



Memorandum

TO: TRANSPORTATION AND
ENVIRONMENT COMMITTEE

FROM: Lori Mitchell P.E.
Matt Loesch

SUBJECT: See Below

DATE: February 10, 2025

Approved

Date:

2/21/2025

SUBJECT: San Jose-Santa Clara Regional Wastewater Facility Capital Improvement Program Annual Status Report, January 2024 – December 2024

RECOMMENDATION

Accept the annual status report on the San José-Santa Clara Regional Wastewater Facility (RWF) Capital Improvement Program (CIP) for the period of January through December 2024.

BACKGROUND

The San José and Santa Clara City Councils adopted the Plant Master Plan (PMP) in November 2013 and December 2013, respectively. The PMP identified more than 100 capital improvement projects totaling over \$2.1 billion to be implemented at the RWF over 30 years. Staff completed a validation process in early 2014 to update and prioritize the recommended PMP projects and additional gap projects into 33 projects to be initiated over 10 years. Beginning in fiscal year 2014-2015, the validation process was used to inform the five-year CIP and ten-year funding strategy. The 2025-2029 Adopted CIP includes approximately \$948 million in funding, of which approximately \$544 million is for construction. To provide visibility and accountability for this significant CIP effort, staff began providing formal semiannual status reports to Transportation & Environment Committee, the Treatment Plant Advisory Committee, and the City Council in spring 2013, and annual status reports starting in 2023.

The first semiannual status report was published in April 2013 and focused on progress and activities from July 2012 through December 2012. This report is the 22nd in the report series and highlights key program and project accomplishments in the 2024

calendar year. This report also complements CIP status reports that staff issued monthly from April 2014 through April 2021 and quarterly beginning in May 2021; these reports provide more frequent and time-relevant updates. Through December 2024, 98 monthly and quarterly reports have been issued. Copies of these reports are available at: <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/water-utilities/regional-wastewater-facility/capital-improvement-program/cip-document-library/>.

ANALYSIS

During this reporting period, dedicated staff and contractors continued to make progress on critical CIP projects. There were no reportable incidents to the State's Division of Occupational Safety and Health from January through December 2024.

The CIP reached significant milestones during this reporting period:

A. Multiple Projects Completed

Over the past year, six key projects were completed. These projects yielded substantial benefits, including:

- Blower Improvements project replaced aging equipment in the secondary treatment area to boost aeration system efficiency;
- Fire Life Safety project upgraded fire alarm and monitoring systems to enhance safety;
- New Headworks Access Road project improved site accessibility and safety for septage haulers and chemical trucks by constructing a new roadway;
- Outfall Channel and Instrumentation Improvements project upgraded water quality monitoring systems to ensure ongoing compliance with National Pollutant Discharge Elimination System permit requirements;
- Storm Drain System Improvements project rehabilitated multiple stormwater pump stations, storm and sanitary pipes, and drainage systems to safeguard critical infrastructure during severe weather events; and
- Yard Piping Improvements - Phase 2 project rehabilitated several critical large-diameter process pipes to address deterioration due to age and mitigate risk of failure.

With two more projects slated to be completed this year, CIP staff expects a significant reduction in construction activity over the next few years.

B. Plant Master Plan Technical Update in Progress

The original Plant Master Plan (PMP), adopted in 2013, outlined a vision for the RWF through 2040, addressing aging infrastructure, regulatory compliance, increasing flows and loads, sea level rise, and community values. While these

factors remain critical, significant changes over the past eleven years necessitate a formal update to the PMP and its 33 supporting project memoranda.

The PMP Technical Update will incorporate projects completed since 2013; assess the impact of recent changes on the previously identified drivers; re-evaluate and update recommendations for future improvements; and extend the planning horizon to 2050.

In June 2024, CIP staff engaged Jacobs Engineering Group Inc. to perform the technical update. The outcomes will include a detailed assessment of all recommended capital improvements for the next 25 years, as well as updated project descriptions, scopes, costs, and schedules. The PMP Technical Update is expected to be finalized in Spring 2025.

On the project delivery front, there were 16 active projects at various phases of the project delivery model during this reporting period. The descriptions of projects listed below can be found in Attachment A.

