

City Service Area Environmental and Utility Services



Cadwallader Tank Exterior



Headworks 1 Bar Screens

Mission: Delivering world class utility services and programs to improve our health, environment, and economy.

The Sanitary Sewer System Capital Improvement Program (CIP) constructs sewer improvement projects that enhance sewer capacity to meet economic development goals and rehabilitates existing sewers to minimize sanitary sewer overflows.

The Storm Sewer System CIP continues to replace or rehabilitate pump stations to reduce the risk of local flooding during storm events and storm water quality improvements for regulatory compliance. The program addresses the drainage needs in residential neighborhoods, business districts, and walking routes to schools and public facilities.

The Water Pollution Control Plant (Plant) is a regional advanced wastewater treatment facility that serves the cities of San José, Santa Clara, and Milpitas, as well as the Cupertino Sanitary District, West Valley Sanitation District, County Sanitation Districts 2-3, and Burbank Sanitary District. The Plant is one of the largest tertiary wastewater treatment works in the western United States, serving more than 1.4 million residents and approximately 17,000 businesses. A major master planning effort was completed in late 2013, resulting in Environmental Impact Report certification and formal adoption of a 30-year master plan. The master plan provides the framework for over \$1.0 billion in new construction at the Plant over the next 10 to 15 years, and responds to aging infrastructure, future regulations, population growth, and treatment technology improvements.

The Water Utility System CIP ensures reliable utility infrastructure for the San José Municipal Water System and includes the construction of new facilities, maintenance of existing infrastructure, and improvements to existing facilities.

CSA CAPITAL PROGRAMS

- Sanitary Sewer System
- Storm Sewer System
- Water Pollution Control Plant
- Water Utility System

City Service Area **Environmental and Utility Services**

Recent Accomplishments

- 30-inch Old Bayshore Sanitary Sewer Supplement – Installed 5,540 linear feet of 30-inch diameter relief sewer parallel to an existing 30-inch pipe on Old Bayshore Highway (completed in Aug. 2017)
- Cadwallader Reservoir Rehabilitation – Completed site improvements and repaired deteriorating infrastructure at the Cadwallader Reservoir site in the Municipal Water System service area. (completed in July 2017)
- Chynoweth Avenue and Park Avenue Green Street Pilot Projects – Installed bioretention areas and permeable pavers along Chynoweth and Park Avenues to provide stormwater treatment measures (completed in Nov. & Dec. 2017)
- Emergency Diesel Generator Package 2A Project – Constructed emergency generators at the Water Pollution Control Plant (completed in July 2017)
- Large Trash Capture Device Installation Phase V Project – Installed full trash capture devices at several locations in the City to reduce trash from entering the City’s storm sewer system (completed in Aug. 2017)

Program Highlights

Sanitary Sewer System Capital Program

2019-2023 Proposed CIP: \$186.9 million

Sanitary Sewer Rehabilitation Projects:

- Cast Iron Pipe – Remove and Replace
- Condition Assessment Sewer Repairs

Sanitary Sewer Interceptor/Capacity Improvement Projects:

- Immediate Replacement and Diversion Projects
- Bollinger Rd/Rincon Rd/Virginia Av Sani. Sewer Imp.
- 60” Brick Interceptor, Phase VIA and VIB

Storm Sewer System Capital Program

2019-2023 Proposed CIP: \$32.0 million

- Large Trash Capture Devices
- Storm Sewer Master Plan – City-wide

Water Pollution Control Capital Program

2019-2023 Proposed CIP: \$1.33 billion

Preliminary Wastewater Treatment:

- Headworks Improvements
- New Headworks

Primary Wastewater Treatment:

- East Primary Rehabilitation, Seismic Retrofit, and Odor Control

Secondary Wastewater Treatment:

- Aeration Tanks and Blower Rehabilitation

Biosolids:

- Digested Sludge Dewatering Facility

Electrical Systems and Power Generation:

