



Memorandum

TO: TRANSPORTATION AND
ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow
Jon Cicirelli

SUBJECT: SEE BELOW

DATE: March 14, 2018

Approved

Date

23 MARCH 2018

**SUBJECT: SAN JOSÉ-SANTA CLARA REGIONAL WASTEWATER FACILITY
CAPITAL IMPROVEMENT PROGRAM SEMIANNUAL STATUS
REPORT**

RECOMMENDATION

Accept the semiannual status report on the San José-Santa Clara Regional Wastewater Facility Capital Improvement Program for the period of July 2017 through December 2017.

OUTCOME

The purpose of this semiannual status report is to provide an update on the implementation of the Capital Improvement Program (CIP) at the San José-Santa Clara Regional Wastewater Facility¹ (RWF) by highlighting key accomplishments during the first half of fiscal year 2017-2018 to the Transportation and Environment Committee (T&E), the Treatment Plant Advisory Committee (TPAC), and City Council (Council).

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 the next 30 years. A validation process was completed 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 2018-2022 adopted CIP includes approximately \$1.5 billion in funding, of which approximately \$883 million is for construction. To provide visibility and accountability

¹ The legal, official name of the facility remains San José/Santa Clara Water Pollution Control Plant, but beginning in early 2013, the facility was approved to use a new common name, the San José-Santa Clara Regional Wastewater Facility.

for this significant CIP effort, staff began providing formal semiannual status reports to T&E, TPAC, and Council in spring 2013.

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 eleventh in the report series and highlights key program and project accomplishments from July 2017 through December 2017. This report also compliments monthly CIP status reports, which staff began issuing in April 2014 to provide more frequent and time-relevant updates. Through December 2017, 45 monthly reports had been issued. Copies of the monthly reports are available at <http://www.sanjoseca.gov/Archive.aspx?AMID=190>.

ANALYSIS

Significant progress was made in several program areas from July 2017 through December 2017.

A. Financing

In July, the State Water Resources Control Board (SWRCB) informed staff that State Revolving Fund (SRF) funding would not be available for RWF CIP projects due to higher than expected demand for SRF loans. The updated Intended Use Plan issued by the SWRCB gave higher priority to wastewater recycling, small disadvantaged communities, and green projects. In addition, several of the standard terms of the SRF loan agreement precluded the City from obtaining short-term financing and setting rates and reserves in a cost-effective manner. Therefore, at this time, the strategy for funding the City's portion of the RWF CIP includes pay-as-you-go cash funding from ratepayer revenues, short-term financing, and proceeds from bond issuances. Staff will continue to monitor SRF loan opportunities but is not actively seeking SRF loans at this time.

In October, Council approved an interim financing program, under a three-year contract, to enable borrowing up to \$300 million at any one time to fund San José's portion of the RWF CIP. In the longer term, staff anticipates that bonds will need to be issued periodically to provide sufficient funding for the 10-year CIP; the first bond issuance is expected to occur in 2021-2022.

B. Amendment to Program Management Agreement

In October, Council approved an amendment to the master consultant agreement with Stantec Consulting Services (formerly MWH) for program management services. The amendment increased the maximum compensation from \$39 million to \$78 million, and extended the term from September 30, 2018 to June 30, 2023. The amended contract will enable the continuation of program management and project management services for a number of large and complex projects in the CIP. The amendment also addressed recommendations from a 2017 audit of ESD consultant contracts.

C. Recruitments

During the first half of fiscal year 2017-2018, staff successfully filled 12 vacant positions: four associate engineers, three associate engineering technicians, a senior engineering technician, an engineer I/II, an office specialist, a senior process engineer, and a division manager. Recruiting for mid-level and senior engineering positions will be a priority during the second half of fiscal year 2017-2018, particularly for senior and principal engineer and construction inspector positions that support CIP project delivery.

D. Flow Management Study

In July, staff completed an evaluation of the flow and load projections used as the basis of design for CIP projects. Specifically, the study calibrated an existing hydraulic model of the RWF and developed strategies for accommodating extreme peak hour wet weather flows. The study identified a need to confirm the hydraulic and process capacities for various existing treatment and pumping units, which will be performed by RWF operations and process engineering staff starting in the second half of fiscal year 2017-2018. Additionally, recommendations were made to continue to monitor RWF flows during storm events and to reassess the peak flow management strategy since the hydraulic capacities have been established.

