



**San José-Santa Clara**  
Regional Wastewater Facility

# Capital Improvement Program Monthly Status Report: April 2018

June 7, 2018

This report summarizes the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (RWF) for April 2018.

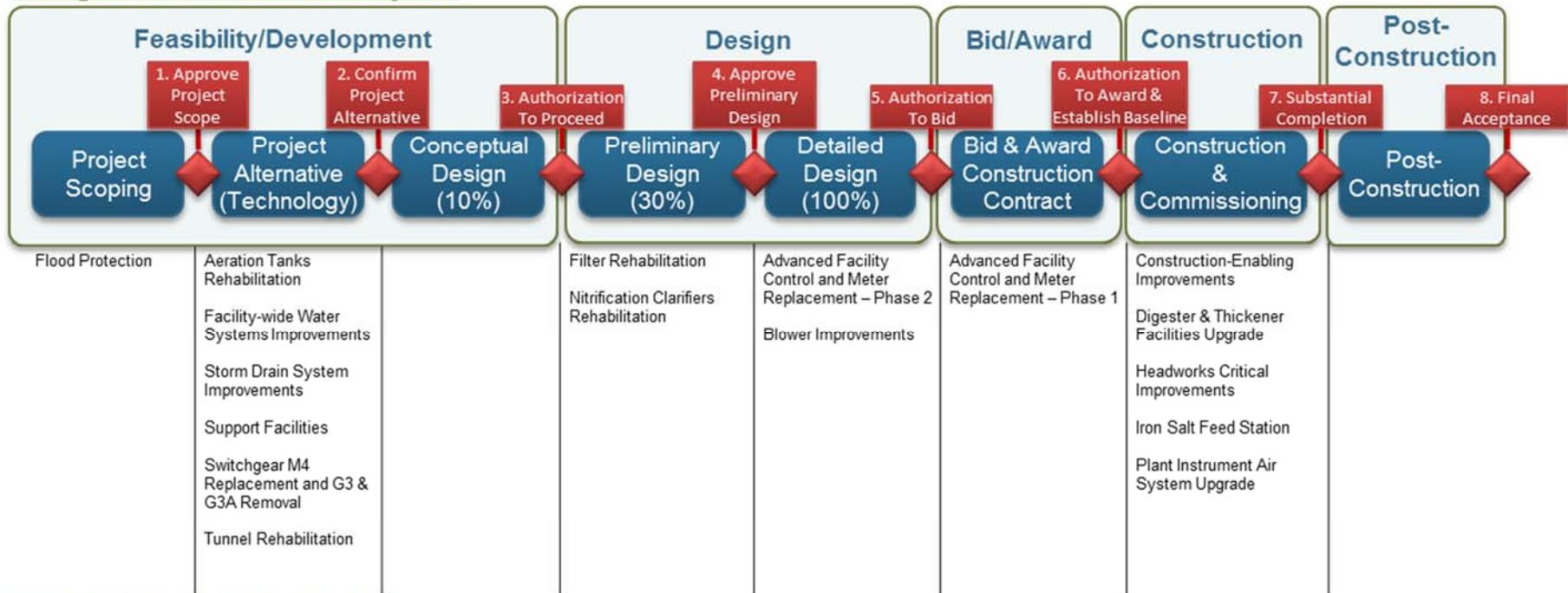
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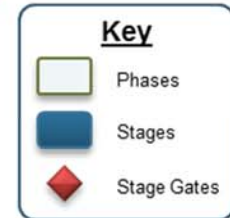
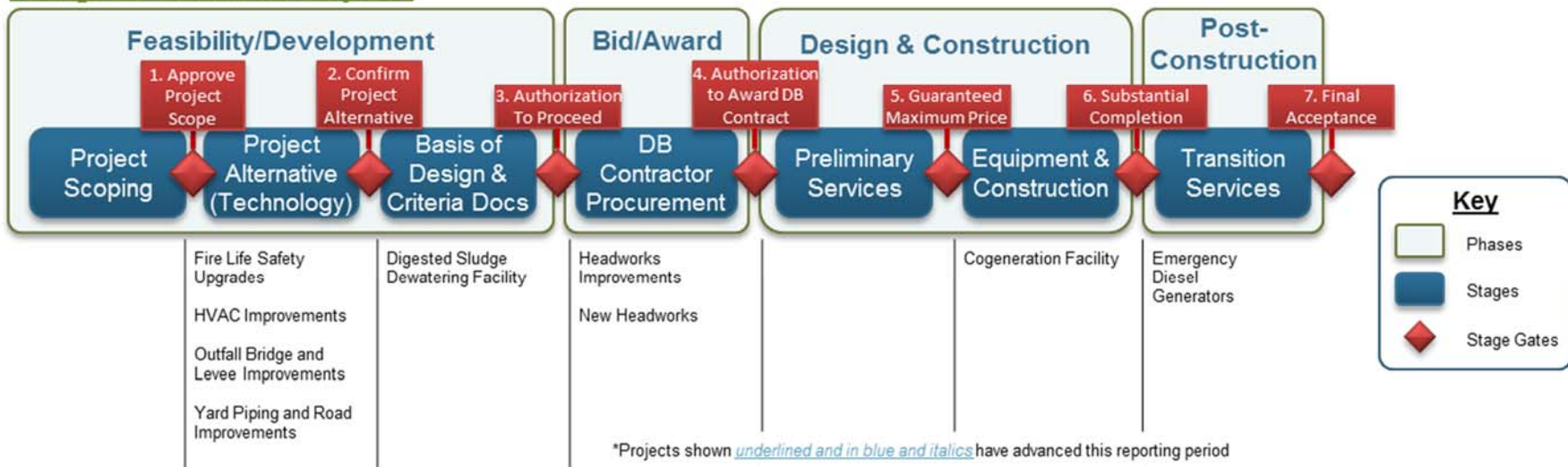


# Project Delivery Model

## Design-Bid-Build Active Projects



## Design-Build Active Projects



## Program Summary

### April 2018

The City advanced the New Headworks and Headworks Improvements projects through Stage Gate 4: Authorization to Award Design-Build Contract. New Headworks will replace the original duty headworks facility (Headworks 1)—which has been in operation for over 50 years and reached the end of its useful life—with a new duty headworks facility (Headworks 3). Headworks Improvements will modify and rehabilitate the backup and wet-weather headworks facility (Headworks 2). The projects (Headworks Project) will be implemented as a single design-build (DB) contract to reduce project cost, duration, and risk. The overall project budget is currently forecast at \$145.5 million and the project is scheduled to complete by September 2022.

