



San José-Santa Clara
Regional Wastewater Facility

Capital Improvement Program Monthly Status Report: January 2019

March 7, 2019

This report summarizes the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (RWF) for January 2019.

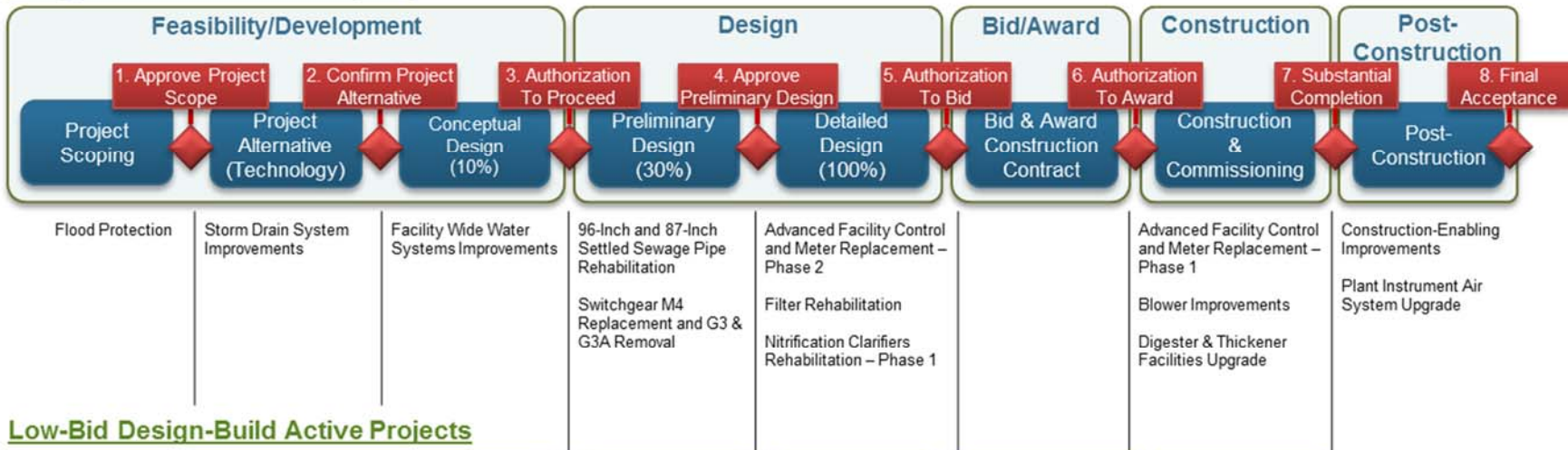
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Project Delivery Models

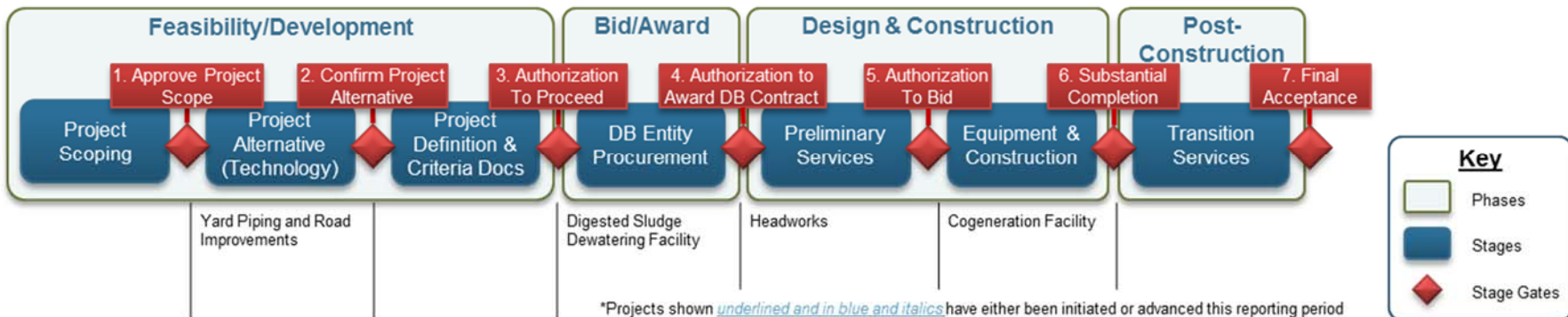
Design-Bid-Build Active Projects



Low-Bid Design-Build Active Projects



Progressive Design-Build Active Projects



*Projects shown underlined and in blue and italics have either been initiated or advanced this reporting period

Key

- Phases
- Stages
- ◆ Stage Gates



Program Summary

January 2019

In January, the Fire Life Safety Upgrades Project passed Stage Gate 3: Authorization to Proceed. The project team began preliminary design, which is expected to be completed by summer 2019.

The Digester and Thickener Facilities Upgrade Project completed the roof concrete placement on Digester 5 and continued roof replacement work on the remaining three digesters (see Figure 1). The contractor also completed installation of the 8-inch compressed digested gas (CDG) piping from the gas compressor room at the Sludge Control Building to the aeration basins. The piping is required to provide CDG to the new engine generators being installed as part of the Cogeneration Facility Project. Work continues at the dissolved air flotation thickeners with installation of the mechanical mechanisms, pressure retention tanks, and electrical conduit and wire.



Figure 1: Digester 6 Concrete Roof Under Construction, Digester 5 Roof Completed

The Cogeneration Facility achieved 50 percent height on the main building walls, which are anticipated to be completed in April 2019. The Advanced Facility Control and Meter Replacement - Phase 1 Project contractor completed a hazardous material survey of the major piping system. In addition, the City approved submittals for the flowmeters, allowing the contractor to order the equipment. Installation of the meters will commence in May 2019. The City held a pre-construction meeting for the Blower Improvements Project with all stakeholders and issued the Notice to Proceed (NTP) to the contractor, Monterey Mechanical.

The Headworks Project team completed contract development and cost negotiations for the exploratory trenching and subsurface investigations, which are anticipated to be performed in April. The design-builder submitted the Basis of Design Report (BODR) and conducted a review workshop with the City.

For the Digested Sludge Dewatering Facility Project, the City interviewed three proposers as part of the design-build (DB) entity selection process and issued the Notice of Final Ranking at the end of the month. The City will begin negotiations with the top-ranked firm.