Other notable developments during this reporting period include the following.

- In August, staff posted a Notice of Determination deeming a firm pre-qualified to provide system integration programming services for CIP projects. This is the second firm to be pre-qualified as another was pre-qualified in July 2016. Having two pre-qualified firms promotes competitive pricing and ensures the availability of system integrators. System integration is critical as it enables monitoring and control of equipment from the RWF's computer room.
- In November, staff advertised a Request for Qualifications (RFQ) for on-call specialty inspection and material testing services. Staff received Statements of Qualifications (SOQs) from five interested firms in December. Staff will seek Council approval to award agreements to the three highest ranked firms during the second half of fiscal year 2017-2018.

On the project delivery front, 25 active projects progressed through various stages of the project delivery model.

A. Feasibility/Development Highlights

Fifteen projects were in the feasibility/development phase during the first half of fiscal year 2017-2018. Key activities completed during this period include the following.

- The **Flood Protection** and **Storm Drain System Improvements** projects were initiated in August and October, respectively. The Flood Protection project will provide protection to the RWF against flooding by building a berm in the low lying areas that connects to existing higher ground. The Storm Drain System Improvements project will upgrade the RWF's existing storm drain system to handle a 10-year 24-hour storm with no surface flooding on streets, and a 100-year 24-hour storm with all flow staying within streets (i.e., not flood any RWF buildings and structures).

- Condition assessments began for two low-bid design-build projects: **Fire Life Safety Upgrades** and **HVAC Improvements**.
- Condition assessment, modeling, and alternatives analysis efforts continued for the **Aeration Tanks Rehabilitation** and **Facility-Wide Water Systems Improvements** projects. Multiple workshops for both projects were held to discuss condition assessment findings, as well as develop and shortlist alternatives for further analysis.
- **Digested Sludge Dewatering Facility** (progressive design-build): In November, the project team completed the evaluation of alternatives for six key project components—dewatering technology, sludge storage, sludge pumping, cake storage, cake conveyance, and layout. In December, work began on the Basis of Design Report. A RFQ will be issued in early 2018 to shortlist prospective design-builders.
- The **Filter Rehabilitation** and **Nitrification Clarifiers Rehabilitation** project teams completed alternatives analysis and developed conceptual design reports.
- **Headworks Improvements and New Headworks** (progressive design-build): Three design-build firms were shortlisted in August and invited to submit proposals following the evaluation of four SOQs in July. A Request for Proposals was issued to the shortlisted firms in November and all three submitted proposals in December.
- **Yard Piping and Road Improvements** (progressive design-build): Staff advertised a RFQ for owner's advisor and engineering services in September, received four SOQs in October, and issued a final ranking in December. Council award of a master consultant agreement is expected in April.

B. Design Highlights

Four projects were in the design phase during the first half of fiscal year 2017-2018. Key activities completed during this period include the following.

- **Advanced Facility Control & Meter Replacement:** Upon completion of the 50 percent design in July, the project was packaged into two phases—**Phase 1** and **Phase 2**—to better align construction with planned RWF maintenance shutdowns and available budget. The project team pre-qualified four prospective general contractors for Phase 1 in November and completed the 100 percent design for Phase 1 in December.
- **Blower Improvements:** In July, the project team hosted an outreach event to familiarize prospective bidders with the project and solicit interest. Attendees included general contractors, subcontractors, and equipment suppliers. The 60% design was completed in September.
- **Cogeneration Facility** (progressive design-build): A value engineering workshop was held in July to help ensure the project is cost efficient. The project became the first to enroll in the owner-controlled insurance program that was established for the RWF CIP in June 2017. The second early work package, which consists of site preparations and foundation work was approved by the City Manager in October. Subsequently, the project team reviewed the 60 percent design and negotiated guaranteed maximum price (GMP) proposals with the design-builder for completing the design and construction. The project team also continued to coordinate with the

Bay Area Air Quality Management District (BAAQMD) regarding the project's Authority to Construct permit.

