



San José-Santa Clara
Regional Wastewater Facility

Capital Improvement Program Monthly Status Report for October 2015

December 3, 2015

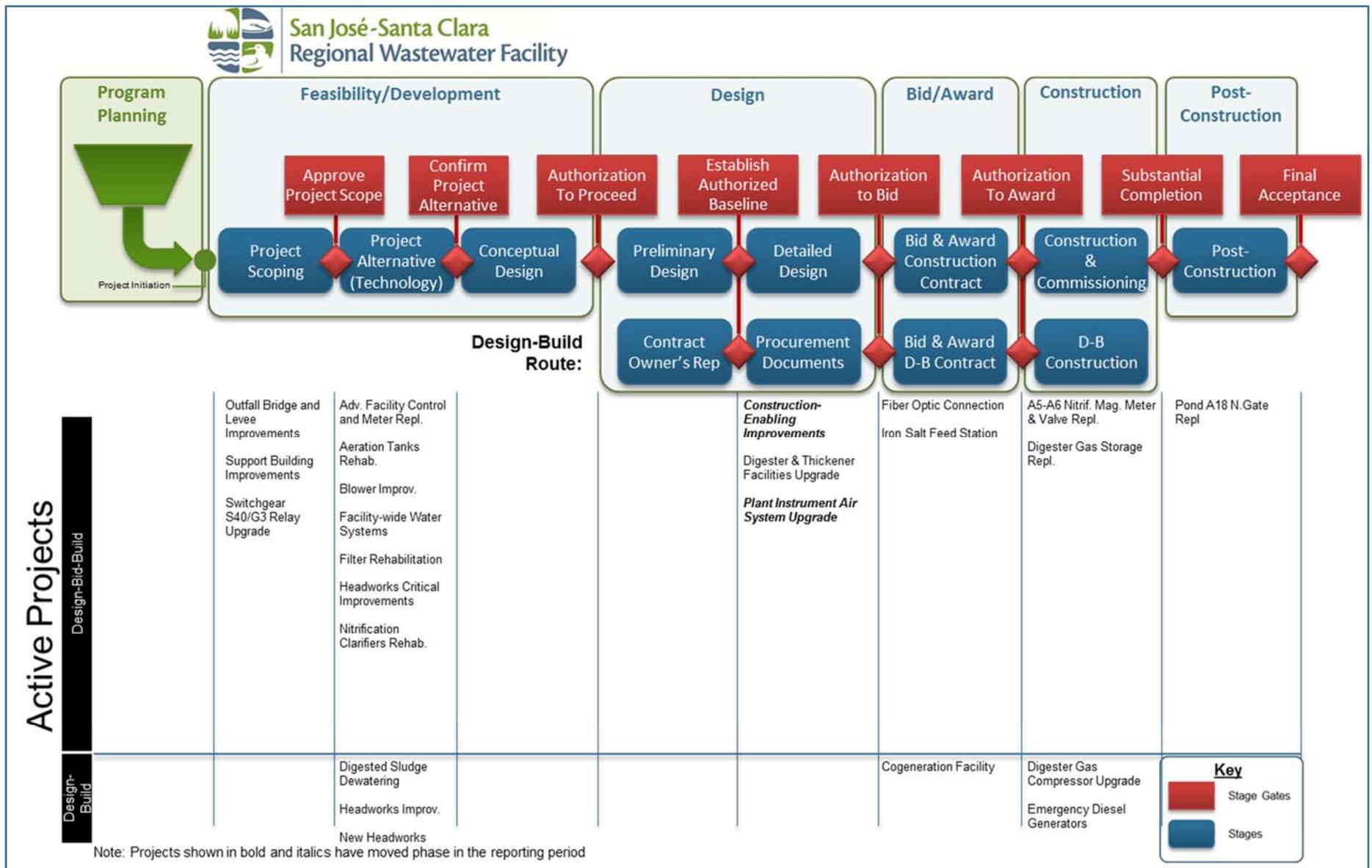
This report provides a summary of the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (Wastewater Facility or RWF) for the period of October 2015.

