San José-Santa Clara Regional Wastewater Facility

Capital Improvement Program

Monthly Status Report: March 2019

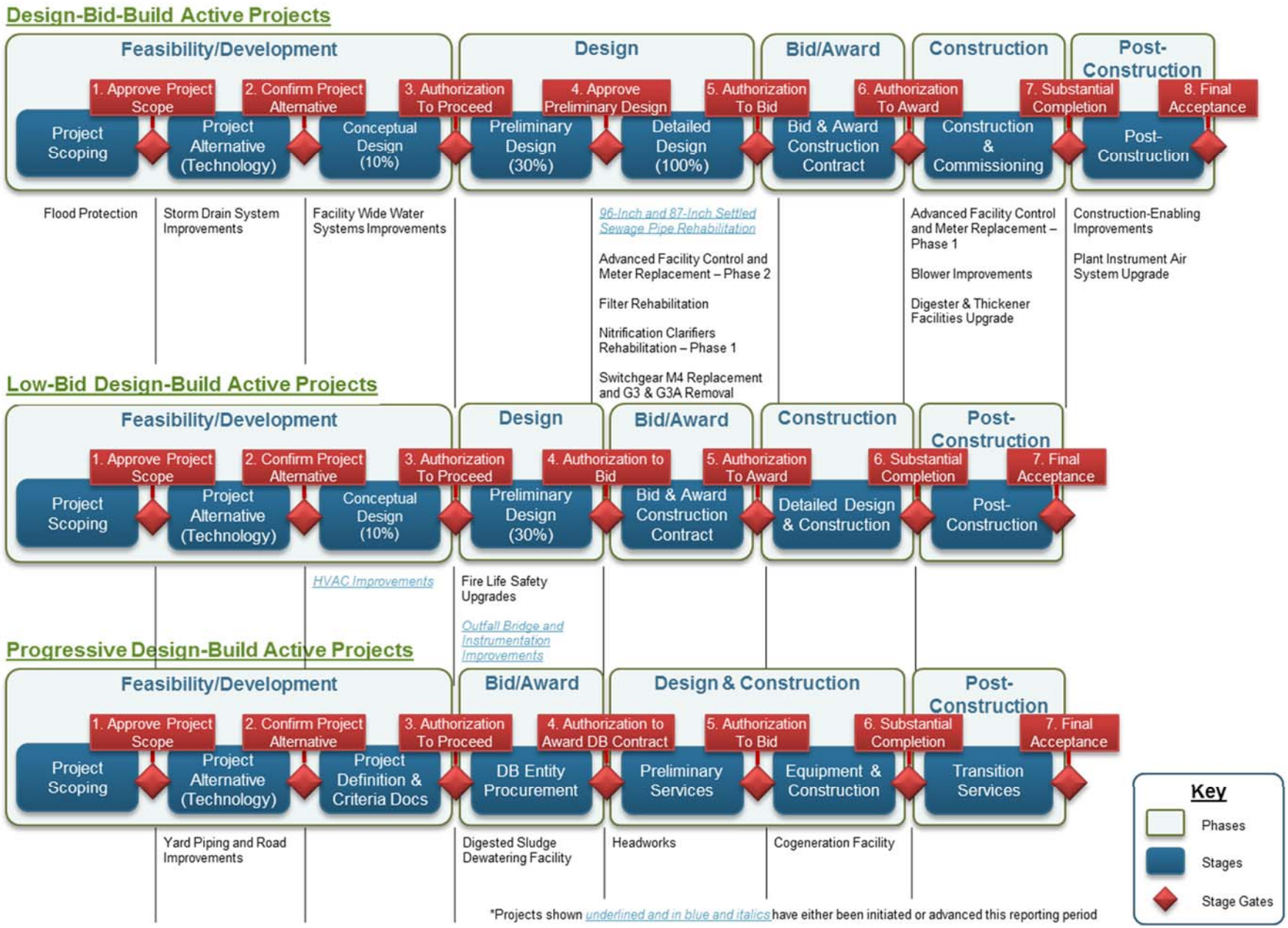
May 9, 2019

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

Report Contents

Project Delivery Models 2
Program Summary 3
Program Highlight – Detailed Design 4
Program Performance Summary 5
Program Budget Performance Summary 6
Project Performance Summary 8
Project Significant Accomplishments 10
Explanation of Project Performance Issues 11
Project Profile – Advanced Facility Control and Meter Replacement – Phase 2 13
Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram 14
Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram 15
Active Construction Projects – Aerial Plan 16

Project Delivery Models



Program Summary

March 2019

In March, three projects advanced to the next stage in the Project Delivery Model (PDM):

1. HVAC Improvements Project passed Stage Gate 2: Confirm Project Alternative
2. Outfall Bridge and Instrumentation Improvements Project passed Stage Gate 3: Authorization to Proceed
3. 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation Project passed Stage Gate 4: Approve Preliminary Design.

The contractor on the Digester and Thickener Facilities Upgrade Project completed concrete roof placement on Digesters 6 and 8, with work continuing on Digester 7. Construction of the concrete digester seismic rings progressed with multiple lifts being placed. The contractor isolated and tied in two blended gas pipelines in preparation for a future connection with the new cogeneration facility. Work also continued on the elevated pipe rack with the excavation of four column foundations north of the gas compressor building and installation of water and digester gas piping along 10 more sections of the pipe rack.