C. Construction Highlights

Six projects totaling more than \$147 million were in construction during the first half of fiscal year 2017-2018 (see Attachment A). One of the six projects is being delivered using the low-bid design-build method, with the remaining five projects being delivered using the design-bid-build delivery method. One project reached beneficial use during this period. The remaining projects all progressed well, although a few encountered delays. Of significance, staff continued to work through several significant unforeseen conditions encountered on the Digester and Thickener Facilities Upgrade project.

Key activities completed during this period include the following.

- **Emergency Diesel Generators** (low bid design-build): On July 7, 2017, the project reached beneficial use as the design-builder completed the commission testing of the four new generators. Completion of the project provides sufficient reliable power to allow critical RWF operations to continue during a temporary utility power outage. Project acceptance is expected by spring 2018.
- **Iron Salt Feed Station:** The general contractor provided operation and maintenance training of the equipment in September, before starting commission testing of the ferric chloride and polymer dosing systems in October. Testing continued through to December. As a result of the testing, the general contractor had to make minor modifications to the in piping and programming. Through December 2017, construction was 84 percent complete. The project is expected to reach beneficial use in spring 2018.
- **Construction-Enabling Improvements:** Delays in the fabrication and delivery of the portable trailers continued to impact the project schedule. The trailer to be used for badging and site security was delivered to the RWF in August. However, delivery of the four construction management trailers was delayed as their fabrication spanned the second half of fiscal year 2017-2018. Staff has notified the general contractor that they have exceeded the amount of contractually allowed working days and that liquidated damages are accruing until full beneficial use is reached. The City has claimed partial beneficial use of a portion of the project to provide a laydown area for contractors on working on other CIP projects. Through December 2017, construction was 77 percent complete. The project is expected to reach beneficial use in spring 2018.
- **Headworks Critical Improvements:** Work began in July with mobilization and preparation of critical equipment submittals by the general contractor. By November, the general contractor had removed one of the two existing single-rake bar screens in Headworks 2 and prepared the existing bar screen channel for the installation a new multi-rake bar screen, which was installed in December. Through December 2017, construction was 25 percent complete. The project is expected to reach beneficial use in spring 2018.

- **Plant Instrument Air System Upgrade:** In July, the general contractor installed the footing for the new compressor building. Concrete for the building's floor and equipment pads was poured in August, and the building's concrete block walls were built in September. Roofing work spanned from October through December. Through December 2017, construction was 55 percent complete. The project is expected to reach beneficial use in spring 2018.
- **Digester and Thickener Facilities Upgrade:** In July, the general contractor completed foundation work for the elevated pipe rack columns and concrete work inside the digesters. In August, installation of post-tension cables was completed. Work on the new sludge screening building and dissolved air flotation thickener tanks, and installation of the pipe rack columns continued through December. Additionally, staff continued to address the unforeseen issues encountered during the second half of fiscal year 2016-2017 and began addressing new issues encountered during the first half of fiscal year 2017-2018.

Temporary Gas Bypass System and 78-inch Pipe Replacement – Preparation for the gas bypass and primary effluent bypass to repair the severely corroded 78-inch pipe and wye structure continued. The gas bypass work was completed in September. The primary effluent bypass and pipeline repair work is scheduled to be completed during the dry weather season of 2018.

Seismic Redesign – In July, staff was notified by the design consultant that the current structural design does not fully meet the seismic design criteria specified for the project. The design consultant evaluated various options and is working to issue a revised seismic design package that takes into account cost, constructability, and schedule impacts. Final completion of the seismic redesign package and contractor pricing is expected in spring 2018. Staff anticipates there will be significant cost and schedule delays due to the seismic redesign work, and that an additional increase to the construction contingency will be needed.

Handling and Mitigation of PCBs – During demolition activities inside digester and dissolved air flotation thickener tanks in summer 2017, elevated levels of polychlorinated biphenyls (PCBs) were found in the joint caulking material. The contractor immediately removed and disposed of all PCB-impacted caulking material in accordance with all applicable state and federal regulations. In September, staff met with the Environmental Protection Agency (EPA) to notify them of the discovery of PCBs at the RWF and to discuss a risk-based clean-up approach for the digester project going forward. In November, an initial application (Phase 1) was submitted to EPA for review. In December, EPA approved the Phase 1 application in efforts to minimize delay impacts to the project, but also required additional soil sampling and characterization work to be performed. Excavation work around the four digesters was put on temporary hold in August 2017 pending consultation with and approval by the EPA; the general contractor will be directed to resume excavations when appropriate and safe to do so. Staff also continued to work on the final application

(Phase 2), which will include soil and concrete sampling results and other additional information.