For the Nitrification Clarifiers Rehabilitation – Phase 1 Project, the City advertised prequalification documents for construction contractors. As part of the final design for the Filter Rehabilitation Project, the design consultant conducted geotechnical investigations, structural reconnaissance, and electrical investigations to minimize the impact of unforeseen conditions during construction. The City reviewed the Switchgear M4 Replacement and G3 and G3A Removal Project 60 percent design submittal and submitted them to the design consultant.

Look Ahead

The following key activities are forecast for February and March of 2019:

- The CIP will hold four stage gates as projects seek approval to advance to the next stage on the PDM. Anticipated stage gates include:
 - 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation—Stage Gate 4: Approve Preliminary Design
 - HVAC Improvements—Stage Gate 2: Confirm Project Alternatives
 - Outfall Bridge & Instrumentation Improvements—Stage Gate 3: Authorization to Proceed
 - Switchgear M4 Replacement and G3 & G3A Removal—Stage Gate 4: Approve Preliminary Design
- The Blower Improvements Project contractor will mobilize and begin submitting contract documentation.
- The 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation Project will advertise the contractor pre-qualification package.

Program Highlight – Vendor Open House

On December 5, the City held the fifth annual open house at the RWF to inform potential vendors about upcoming CIP contracting opportunities. Sixty people representing 48 different companies attended. The City provided consultants, construction contractors, and material and equipment suppliers with information on the CIP and on seven upcoming construction projects, described below, which have an estimated total construction value of \$95 million.

1. **96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation:** This project will rehabilitate a 96-inch settled sewage pipeline using cured-in-place pipe (CIPP), and an 87-inch by 136-inch settled sewage pipeline using concrete crown repair. The engineer's estimate, based on the project's 50 percent design, is approximately \$5 million. The project team anticipates pre-qualifying contractors starting in March 2019, requesting bids in summer 2019, and awarding a construction contract in late 2019.
2. **Advanced Facility Control and Meter Replacement - Phase 2:** This project will replace critical instrumentation, valves, and actuators throughout the RWF. The engineer's estimate based on the project's 90 percent design is approximately \$11 million. The City anticipates pre-qualifying contractors starting in summer 2019, requesting bids in fall 2019, and awarding a construction contract before the end of fiscal year 2019-2020.
3. **Filter Rehabilitation:** This project will make improvements to 16 existing media filters, electrical equipment, mechanical equipment, lighting, and concrete surfaces in the RWF's filter building. The engineer's estimate, based on the project's 30 percent design, is approximately \$28 million. The project team anticipates pre-qualifying contractors starting in spring 2019, requesting bids in late 2019, and awarding a construction contract before the end of fiscal year 2019-2020.
4. **Fire Life Safety Upgrades:** This project will provide new local fire alarm systems for three existing buildings and modify fire alarm systems in multiple other buildings that will be connected to a new centralized fire alarm system, which will monitor all of the RWF fire alarm panels. The engineer's estimate, based on the conceptual design, is approximately \$0.9 million. The project team anticipates requesting bids for this low-bid design-build project in mid-2019 and awarding a contract in late 2019.
5. **Nitrification Clarifiers Rehabilitation - Phase 1:** This project will rehabilitate eight clarifiers; replace all influent and return activated sludge (RAS) pipeline flow meters, valves, and actuators; repair RAS pipelines with CIPP; and replace supporting electrical, instrumentation, and control equipment. The engineer's estimate, based on the project's 60 percent design, is approximately \$43 million. The City advertised pre-qualification documents for contractors this month and anticipates requesting bids in mid-2019 and awarding a construction contract in fall 2019.
6. **Outfall Bridge and Instrumentation Improvements:** This low-bid design-build project will replace the RWF's existing wooden outfall bridge, instrumentation on the bridge, meters in pipes, and transformer. Based on the project's alternative analysis, the engineer's estimate is approximately \$3 million. The project team anticipates requesting bids in early 2020 and awarding a design-build contract in mid-2020.
7. **Switchgear M4 Replacement and G3 & G3A Removal:** This project will replace a one switchgear with new equipment that has a larger breaker and lower arch flash value, its enclosure, and two bus ducts that connect the switchgear to the transformers, as well as remove two switchgears. Based on the project's scope, the engineer's estimate is approximately \$4 million. The project team anticipates requesting bids from contractors in mid-2019 and awarding a construction contract in early 2020.

Also at the open house, the City presented information about recent and upcoming changes that will impact future procurements, including a change in the online bidding vendor (See Figure 2). Information presented during the event and at previous events is available online through BidSync and via the CIP Document Library at www.sjenvironment.org/cip.



Figure 2: David French, CIP Procurement Manager, presents at the Vendor Open House

Program Performance Summary

Seven key performance indicators (KPIs) have been established to measure overall CIP success. Each KPI represents a metric that will be monitored on a regular frequency. Through the life of the CIP, KPIs that best reflect the current program will be selected and measured. KPIs are reset each fiscal year.

Program Key Performance Indicators – Fiscal Year 2018-2019

KPI	Target	Fiscal Year to Date			Fiscal Year End		
		Actual	Status	Trend	Forecast	Status	Trend
Stage Gates	90%	91% 10/11 ¹			95% 18/19		
Measurement: Percentage of initiated projects and studies that successfully pass each stage gate on their first attempt. Target: Green: >= 90%; Amber: 75% to 90%; Red: < 75%							
Schedule	90%	0% 1/3			33% 1/3		
Measurement: Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone. ² Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
Budget	90%	100% 2/2			75% 3/4		
Measurement: Percentage of CIP projects that are accepted by the City within the approved baseline budget. ² Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
Expenditure	\$253M	\$267M			\$301M		
Measurement: CIP FY18-19 committed costs. Target: Committed cost meets or exceeds 70% of planned Budget. 70% of \$361M = \$253M. Therefore Fiscal Year End Green: >=\$253M; Amber: \$199M to \$253M; Red: < \$199M							
Safety	0	0			0		
Measurement: Number of OSHA reportable incidents associated with CIP delivery for the fiscal year. Criteria: Green: zero incidents; Amber: 1 to 2; Red: > 2							
Environmental	0	0			0		
Measurement: Number of permit violations caused by CIP delivery for the fiscal year. Target: Green: zero incidents; Amber: 1 to 2; Red: > 2							
Vacancy Rate³	10%	19% 16/83 ⁴			6% 5/83		
Measurement: Ratio of the number of vacant approved positions to approved positions. Target: Green: <= 10%; Amber: 10% to 20%; Red: > 20%							