The City completed the condition assessment of 18 existing RWF buildings' heating, ventilation, and air conditioning (HVAC) systems as part of the HVAC Improvements Project and began condition assessment of the outfall flow meters, bridge, and weir structures as part of the Outfall Bridge and Levee Improvements Project. The City continued detailed design of the Blower Improvements Project and notified five construction contractors that they had prequalified to bid on the project. The project team anticipates completing the design and construction bid documents in June 2018.

The Iron Salt Feed Station Project contractor addressed a number of commissioning and start-up issues and restarted operational testing. The Construction-Enabling Improvements Project contractor continued to address several outstanding items. The Headworks Critical Improvements Project contractor completed all work associated with the new bar screens and prepared to commence operational testing. The Plant Instrument Air System Upgrade Project contractor completed the connection and testing of a second 480-volt main feeder line and the configuration of the distributed control system. The Cogeneration Facility Project design-builder continued early site work, including demolition and excavation for the new building foundations, and reached the 90 percent design milestone. The Digester and Thickener Facilities Upgrade Project contractor completed all work associated with the 100 million gallons per day temporary pumping and pipeline system. This temporary system will enable the contractor to re-route flows during this year's dry season while replacing a corroded 78-inch settled sewage pipeline. Work on the EPA approved Phase 2 plan to remove PCB caulking, grout, shotcrete, and concrete from the digester area began and is anticipated to be completed by June 2018.

The County recorded the City's Notice of Completion and Acceptance (NOCA) this month for the Emergency Diesel Generators Project.

Additionally, staff presented the CIP Semiannual Status Report, highlighting progress for July through December 2017, to the Transportation and Environment Committee (T&E), and made the following recommendations to the Treatment Plant Advisory Committee (TPAC) and City of San José Council (Council): (1) award a Master Consultant Agreement (MCA) for Owner's Advisor services for the Yard Piping and Road Improvements Project; and (2) accept the CIP Semiannual Status Report. All recommendations were approved.

### Look Ahead

The following key activities are forecast for May and June of 2018:

- Project teams will seek stage gate approval for the following projects:
  1. Blower Improvements Project – Stage Gate 5: Authorization to Bid;
  2. Aeration Tanks Rehabilitation Project – Stage Gate 2: Confirm Project Alternative; and
  3. Headworks Critical Improvements Project – Stage Gate 7 – Substantial Completion.
- The City will shortlist DB entities for the Digested Sludge Dewatering Facility Project based on their Statement of Qualifications and then advertise a Request for Proposal to the shortlisted entities;
- The City will execute the Definitive Contract Amendment (DCA) for the Cogeneration Facility Project and the design-builder will conduct factory acceptance testing of the new cogeneration engines;
- The Filter Rehabilitation Project team will complete the 30 percent design and perform a value engineering study;
- The Iron Salt Feed Station, Headworks Critical Improvements, and Plant Instrument Air System Upgrade projects will reach Beneficial Use;
- Staff will make the following recommendations to TPAC and Council: (1) award the Advanced Facility Control and Meter Replacement – Phase 1 Project construction contract; (2) accept the annual update on Discharge Regulations and Future Impacts on the RWF; (3) approve and adopt the proposed 2019-2023 CIP Budget; (4) award three special inspection MCAs for various CIP projects; (5) award the Headworks Project DB contract; and (6) approve the Digester & Thickener Facilities Upgrade Project construction contingency increase.



## Program Highlight – Value Engineering

Value Engineering (VE) is a creative and independent process which is focused on adding “value” to major public works projects, where value is defined as the ratio of function to cost. VE has been widely used in the construction industry for many years with the following positive results:

- Reduced construction time;
- Improved constructability (ability to construct);
- Improved quality;
- Safer operations;
- Resolution of stakeholder issues;
- Reduced operating costs;
- Reduced capital costs; and
- Mitigated or lowered risks

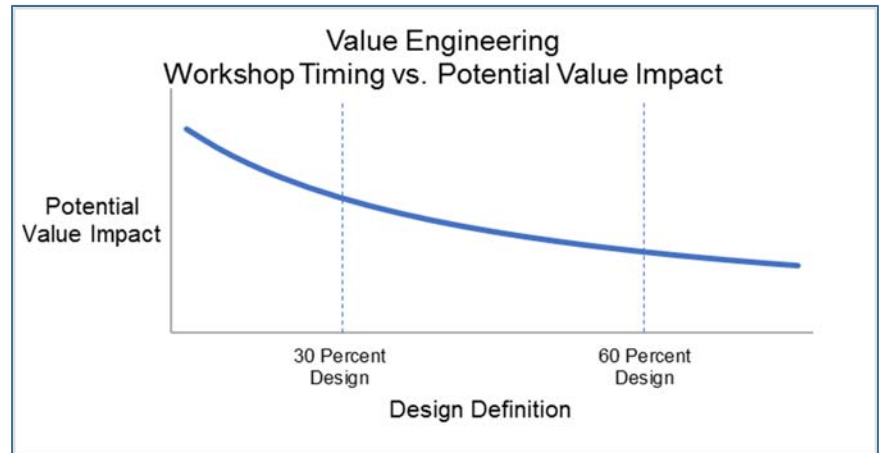


Figure 1: Value Engineering Impact

The greatest potential impact on improving project value occurs early in the design process, as depicted in Figure 1. The CIP requires all capital projects with a construction estimate of \$10 million or more to conduct a VE study at the 30 percent design milestone. A second study may also be conducted at the 60 percent design milestone if the project’s construction estimate exceeds the available project budget.

