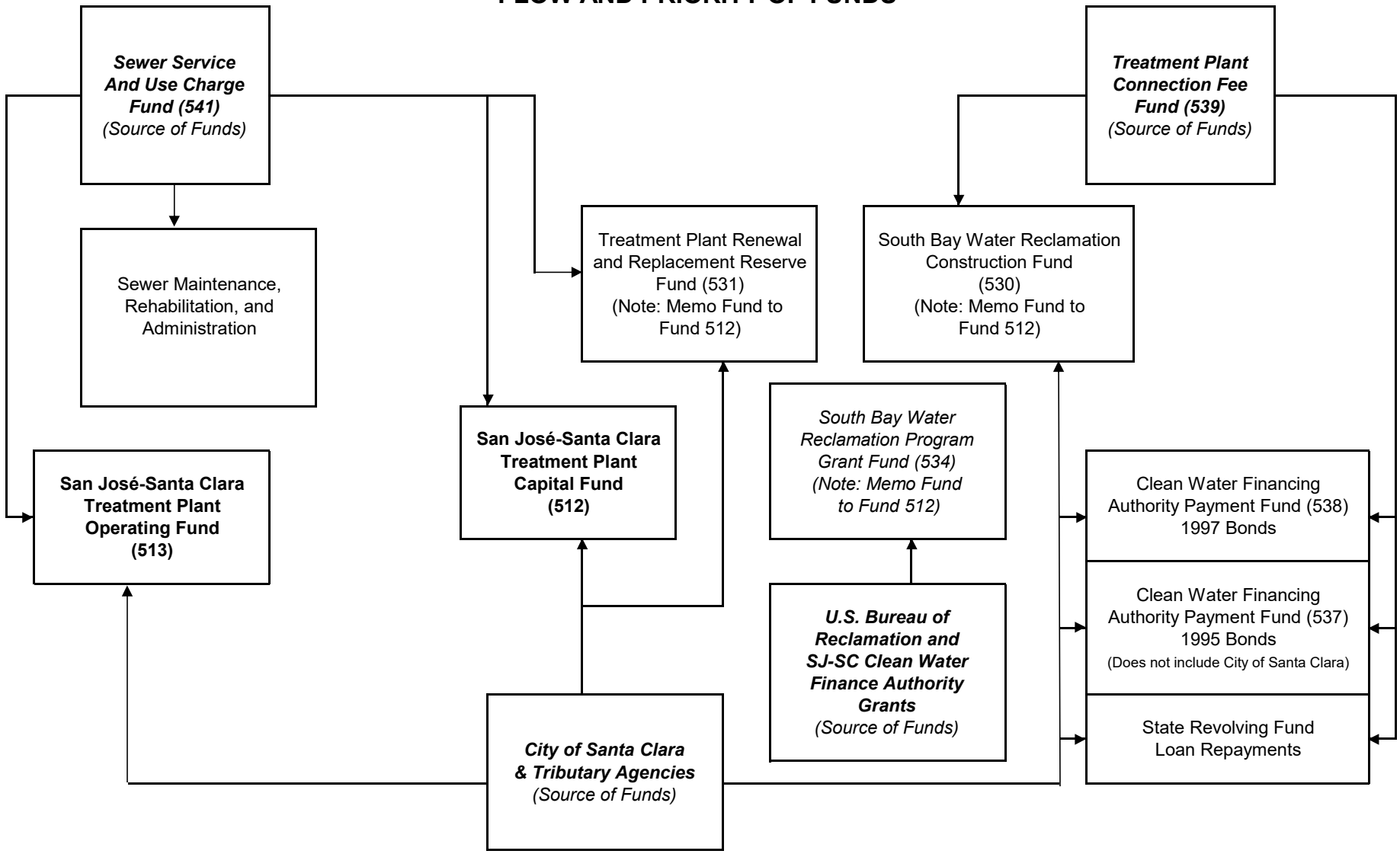
The San José Sewer Service and Use Charge Fund was established in the San José Municipal Code Section 15.12.640 in August 1959. This fund is the depository of revenues from Sewer Service and Use Charges received from residential, commercial, and industrial users of the sanitary sewer system. A portion of these monies is transferred to the Operating and Capital Funds to pay for the City of San José's share of operating and capital costs of the Plant.

The Santa Clara Sewer Revenue Fund was established by Resolution Number 916 of the City Council of Santa Clara in October 1960. Like the City of San José, revenues from this fund are transferred directly to the Operating and Capital Funds.

The Capital Fund provides all monies used for capital projects. Included in this fund is the Treatment Plant Renewal and Replacement Fund. This fund was established to satisfy the Plant's federal and State grant agreements as well as to comply with bond covenants.

The South Bay Water Recycling (SBWR) Capital Fund provides monies for capital improvement projects in support of SBWR system infrastructure.

WATER POLLUTION CONTROL PLANT
FLOW AND PRIORITY OF FUNDS



The arrows indicate the flow of funds from each of the various sources to the fund in which the revenues are expended.