Notes

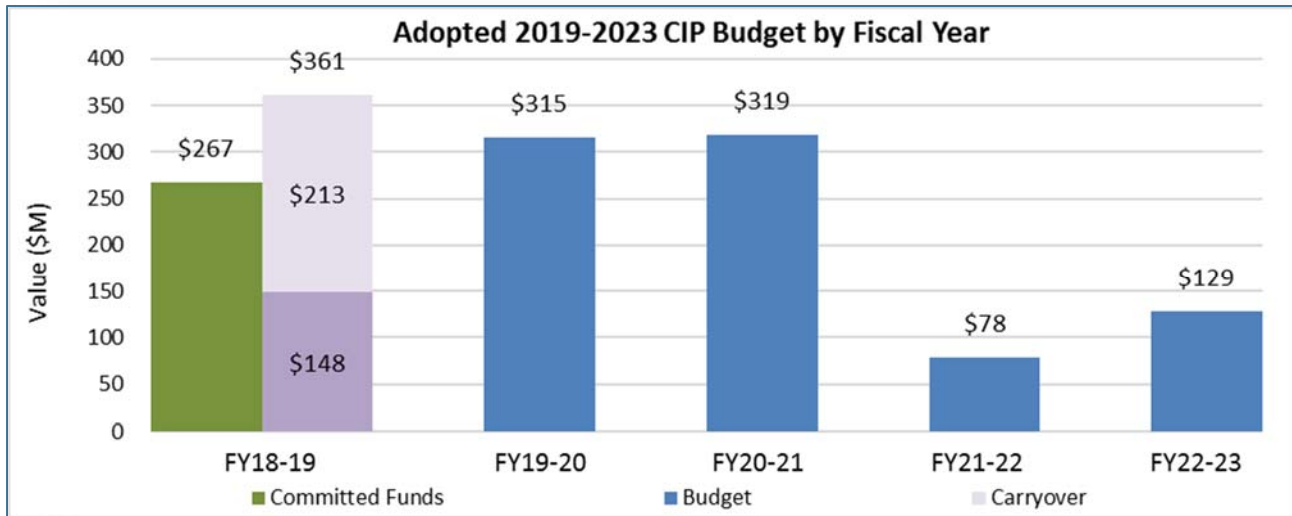
1. The Fire Life Safety Upgrades Project passed Stage Gate 3: Authorization to Proceed.
2. The baseline Beneficial Use date and the baseline budget for each project are established at construction contract award and execution.
3. The Vacancy Rate KPI measures City CIP-approved positions (ESD and Public Works) and program management consultant full-time staff.
4. The total number of vacant positions has been reduced by one because that position will not be needed on the CIP until FY 20-21. The CIP vacancy count increased by one.



Program Budget Performance Summary

This section summarizes the cumulative monthly budget performance for fiscal year (FY)18-19 based on the Adopted 2019-2023 CIP.

Adopted 2019-2023 CIP Expenditure and Encumbrances



Notes:

Committed Funds: Total of expenditures and encumbrances.

Expenditure: Actual cost expended, either by check to a vendor or through the City's financial system, for expenses such as payroll or for non-personal expenses that do not require a contract.

Encumbrance: Financial commitments such as purchase orders or contracts that are committed to a vendor, consultant, or contractor. An encumbrance reserves the funding within the appropriation and project.

The FY18-19 budget is \$185 million, which consists of \$131 million in new funds and \$54 million in rebudgets. For purposes of this monthly report, the adopted FY18-19 budget is adjusted from \$185 million to \$148 million due to the exclusion of certain appropriations that are not measured as part of the expenditure KPI. Excluded appropriations include City Hall Debt Service Fund; Clean Water Financing Authority Debt Service Payment Fund; Debt Service Repayment for Plant Capital Improvement Projects (San José only debt service); Equipment Replacement Reserve; Ending Fund Balance; Public Art; SBWR Extension; State Revolving Fund Loan Repayment; and Urgent and Unscheduled Treatment Plant Rehabilitation. Similar adjustments have been made to the budgets for FY19-20 through FY 22-23.

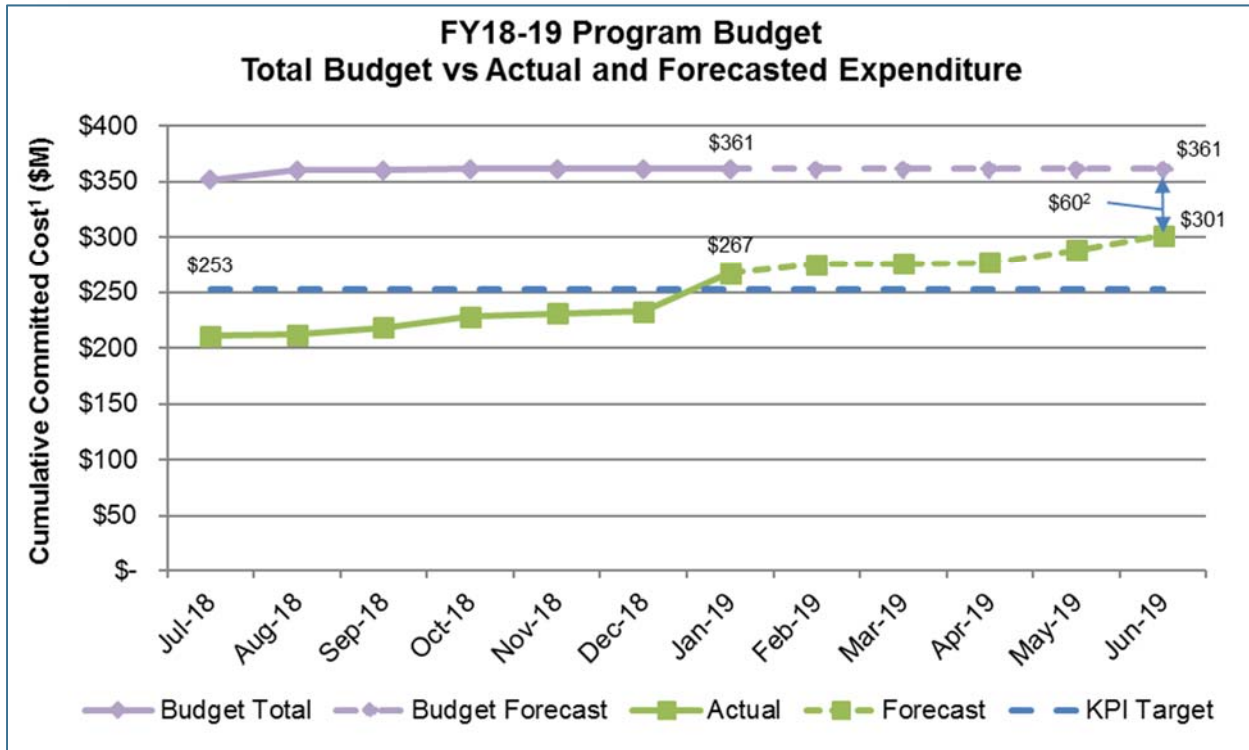
Carryover: Encumbrance balances at the end of the previous fiscal year are automatically carried forward to the current fiscal year as carryover funding to pay invoices for approved construction contracts and consultant agreements. FY18-19 carryover is \$213 million.