The CIP VE studies are conducted by an independent multi-disciplined team of professionals with expertise in the project scope. The CIP has retained two firms to conduct VE studies on a rotating basis. The VE team uses an international standard value methodology and works through the following six-phase process in a multi-day workshop format:

1. Information Phase
2. Function Analysis Phase
3. Creative Phase
4. Evaluation Phase
5. Development Phase
6. Presentation Phase

Each VE study results in recommendations to improve quality and value. The CIP project team then evaluates the recommendations and selects which recommendations will be incorporated into the project design.

The CIP’s first VE study was completed in June 2017 for the Blower Improvements Project at the 30 percent design (see Figure 2). The study was performed by a six-person team with expertise in the VE process, blower design and operations, electrical design, constructability, and cost estimating. The team developed 120 initial ideas for potential changes to the design. The team selected 10 proposals as best alternatives. The VE team then developed these alternatives into workable solutions, which they presented to the CIP project management team. The CIP reviewed the recommendations internally and directed the design consultant to implement the recommendations believed to be cost effective and prudent. The VE process resulted in savings of \$3.8 million in capital costs for the project.

Two more VE studies are scheduled to be performed this year on CIP projects at 30 percent design completion:

- 1) Filter Rehabilitation Project in June 2018; and
- 2) Nitrification Clarifier Rehabilitation Project in July 2018.

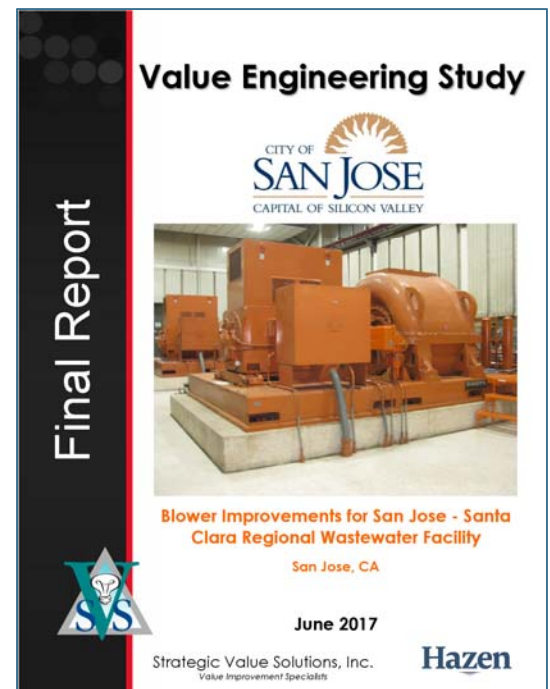


Figure 2: Blower Improvements Project Value Engineering Final Report



## Program Performance Summary

Eight 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 have been reset for this fiscal year.

### Program Key Performance Indicators – Fiscal Year 2017-2018

KPI	Target	Fiscal Year to Date			Fiscal Year End		
		Actual	Status	Trend	Forecast	Status	Trend
<b>Stage Gates</b>	80%	100%			100%		
		15/15 <sup>1</sup>			18/18 <sup>2</sup>		
Measurement: Percentage of initiated projects and studies that successfully pass each stage gate on their first attempt. Target: Green: >= 80%; Amber: 70% to 80%; Red: < 70%							
<b>Schedule</b>	90%	0%			50%		
		0/1			2/4 <sup>4</sup>		
Measurement: Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone. <sup>3</sup> Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
<b>Budget</b>	90%	67%			75%		
		2/3 <sup>5</sup>			3/4		
Measurement: Percentage of CIP projects that are accepted by the City within the approved baseline budget. <sup>3</sup> Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
<b>Expenditure</b>	\$247M	\$198M			\$309M <sup>6</sup>		
Measurement: CIP FY17-18 committed costs. Target: Committed cost meets or exceeds 70% of planned Budget. 70% of \$354M = \$247M. Therefore Green: >=\$247M; Amber: \$194M to \$247M; Red: < \$194M							
<b>Procurement</b>	80%	100%			100%		
		3/3			4/4		
Measurement: Number of consultant and contractor procurements advertised compared to planned for the fiscal year. Target: Green: >= 80%; Amber: 70% to 79%; Red: < 70%							
<b>Safety</b>	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							
<b>Environmental</b>	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							
<b>Staffing<sup>7</sup></b>	80%	100%			100%		
		15/15			15/15		
Measurement: Number of planned positions filled for the fiscal year. Target: Green: >= 80%; Amber: 70% to 79%; Red: < 70%							

