



San José-Santa Clara
Regional Wastewater Facility

Capital Improvement Program

Monthly Status Report: April 2019

June 6, 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 April 2019.

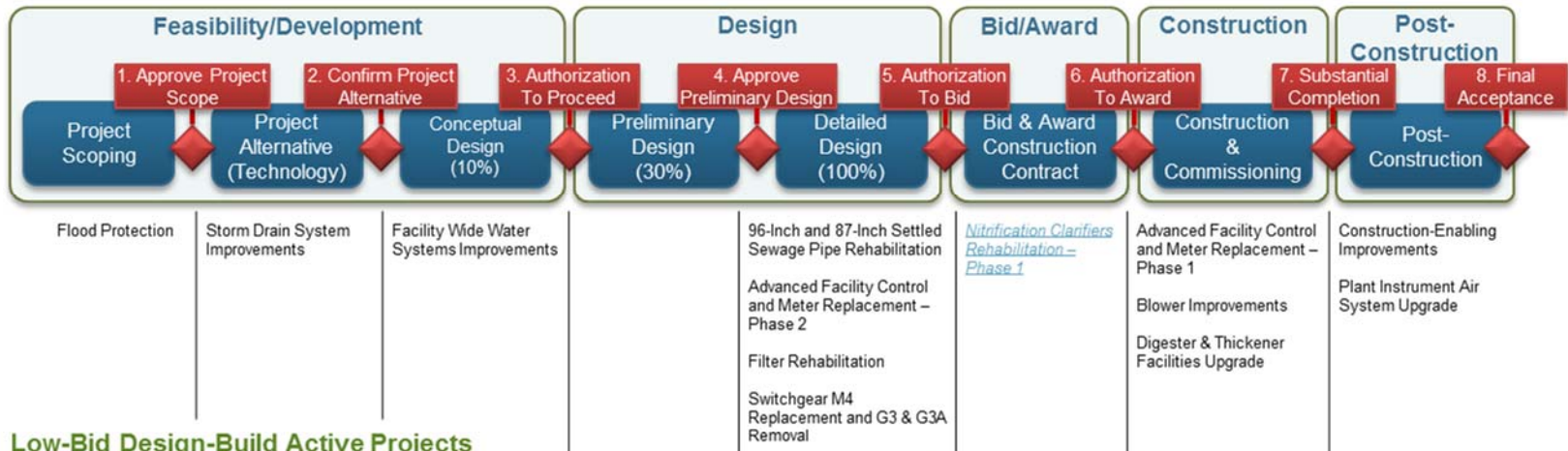
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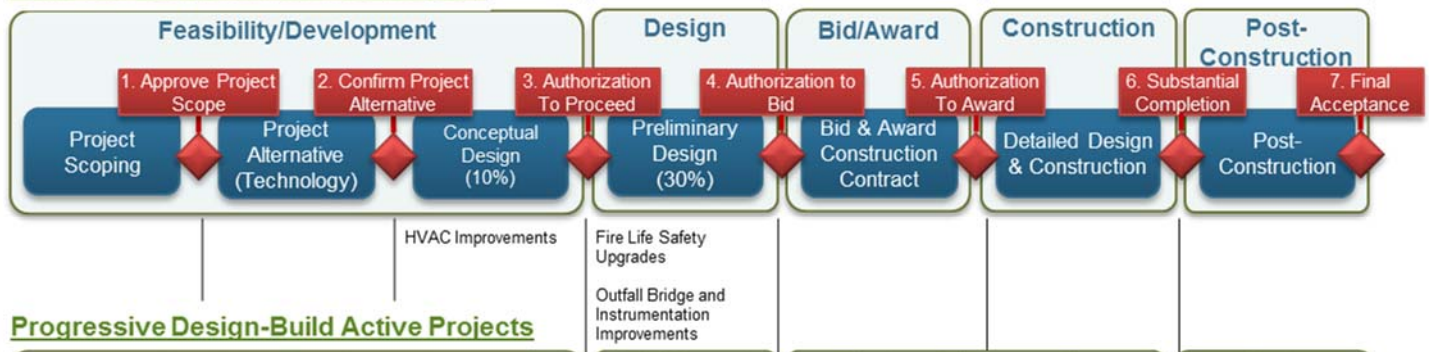


Project Delivery Models

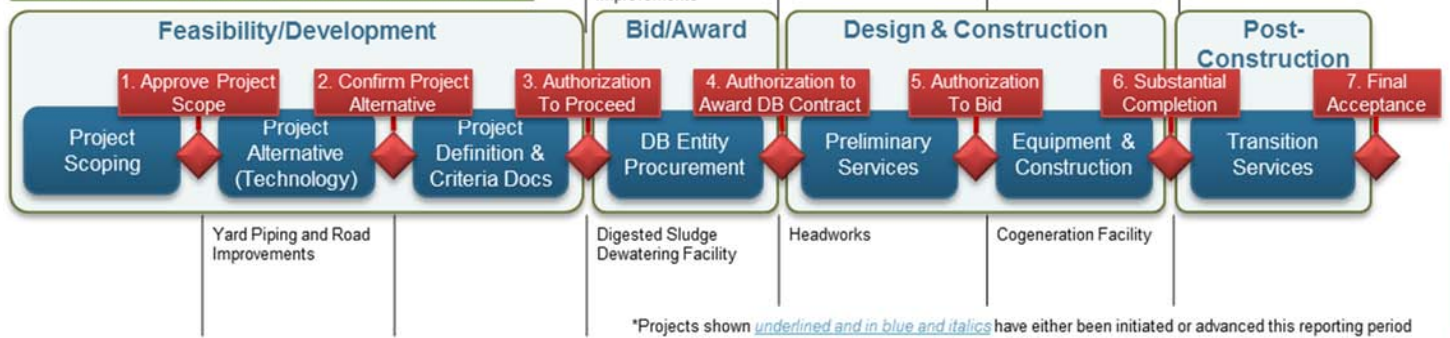
Design-Bid-Build Active Projects



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

April 2019

In April, the Nitrification Clarifiers Rehabilitation – Phase 1 Project passed Stage Gate 5: Authorization to Bid of the Project Delivery Model (PDM). The City completed the pre-qualification process and determined that all six contractors who submitted qualifications were eligible to bid on the project. The City plans to advertise the project in May and open bids in June.