Budget of \$148.3 million and carryover of \$213.1 million totals \$361.4 million for FY18-19.



Fiscal Year 2018-2019 Program Budget Performance

The FY18-19 CIP budget is comprised of approximately \$148 million in new funds, plus encumbered carryover of \$213 million for a rounded total of \$361 million. This excludes City Hall Debt Service Fund; Clean Water Financing Authority Debt Service Payment Fund; Debt Service Repayment for Plant Capital Improvement Projects (San José only debt service); Equipment Replacement Reserve; Ending Fund Balance; Public Art; SBWR Extension; State Revolving Fund Loan Repayment; and Urgent and Unscheduled Treatment Plant Rehabilitation items. Overall, the forecasted fiscal year-end committed funds exceed the fiscal year-end target by \$48 million.



Notes:

1. Committed costs are expenditures and encumbrance balances, including carryover (encumbrance balances from the previous fiscal year).
2. The variance between forecasted budget and forecasted commitments can be primarily attributed to the following factors:
 - a. Several construction contracts are now anticipated to be awarded in FY19-20 instead of FY18-19 based on updated schedules:
 - i. Fire Life Safety Upgrades Project
 - ii. Switchgear M4 Replacement and G3 & G3A Removal Project
 - b. Several consultant service orders will not be awarded in FY18-19:
 - i. Aeration Tank Rehabilitation Project
 - ii. Support Facilities Project
 - iii. Tunnel Rehabilitation Project
 - c. The Blower Improvement Project construction bids came in under budget.
 - d. Several other minor encumbrances for consultant services are either lower than budgeted or are anticipated to be awarded in FY19-20.
 - e. Several authorized positions remain vacant, resulting in lower predicted personal services expenses than budgeted.
 - f. The FY16-17 payment budgeted for the annual Owners Controlled Insurance Program premium covered the period through FY17-18. Funds rebudgeted from FY17-18 will be programmed in FY19-20.



Project Performance Summary

There are currently six projects in the construction and post-construction phases and an additional 14 projects in feasibility/development, design, bid and award, or design and construction phases (see PDM, page 2). Projects in the construction phase have established cost and schedule baselines and are monitored using the City's Capital Project Management System (CPMS). Green/red icons are included in the table below to indicate whether these projects are on budget and schedule.

Project Performance – Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date ¹	Cost Performance ²	Schedule Performance ²
1. Construction-Enabling Improvements	Post-Construction	Aug 2018 ³	◆	◆
2. Plant Instrument Air System Upgrade	Post-Construction	Nov 2018 ³	●	◆
3. Cogeneration Facility	Design & Construction	Mar 2020 ⁴	●	●
4. Digester and Thickener Facilities Upgrade	Construction	Nov 2020	◆	◆
5. Advanced Facility Control & Meter Replacement - Phase 1	Construction	June 2021	●	●
6. Blower Improvements	Construction	Sep 2022	●	●

Key:

Cost:	● On Budget	◆ >1% Over Budget	Schedule:	● On Schedule	◆ >2 months delay
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Notes

- Beneficial Use is defined as work that is sufficiently complete, in accordance with contract documents, that it can be used or occupied by the City. Beneficial Use dates are reviewed as part of project schedule reviews.
- An explanation of cost and schedule variances on specific projects identified in this table is provided on pages 12 and 13.
- Actual Beneficial Use date.
- The project construction Beneficial Use date will be baselined once the City accepts the contractor's construction schedule.



Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date ¹
1. Digested Sludge Dewatering Facility	Bid/Award	Nov 2022
2. 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation	Design	Oct 2020
3. Switchgear M4 Replacement and G3 & G3A Removal	Design	Feb 2022
4. Fire Life Safety Upgrades	Design	Sep 2022
5. Advanced Facility Control & Meter Replacement - Phase 2	Design	Dec 2022
6. Headworks	Design and Construction	Dec 2022
7. Filter Rehabilitation	Design	Apr 2023
8. Nitrification Clarifiers Rehabilitation – Phase 1	Design	Oct 2023
9. Outfall Bridge and Instrumentation Improvements	Feasibility/Development	Jan 2021
10. Storm Drain System Improvements	Feasibility/Development	Dec 2022
11. Flood Protection	Feasibility/Development	Mar 2023
12. HVAC Improvements	Feasibility/Development	Mar 2023
13. Facility Wide Water Systems Improvements	Feasibility/Development	Aug 2024
14. Yard Piping and Road Improvements	Feasibility/Development	June 2027

Notes

1. Beneficial Use is defined as work that is sufficiently complete, in accordance with contract documents, that it can be used or occupied by the City. Beneficial Use dates are reviewed as part of project schedule reviews.



Project Significant Accomplishments

Biosolids Package

Digester and Thickener Facilities Upgrade

- Contractor Walsh completed the compressed digester gas line from the sludge control building gas compressor room to the aeration basins. The Cogeneration Facility Project will connect the line to the new engine generation building.
- Walsh also completed the new concrete roof on digester 5 and the installation of mechanical equipment in dissolved air flotation tanks 1 and 2. Additionally, the electrical subcontractors installed one of the four new motor control centers and other electrical equipment in the sludge control electrical room. The project is currently 65% complete.