A. Feasibility/Development Highlights

Two projects were in the feasibility/development phase during the 2024 calendar year. Key activities completed during this period include the following:

- **Additional Digester Facility Upgrade:** During this period, the owner's advisor conducted condition assessments, seismic evaluations, and struvite analysis to define the project scope and key criteria. The project team also started developing the Request for Qualifications (RFQ) to procure a design-builder, scheduled to be advertised in February 2025. To engage potential design-builders, staff hosted an open house event in September.
- **Building 40 VFD Room HVAC Improvements:** This project was initiated in April 2024 to construct a new HVAC system to protect the variable frequency drives that control the blowers in Building 40. During this period, the consultant developed design alternatives for the new HVAC system.

B. Design /Bid and Award Highlights

Four projects were in the design or bid/award phase at the end of December 2024. Key activities completed during this period include the following:

- **Camera and Card Reader Upgrades:** During this period, the consultant completed the conceptual design report and started to develop the preliminary design.
- **Yard Piping Improvements - Phase 3:** During this period, the consultant completed the project design. The construction contract was advertised in December and Council award is anticipated in April 2025.

C. Construction Highlights

Ten projects, totaling approximately \$294 million, were in construction during the period ending December 2024 (see Attachment B). One of the 10 projects is being delivered using the design-build method, with the remaining nine projects being delivered using the design-bid-build approach. Also, six projects reached substantial completion: Blower Improvements, Fire Life Safety Upgrades, New Headworks Access Road, Outfall Channel and Instrumentation Improvements, Storm Drain System Improvements, and Yard Piping Improvements - Phase 2. Key activities completed during this period include the following:

- **Blower improvements:** During this period, the contractor continued punch list and warranty work and other project close-out activities. Substantial completion was achieved in June.
- **Digested Sludge Dewatering Facility:** During this reporting period, construction progressed significantly. Foundations, walls, and structural steel were erected for both the main dewatering building and the truck loadout facility. Installation of four centrifuges and four cake bins was completed in their respective buildings, along with associated electrical and mechanical components. Horizontal directional drilling under Zanker Road enabled the placement of underground pipelines to transport sludge and centrate between the new dewatering facility and RWF process areas across the street. Testing, startup, and commissioning of the dewatering facility are expected to commence in early 2025, with substantial completion anticipated by fall 2025. Through December, construction was approximately 80 percent complete.
- **Facility-wide Water Systems Improvements:** In January, Council awarded the construction contract. Pre-construction activities commenced in April, including exploratory trenching to locate existing water lines. Field work through November included the installation of over 2,000 feet of new water lines and electrical conduits in various locations around the RWF and continuing duct bank installation work near the cogeneration facility. Staff continued to review several submittals for switchgear and transformer components. Through December, construction was approximately 6 percent complete.
- **Filter Rehabilitation:** During this period, the contractor continued replacing old electrical equipment and migrating power to new devices during carefully coordinated short-term shutdowns. Other ongoing work included insulation of air headers, drywall repairs, application of coatings, installation of a new motor control center and sump pumps, and construction of duct banks and underground conduits. As of December, construction was approximately 94 percent complete, with substantial completion anticipated in spring 2025.
- **Fire Life Safety Upgrades:** In 2024, the contractor finished installing fire alarm systems and appurtenances in all 13 buildings. Functional and operational testing was completed successfully. In October, the Fire

Department inspected all 13 buildings, and substantial completion was achieved.

- **New Headworks Access Road:** Council awarded the construction contract in June. Pre-construction activities, including site surveying, clearing, grubbing, and subgrade preparation, were completed in September. Construction of the roadway, including concrete, storm drain piping, and drain inlet work started in October. Asphalt pouring followed, and the project achieved substantial completion by November.
- **Outfall Channel and Instrumentation Improvements:** In January, the long-lead electrical transformer was delivered to the RWF. The contractor installed and energized the new transformer in February and March. Replacement, calibration, and testing of instruments continued in various areas. Additional work included tagging and labeling instruments and demolishing an old duct bank and vault. The project reached substantial completion in September.
- **RWF Main Entrance Improvements:** Council awarded the construction contract in June. Pre-construction activities commenced including a bird survey, installation of temporary fencing, tree and asphalt removal, site clearing, grading and compaction. The contractor took the contents of the chlorine lines and samples from pipes for testing and performed potholing.
- **Storm Drain System Improvements:** During this period, the contractor finished installing electrical and mechanical components, including switch controls, flow meters, and pumps, in all seven pump stations. Testing, startup, and commissioning was completed. Substantial completion was achieved in July.
- **Yard Piping Improvements - Phase 2:** During this period, the contractor finished pouring the concrete slab and installing stainless-steel grating at Effluent Junction Structure 1. Aluminum stairs and handrails were installed at the fish screening structure. All improvements at the No. 3 Water Wet Well were completed. Additionally, the rehabilitation of the 102-inch nitrification influent pipe, 120-inch raw sewer pipe, the 48" Santa Clara Force Main and 96-inch raw sewer pipe was finalized. All pipes were tested and returned to service. Substantial completion was achieved in November.