- Energy Generation Improvements

Water Utility System Capital Program

2019-2023 Proposed CIP: \$36.9 million

- Annual Water Main Replacement
- Fowler Pump Station Replacement
- Infrastructure Improvements
- North San José Well #5 Development and Construction

CSA OUTCOMES

(Supported by the Capital Programs)

- ✓ Reliable Utility Infrastructure
- ✓ Healthy Streams, Rivers, Marsh and Bay
- ✓ Safe, Reliable and Sufficient Water Supply

City Service Area Environmental and Utility Services

Performance Measures

A set of consistent and comprehensive performance measurements along with targets and goals has been established for the entire capital program and adopted for each individual CSA. Measures focus on schedule (cycle time) and project delivery cost. Please see the Budget Guide section narrative for additional information on capital performance measurements.

Outcome: Quality CIP Projects Delivered On-Time and On-Budget

Strategic Goals	CSA Performance Measures	2016-2017 Actual ¹	2017-2018 Target	2017-2018 Estimate	2018-2019 Target	5-Year Goal
Environmental and Utility Services CSA delivers quality Capital Improvement Program (CIP) projects on-time and on-budget	1. % of CIP projects delivered within 2 months of approved baseline schedule ²	81% (26/32)	85%	82% (28/34)	85%	85%
	2. % of CIP projects that are completed within the approved baseline budget ³	95% (21/22)	90%	100% (27/27)	90%	90%

¹ The 2016-2017 Actual number of projects may vary from the 2016-2017 Adopted Budget Estimate as documented in the 2017-2018 Adopted Budget as a result of the date of the estimated beneficial use of the project being revised and the projects expected to be delivered in the following fiscal year. Also, the number of projects may change with the inclusion of projects in the 2016-2017 Actual not originally included in the 2016-2017 Adopted Budget Estimate due to incomplete project information at that time.

² Projects are considered to be “delivered” when they are available for their intended use and are considered “on schedule” if delivered within two months of baseline schedule.

³ Projects are considered “completed” when final cost accounting has occurred and the project has been accepted. Projects are considered “on budget” when the total expenditures do not exceed 101% of the baseline budget.

In 2017-2018, an estimated 28 of 34 (82%) projects are projected to be delivered within two months of the approved baseline schedule, which is below the performance target of 85%. Significant weather-related construction delays contributed to several projects being delivered beyond two months of the baseline schedule. Some of the notable capital projects delivered in 2017-2018 include sanitary sewer improvements (Arbor Drive, Fleming Avenue, Norwood Avenue, and Rio Hondo Drive), Cahill Storm Pump Station Rehabilitation, Large Trash Capture Installation Project Phase V, and the Cadwallader Reservoir Rehabilitation.

In 2017-2018, an estimated 27 of 27 (100%) of the projects are projected to be completed within their baseline budgets, which is above the one-year performance target of 90%. A few of the notable capital projects completed in 2017-2018 include the Alviso Storm Sewer Improvement, Coleman Road Sanitary Sewer Improvement - Phase II, Magnolia Avenue Storm Drainage Improvements, Tennant Avenue Sanitary Sewer Replacement, and Emergency Diesel Generator Package 2A at the Regional Wastewater Facility (RWF). The CSA continues to work to strengthen the alignment of project scopes, schedules, and budgets, while also accounting for external market conditions that may affect the delivery of capital projects. Staff relies heavily on the cost estimating and tracking tools that are available through the City’s Capital Project Management System (CPMS). These tools allow project management staff to effectively track project costs on an ongoing basis and assist in ensuring that expenditures remain within budgeted levels.