The design-builder for the Cogeneration Facility Project continued to erect the concrete masonry unit walls and completed the wall bracing of the main generator building. The under-slab plumbing and electrical work was also completed for the concrete slab that will be poured in April for the cooling towers and chillers. The Blower Improvements Project contractor completed a pre-assessment of all 10 existing blowers to establish baseline conditions prior to rehabilitation work due to commence in the summer.

The Headworks Project team held workshops to discuss startup and acceptance testing, as well as influent pump station design configuration. On the Digested Sludge Dewatering Facility Project, the project team continued negotiations with the top-ranked firm selected in the recent request for proposals (RFP) procurement.

The design consultants for the Filter Rehabilitation and Nitrification Clarifiers Rehabilitation – Phase 1 projects submitted the 60 percent and 100 percent designs, respectively. The Nitrification Clarifiers Rehabilitation – Phase 1 Project team reviewed the Statements of Qualifications (SOQs) received from contractors as part of the prequalification process. The City expects to post a list of qualified contractors in April. For the 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation Project, the City advertised prequalification documents for construction contractors.

Look Ahead

The following key activities are forecast for April and May 2019:

- The notice of determination for pre-qualified contractors for the Nitrification Clarifiers Rehabilitation – Phase 1 Project will be posted and the project will be advertised for bid.
- The CIP will hold four stage gates as projects seek approval to advance to the next stage of the PDM. Anticipated stage gates include:
  - 96-inch and 87-inch Settled Sewage Rehabilitation Project – Stage Gate 5: Authorization to Bid
  - Construction Enabling Improvements Project – Stage Gate 7: Substantial Completion
  - Nitrification Clarifiers Rehabilitation – Phase 1 Project – Stage Gate 5: Authorization to Bid
  - Plant Instrument Air System Upgrade - Stage Gate 7: Substantial Completion
- The Cogeneration Facility Project will pour concrete base slabs for the electrical and mechanical building, digester gas treatment system, and cooling towers and chillers. Preparation work will start on the main generator building roof installation.
- For the Headworks Project, the design-builder will conduct subsurface investigations of the proposed new headworks facility site.
- The contractor for the Advanced Facility Control and Meter Replacement – Phase 1 Project will begin replacement of flow meters and other critical equipment.
- The City will issue notices of completion and acceptance for the Construction-Enabling Improvements and Plant Instrument Air System Upgrade projects.

Program Highlight – Detailed Design

During the detailed design stage of the PDM (see blue box in Figure 1, below), designers complete a project's design details based on the Preliminary Design Report prepared in the previous stage (refer to Monthly Status Report: November 2018), approved by CIP leadership in Stage Gate 4: Approve Preliminary Design. The detailed design stage follows preliminary definition of key project parameters. During this phase, accepted value engineering (VE) recommendations are incorporated into the project design. The project team, Operations and Maintenance (O&M), construction management team, and selected technical experts conduct detailed design reviews at the 60 percent and 90 percent completion points.

Key areas of focus during detailed design include:

- Geotechnical – Complete all field work and incorporate results into the design;
- Performance – Revisit in detail project performance standards;
- Operations – Confirm operations strategies with O&M staff;
- Procurement – Conclude equipment pre-purchase, early work packages, and contractor pre-qualification;
- Interfaces – Update interface mitigation measures and coordinate with other CIP projects;
- HAZOP – Incorporate hazard and operability (HAZOP) study results into design details;
- Costs – Update the project Opinion of Probable Construction Costs (OPCC) (Class 2) and operating cost estimates, based on the latest information;
- Risks – Update threats and opportunities and confirm response plans;
- Constructability – Complete proposed construction sequencing and identify mandatory constraints for the contractor;
- Commissioning and Startup – Specify detailed startup and testing procedures;
- Permitting – Conclude detailed permitting requirements and specify impacts on the contractor;
- VE – Incorporate accepted VE recommendations into the design;
- Schedule – Refine the construction schedule;
- Environmental – Complete the California Environmental Quality Act (CEQA) documents for the project;
- Safety – Define the health and safety requirements for the general contractor; and
- Specifications – Assemble and adapt standard City contractual conditions specific to this contract.

For design-bid-build projects, the detailed design phase produces a set of documents used to solicit construction bids. At the conclusion of the detailed design phase, CIP leadership reviews the project at Stage Gate 5: Authorization to Bid and, upon approval, authorizes the project team to seek construction bids.

For both progressive design-build (PDB) and low-bid design-build (LBDB) projects, the detailed design is completed by the design-builder. In the case of PDB projects, detailed design happens during the Preliminary Services phase to the extent required to define the project costs. Once the guaranteed maximum price (GMP) is agreed upon and approved, detailed design development continues in the Equipment and Construction phase to provide details for construction. For LBDB projects, the project is awarded based on preliminary design documents and detailed design occurs during the Detailed Design and Construction phase. In both cases, the City reviews and approves the detailed design, resulting in a complete set of design documents.