Digested Sludge Dewatering Facility

- To help inform the performance standards that will be incorporated into the design-build contract, owner's advisor Brown and Caldwell began a study to forecast the dewaterability of the sludge after converting the digestion process from mesophilic to thermophilic.
- The City conducted interviews with three proposing design-build entities and issued a Notice of Final Ranking. The project team will begin negotiating with the top-ranked firm in February.

Facilities Package

96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation

- Design consultant Black & Veatch conducted the 50 percent design workshop. In March, the project team will bring the project to stage gate and seek approval to proceed with detailed design.

Fire Life Safety Upgrades

- The low-bid design build project passed Stage Gate 3: Authorization to Proceed. Design consultant Kennedy/Jenks (K/J) began preliminary design, which is anticipated to be completed by April 2019.

HVAC Improvements

- Design consultant K/J finalized the alternative analysis report. In March, the project team will present project alternative recommendations at Stage Gate 2: Confirm Project Alternative and seek approval to begin conceptual design.

Storm Drain System Improvements

- Design consultant AECOM conducted workshops to present their alternatives analysis for storm pump stations and storm sewer system. The final reports are anticipated in March 2019.

Yard Piping and Roadway Improvements

- Owner's advisor Black & Veatch conducted workshops to present findings and recommendations based on the recently completed condition assessments. The project team anticipates final reports in April 2019.

Liquids Package

Advanced Facility Control and Meter Replacement – Phase 1

- Contractor Overaa completed the hazardous material survey and ordered all critical equipment. Overaa anticipates beginning equipment installation at the start of the dry season this May.

Blowers Improvements

- The project team issued the NTP to construction contractor Monterey Mechanical and held a pre-construction meeting. Next month, the City will hold a formal partnering session and will begin reviewing submittals and process shutdown requests.

Filter Rehabilitation

- Design consultant K/J completed geotechnical drilling, structural reconnaissance, and electrical investigations for the site investigation. Next month, the project team will work with K/J to finalize the plan for utility potholing and field verifying the existing electrical infrastructure.

Headworks

- Design-builder CH2M Hill submitted the draft BODR for the City to review. The final BODR is anticipated in April 2019.



Nitrification Clarifiers Rehabilitation – Phase 1

- The City advertised the pre-qualification documents for construction contractor and expects to post a list of pre-qualified contractors in March 2019.

Power and Energy Package

Cogeneration Facility

- The design-builder CH2M achieved 50 percent height on the main building CMU wall. The wall completion is anticipated in late April 2019 (See Figure Below).
- The City submitted the application and supporting documentation detailing the operation of the boilers to the Bay Area Air Quality Management District and anticipate a response within 60 days.
- The City also submitted to PG&E the final Interconnection Agreement and the Detailed Study Agreement outlining the impacts of the connection. The project team anticipates a response from PG&E by early May.

Switchgear M4 Replacement and G3 & G3A Removal

- Design consultant Brown and Caldwell submitted the 60 percent design for City review. The final design submittal is anticipated in July 2019.



Figure 3: Main Cogeneration Building

Explanation of Project Performance Issues

Construction-Enabling Improvements Project

This project was originally scheduled to be substantially complete by mid-February 2017. Due to the extremely wet 2016-17 winter season, contractor Teichert Construction was unable to perform site work on several occasions between October 2016 and April 2017. Teichert was granted extra work days for weather-related delays and for extra work associated with several contract change orders. A new contract completion date of June 8, 2017 was established. However, Teichert's subcontractor, ModSpace, was slow to respond and regularly submitted late and incomplete documentation, which resulted in the portable trailers arriving in January 2018, approximately nine months later than the contract completion date.

Teichert experienced additional delays completing installation of the portable trailers and submitting complete and acceptable documentation for access ramps and canopies. In early August 2018, the contractor completed installation of the electrical, communications, and wastewater utilities. Also in August, the City of San José Building Division issued the Certificate of Occupancy permit for the trailers, and the construction management group issued the Notice of Substantial Completion indicating the project had reached Beneficial Use. The project team provided Teichert with a list of remaining contract work to be completed. The project team has reached agreement with Teichert for liquidated damages and to complete outstanding tasks for project closeout. The project team anticipates accepting the project in March 2019.

Plant Instrument Air System Upgrade Project

Project construction has been delayed by seven months due to four issues: 1) The project team discovered that the planned construction site access route crossed a large settled sludge pipeline, requiring an alternative access route to be developed and constructed; 2) the contractor was temporarily unable to install a section of the conduit from the sludge control building to the new compressor building due to other work being performed in the area by a different contractor; 3) development of the 28-day commissioning test procedure took longer than anticipated; and 4) during the eight-hour functioning test the project team discovered oxidized (rusted) carbon steel shavings in an existing condensate tank unrelated to the project construction. The material was removed, and the test was successfully completed. The project achieved Beneficial Use in November 2018. The project team anticipates project acceptance in April 2019.

Digester and Thickener Facilities Upgrade Project

This project encountered numerous unforeseen conditions at the beginning of construction in 2016, described below. In 2017, design modifications were required to address seismic risks, and discovery of hazardous materials required extensive cleanup. Delays for these conditions continue to be discussed and evaluated.

The City has negotiated contract change orders for the following unforeseen conditions discovered in 2016:

- Major corrosion of a below-ground, 78-inch settled sewage pipeline and junction structure delayed the construction of dissolved air flotation tank piping connections, two new pressurization flow boxes, and utility relocation work. The contractor postponed all repairs until a temporary pumping and pipeline system could be designed and safely installed to enable replacement of the pipeline in the 2018 dry season. In May of 2018, the contractor started full-time operation of this temporary pumping and pipeline system and began replacement of the 78-inch settled sewage pipeline, which was completed in late September 2018.
- A 36-inch biochemical oxygen demand pipe was found to be obstructing the new sludge screening building foundation. The contractor removed this pipe and relocated several gas drain vaults and associated piping before the foundation construction began.
- Multiple conflicts between contract work and existing utilities required numerous relocations including water, natural gas, digester gas, landfill gas, storm drains, and sanitary sewer pipelines. The contractor completed necessary relocations and rerouting, especially near the new digester gas pipe rack footings. Many of these modifications also required design changes.
- Bay Area Air Quality Management District venting restrictions also delayed digester work. The contractor completed the temporary digester gas connections and the system became operational in February 2018.