Capital Program Summary by City Service Area

Environmental and Utility Services

V-33

	<u>2018-2019 Budget</u>	<u>2019-2023 CIP Budget</u>	<u>Total Budget (All Years)</u>	<u>Start Date</u>	<u>End Date</u>
<u>Sanitary Sewer System</u>					
60 inch Brick Interceptor, Phase VIA and VIB	1,624,000	3,530,000	45,962,274	3rd Qtr. 2009	2nd Qtr. 2021
Almaden Supplement Sewer Rehabilitation (North)		3,130,000	3,130,000	3rd Qtr. 2020	2nd Qtr. 2022
Bollinger Road - Moorpark Avenue - Williams Road Sanitary Sewer	7,672,000	7,982,000	8,504,223	3rd Qtr. 2012	2nd Qtr. 2021
Capital Program and Public Works Department Support Service Costs	1,820,000	6,970,000	*	Ongoing	Ongoing
Cast Iron Pipe - Remove and Replace	4,500,000	24,000,000	*	Ongoing	Ongoing
City Hall Debt Service Fund	347,000	1,747,000	*	Ongoing	Ongoing
Condition Assessment Sewer Repairs	5,500,000	29,000,000	*	Ongoing	Ongoing
Fee Administration - Sanitary Sewer	84,000	424,000	*	Ongoing	Ongoing
Flow Monitoring Program (Master Planning)	925,000	4,465,000	*	Ongoing	Ongoing
Fourth Major Interceptor, Phase VIIA	500,000	5,500,000	5,500,000	3rd Qtr. 2018	2nd Qtr. 2020
Immediate Replacement and Diversion Projects	3,700,000	26,300,000	*	Ongoing	Ongoing
Inflow and Infiltration Reduction	200,000	1,000,000	*	Ongoing	Ongoing
Infrastructure - Sanitary Sewer Condition Assessment	3,000,000	15,000,000	*	Ongoing	Ongoing
Infrastructure Management System	34,000	190,000	*	Ongoing	Ongoing
Master Planning Updates	1,965,000	8,065,000	*	Ongoing	Ongoing
Montague Sanitary Sewer Pump Station Reserve	2,400,000	2,400,000	2,400,000	N/A	N/A
Payments to West Valley Sanitation District	10,000	50,000	*	Ongoing	Ongoing
Permit Review and Inspection for Outside Agencies - Sanitary Sewer	25,000	125,000	*	Ongoing	Ongoing
Preliminary Engineering - Sanitary Sewer	950,000	4,750,000	*	Ongoing	Ongoing
Program Management - Sanitary Sewer	300,000	1,500,000	*	Ongoing	Ongoing
Public Art Allocation	172,000	459,000	1,629,000	Ongoing	Ongoing
Public Works Engineering Services Equipment (Materials Lab)	40,000	200,000	*	Ongoing	Ongoing
Rehabilitation of Sanitary Sewer Pump Stations	575,000	911,000	5,868,242	3rd Qtr. 2008	2nd Qtr. 2019
Reinforced Concrete Pipe Rehabilitation Program	500,000	2,500,000	*	Ongoing	Ongoing
Rincon Avenue - Virginia Avenue Sanitary Sewer Improvements	701,000	701,000	5,119,000	3rd Qtr. 2017	2nd Qtr. 2019
Trimble Road and Capewood Lane Sanitary Sewer Improvements	18,000	18,000	4,993,890	2nd Qtr. 2014	2nd Qtr. 2019
Urgent Rehabilitation and Repair Projects	4,000,000	29,500,000	*	Ongoing	Ongoing
Westmont Avenue and Harriet Avenue Sanitary Sewer Improvements	<u>4,545,000</u>	<u>5,011,000</u>	5,572,000	3rd Qtr. 2017	2nd Qtr. 2020
Total: Construction/Non-Construction	46,107,000	185,428,000			