#### Notes

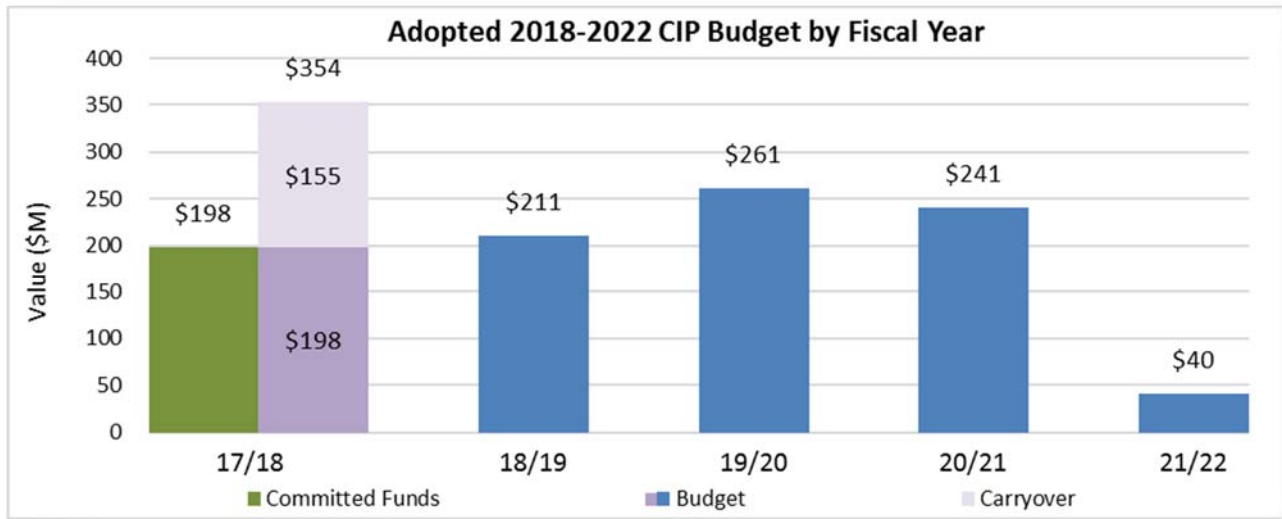
1. The Headworks Project successfully completed Stage Gate 4: Authorization to Award DB Contract.
2. The fiscal year-end count has been updated to reflect a decrease in the number of planned stage gates due to project schedule revisions.
3. The baseline Beneficial Use date and the baseline budget for each project are established at construction contract award and execution.
4. The Construction-Enabling Improvements Project team no longer anticipates achieving Beneficial Use this fiscal year and has been removed from this fiscal year's Schedule KPI.
5. The City accepted the Emergency Diesel Generators Project with project expenses within the approved baseline budget.
6. The fiscal year-end expenditure forecast increased by approximately \$1 million due to revised encumbrance estimates.
7. The staffing KPI is measured quarterly and represents CIP recruitments planned for the fiscal year. This KPI measurement does not account for staff turnover throughout the fiscal year.



## Program Budget Performance Summary

This section summarizes the cumulative monthly budget performance for fiscal year (FY)17-18 based on the 2018-2022 CIP.

### Adopted 2018-2022 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 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.

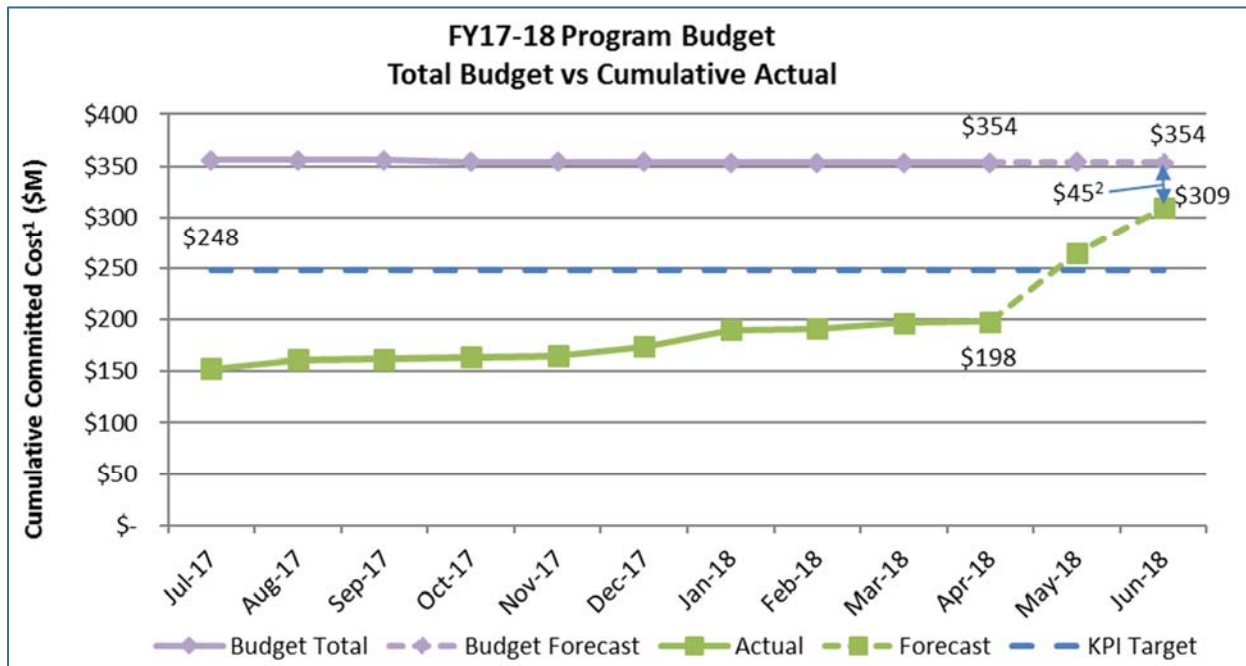
The FY17-18 budget is \$238 million, which consists of \$198 million in new funds and \$40 million in rebudgets. For purposes of this monthly report, the adopted FY17-18 budget is adjusted from \$238 million to \$198 million due to excluding certain appropriations that are not measured as part of the expenditure KPI. Excluded appropriations include Urgent and Unscheduled Treatment Plant Rehabilitation, SBWR Extension, Debt Service Repayment for Plant Capital Improvement Projects (San José only debt service), Public Art, State Revolving Fund Loan Repayment, City Hall Debt Service Fund, Clean Water Financing Authority Debt Service Payment Fund, Equipment Replacement Reserve, and Ending Fund Balance. Similar adjustments have been made to the budgets for FY18-19 through FY 21-22. In October, the fall cleanup action increased the FY17-18 budget by \$3 million.

**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.



## Fiscal Year 2017-2018 Program Budget Performance

The FY17-18 budget is comprised of approximately \$198 million in new funds plus encumbrance carryover of \$155 million for a total of \$354 million. This excludes Reserves, Ending Fund Balance, Debt Service, South Bay Water Recycling, Public Art, and Urgent and Unscheduled Rehabilitation items.