The contractor on the Digester and Thickener Facilities Upgrade Project continued seismic ring beam concrete placement on all four digesters. Work also continued on the elevated pipe rack with construction of four column foundations, one of two large polymer tank pads, and the elevated pipe rack gas line moisture removal system.

The design-builder for the Cogeneration Facility Project continued to erect the concrete masonry unit walls of the main generator building, placing the eighth of nine lifts, and installed the mezzanine embeds for the south wall of the control room. The design-builder finished preparation work for the 200-ton crane that will arrive in June to place the building's roof joists. Preparation work also continued for the concrete slabs for the electrical and mechanical building, digester gas treatment area, and cooling towers and chillers (see Figure 1); these slabs will be poured in May/June.



Figure 1: Cogeneration Facility Project concrete slab work continues

On the Blower Improvements Project, the project team began reviewing key submittals for the blower motors, reduced voltage starters, and variable frequency drives.

The Headworks Project team held workshops to discuss cost estimating review planning, process control, and condition assessment planning. The design-builder continued preparations for planned subsurface investigations that will commence in May. On the Digated Sludge Dewatering Facility Project, the project team continued negotiations with the top-ranked firm. Negotiations are expected to be completed in June.

The review of the 60 percent design for the Filter Rehabilitation Project was completed by the project team and comments returned to the design consultant. For the 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation Project, the City completed evaluation of pre-qualification packages submitted by six contractors and posted the determination of pre-qualified contractor list. The draft 10 percent conceptual design report was submitted by the HVAC Improvements design consultant and a workshop held to review the submittal.

Look Ahead

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

- The Nitrification Clarifiers Rehabilitation – Phase 1 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;
 - Digated Sludge Dewatering Facility – Stage Gate 4: Authorization to Award DB Contract; and
 - Plant Instrument Air System Upgrade - Stage Gate 7: Substantial Completion.
- 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 contractor for the Blower Improvements Project will begin demolition in the blower buildings to create space for new electrical rooms and the project team will hold a second partnering session.
- The City will issue notices of completion and acceptance for the Construction-Enabling Improvements and Plant Instrument Air System Upgrade projects.



Program Highlight – Procurement

The CIP is delivering more than 33 projects in a 10-year span beginning in 2014 with an estimated total value of \$1.4 billion to rebuild and modernize the RWF. The CIP's procurement processes are managed by the Department of Public Works in partnership with the Environmental Services Department and is governed by the California Public Contracting Code. The effective management and administration of procurements are instrumental to the successful delivery of the program. Projects are delivered using one of three approaches: design-bid-build (DBB), low-bid design-build (LBDB), and progressive design build (PDB). Each approach starts with the procurement of a design consultant. The design consultant's role varies between the delivery methods, but the procurement process is consistent and outlined first.

Design Consultant

When procuring a design consultant for a project, the City uses a qualifications-based ratings system, with added preference points for firms that meet the City's definition as either a Local Business Enterprise (LBE) or a Small Business Enterprise (SBE).

The City issues a Request for Qualifications (RFQ) for master consultant agreements or Request for Proposals (RFP) for standard consultant agreements using the City's electronic procurement (e-procurement) platform. Design firms respond by submitting a Statement of Qualifications (SOQ) or Proposal. Then the procurement team conducts a responsiveness check to ensure all required information is included in the submittal. Next, the City establishes a Technical Evaluation Panel (TEP) composed of subject matter experts and other CIP representatives. The program may also elect to bring an individual from outside the City to participate as a panelist. The TEP members individually evaluate the submittals and assign a numerical score to each evaluation section, including expertise (technical capability), experience (past completed projects), and proposed approach to the project. Then the TEP meets as a group to review the scores, incorporates any LBE/SBE preference points (5 percent of the available points each), and creates an interim/final ranking score for each firm. If the City elects to conduct in-person interviews, it will publicly identify the invited firms through the e-procurement system. The City then assembles an interview evaluation panel, which may differ from the technical evaluation panel, to conduct and rate the oral interviews. The final ranking from the interviews determines the selected design consultant firm. Finally, the City publicly announces the final ranking on the e-procurement system. Design firms have 10 business days to protest the City's determination.

Construction Contractors

The process for procuring construction contractors varies depending on the delivery method employed. Each of the three methods utilized in the program are listed below.

Design-Bid-Build Delivery Method

When procuring a construction contractor using the traditional DBB method, a project team compiles bid documents that consist of final signed and stamped plans and specifications (See Figure 2). These documents are publicly advertised using the e-procurement system for contractors to evaluate and compose a line item bid or lump sum bid. Contractors submit bids to City Hall by the date and time specified in the documents. The City conducts a public bid opening and the project manager reviews the bids for responsiveness and accuracy to determine the apparent low bidder. The City then issues a public Notice of Intent to Award (NOITA) using the e-procurement system, including a summary of all bids received and all bid packages received. Bidders have five business days from the issuance of the NOITA to protest the City's determination. If a protest is received, the City works with the bidders involved to decide the merit of the protest. If no protest is received or after the City resolves any protest, the City announces the award of the contract to the lowest responsive bidder through a public Notice of City Council Award on the e-procurement system.