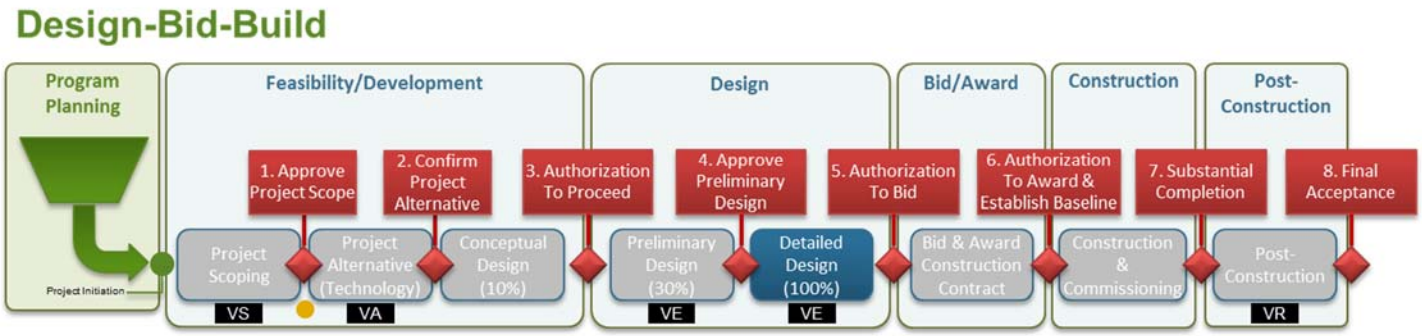


Figure 1: Design-bid-build PDM with detailed design stage highlighted

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%	93% 14/15 [1]	●	↑	95% 19/20 [2]	●	↑
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.[3] 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.[3] Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
Expenditure	$253M	$273M	●	↑	$285M [4]	●	↓
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 Rate[5]	10%	22% 18/83 [6]	◆	↑	11% 9/83	▲	↑
Measurement: Ratio of the number of vacant approved positions to approved positions. Target: Green: <= 10%; Amber: 10% to 20%; Red: > 20%							

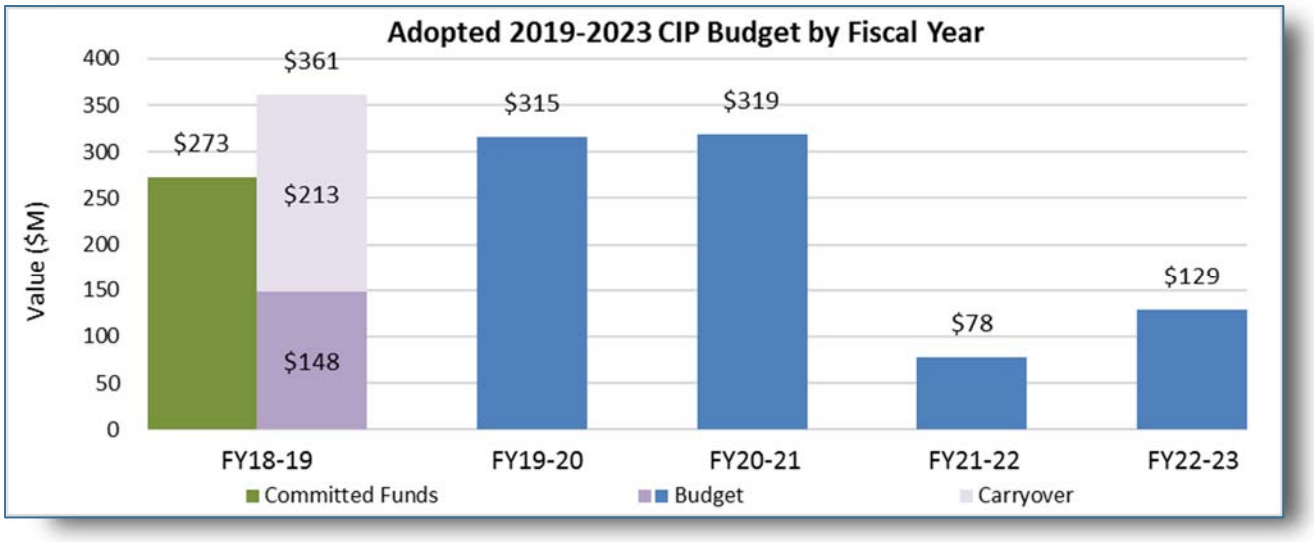
Notes

1. The 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation, HVAC Improvements, and Outfall Bridge and Instrumentation Improvements projects passed Stage Gate 4: Approve Preliminary Design, Stage Gate 2: Confirm Project Alternative, and Stage Gate 3: Authorization to Proceed, respectively.
2. The quantity of forecasted fiscal year-end stage gates increased by one due to revised project schedules.
3. The baseline Beneficial Use date and the baseline budget for each project are established at construction contract award and execution.
4. The forecasted fiscal year-end expenditure decreased because several design awards have moved to the next fiscal year.
5. The Vacancy Rate KPI measures CIP-approved positions (ESD and Public Works) and program management consultant full-time staff.
6. The CIP vacancy count increased by three.

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.