### 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. Construction contracts that are not expected to be awarded in FY17-18:
    - i. Blower Improvements Project
    - ii. Fire Life Safety Upgrades Project
  - b. Several consultant service orders planned for award in FY17-18 are now expected to be awarded in FY18-19:
    - i. Filter Rehabilitation Project – detailed design work
    - ii. Facility-wide Water Systems Improvements Project - preliminary and detailed design work
    - iii. Tunnel Rehabilitation Project – feasibility/development work
  - c. Several other minor encumbrances for consultant services are either lower than budgeted or are anticipated to be awarded in FY18-19.
  - d. Several authorized positions remain vacant, resulting in lower predicted personal services expenses than budgeted.
3. The FY17-18 budget includes three recurring appropriations (Preliminary Engineering, Equipment Replacement, and Plant Infrastructure Improvements) that total approximately \$3.66 million. These appropriations are included in the budget to implement minor capital improvement projects that may be needed during the fiscal year. No major expenditures or encumbrances are currently planned against these appropriations.



## Project Performance Summary

There are currently six active projects in the construction phase and one projects in the post-construction phase, with an additional 19 projects in feasibility/development, design, or bid and award phases (see PDM, page 2). All active projects are listed in the tables below. 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 <sup>1</sup>	Cost Performance <sup>2</sup>	Schedule Performance <sup>2</sup>
1. Emergency Diesel Generators	Post-Construction	Jul 2017 <sup>3</sup>	●	◆
2. Iron Salt Feed Station	Construction	May 2018	●	◆
3. Headworks Critical Improvements	Construction	Jun 2018	●	●
4. Plant Instrument Air System Upgrade	Construction	Jun 2018	●	●
5. Construction-Enabling Improvements	Construction	Jul 2018	●	◆
6. Cogeneration Facility	Design & Construction	Mar 2020 <sup>4</sup>	●	●
7. Digester and Thickener Facilities Upgrade	Construction	Jul 2021	◆	◆

#### KEY:

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

#### 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 page 11 and 12.
- Actual Beneficial Use date.
- The project construction Beneficial Use date will be baselined once the contractor submits their construction schedule.





## Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date <sup>1</sup>
1. Advanced Facility Control & Meter Replacement Phase 1	Bid and Award	Dec 2020
2. Headworks Improvements	Bid and Award	Sep 2022
3. New Headworks	Bid and Award	Sep 2022
4. Blower Improvements	Design	Nov 2021
5. Filter Rehabilitation	Design	Oct 2022
6. Advanced Facility Control & Meter Replacement Phase 2	Design	Dec 2022
7. Nitrification Clarifiers Rehabilitation	Design	Dec 2023
8. Outfall Bridge and Levee Improvements	Feasibility/Development	Dec 2020
9. Switchgear M4 Replacement and G3 & G3A Removal	Feasibility/Development	Jan 2022
10. Storm Drain System Improvements	Feasibility/Development	Jul 2022
11. Fire Life Safety Upgrades	Feasibility/Development	Sep 2022
12. Flood Protection	Feasibility/Development	Sep 2022
13. Digested Sludge Dewatering Facility	Feasibility/Development	Oct 2022
14. HVAC Improvements	Feasibility/Development	Mar 2023
15. Facility-wide Water Systems Improvements	Feasibility/Development	Aug 2023
16. Aeration Tanks Rehabilitation	Feasibility/Development	Aug 2025
17. Support Facilities	Feasibility/Development	Dec 2026
18. Tunnel Rehabilitation	Feasibility/Development	Jan 2027
19. Yard Piping and Road Improvements	Feasibility/Development	Jan 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.



## Significant Accomplishments

### Biosolids Package

#### Digester Thickener and Facilities Upgrade

- Contractor Walsh Construction completed the installation of a backup transformer and training of O&M staff for the settled sewage (SES) pipeline reroute system. All equipment associated with the SES reroute system is now installed.

### Facilities Package

#### Cogeneration Facility

- Design-builder CH2M completed significant site demolition, excavation, compaction, and backfill work, preparing the site for electrical duct bank installation and a concrete slab pour in May.
- The City and CH2M finalized the DCA, which is anticipated to be executed in May.
- The City received the 90 percent design submission and conducted the 90 percent design review workshop.

#### Facility-wide Water Systems Improvements

- Design consultant Kennedy/Jenks (K/J) submitted a draft technical memorandum on future water systems hydraulic modeling and analyses for City review. The City will hold a project workshop in May to review the findings.

#### Fire Life Safety Upgrades

- Design consultant K/J led a project workshop with City staff to review condition assessment findings.

#### HVAC Improvements

- Design consultant K/J completed condition assessment work of 18 RWF buildings. The consultant will document the findings in the condition assessment report and hold a project workshop to review the findings in June 2018.

#### Outfall Bridge and Levee Improvements

- Design consultant AECOM used a dive team to perform underwater condition assessment work at the outfall flow meters, bridge, and weir locations. The consultant will next perform an on-site topographical survey and a geotechnical investigation.

#### Yard Piping and Road Improvements

- Council approved the award of a Master Consultant Agreement (MCA) for owner's advisor services to Black and Veatch. The MCA is for a total amount not to exceed \$9.75 million through June 2026.

### Liquids Package

#### Blower Improvements

- The City prequalified five construction contractors to bid on the project, which is expected to be advertised in June.

#### Headworks Critical Improvements

- Contractor Overaa Construction completed work on the bar screens, which allowed operational testing to begin in May, and completed the installation of two new actuators and associated electrical work.
- The project team finished establishing the testing plan and protocols.

#### Headworks Improvements and New Headworks

- The project team successfully completed Stage Gate 4: Authorization to Award Design Build Contract and anticipate recommending award of a DB contract to TPAC and Council in June 2018.

### Power and Energy Package

#### Plant Instrument Air System Upgrade

- Contractor Anderson Pacific completed the connection and testing of a second 480-volt main feeder line and the configuration of the distributed control system.

#### Emergency Diesel Generators

- The City accepted the project on April 26. The project team will seek approval of Stage Gate 8: Final Acceptance in July 2018.