The following outstanding issues are currently being evaluated and are expected to result in additional costs and delays:

- Digester structural redesign: The design consultant revised the structural drawings to address seismic issues by enlarging the foundation ring beam at the base of each of the four digesters. The contractor provided a cost proposal associated with this revision and the City issued a change order for a portion of the proposal. Work associated with the new foundations is ongoing.
- Hazardous material mitigation: Testing of soils and concrete for polychlorinated biphenyls (PCBs) was completed and the federal Environmental Protection Agency (EPA) issued a final conditional approval. In compliance with the EPA-approved, risk-based management plan, removal and disposal of all contaminated materials in three of four affected digesters and all tunnel joints has been completed. All contaminated soils have been removed and disposed of and most of the impacted concrete has been encased. The last portion of the work will be finalized once the digester



foundation base layers and roof work are complete. The project team anticipates submittal of final work reports to the EPA in June 2019.

In November 2017, Council approved a construction contingency increase of \$15 million. The City issued change orders against the increased contingency for delays associated with the conditions discovered in 2016.

In June 2018, Council approved a second construction contingency increase of \$25 million for additional costs associated with the seismic redesign, hazardous material remediation, and extended construction duration.

The Beneficial Use date was accelerated to November 2020 after the contractor identified and initiated several tasks concurrently that had been originally planned in series. The City received an updated schedule from contractor Walsh in November 2018 and is processing a change order to compensate for additional delays due to the redesign and PCBs cleanup and removal.



Project Profile – Fire Life Safety Upgrades

The RWF's main operational area is approximately 150 acres and houses unit treatment processes as well as more than two dozen support building facilities that are scattered throughout the site. The building facilities are now between 30 to 60 years old and range in size from 1,440 square feet to 31,600 square feet with a combined total estimated floor area of approximately 180,000 square feet. In late 2011, a Fire Code Compliance Gap Analysis study was conducted that identified fire code compliance gaps and fire risk potentials across most of the support buildings. Since 2012, RWF staff have implemented standard operating procedures and taken corrective actions to address many of the findings, however, some findings remain outstanding and require capital construction. These findings will be addressed by the Facility-wide Water System Improvements Project (see Monthly Status Report: August 2017 issue) and the Fire Life Safety Upgrades Project.

Based on the condition assessment performed in spring 2018 by the design consultant, K/J, this project will:

1. Provide new fire alarm systems for two existing buildings (Administration Building and Warehouse).
2. Replace the fire alarm system in one existing building (Filtration Influent Pump Station Building).
3. Modify the fire alarm systems in eight existing buildings (Chlorine Building, Disinfection Building, Sludge Control Building, Paint Shop, ESB, TPS Building, Building 40 and RSM Operations Building).
4. Connect the fire alarm systems in six new buildings constructed by three other CIP projects (Digester Gas Compressor Upgrades, Digester and Thickener Facilities Upgrade, and Cogeneration Facility projects) to the new centralized monitoring system.
5. Remove abandoned fire alarm equipment in three existing buildings (Paint Shop, HVAC Shop and Warehouse).
6. Install a new centralized fire alarm monitoring system to monitor panels in the 11 existing buildings and six new buildings to satisfy fire alarm related code requirements.
7. Install one main and one redundant monitoring stations.
8. Provide standard fire alarm and fire suppression system specifications to be used by other CIP projects.

The project will be delivered using the low-bid design-build method. This month, the project passed Stage Gate 3: Authorization to Proceed and K/J began developing the 30 percent design plans and specifications. The project is anticipated to be advertised for bid in mid-2019 and construction is scheduled to begin in spring 2020. Beneficial Use is expected by fall 2022. The estimated total project cost is approximately \$5 million.

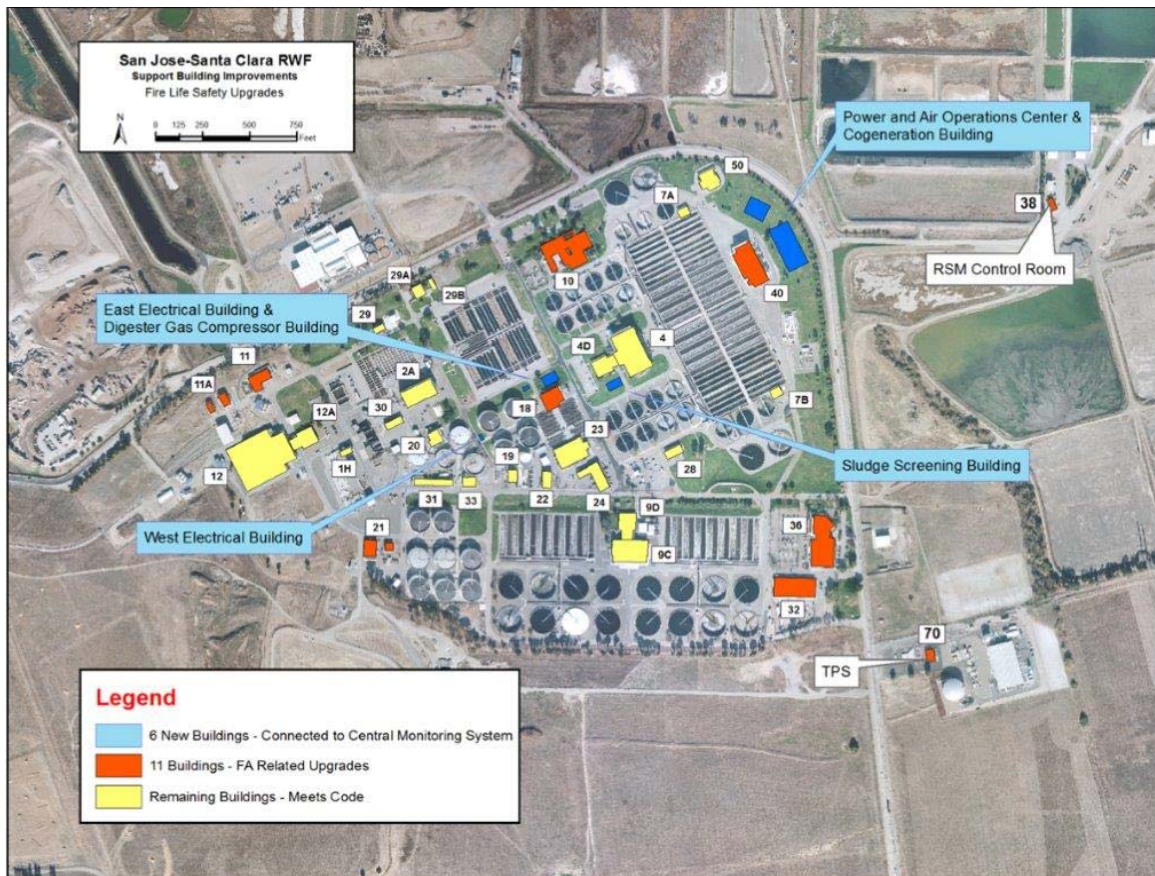


Figure 4: Condition Assessment Outcome

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Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