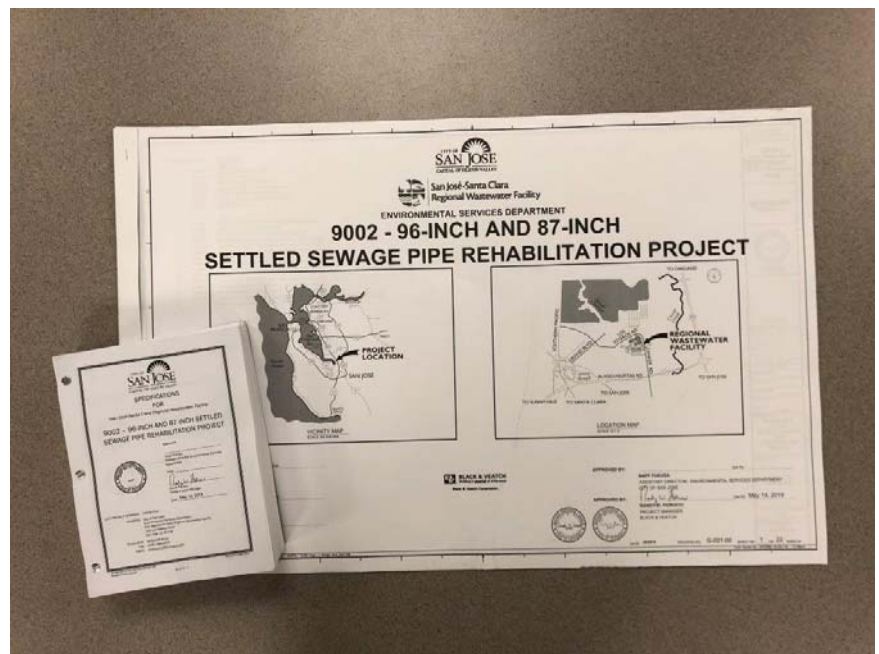


Figure 2: Completed 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation Project Contract Documents Awaiting Final Signature

Low-Bid Design-Build Method

The LBDB contractor procurement process is similar to the DBB contractor procurement process except that the bid documents typically consist of 30 percent project plans and specifications. LBDB contractors submit bids that include the cost of completing the design and construction. LBDB contractors submit bids to the City on the date specified in the contract documents. The remainder of the procurement process follows the DBB process and the City awards the contract to the lowest responsive bidder.

Progressive Design-Build

The PDB procurement process is a two-step process and has some similarities to the consultant procurement process. Design-Build (DB) entities are rated on their expertise (technical capability), experience (past completed projects), and project approach. Again, preference points of 5 percent each are awarded to DB entities meeting the City's definition of LBE or SBE.

The first step is to prequalify the DB entity. The City advertises an RFQ using the e-procurement system, and the DB entities submit SOQs in accordance with the RFQ. The City uses a TEP to evaluate the SOQs the same way it evaluates design consultants' qualifications. Then the City issues a ranking that shortlists the number of DB entities it intends to invite for proposals.

The second step consists of the City advertising an RFP using the e-procurement platform inviting proposals from the shortlisted DB entities. The invited PDB entities submit a technical proposal and a sealed price proposal. The TEP evaluates the technical proposal following the same process outlined in the first step.

The City then conducts oral interviews with the highest ranked PDB entities completing the technical evaluation. Only after the DB entities have been ranked are the sealed price proposals opened and evaluated using a mathematical equation with the lowest price receiving the full allocated number of points and the subsequent price proposals receiving the percentage difference from the lowest price. The price proposal score, technical score, and any LBE/SBE preference points are combined to create the final ranking.

The City publicly announces the final ranking on the e-procurement system. DB entities have 10 business days to protest the City's determination before the contract is awarded (See Figure 3).

The City maintains the highest ethical standards in its procurement practices to ensure that the vendor procurement process is transparent and competitive and that all participants are treated equally. To help facilitate these standards, all solicitations are advertised on an e-procurement system that allows vendors, at no charge, the ability to receive notifications when a project is advertised and to obtain all pertinent information about a project including all bid documents, addenda, and questions posed by other potential participants with the associated City's response. Currently, the City uses BidSync. However, starting June 3, 2019, the City will begin the first of three phases of its e-procurement system migration from BidSync to Biddingo. The first phase will migrate all City construction bids. The second phase will migrate all supplies, equipment, information technology, and non-consultant services bids. The final phase will migrate all consultant service bids. All phases are expected to be complete before the end of 2019.

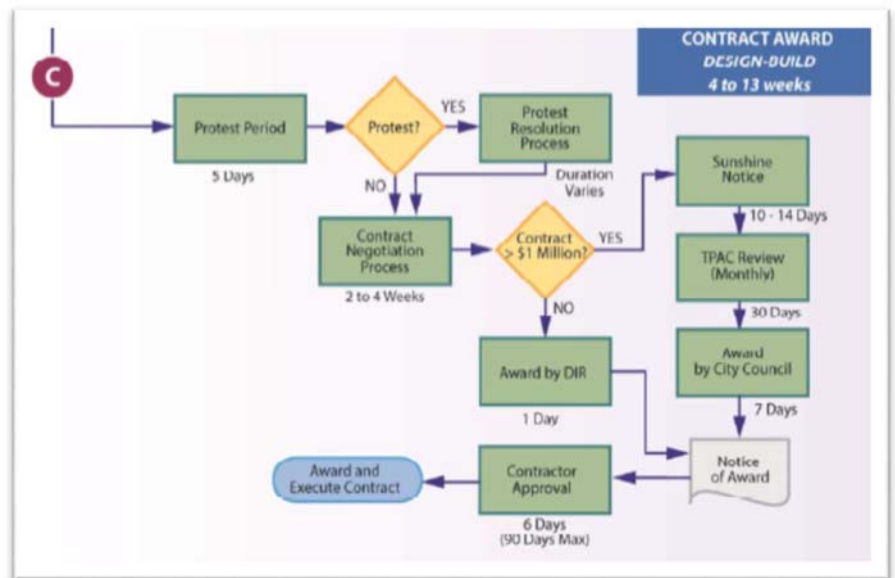


Figure 3: Contract award process for design-build contracts

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 basis. 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%	94% 15/16 ¹			95% 19/20		
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%	33% 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	\$274M			\$282M ³		
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 Rate⁴	10%	20% 17/83 ⁵			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