## Explanation of Project Performance Issues

### Construction-Enabling Improvements

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 for several weeks from October 2016 through April 2017. Teichert has been granted 47 extra work days for weather-related delays. Teichert has also been granted additional time to remove and replace asphalt pavement in damaged areas of Zanker Road; install traffic-rated pull boxes for the streetlight system; install underground conduits for the fiber optic system; and make additional changes.

Delays in completing the installation of portable trailers required for the project continue to impact the schedule. Installation of the utilities, access ramps, and canopy systems is underway. Teichert estimates that it could take several more weeks to obtain required materials and schedule necessary subcontractors, which could result in another six to nine weeks to complete the installation and setup of the trailers. These delays would place the Beneficial Use date in July 2018. The City notified Teichert that the number of contract work days has been exceeded and that liquidated damages are in effect. By the end of this reporting month, liquidated damages were \$216,000.

### Digester and Thickener Facilities Upgrade

This project has encountered numerous unforeseen conditions including required design modifications to address seismic forces and the discovery of hazardous materials.

These unforeseen conditions are impacting the project schedule and cost. The City has negotiated contract change orders for the following conditions, resulting in an estimated six-month delay to the Beneficial Use date:

- Major corrosion of a below-ground 78-inch settled sewage pipeline and junction structure is impacting the dissolved air floatation tank piping connections, two new pressurization flow boxes, and utility relocation work. The contractor has postponed all repairs until a temporary pumping system can be safely installed during the 2018 dry season.
- A 36-inch biochemical oxygen demand pipe was obstructing the new sludge screen building foundation. The contractor has removed this pipe and relocated several gas drain vaults and associated piping.
- Multiple conflicts between contract work and existing water, natural gas, digester gas, landfill gas, storm drain, and sanitary sewer pipelines require numerous relocations. The contractor has completed necessary relocations and modifications, including rerouting and other design changes to the new digester gas pipe rack footings.
- BAAQMD venting restrictions have delayed digester work by approximately six months. The contractor has now completed the temporary digester gas connections and the system is now operational.

In November 2017, Council approved a contingency increase of \$15 million. The City has issued change orders against the increased contingency for delays associated with the above conditions, including an increase of 140 working days to the project schedule.

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

- Digester structural redesign: The design consultant has completed the revised structural drawings to address seismic issues. The contractor has provided a cost proposal associated with the revised structural drawings for the City's review.
- Hazardous material mitigation: Testing of soils and concrete for PCBs is complete. The consultant has prepared a hazardous material survey report summarizing the sampling results. The project team has determined disposal options. Excavation and removal of PCB-contaminated soil is in progress.

A second contingency increase is pending Council approval in June for additional costs associated with the seismic redesign, hazardous material remediation, and schedule delays.

An estimated delay of 276 working days based on the contractor's latest submittal is now reflected in the revised Beneficial Use date of July 2021. City staff is evaluating this estimated delay.

### Emergency Diesel Generators

This project reached Beneficial Use in July 2017; final acceptance is anticipated by spring 2018. The schedule shows a project completion delay of approximately one year from the Notice to Proceed (NTP) completion date. The City granted a schedule addition of 189 working days through the change order process due to additional scope. The project has extended beyond the original schedule due to the following factors:

- Caterpillar, the supplier of the emergency diesel generator system, took longer than expected to develop the controls and network switches that interface with existing RWF controls. Caterpillar has completed their outstanding items. Peterson Control completed their outstanding items and has obtained O&M final signoff.
- Additional time was required for PG&E to review the third-party protective devices testing report and schedule the witness test for the new emergency diesel generators. PG&E has now completed this work.



- A no-cost time extension change order was required to split the commissioning sequence into two phases and ensure RWF backup power during engine modification work. The contractor completed both phases of the project, including modifications to the existing EG1 engine; an eight-hour load test for the four new generators; installation of the fueling and diesel exhaust fluid systems; and upgrades to the existing EG2 and EG3 engines and M4 switchgear.

The contractor has reached a settlement with the City on liquidated damages and the City issued NOCA for the project on April 26.

### **Iron Salt Feed Station**

The Iron Salt Feed Station Project construction has been delayed by eight months due to a combination of heavy winter rain in 2016-17; longer than anticipated time to fabricate the double containment pipeline and leak detection system; some piping modifications to resolve a pump operational issue at the ferric chloride station; and the installation of additional piping to allow O&M staff to temporarily dose polymer at an alternate location. In addition, operational testing and commissioning of the new equipment has taken longer than anticipated to fine-tune the control program, identify and resolve pump drop-off issues, and address issues with the new flow meter and level sensor. Staff anticipate that the project will reach Beneficial Use in May 2018.



## Project Profile – HVAC Improvements

Most heating, ventilation, and air conditioning (HVAC) equipment in the RWF buildings has exceeded its service life. Replacement parts are becoming scarce. The HVAC system is a vital building function providing cooling for sensitive equipment, ventilation of work space, as well as comfort to occupants. Frequent repairs of old HVAC equipment increase maintenance costs and decrease system reliability. Rehabilitating the HVAC system will improve system performance, efficiency, and reliability, and a more comfortable environment for building occupants.

The project scope includes:

- Replacing the original boilers, chillers, and cooling tower used to produce heating hot and chilled waters with new high efficiency equipment;
- Upgrading or replacing the existing air handler systems that circulate airflow throughout the buildings (see Figures 3 and 4); and
- Replacing the existing exhaust fans with new appropriately sized equipment providing improved ventilation and efficiency.



**Figure 3: Aging Air Handler Unit**



**Figure 4: Heavily Corroded Air Handler Unit**

In December 2017, the City authorized design consultant Kennedy Jenks (K/J) to start work on the project. In April, K/J completed the condition assessment of the HVAC systems in 18 RWF buildings. The consultant will hold a project workshop to review the condition assessment results in June.

The project will be delivered using the low-bid design-build method. K/J will develop the 30 percent design documents for a low-bid DB contract. The DB contractor will then finalize the design and build the improvements in compliance with the new mechanical and energy codes, including modifications necessitated by changes that have occurred in building use at the RWF throughout the years.