Staff expects to achieve the following by the end of December 2025:

1. Reach substantial completion on the Digested Sludge Dewatering Facility, and Filter Rehabilitation;
2. Advertise the Request for Qualifications (RFQ) and Request for Proposals (RFP) for design-builders for the Additional Digester Facility Upgrade project;
3. Obtain Council approval to award the construction contract for Yard Piping Improvements - Phase 3, and the design-build contract for Additional Digester Facility Upgrade; and
4. Obtain Council approval of the Plant Master Plan Technical Update.

February 10, 2025

Subject: San José-Santa Clara Regional Wastewater Facility Capital Improvement Program Annual Status Report, Jan 2024 – Dec 2024

Page 6

COORDINATION

This report has been coordinated with the City Attorney's Office and the City Manager's Budget Office.

/s/
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/s/
Matt Loesch
Director, Public Works

For questions, please contact Mariana Chavez-Vazquez, RWF General Manager, Environmental Services Department at (408) 506-3759.

The principal author(s) of this memorandum are Liz Neves, Supervising Environmental Services Specialist, ESD; and Ekpa Akpan-Muganda, Program Manager, ESD. For questions, please contact David Ohlson, Principal Wastewater Facility Engineer, ESD at david.ohlson@sanjoseca.gov or (408) 635-4041.

ATTACHMENT:

Attachment A - Descriptions of Active Projects

Attachment B - Projects Under Construction: January 2024 – December 2024

ATTACHMENT A

Descriptions of Active Projects

1. **Additional Digester Facility Upgrade:** The RWF has 12 anerobic digesters. Four of the 12 have recently been upgraded from mesophilic to thermophilic to create a temperature-phased anaerobic digestion (TPAD) process. The remaining eight digesters, range from 50 to 60 years old. Many of the parts in these digesters are out of date or reaching the end of their lifespans. This project will renew the tanks' structure and implement upgrades to several components, including mechanical upgrades to six digesters, new electrical and instrumentation and control equipment, etc.
2. **Blower Improvements:** RWF's aeration blower systems, which supply oxygen for breaking down organic material in wastewater, are more than 30 years old. This project will replace blower engines, gearboxes, and associated control equipment, extending the system's life and enhancing its energy efficiency.
3. **Building 40 VFD Room HVAC Improvements:** This project's scope is the design and construction of a new closed-loop HVAC system for the variable-frequency drive (VFD) room in Building 40. This system will be similar to other VFD rooms in the RWF and will consist of an air-handling unit as well as supply and return ductwork.
4. **Camera and Card Reader Upgrades:** Much of the RWF's security infrastructure is out of date and failing. Maintaining the RWF as a safe and secure facility is a priority. This project will upgrade and install various security features throughout the site, including access card readers in public buildings, server rooms, chemical supply rooms, warehouse; new card readers at remote gates, the entrance to outfall channel, and other perimeter gates; two new proximity card badging stations; closed-circuit televisions utilizing both wired and wireless cameras in various locations; and associated server room upgrades including HVAC, electrical, fiber, racks, etc.
5. **Digested Sludge Dewatering Facility:** The RWF currently uses an open-air lagoon and drying bed process to stabilize biosolids before landfill disposal. The 2013 Plant Master Plan recommended moving to an enclosed mechanical dewatering process. This project will build a mechanical dewatering facility and support facilities.
6. **Facility-wide Water System Improvements:** The RWF has five water systems: potable water (1W), groundwater (2W), process water (3W), fire protection water (4W), and recycled water (RW). These systems were constructed at separate times as part of various expansions. The aim of this project is to review, rehabilitate, replace, and/or extend the RWF's water systems to improve current and future performance and reliability.
7. **Filter Rehabilitation:** The filtration process is one of the final steps in wastewater treatment. The RWF's tertiary filtration process consists of 16 granular media filters and ancillary equipment. Built in the 1970s and 1980s, these components are near the end of their useful lives. The project will rehabilitate structural, mechanical, electrical and instrumentation elements of the system.
8. **Fire Life Safety Upgrades:** Several RWF buildings currently lack automated fire alarm systems to monitor and send out a notification in the event of a fire. Fire life safety upgrades are needed to bring the RWF into compliance with current building safety and fire codes.