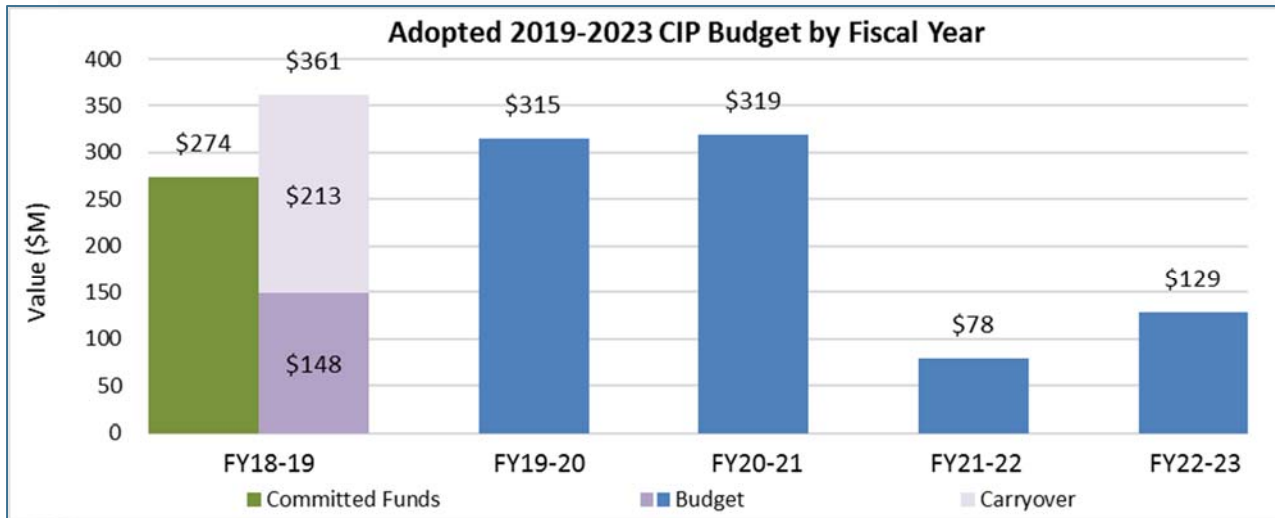
1. The Nitrification Clarifiers Rehabilitation - 1 Project passed Stage Gate 5: Authorization to Bid.
2. The baseline Beneficial Use date and the baseline budget for each project are established at construction contract award and execution.
3. The forecasted fiscal year-end expenditure decreased due to revised encumbrance timing.
4. The Vacancy Rate KPI measures CIP-approved positions (ESD and Public Works) and program management consultant full-time staff.
5. The CIP vacancy count decreased 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 FY22-23.

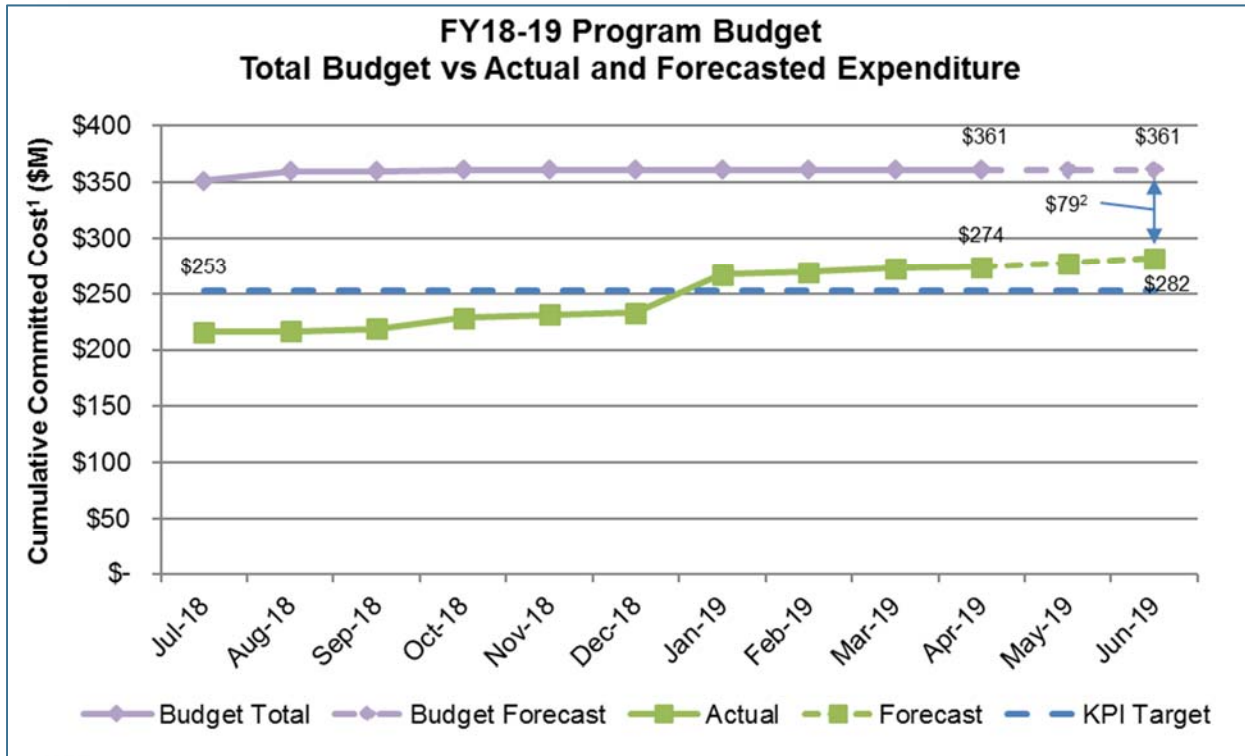
Carryover: Encumbrance balances at the end of the previous fiscal year are automatically carried forward to the current fiscal year as carryover funding to pay invoices for approved construction contracts and consultant agreements. FY18-19 carryover is \$213 million.