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Project Delivery Model



Program Summary

October 2015

In October, the CIP progressed on multiple fronts, including the successful advancement of one programmatic study and two projects through the Project Delivery Model (PDM) stage gate process. The projects that advanced were Construction-Enabling Improvements; Plant Instrument Air System Upgrade (both Establish Authorized Baseline stage gate); and the Architectural Guidelines Programmatic Study (Final Acceptance stage gate).

The CIP also met a number of key procurement milestones. Staff advertised a Request for Qualifications (RFQ) for the Advanced Facility Control and Meter Replacement Project, which will replace and upgrade critical flow meters, actuators, sensors, controls, and monitoring equipment throughout the RWF.

Staff received construction bids for the Iron Salt Feed Station Project. A contract award is scheduled for January 2016. Demonstrations of the short-listed vendor software packages for the Design and Construction Management Software (DCMS) procurement were held; Staff anticipates an award recommendation in spring 2016. A pre-proposal meeting and consultant site walk for the Nitrification Clarifiers Rehabilitation RFQ were also held this month.

The Digester and Thickener Facilities Upgrade Project reached the 90 percent design submission milestone. Contractor prequalification for the project was completed and a listing of prequalified contractors was posted on BidSync. This project is scheduled to be advertised in January 2016.

Staff presented recommendations from the Odor and Corrosion Strategy Study to the Transportation and Environmental Committee (T&E), Treatment Plant Advisory Committee (TPAC) and City Council (Council) this month. The study's three main elements are: validation of the odor goal assumed in the Plant Master Plan (PMP); establishing an odor fence line at which the adopted odor goal is to be met; and development of an Odor Implementation Plan (OIP) to meet adopted odor goals. All elements of the strategy were approved.

In addition, construction work continued at the RWF for a number of CIP projects including the Emergency Diesel Generators, Digester Gas Compressor Upgrade, and Digester Gas Storage Replacement. The DCS Fiber Optics Network Expansion Project was accepted this month.

Look Ahead

In November, staff will continue to move forward on numerous efforts related to consultant and design-build procurements for CIP projects including the Cogeneration Facility; Headworks Improvements; New Headworks; Facility Wide Water Systems Improvement; Filter Rehabilitation; Nitrification Clarifiers Rehabilitation; and Advanced Facility Control and Meter Replacement. RFQ documents will be issued for the Aeration and Blower Rehabilitation project in December.

Procurements for a number of programmatic services are also expected to advance, including General Engineering Services; DCMS; Value Engineering and Peer Review Services; System Integration Services; Construction Management Services; and Audit Services. RFQ documents will be issued for Value Engineering and Peer Review Services in November and for Construction Management Services and Audit Services in December.

Staff will advance recommendations to TPAC and Council to approve final proposer ranking and authorize the City Manager to negotiate the design-build contract for the Cogeneration Project and approve a consultant award for the Headworks projects in November and December, respectively. Recommendations on Clean Water State Revolving Fund (SRF) loan applications and proposed amendments to the RWF Master Services Agreement to secure SRF funding will also be presented.

Three projects will seek to advance through stage gates in November: Iron Salt Feed Station (Authorization to Award) and two programmatic studies: Traffic Circulation and Impact Study and Automation Master Plan Guidelines (both Final Acceptance).

The Digester Gas Storage Replacement Project is scheduled to achieve Beneficial Use in late November.

Formal project management training for all CIP project managers and project engineers will continue, with sessions on scheduling planned for November 2015 and January 2016.

The third annual Vendor Open House will take place at the RWF on November 4. Previous CIP open house events were held in 2012 and 2014.



Program Highlight – Odor and Corrosion Control Study

As part of the 2013 Plant Master Plan's (PMP's) strategic vision for the RWF, in August 2014 the City initiated the RWF Odor and Corrosion Control Study. The study's main elements were (1) to validate the odor goal assumed in the PMP; (2) establish an odor fence line at which the odor goal is to be met; and (3) develop an odor control implementation plan.

The study was substantially completed in June 2015 with recommendations to provide odor control improvements for Headworks 2; future Headworks 3; East Primary Clarifiers; Dissolved Air Flotation Tanks; and a future Digested Sludge Dewatering Facility. This facility will replace existing sludge lagoons and drying beds during the Phase 1 (2015-2029) PMP implementation plan. The study also recommended future consideration of optional odor control improvements for the Primary Effluent Equalization Basin and Aeration Basins (BNR1).