The project team expects to begin construction in the fall 2020 and reach Beneficial Use in spring 2023. The total project budget is currently \$12.8 million.

# Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

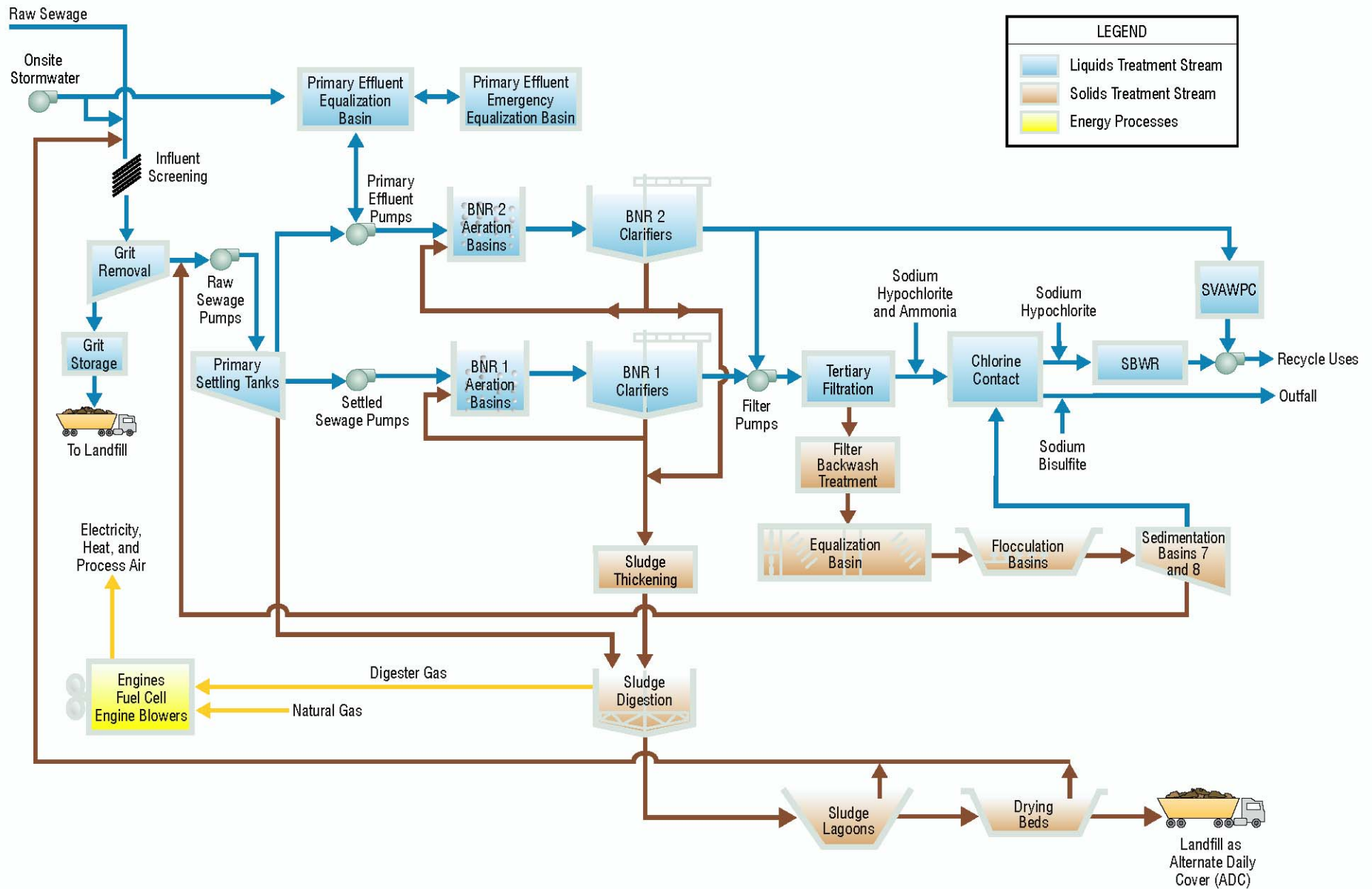


Figure 5 – Current Treatment Process Flow Diagram



# Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

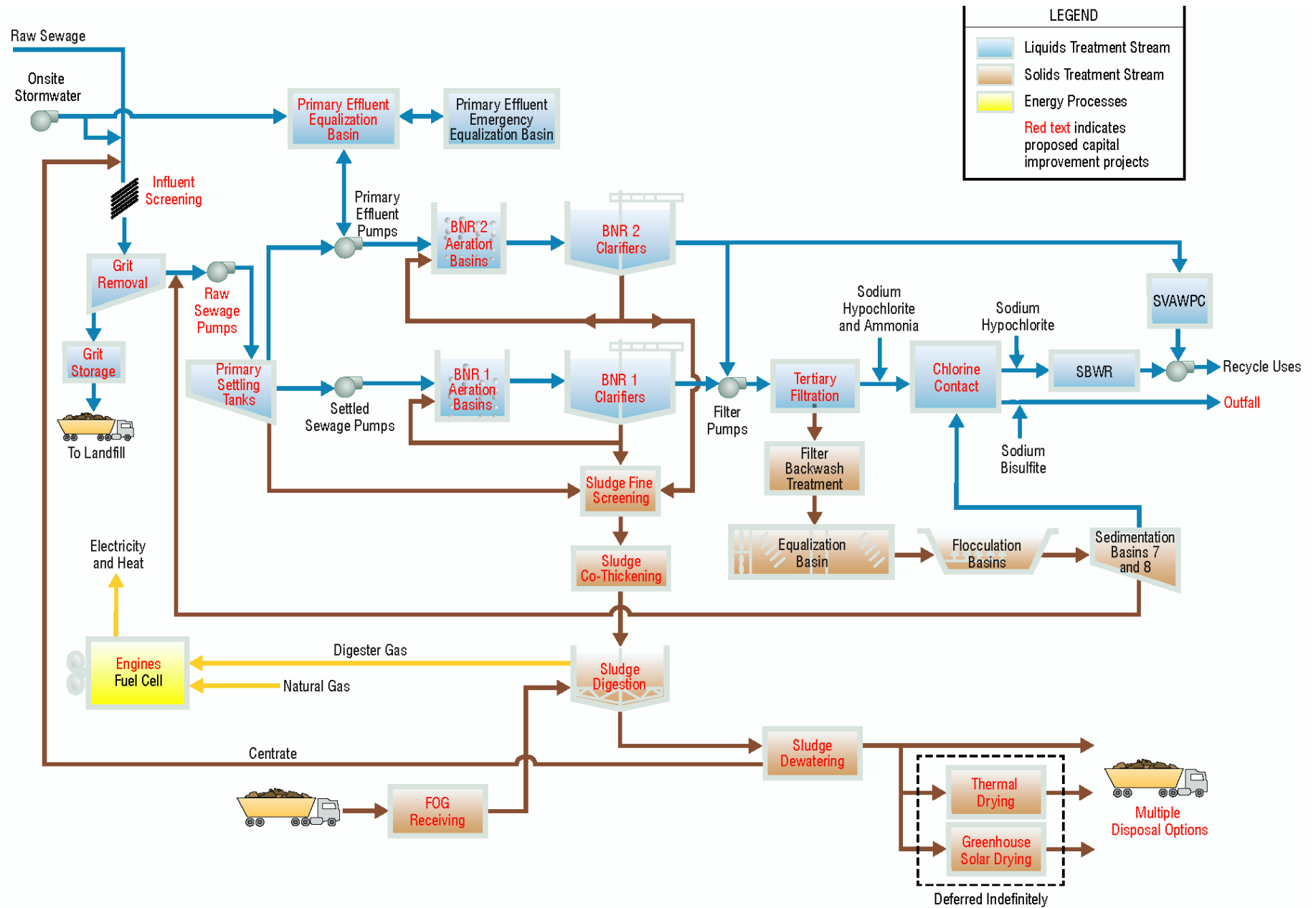


Figure 6 – Proposed Treatment Process Flow Diagram



## Active Construction Projects – Aerial Plan

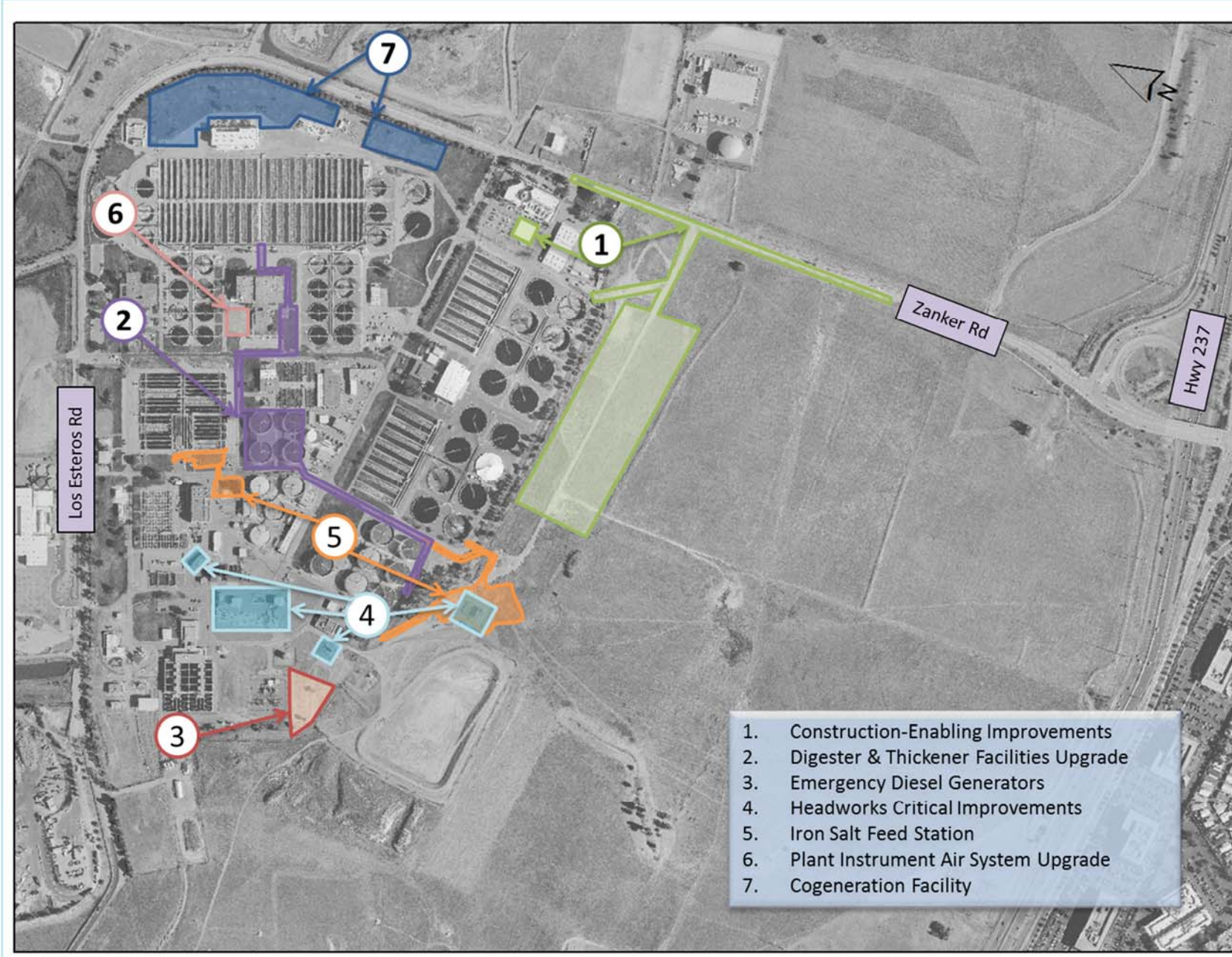


Figure 7: Active Construction Projects