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. A couple 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 and associated owner's advisor services are now anticipated to be awarded in FY19-20.
 - d. The Digester and Thickener Facilities Upgrade Project design consultant services amendment is now expected to be executed in FY19-20.
 - e. The Blower Improvement Project construction bids came in under budget.
 - f. Several other minor encumbrances for consultant services are either lower than budgeted or are anticipated to be awarded in FY19-20.
 - g. Several authorized positions remain vacant, resulting in lower predicted personal services expenses than budgeted.
 - h. 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
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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.



Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date ¹
1. Digested Sludge Dewatering Facility	Bid/Award	Jan 2023
2. Nitrification Clarifiers Rehabilitation – Phase 1	Bid/Award	Oct 2023
3. 96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation	Design	Oct 2020
4. Outfall Bridge and Instrumentation Improvements	Design	Dec 2021
5. Switchgear M4 Replacement and G3 & G3A Removal	Design	Feb 2022
6. Advanced Facility Control & Meter Replacement - Phase 2	Design	Nov 2022
7. Fire Life Safety Upgrades	Design	Nov 2022
8. Headworks	Design and Construction	Dec 2022
9. Filter Rehabilitation	Design	Apr 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	Nov 2027

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.



Project Significant Accomplishments

Biosolids Package

Digester and Thickener Facilities Upgrade

- Walsh completed 75 percent of the ring beams foundation concrete pours for all four digesters; installed the transfer sludge piping and digester overflow piping inside two of the four digesters, installed the main control equipment in the new sludge screening building; completed the elevated pipe rack foundations for four columns adjacent to C Street; completed the foundation for one of the two large polymer tanks.
- Walsh also installed partial backfill around the west electrical building foundation walls and completed the east electrical building concrete foundation walls.

Facilities Package

96-Inch and 87-Inch Settled Sewage Pipe Rehabilitation

- The City completed the evaluation of pre-qualification packages submitted by six contractors and issued the determination of pre-qualified contractor list for the project.
- The project team received CEQA exemption for the project. In May, the project team will complete the 100 percent design and seek approval to advertise the project for bid.

Facility Wide Water Systems Improvements

- The City held a kick-off meeting for the conceptual design with the design consultant Kennedy/Jenks (K/J). Next, the designer will conduct field investigations including geotechnical subsurface utility and site topography.

HVAC Improvements

- The design consultant K/J submitted the draft conceptual design report and conducted a workshop to review the submittal. The project team anticipates a final report in June 2019.

Liquids Package

Blowers Improvements

- Contractor Monterey Mechanical submitted critical submittals for the blower motors, reduced voltage starters, and variable frequency drives. Next month, the contractor will begin demolition in the blower buildings to convert the space to new electrical rooms and the City will hold a second partnering session.

Filter Rehabilitation

- The project team completed design review comments for the 60 percent design submittal and anticipate the 90 percent design submittal by design engineer K/J in July 2019.

Headworks

- Design-builder CH2M conducted workshops addressing cost estimating review planning, process control, and condition assessment planning. The design-builder continued preparations for planned subsurface investigations that will begin in May.

Nitrification Clarifiers Rehabilitation – Phase 1

- The City completed the evaluation of pre-qualification packages and issued a determination that all six contractors who submitted are qualified to bid on the project.
- The project team passed Stage Gate 5: Authorization to Bid, allowing them to advertise the project construction contract for bids next month.

Power and Energy Package

Cogeneration Facility

- Design-builder CH2M completed the hot water loop and digester gas piping from the cogeneration area to the secondary aeration basin area, and they completed the underslab electrical work for the gas-treatment area and cooling towers.
- CH2M also completed the structural design and planning for a bridge over an existing 84-inch nitrification process influent line allowing the 200-ton crane access for the scheduled bridge crane steel and roof steel placement in early May.



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 June 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 of 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 belowground, 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 and 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 finished in early May 2019. 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 originally had been planned in series.



Project Profile – Facility Wide Water Systems Improvements

The RWF has four water systems consisting of potable water (1W), groundwater (2W), process water (3W), and fire protection water (4W) (see Figure 4). The water systems were constructed over time with various expansions and are now beyond their useful life requiring frequent repairs due to leaks and failures. Additionally, changes to water uses and demands require modifications to the existing systems.

The project objectives are to evaluate the existing water distribution systems' conditions; calibrate a hydraulic model to assess the systems' adequacies to meet current and future demands; then rehabilitate, replace, combine, and/or extend the RWF's four water systems, including piping, valves, pumps, controls, and other ancillary equipment.

In September 2016, the City awarded a consultant agreement to K/J Consultants to provide design engineering services for the project. Since then, K/J has completed a condition assessment of the water systems, field testing, hydraulic data collection, hydraulic modeling, and determination of future demands. Using this information, the consultant completed a "triple bottom line plus" business case alternatives analysis for the four water systems in October 2018. Based on the analysis, the project team was approved to proceed with the following approach for each water system:

1W (Potable Water)

- Add redundancy by reconnecting to the potable water system at Nortech Parkway;
- Replace approximately 7,700 LF or 18 percent of pipe (up to 8-inch);
- Add connections for existing support buildings and the planned digested sludge dewatering facility; and
- Loop the system to eliminate dead ends.