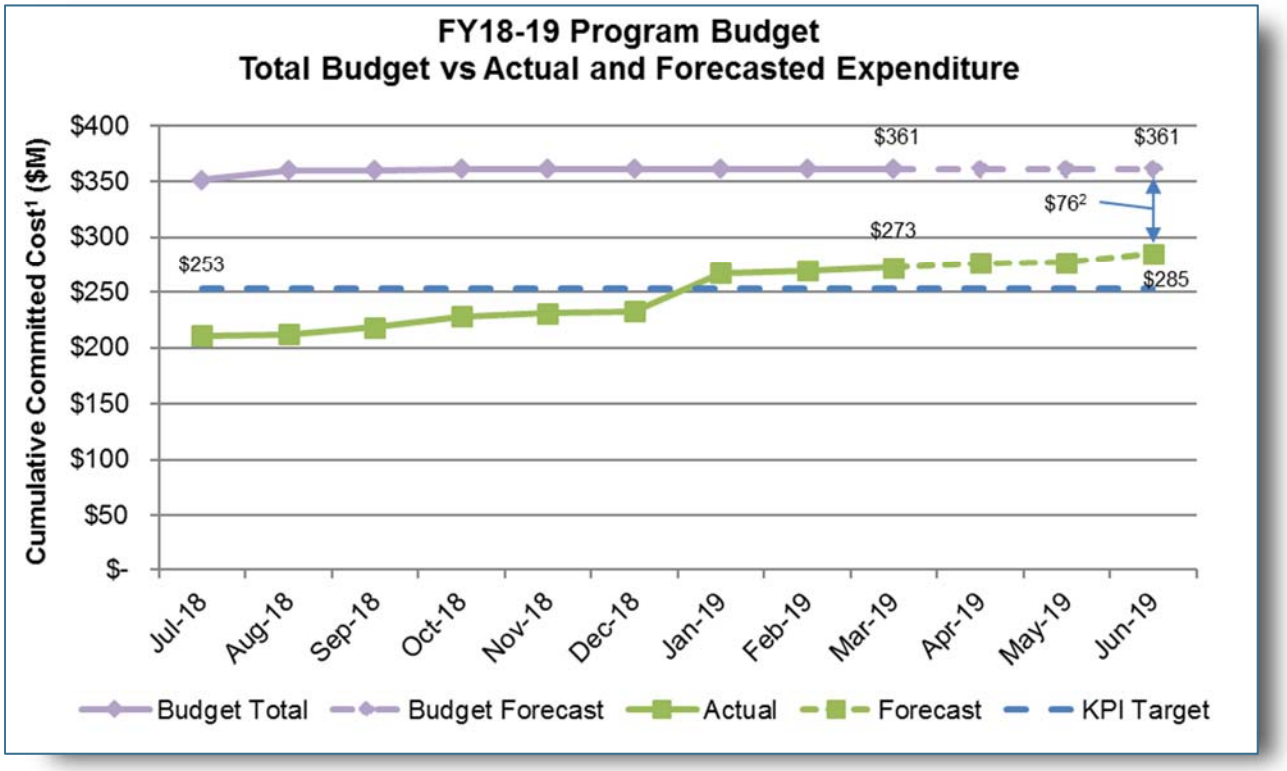
The FY18-19 budget is $185 million, which consists of $131 million in new funds and $54 million in rebudgets. For purposes of this monthly report, the adopted FY18-19 budget is adjusted from $185 million to $148 million due to the exclusion of certain appropriations that are not measured as part of the 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 million and carryover of $213 million totals $361 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 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 $32 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 Digested Sludge Dewatering Facility Project preliminary services contract is now anticipated to be awarded in FY19-20.
    d. The Blower Improvement Project construction bids came in under budget.
    e. Several other minor encumbrances for consultant services are either lower than budgeted or are anticipated to be awarded in FY19-20.
    f. Several authorized positions remain vacant, resulting in lower predicted personal services expenses than budgeted.
    g. 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	Sep 2020	●	●
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

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.
2. An explanation of cost and schedule variances on specific projects identified in this table is provided on pages 11 and 12.
3. Actual Beneficial Use date.

Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date[1]
1. Digested Sludge Dewatering Facility	Bid/Award	Jan 2023
2. 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation	Design	Oct 2020
3. Outfall Bridge and Instrumentation Improvements	Design	Jan 2022
4. Switchgear M4 Replacement and G3 & G3A Removal	Design	Feb 2022
5. Fire Life Safety Upgrades	Design	Sep 2022
6. Advanced Facility Control & Meter Replacement - Phase 2	Design	Dec 2022
7. Headworks	Design and Construction	Dec 2022
8. Filter Rehabilitation	Design	Apr 2023
9. Nitrification Clarifiers Rehabilitation – Phase 1	Design	Oct 2023
10. HVAC Improvements	Feasibility/Development	Mar 2023
11. Storm Drain System Improvements	Feasibility/Development	Apr 2023
12. Flood Protection	Feasibility/Development	Jun 2023
13. Facility Wide Water Systems Improvements	Feasibility/Development	Aug 2024
14. Yard Piping and Road Improvements	Feasibility/Development	Oct 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 isolated and tied in two blended gas pipelines between the compressor room and the connection point to the future cogeneration facility, at the east end of the elevated pipe rack east end; completed four additional elevated pipe rack foundations; and completed the Digester 8 concrete roof pour.
- Walsh completed pre-operation testing on two master control centers in the existing sludge control compressor room and two master control centers inside the new sludge screening building.