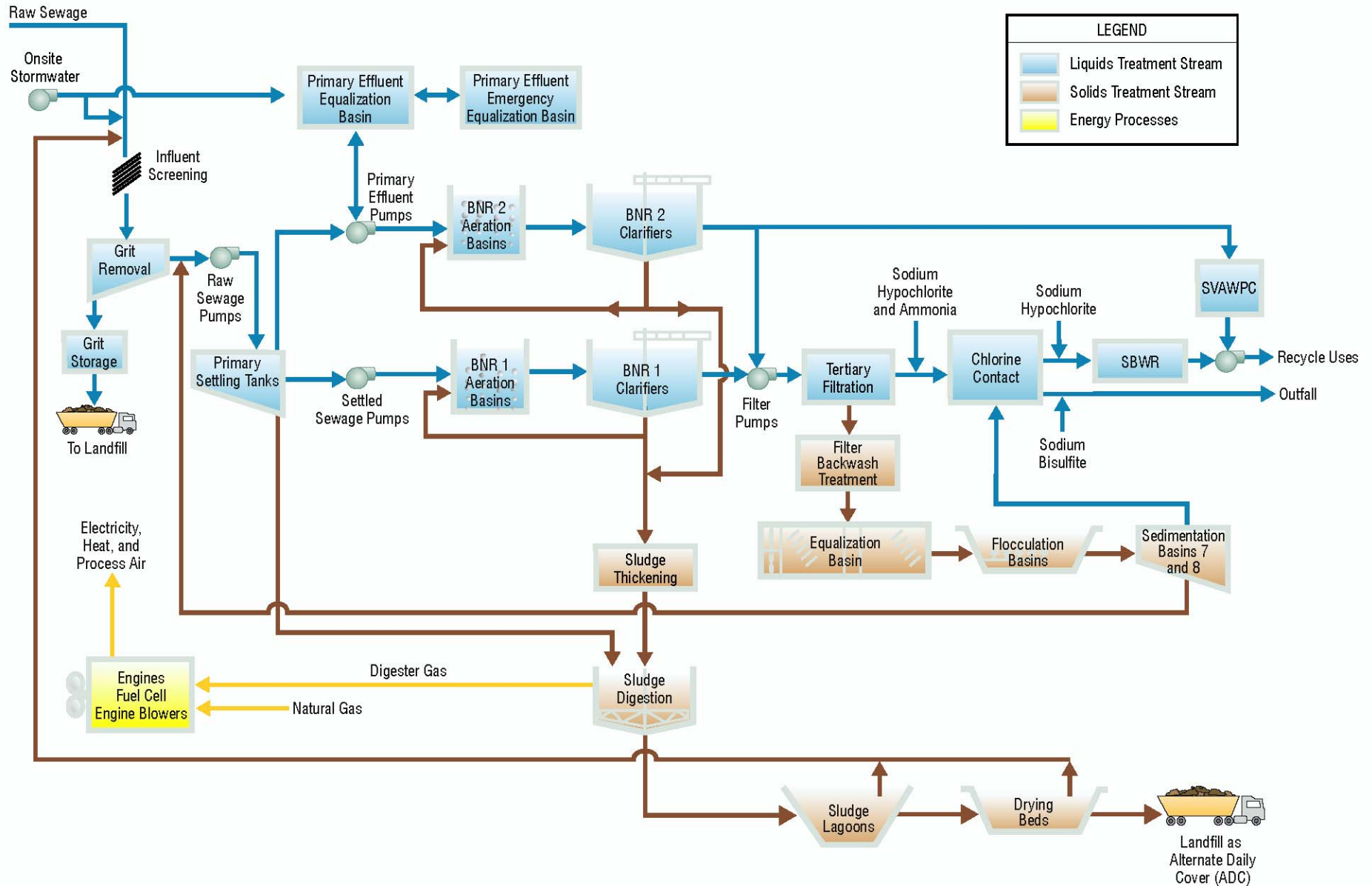


Figure 5 – Current Treatment Process Flow Diagram



Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

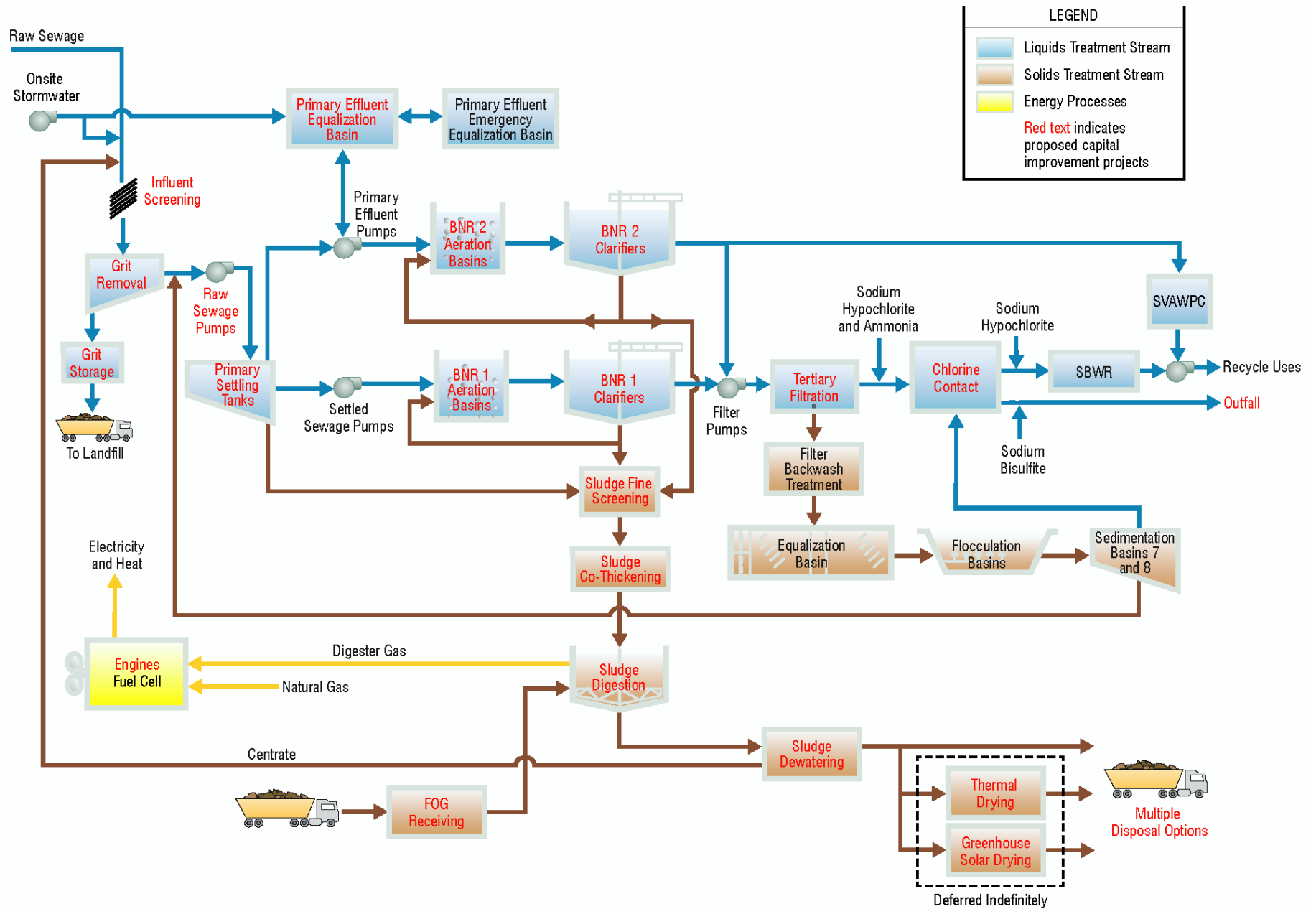