Capital Program Summary by City Service Area

Environmental and Utility Services

	<u>2018-2019 Budget</u>	<u>2019-2023 CIP Budget</u>	<u>Total Budget (All Years)</u>	<u>Start Date</u>	<u>End Date</u>
Ending Fund Balance	850,886	1,515,886	**		
Total: Sanitary Sewer System	46,957,886	186,943,886	**		
 <u>Storm Sewer System</u>					
Alviso Storm Pump Station	647,000	770,000	16,954,796	3rd Qtr. 2013	3rd Qtr. 2019
Capital Program and Public Works Department Support Service Costs	700,000	1,202,000	*	Ongoing	Ongoing
Charcot Storm Pump Rental	300,000	1,500,000	1,800,000	4th Qtr. 2015	2nd Qtr. 2021
City Hall Debt Service Fund	148,000	744,000	*	Ongoing	Ongoing
Condition Assessment Storm Sewer Repairs	150,000	750,000	*	Ongoing	Ongoing
Fee Administration - Storm Sewer	25,000	125,000	*	Ongoing	Ongoing
Flow Monitoring Program	365,000	1,575,000	*	Ongoing	Ongoing
General Fund - Interest Income	6,000	30,000	*	Ongoing	Ongoing
Green Infrastructure Improvements	450,000	2,250,000	*	Ongoing	Ongoing
Infrastructure Management System	7,000	35,000	*	Ongoing	Ongoing
Large Trash Capture Devices	6,673,000	6,773,000	9,718,564	3rd Qtr. 2014	3rd Qtr. 2019
Outfall Rehabilitation - Capital	250,000	1,250,000	*	Ongoing	Ongoing
Permit Review and Inspection for Outside Agencies - Storm Sewer	50,000	250,000	300,000	Ongoing	Ongoing
Preliminary Engineering - Storm Sewer	180,000	900,000	*	Ongoing	Ongoing
Program Management - Storm Sewer	150,000	750,000	*	Ongoing	Ongoing
Public Art Allocation	21,000	68,000	613,000	Ongoing	Ongoing
San Jose Watershed Invasive Species Removal and Engagement	200,000	1,000,000	1,200,000	Ongoing	Ongoing
Storm Pump Station Rehabilitation and Replacement	250,000	1,250,000	*	Ongoing	Ongoing
Storm Sewer Improvements	500,000	2,500,000	*	Ongoing	Ongoing
Storm Sewer Master Plan - City-wide	1,400,000	6,250,000	*	Ongoing	Ongoing
Urgent Flood Prevention and Repair Projects	200,000	1,000,000	*	Ongoing	Ongoing
Total: Construction/Non-Construction	12,672,000	30,972,000			
Ending Fund Balance	709,178	1,025,178	**		
Total: Storm Sewer System	13,381,178	31,997,178	**		