- 9. New Headworks Access Road:** With the Headworks 3 facility now operational, septic hauling and chemical trucks need a dependable path to travel to and from the site. This project will create a permanent roadway from the Zanker Road Gate to the new Headworks 3 transfer point. The roadway will include proper drainage to protect the surrounding areas, including the nearby nature preserve, from spillage and pollution.
- 10. Outfall Channel and Instrumentation Improvements:** The end product of the wastewater treatment process travels through the outfall channel to the Artesian Slough and South San Francisco Bay. This project will replace older technology with a fiber optic system, install new instruments, improve the integrity of the weir structure, and construct a large vault structure to install new flow meter technology, making the meters accessible to staff.
- 11. RWF Main Entrance Improvements:** Built in 1988, the existing main gate serves as the RWF's primary vehicle security checkpoint and has lasted beyond its service life. The new entrance will be upgraded to meet Americans with Disabilities Act requirements, the entry and exit lanes will be widened to improve traffic flow for large delivery trucks, and lighting will be improved for clearer nighttime visibility.
- 12. Storm Drain System Improvements:** The RWF experiences localized flooding during heavy rainfall events due to runoff, requiring improvements to the existing storm drain system to protect the operational area. This project will improve the existing storm drain system by rehabilitating storm water pump stations, pipes, manholes, catch basins, and other components. The upgrades made by this project will protect RWF's critical structures and equipment during 10- year through 100-year storm events.
- 13. Yard Piping Improvements Phase 2:** The RWF has 67,000 linear feet of process pipes that carry gas, liquids, sludge, air, steam and other process streams to and from the various treatment areas. These networks of pipeline are critical to RWF operations. Seventy percent of the pipes are more than 25 years old, and 10% are more than 50 years of age. This is the second of a multi-phase project to repair or replace pipe systems that have been identified as high priority or at high risk of failure.
- 14. Yard Piping Improvements Phase 3:** The RWF has 67,000 linear feet of process pipes that carry gas, liquids, sludge, air, steam and other process streams to and from the various treatment areas. These networks of pipeline are critical to RWF operations. Seventy percent of the pipes are more than 25 years old, and 10% are more than 50 years of age. This is the third of a multi-phase project to repair or replace pipe systems that have been identified as high priority or at high risk of failure.

ATTACHMENT B

Projects Under Construction: January 2024 – December 2024

#	Project Name	Contractor	Amount Awarded	Date Awarded	Actual/ Estimated Beneficial Use
1.	8073 – Blower Improvements	Monterey Mechanical Company	Base Contract: \$29,429,838 Contingency: \$4,493,163	6/21/2016	Summer 2024
2.	7758 – Digested Sludge Dewatering Facility	Walsh Construction Company II, LLC	Base Contract: \$131,161,646 Contingency: \$12,115,379	3/1/2022	Fall 2025
3.	7790 – Facility-wide Water Systems Improvements	Ranger Pipelines, Inc.	Base Contract: \$59,795,585 Contingency: \$8,923,614	1/9/2024	Summer 2027
4.	7448 – Filter Rehabilitation	Walsh Construction Company II, LLC	Base Contract: \$33,290,577 Contingency: \$6,658,000	10/20/2020	Spring 2025
5.	8781 – Fire Life Safety Upgrades	Blocka Construction, Inc.	Base Contract: \$2,839,000 Contingency: \$675,850	8/23/2022	Winter 2025
6.	9911 – New Headworks Access Road	O.C. Jones & Sons, Inc.	Base Contract: \$1,501,366 Contingency: \$150,137	7/4/2024	Fall 2024
7.	7745 – Outfall Channel and Instrumentation Improvements	Anvil Builders Inc.	Base Contract: \$4,297,570 Contingency: \$644,636	12/2/2021	Fall 2024
8.	9895 – RWF Main Entrance Improvements	W.E. Lyons Construction Co.	Base Contract: \$8,996,937 Contingency: \$899,693	6/4/2024	Spring 2026
9.	8748 – Storm Drain System Improvements	Ranger Pipelines, Inc.	Base Contract: \$6,333,000 Contingency: \$1,266,600	3/22/2022	Summer 2024
10.	9850 – Yard Piping Improvements - Phase 2	Michels Trenchless	Base Contract: \$16,855,430 Contingency: \$2,528,314	4/25/2023	Fall 2024