Staff plans to seek Council approval for a second contingency increase in spring 2018 to implement the seismic retrofit solution and PCBs cleanup plan. An initial increase to the construction contingency, in the amount of \$15,000,000, was approved by Council in November 2017 to address the previously encountered and unforeseen underground utility conflicts, regulatory requirements from BAAQMD, and deteriorated 78-inch pipe and wye structure, and mitigation of lead paint.

Through December 2017, construction was 39 percent complete. The project is expected to reach beneficial use in summer 2020.

Staff, contractors, and consultants continue to work safely and there were no reportable incidents to the State's Division of Occupational Safety and Health (Cal/OSHA) during the first half of fiscal year 2017-2018.

Staff expects to achieve the following during the second half of fiscal year 2017-2018.

1. Obtain Council approval to award a master consultant agreement for owner advisor services for the Yard Piping and Road Improvements project.
2. Advertise a RFQ for design-build services for the Digested Sludge Dewatering Facility project.
3. Issue a final ranking for the design-builder procurement, commence contract negotiations with the highest ranked design-builder, and obtain Council approval to award a design-build contract for the Headworks Improvements and New Headworks project.
4. Complete preliminary design and begin detailed design on two projects: Filter Rehabilitation and Nitrification Clarifiers Rehabilitation.
5. Execute a definitive contract amendment and a negotiated GMP to complete the design and construction of the Cogeneration Facility with the project's design-builder.
6. Start construction for the new Cogeneration Facility.
7. Pre-qualify general contractors, complete design, and advertise the Blower Improvements project for construction bidding.
8. Advertise and obtain Council approval to award a construction contract for the Advanced Facility Control & Meter Replacement Phase 1 project.
9. Install the temporary bypass pumping system to allow replacement of the 78-inch settled sewage pipeline as part of the Digester and Thickener Facilities Upgrade Project.
10. Obtain Council approval for a second increase to the construction contingency for the Digester and Thickener Facilities Upgrade project.
11. Amend the master consultant agreement with Signet Testing Laboratories to continue providing special inspection and material testing services for the Digester and Thickener Facilities Upgrade project.
12. Reach beneficial use on four projects: Construction-Enabling Improvements, Headworks Critical Improvements, Iron Salt Feed Station, and Plant Instrument Air System Upgrade.

13. Obtain Council approval to award master consultant agreements for specialty inspection and material testing services during construction for various CIP projects.
14. Continue to develop longer term resource and staffing plans, particularly for the construction management group in anticipation of increased construction activities in fiscal years 2019-2020 and 2020-2021.
15. Continue recruitment activities to fill remaining RWF CIP vacancies.

EVALUATION AND FOLLOW-UP

No follow-up action is required at this time. Staff will continue to provide regular updates to inform T&E, TPAC, and Council of significant changes or issues (particularly as related to rate impacts) as implementation of the CIP progresses. In addition to semiannual presentations, staff will continue to share monthly progress reports with TPAC.

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the April 2, 2018, T&E agenda.

COORDINATION

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

COMMISSION RECOMMENDATION/INPUT

This item is scheduled to be heard at the April 12, 2018, TPAC meeting. A supplemental memo with the committee's recommendation will be included in the amended April 24, 2018, City Council meeting agenda.

CEQA

Not a Project, File No. PP17-009, Staff Reports, Assessments, Annual Reports, and Information Memos that involve no approvals of any City action.

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TRANSPORTATION AND ENVIRONMENT COMMITTEE

March 14, 2018

Subject: Wastewater Facility CIP Semiannual Status Report, July 2017 – December 2017

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For questions, please contact Ashwini Katak, Assistant Director, Environmental Services Department at (408) 975-2553.

Attachment A – Projects in Construction: July 2017 – December 2017