2W/3W (Groundwater/Process Water)

The two systems will be combined and will exclusively use process water, eliminating groundwater use.

- Decommission the 2W supply system by abandoning an existing operational well and demolishing the storage tank, booster pump station and piping, and hydropneumatic tank;
- Replace approximately 9,900 LF or 42 percent of 2W pipe (up to 8-inch);
- Replace approximately 11,100 LF or 18 percent of 3W pipe (2-inch to 10-inch);
- Loop the existing low pressure 3W system;
- Add a new high-pressure loop and a new pump station; and
- Add a third high-flow VFD pump to the main 3W Process Water Pump Station at the Filtration Influent Pump Station to provide redundancy when the temperature-phased anaerobic digesters go online and for future expansion.

4W (Fire Protection Water)

- Convert the system supply from final plant effluent to the municipal water system by adding a new airgap-protected 750,000-gallon fire water storage tank with a new 4W pump;
- Add a connection for the planned digested sludge dewatering facility; and
- Disconnect of 4W washdown connections.

This month, the project team held a conceptual design kickoff meeting to review next steps, including: additional hydraulic modeling with updated water demands; geotechnical investigations; subsurface investigations; topographic survey; and construction schedule and sequencing development. These analyses will be incorporated into the conceptual design report and drawings.

The project is being delivered using the DBB method. Conceptual design is anticipated to be completed by November 2019 and detailed design is expected to be completed by summer 2021. The construction contract is expected to be awarded in late 2021 and the project is anticipated to reach Beneficial Use in summer 2024. The current project budget is \$17.5 million.



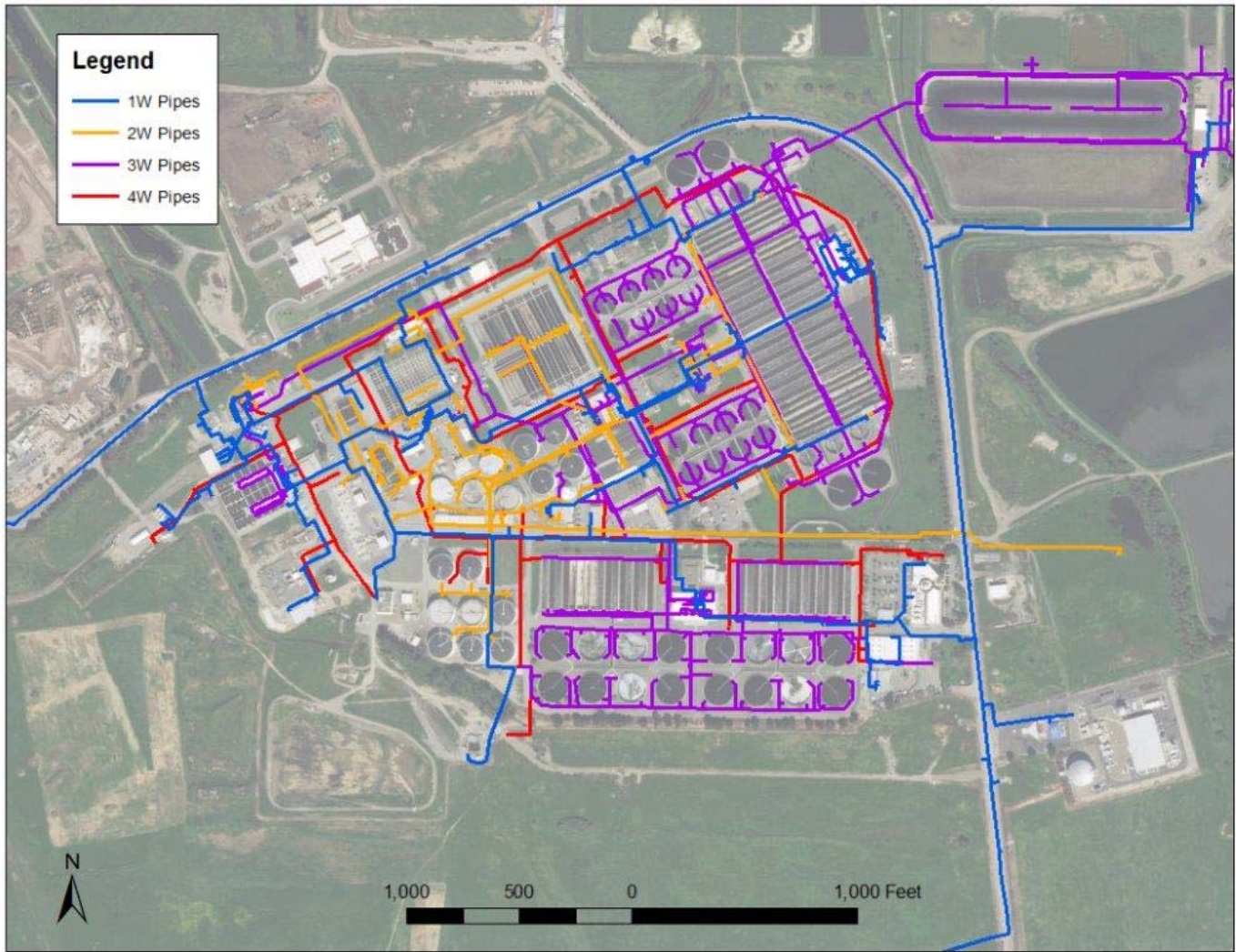


Figure 4: Existing water systems include 1W (potable water), 2W (groundwater), 3W (process water), and 4W (fire water)

Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

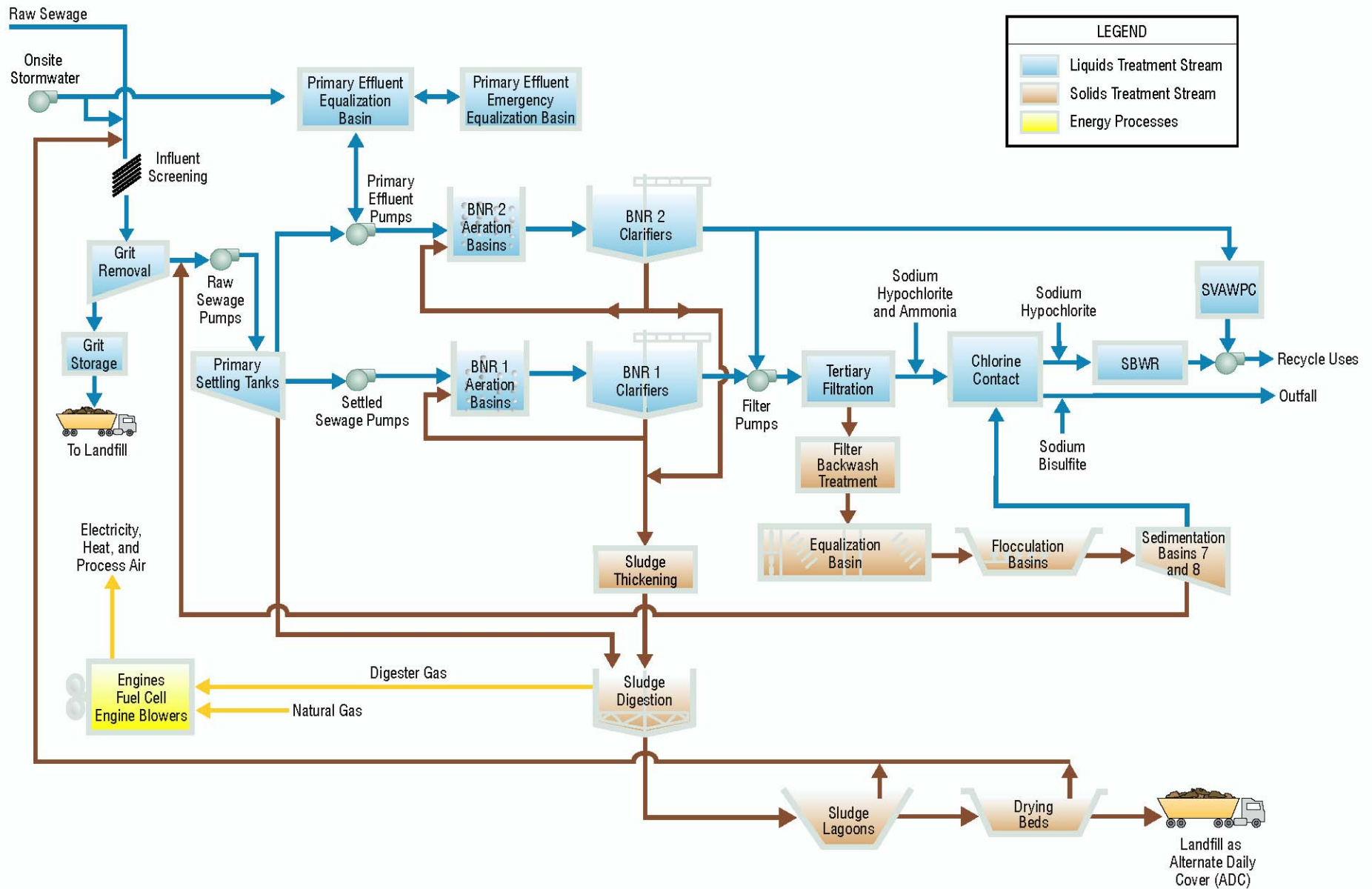


Figure 5 – Current Treatment Process Flow Diagram



Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