Facilities Package

96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation

- The project team passed Stage Gate 4: Approve Preliminary Design.
- The City advertised prequalification documentation and began the CEQA exemption process.
- Design consultant Black and Veatch submitted the 100 percent design and specifications for City review.

HVAC Improvements

- The project team finished the alternatives analysis report, passed Stage Gate 2: Confirm Project Alternative, and authorized design consultant K/J to begin the conceptual design, which is expected to be completed in July 2019.

Outfall Bridge and Instrumentation Improvements

- The project team passed Stage Gate 3: Authorization to Proceed, allowing design consultant AECOM to begin preliminary design, which is anticipated to be completed in August 2019.

Liquids Package

Blowers Improvements

- Contractor Monterey Mechanical completed pre-assessment of all 10 existing blowers to establish baseline operating conditions prior to the rehabilitation work slated to start this summer.

Filter Rehabilitation

- Design consultant K/J completed field verification of the existing electrical infrastructure, submitted the 60 percent design, and conducted a workshop to review the design with project stakeholders. The project team anticipates completing the 100 percent design in November 2019.

Headworks

- The project team held workshops on startup and acceptance testing and on various technical issues, including influent pump type, force main routing, and metering options. Next month, the project team will conduct workshops to address cost estimating, process control, and condition assessment approaches.
- The project team completed the CEQA addendum and continued preparing the 30 percent design submittal.

Nitrification Clarifiers Rehabilitation – Phase 1

- Design consultant HDR completed the 100 percent design documents and will submit the associated OPCC next month. The project team anticipates seeking authorization to bid at Stage Gate 4 next month.

Power and Energy Package

Cogeneration Facility

- Design-builder CH2M completed the wall bracing of the main generator building. Next, they will begin setting the roof steel frames, including the bridge crane track and trolley.
- The design-builder also completed the under-slab plumbing and electrical work in preparation to pour the concrete slab in April for the chillers and cooling towers. Once the concrete has cured, CH2M will install the four cooling tower skids received this month.

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, which indicated that 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 May 2019.

Plant Instrument Air System Upgrade Project

Project construction was 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 development and construction of an alternative access route; 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 May 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 have amounted to 273 working days. The original construction completion and Beneficial Use date in September 2019 has been delayed to November 2020.

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 replacing 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 City has negotiated contract change orders for the following issues discovered in 2017 and 2018:

- Digester structural redesign: The design consultant revised the structural drawings to address seismic concerns 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 final, global change order to cover work activities;
- Distributed control system architectural changes: The design guidelines for the distributed control system were developed after the project plans were completed. Several changes were required for fiber optic cable, electrical wiring, patch panels, converters, communications instrumentation, and emergency power supply. Drawings, color-coding labeling, and process diagrams had to be revised to reflect these changes;

- Fire Department requirements: Fire permit requirements changed after the design was completed. The Fire Marshal required additional alarms and electrical connections. A new electrical fire suppression system was installed to meet current environmental requirements. At one structure, additional time was needed to confirm that the fire suppression system was not required;
- Structural issues with the west electrical building, DAFT tank walls, DAFT ceiling slab, and digester feed pump canopy;
- Drainage of one DAFT underground gallery, polymer pad, Main Street drainage; and
- Required warranty extensions resulting from construction delays.

The hazardous material mitigation issue is currently being evaluated and is expected to result in additional costs. Testing of soils and concrete for 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 ring beam 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.

To minimize further delays, the contractor is executing several tasks concurrently that had been planned originally in series.

Project Profile – Advanced Facility Control and Meter Replacement – Phase 2

The RWF relies on control equipment—flow meters; valves and actuators; sensors and transmitters—for process monitoring and control, to safely and efficiently operate the RWF, and maintain compliance with its National Pollutant Discharge Elimination System permit. Most of the RWF's control equipment was installed during the 1960s and 1970s, is in poor condition, and requires excessive maintenance. Some of this equipment is difficult to repair because it is no longer supported by the manufacturers, and replacement parts are either scarce or unavailable. Historically, these devices were replaced only after they had failed, resulting in disruptions and potential risks to plant operational goals. New control equipment is urgently needed to increase equipment and data reliability and integrity, improve the RWF's overall operational efficiency, and reduce maintenance of the advanced control equipment.

The second phase of the Advanced Facility Control and Meter Replacement Project will replace or upgrade the control equipment in the following treatment areas (see Figure 2): east primary, secondary A battery, nitrification A battery, and the filtration building. The project scope includes replacing 53 flow meters, four density meters, 24 valves, 12 valve actuators, and 61 sensors and transmitters, including associated piping modifications and electrical improvements.