V-34

Water Pollution Control

Capital Program Summary by City Service Area

Environmental and Utility Services

V-35

	<u>2018-2019 Budget</u>	<u>2019-2023 CIP Budget</u>	<u>Total Budget (All Years)</u>	<u>Start Date</u>	<u>End Date</u>
Additional Digester Upgrades		62,096,000	64,475,000	3rd Qtr. 2019	4th Qtr. 2025
Advanced Facility Control and Meter Replacement	1,361,000	24,655,000	39,139,292	3rd Qtr. 2010	1st Qtr. 2023
Aeration Basin Future Modifications		6,330,000	50,277,000	3rd Qtr. 2019	4th Qtr. 2030
Aeration Tanks and Blower Rehabilitation	40,412,000	106,127,000	147,211,808	1st Qtr. 2015	3rd Qtr. 2026
Capital Program and Public Works Department Support Service Costs	629,000	5,974,000	*	Ongoing	Ongoing
City Hall Debt Service Fund	196,000	988,000	*	Ongoing	Ongoing
Clean Water Financing Authority Debt Service Payment Fund	5,524,000	16,577,000	*	Ongoing	Ongoing
Debt Service Repayment for Plant Capital Improvement Projects	1,815,000	345,288,000	*	Ongoing	Ongoing
Digested Sludge Dewatering Facility	10,192,000	109,494,000	113,870,291	3rd Qtr. 2014	4th Qtr. 2022
Digester and Thickener Facilities Upgrade	5,108,000	8,351,000	128,149,072	3rd Qtr. 2006	3rd Qtr. 2021
East Primary Rehabilitation, Seismic Retrofit, and Odor Control	1,000,000	36,388,000	112,887,882	3rd Qtr. 2010	4th Qtr. 2027
Energy Generation Improvements	2,144,000	3,788,000	103,224,917	3rd Qtr. 2012	2nd Qtr. 2020
Equipment Replacement	1,663,000	8,315,000	*	Ongoing	Ongoing
Equipment Replacement Reserve	5,000,000	5,000,000	5,000,000	N/A	N/A
Facility Wide Water Systems Improvements	366,000	13,259,000	16,396,914	3rd Qtr. 2014	3rd Qtr. 2024
Filter Rehabilitation	1,026,000	37,060,000	41,654,534	3rd Qtr. 2013	4th Qtr. 2022
Final Effluent Pump Station & Stormwater Channel Improvements		45,239,000	47,358,000	3rd Qtr. 2019	3rd Qtr. 2025
Flood Protection	273,000	7,221,000	9,444,000	3rd Qtr. 2017	1st Qtr. 2022
FOG Receiving		313,000	12,850,000	1st Qtr. 2023	3rd Qtr. 2029
Headworks Improvements	270,000	14,553,000	19,008,873	3rd Qtr. 2012	4th Qtr. 2022
Master Plan Updates	3,000,000	3,000,000	3,000,000	3rd Qtr. 2018	2nd Qtr. 2021
New Disinfection Facilities		7,853,000	56,977,000	3rd Qtr. 2020	2nd Qtr. 2029
New Headworks	1,309,000	115,904,000	124,119,825	3rd Qtr. 2012	4th Qtr. 2022
Nitrification Clarifier Rehabilitation	841,000	46,176,000	51,730,907	3rd Qtr. 2009	3rd Qtr. 2024
Outfall Bridge and Levee Improvements	299,000	5,847,000	8,148,622	3rd Qtr. 2014	2nd Qtr. 2021
Owner Controlled Insurance Program	4,944,000	15,017,000	18,117,000	2nd Qtr. 2017	2nd Qtr. 2023
Payment for Clean Water Financing Authority Trustee	5,000	15,000	*	Ongoing	Ongoing
Plant Electrical Reliability	4,286,000	4,806,000	7,323,122	3rd Qtr. 2003	2nd Qtr. 2022
Plant Infrastructure Improvements	1,000,000	5,000,000	*	Ongoing	Ongoing
Preliminary Engineering - Water Pollution Control	1,000,000	5,000,000	*	Ongoing	Ongoing

Capital Program Summary by City Service Area

Environmental and Utility Services

	<u>2018-2019 Budget</u>	<u>2019-2023 CIP Budget</u>	<u>Total Budget (All Years)</u>	<u>Start Date</u>	<u>End Date</u>
Program Management - Water Pollution Control	8,258,000	38,146,000	*	Ongoing	Ongoing
Record Drawings	3,354,000	13,582,000	14,264,000	3rd Qtr. 2014	2nd Qtr. 2026
Secondary Clarifier Rehabilitation	565,000	26,100,000	26,455,000	1st Qtr. 2017	4th Qtr. 2024
State Revolving Fund Loan Repayment	1,804,000	1,804,000	6,268,000	Ongoing	Ongoing
Storm Drain System Improvements		12,134,000	13,936,000	3rd Qtr. 2017	3rd Qtr. 2023
Support Building Improvements	1,701,000	20,640,000	56,075,175	3rd Qtr. 2015	3rd Qtr. 2028
Treatment Plant Distributed Control System	1,025,000	4,525,000	6,040,719	1st Qtr. 2012	2nd Qtr. 2022
Tunnel Rehabilitation	1,219,000	25,031,000	27,603,902	3rd Qtr. 2016	4th Qtr. 2026
Urgent and Unscheduled Treatment Plant Rehabilitation	500,000	2,500,000	*	Ongoing	Ongoing
Various Infrastructure Decommissioning	469,000	22,220,000	22,220,000	3rd Qtr. 2018	2nd Qtr. 2022
Yard Piping and Road Improvements	2,327,000	68,962,000	119,524,253	3rd Qtr. 2011	3rd Qtr. 2026
Total: Construction/Non-Construction	114,885,000	1,301,278,000			
Ending Fund Balance	11,073,816	33,200,816	**		
Total: Water Pollution Control	125,958,816	1,334,478,816	**		