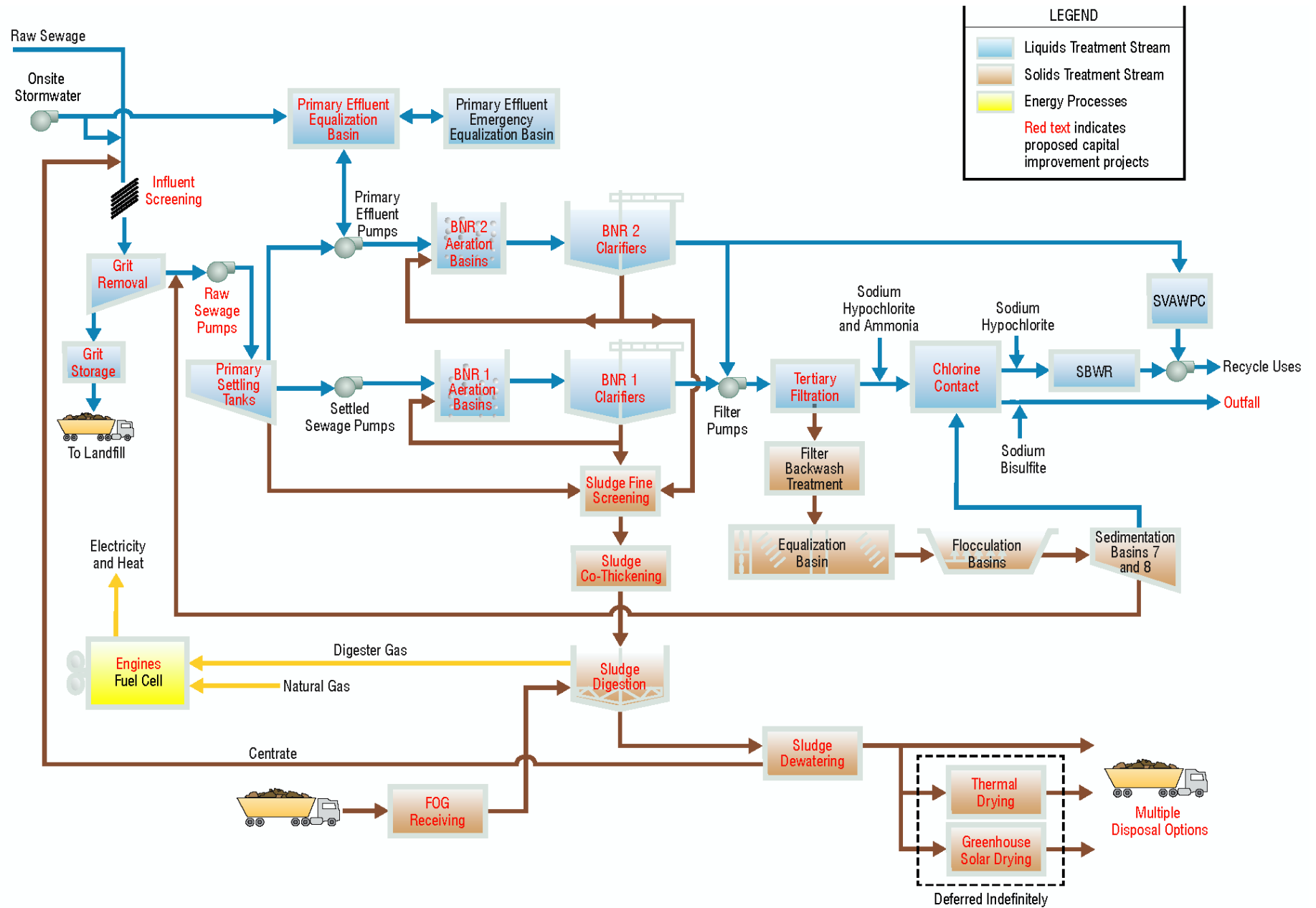


Figure 6 – Proposed Treatment Process Flow Diagram



Active Construction Projects – Aerial Plan

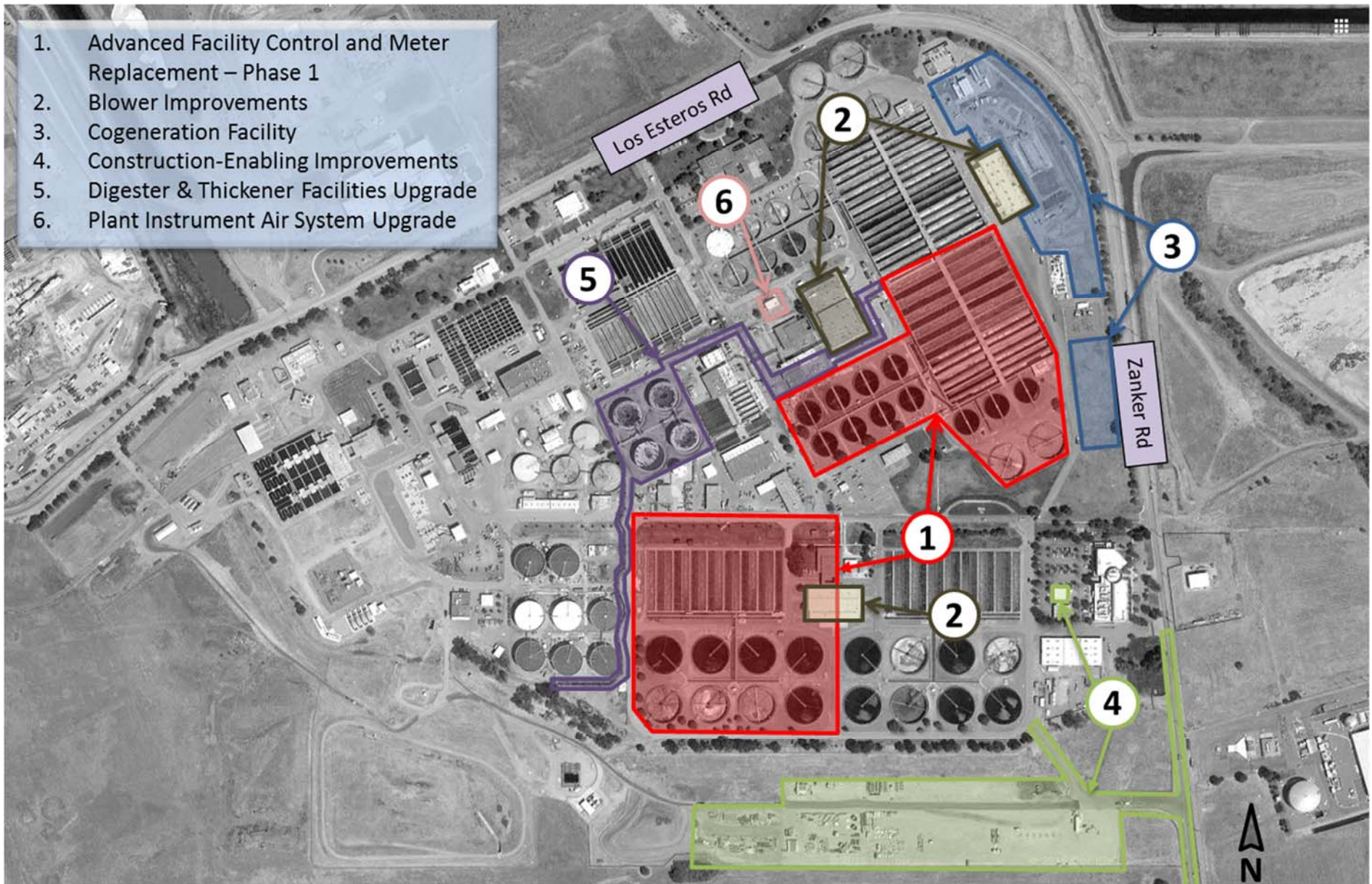


Figure 7: Active Construction Projects