In July 2017, the larger Advanced Facility Control and Meter Replacement Project was split into two phases to better align construction with planned maintenance shutdowns of the secondary and nitrification treatment areas. Both phases are being delivered using the traditional design-bid-build approach. The first phase is currently in construction and is anticipated to reach Beneficial Use in winter 2020. For Phase 2, design consultant Black and Veatch is completing the design and anticipates submitting the 100 percent design in May. The City plans to advertise prequalification documents in May, advertising the project for bid in fall 2019, and recommending Council award the construction contract in spring 2020. The total estimated project cost is $18.2 million and expected to reach Beneficial Use in winter 2022.

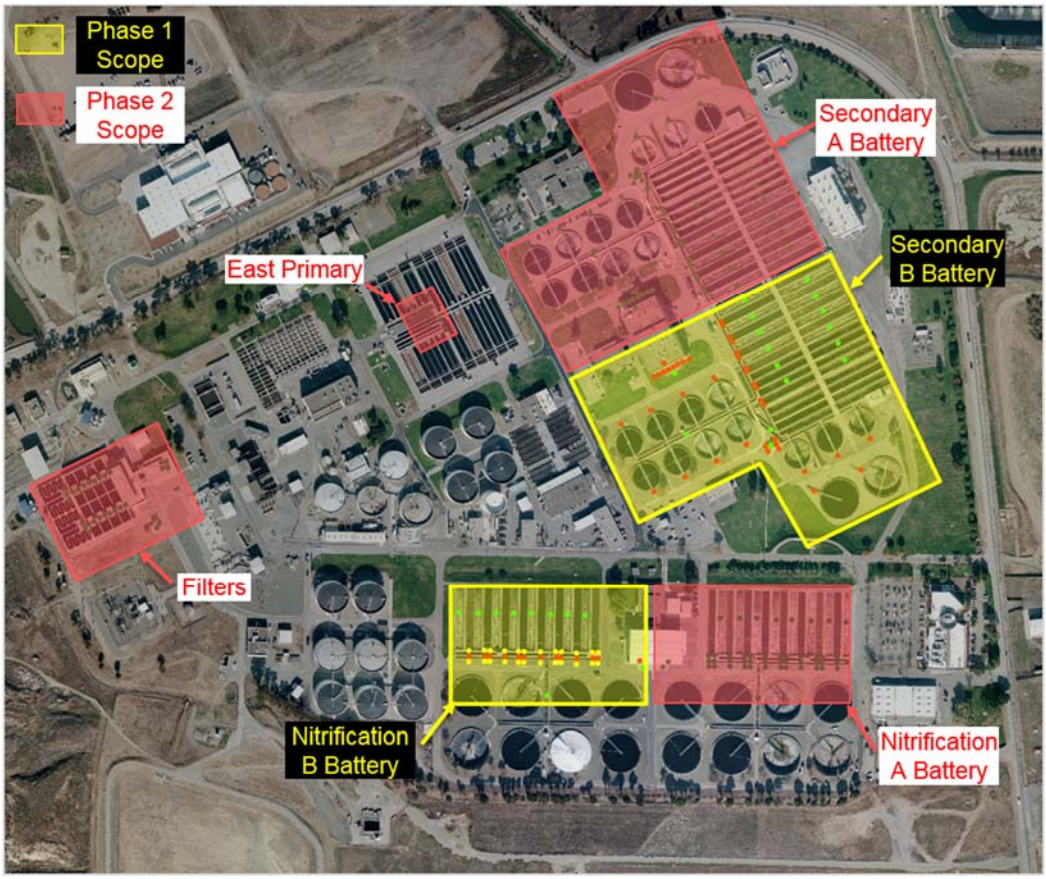