V-36

Water Utility System

Advance System Design	200,000	1,000,000	*	Ongoing	Ongoing
Annual Water Main Replacement	1,300,000	8,400,000	*	Ongoing	Ongoing
Backup Generator Replacement	200,000	200,000	*	Ongoing	Ongoing
Capital Program and Public Works Department Support Service Costs	7,000	41,000	*	Ongoing	Ongoing
City Hall Debt Service Fund	8,000	52,000	*	Ongoing	Ongoing
Facility Sites Improvement	300,000	300,000	*	Ongoing	Ongoing
Fowler Pump Station Replacement	2,100,000	2,100,000	2,160,000	3rd Qtr. 2017	2nd Qtr. 2019
GIS Support	65,000	325,000	*	Ongoing	Ongoing
Infrastructure Improvements	800,000	4,100,000	*	Ongoing	Ongoing
Major Facilities Fee Administration	15,000	75,000	*	Ongoing	Ongoing
Master Plan Engineering	155,000	825,000	*	Ongoing	Ongoing
Meter Installations	50,000	250,000	*	Ongoing	Ongoing
Network System Flow Improvements	6,000	30,000	*	Ongoing	Ongoing
North Coyote Valley Water System Reserve	168,000	168,000	168,000	N/A	N/A

Capital Program Summary by City Service Area

Environmental and Utility Services

	<u>2018-2019 Budget</u>	<u>2019-2023 CIP Budget</u>	<u>Total Budget (All Years)</u>	<u>Start Date</u>	<u>End Date</u>
North San José Reliability Well #6 Construction		1,460,000	1,460,000	3rd Qtr. 2019	2nd Qtr. 2022
North San José Well #5 Development and Construction	1,560,000	1,560,000	1,560,000	3rd Qtr. 2018	4th Qtr. 2019
Preliminary Engineering - Water	140,000	750,000	*	Ongoing	Ongoing
Public Art Funding	7,000	27,000	151,000	Ongoing	Ongoing
Safety and Security Improvements	100,000	500,000	*	Ongoing	Ongoing
Service Installations	200,000	1,000,000	*	Ongoing	Ongoing
System Growth Related Projects Reserve	1,600,000	1,600,000	1,600,000	N/A	N/A
System Maintenance/Repairs	740,000	3,780,000	*	Ongoing	Ongoing
System Rehabilitation/Replacement Reserve	2,854,000	3,901,000	3,901,000	N/A	N/A
Tuers Road Site Improvements	<u>510,000</u>	<u>510,000</u>	510,000	3rd. Qtr. 2018	2nd. Qtr. 2019
Total: Construction/Non-Construction	13,085,000	32,954,000	11,510,000	296,330	307,427
Ending Fund Balance	<u>3,495,431</u>	<u>3,927,431</u>	**		
Total: Water Utility System	16,580,431	36,881,431	**		
CSA Total: Construction/Non-Construction	186,749,000	1,550,632,000	**		
Ending Fund Balance	<u>16,129,311</u>	<u>39,669,311</u>	**		
CSA Total:	<u><u>202,878,311</u></u>	<u><u>1,590,301,311</u></u>	**		

V-37

* Total Budget information is not provided due to the ongoing nature of this project.

** The 2018-2019 through 2021-2022 Ending Balance are excluded from the FIVE-YEAR TOTAL USE OF FUNDS to avoid multiple