Figure 6 – Proposed Treatment Process Flow Diagram



Active Construction Projects – Aerial Plan

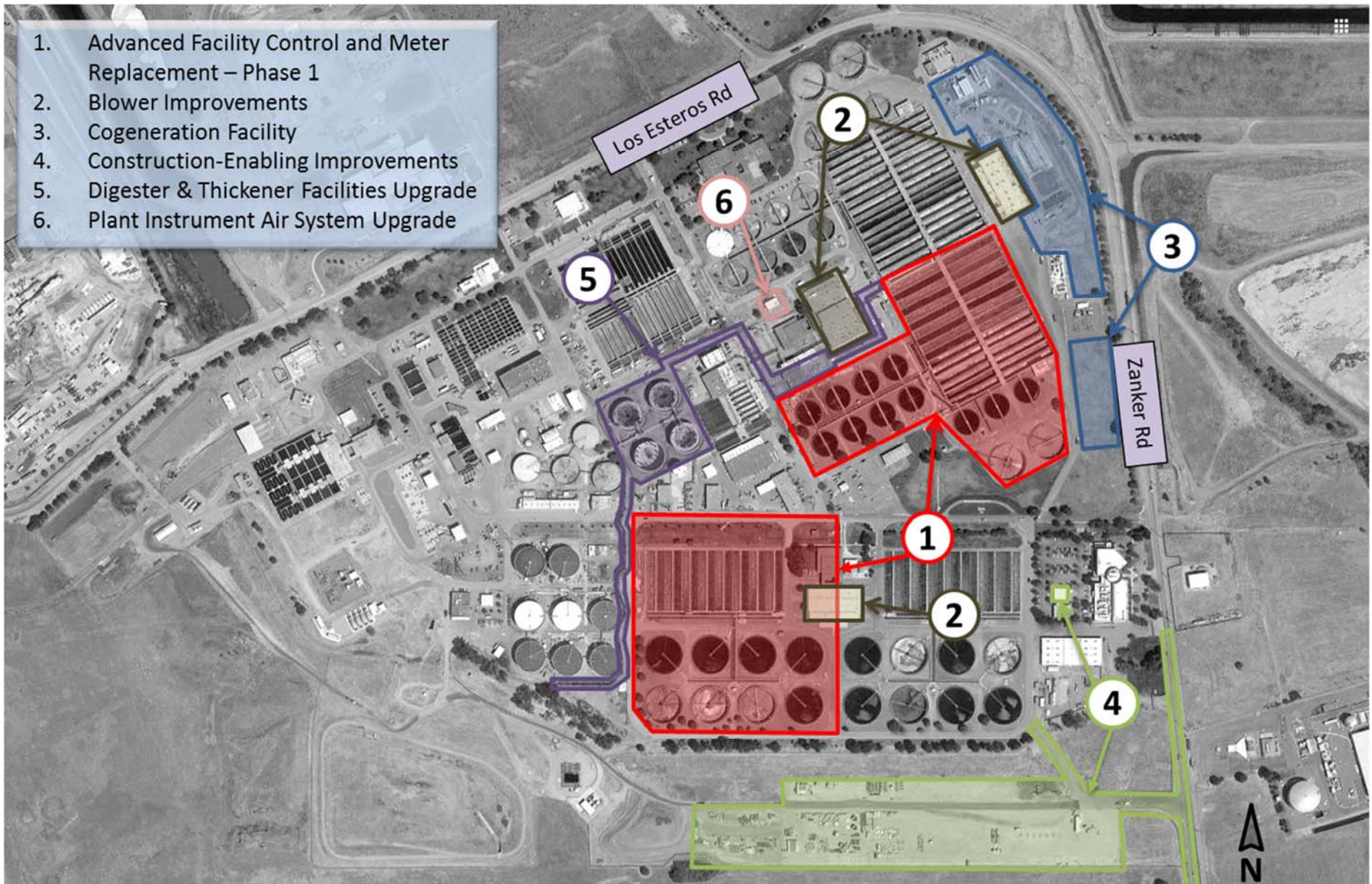


Figure 7: Active Construction Projects