Figure 2: Project Map

Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

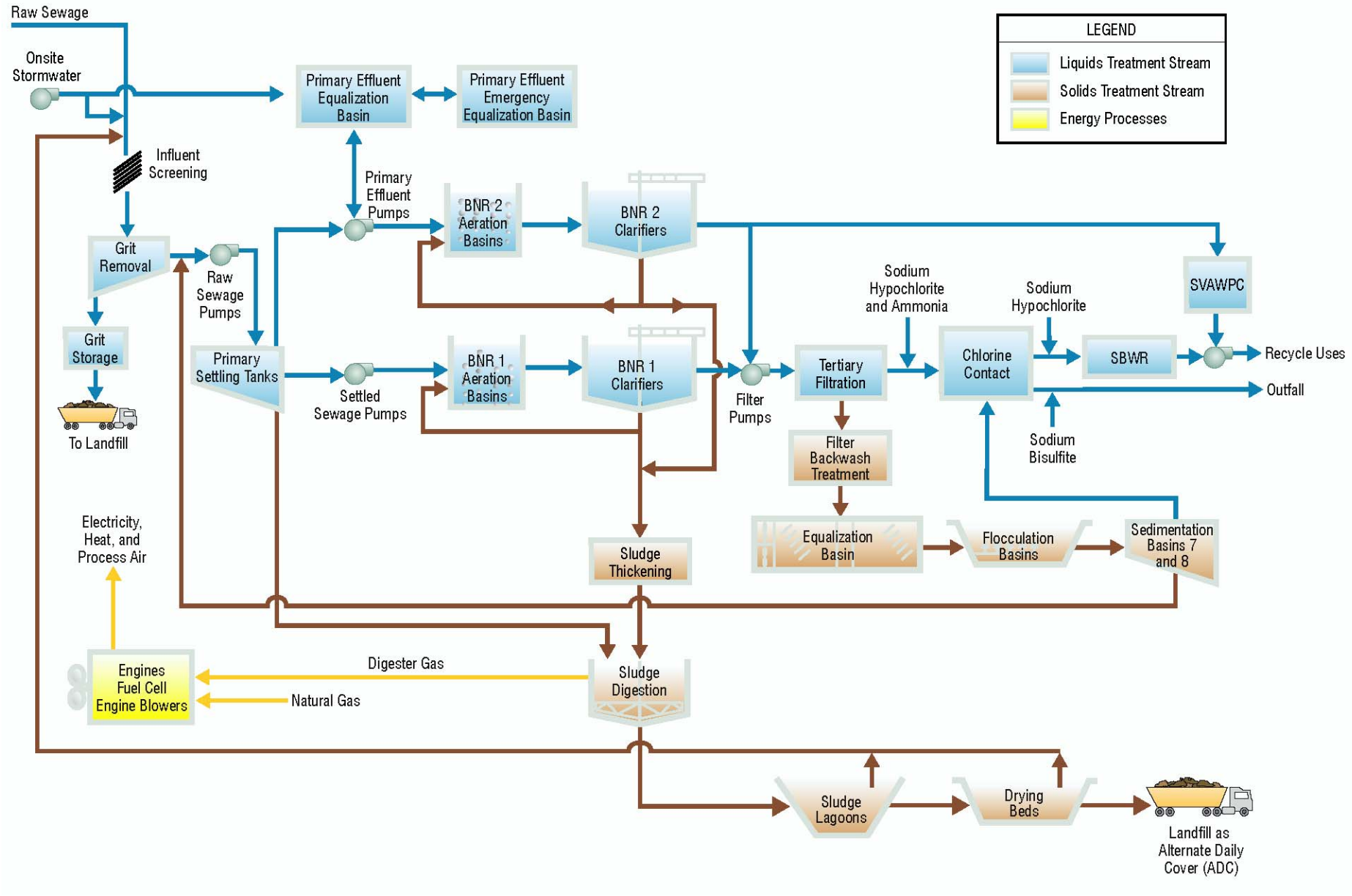


Figure 3 – Current Treatment Process Flow Diagram

Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

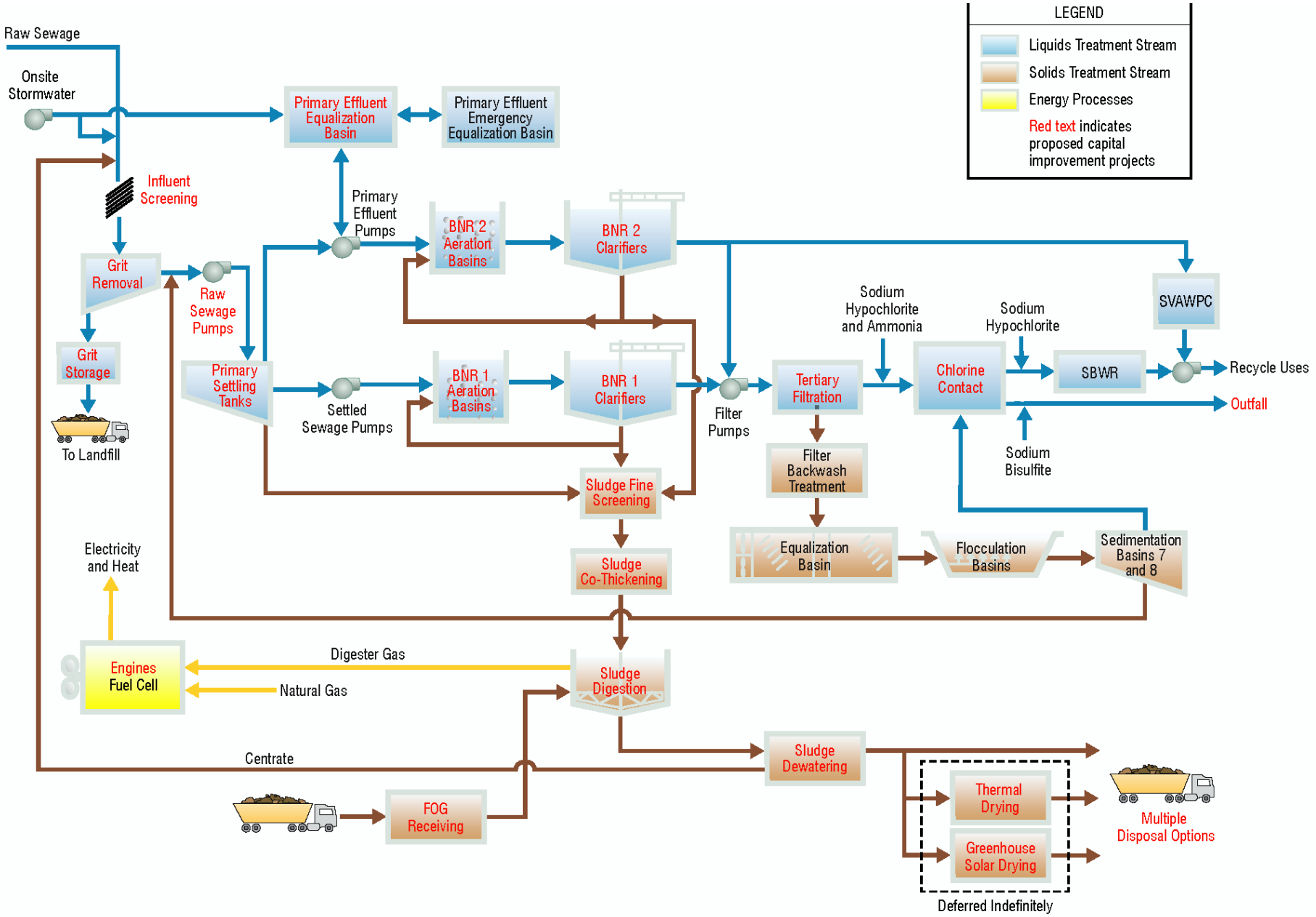


Figure 4 – Proposed Treatment Process Flow Diagram

Active Construction Projects – Aerial Plan

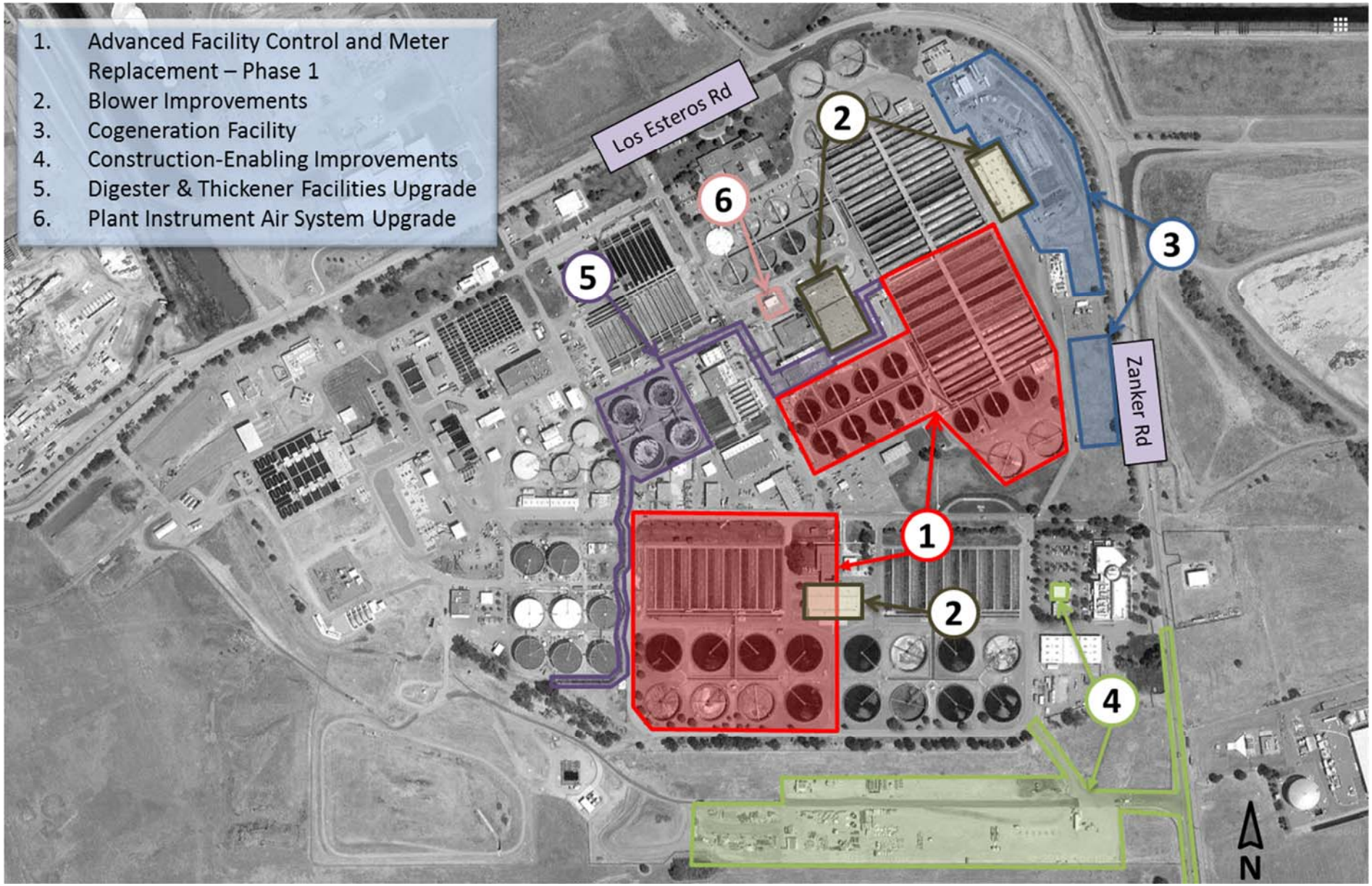


Figure 5: Active Construction Projects