The primary focus of the CIP Phase 1 odor control improvements is to enable the City to meet the adopted odor goal at the RWF odor fence line. The figure below shows the odor fence line (solid orange line), the extent of odor impacts after the implementation of Phase 1 (yellow line), and the optional future fence lines (dashed orange lines). The optional fence lines will be considered at a later date based on future use of the land currently used for sludge lagoons and drying beds once these facilities are decommissioned; and on the extent of future public access to Pond A18 and adjacent land. Approximately \$47 million will be needed in capital improvements to implement Phase 1 odor control improvements. The Odor and Corrosion Control Study was completed on time and within budget.



Figure 1—The yellow line shows odor impacts of all potential RWF odor sources within the odor fence line (solid orange line) after Phase 1 odor control implementation.

Program Performance Summary

Eight key performance indicators (KPIs) have been established to measure the overall success of the CIP. Each KPI represents a metric which will be monitored on a regular frequency. Through the life of the CIP, KPIs will be selected and measured which best reflect the current maturity of the program. An additional KPI has been added for FY15-16 to measure project stage gate compliance.

Program Key Performance Indicators – Fiscal Year 2015-2016

KPI	Target	Year to Date			Fiscal Year End		
		Actual	Status	Trend	Forecast	Status	Trend
Stage Gates	80%	100% (9/9) ¹			100% (28/28)		
Measurement: Percentage of initiated projects and studies that successfully pass each stage gate. Criteria: Red: < 70%; Amber: 70% to 80%; Green: >=80%							
Schedule	85%	50% (1/2)			25% (1/4)		
Measurement: Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone. Criteria: Red: < 75%; Amber: 75% to 85%; Green: >=85%							
Budget	90%	100% (4/4) ²			83% (5/6)		
Measurement: Percentage of CIP projects that are completed within the approved baseline budget. Criteria: Red: < 80%; Amber: 80% to 89%; Green: >=90%							
Expenditure	\$154M	70M			\$193M ³		
Measurement: CIP Fiscal Year 15/16 committed costs. Committed cost meets or exceeds 70% of planned Budget (70% of \$220M = \$154M)							
Procurement	80%	100% (6/6) ⁴			100% (17/17)		
Measurement: Number of consultant and contractor procurements for initiated projects and program-wide services advertised compared to planned for the fiscal year. Criteria: Red: < 70%; Amber: 70% to 79%; Green: >=80%							
Safety	0	0			0		
Measurement: Number of OSHA reportable incidents associated with CIP construction for the fiscal year. Criteria: Red: > 2; Amber: 1 to 2; Green: zero incidents							
Environmental	0	0			0		
Measurement: Number of permit violations caused by CIP construction for the fiscal year. Criteria: Red: > 2; Amber: 1 to 2; Green: zero incidents							
Staffing⁵	80%	100% (1/0)			86% (25/29)		
Measurement: Number of planned positions filled for the fiscal year. Criteria: Red: < 70%; Amber: 70% to 79%; Green: >=80%							

Notes

- For the Stage Gate KPI Year to Date (YTD), the number of completed stage gates increased from six to nine. The following projects/studies successful completed their stage gates in October – Construction-Enabling Improvements, Plant Instrument Air System Upgrade, and Architectural Guidelines.
- For the Budget KPI YTD, four out of four projects were completed within the approved baseline budget. These four projects are Fire Main replacement – Phase III Project, which was accepted in July 2015, Training Trailer Replacement Project, which was accepted in August 2015, Handrail Replacement Project, which was accepted in September 2015, and the DCS Fiber Optics Network Expansion Project, which was accepted in October 2015.
- The FYE Forecast Expenditure increased since the Iron Salt Feed project construction contract and the Cogeneration project Black & Veatch design-build service order amounts are higher than the original budget estimate.
- For the Procurement KPI Year to Date, the number of procurements increased from five to six. The Consultant Services for the Advanced Facility Control & Meter Replacement Project was advertised in October 2015.
- The City Staffing level KPI for planned recruitments for positions that are vacant at the start of the fiscal year, KPI measured quarterly; all other KPIs measured are monthly. KPI measurement does not account for staff turnover throughout the fiscal year.

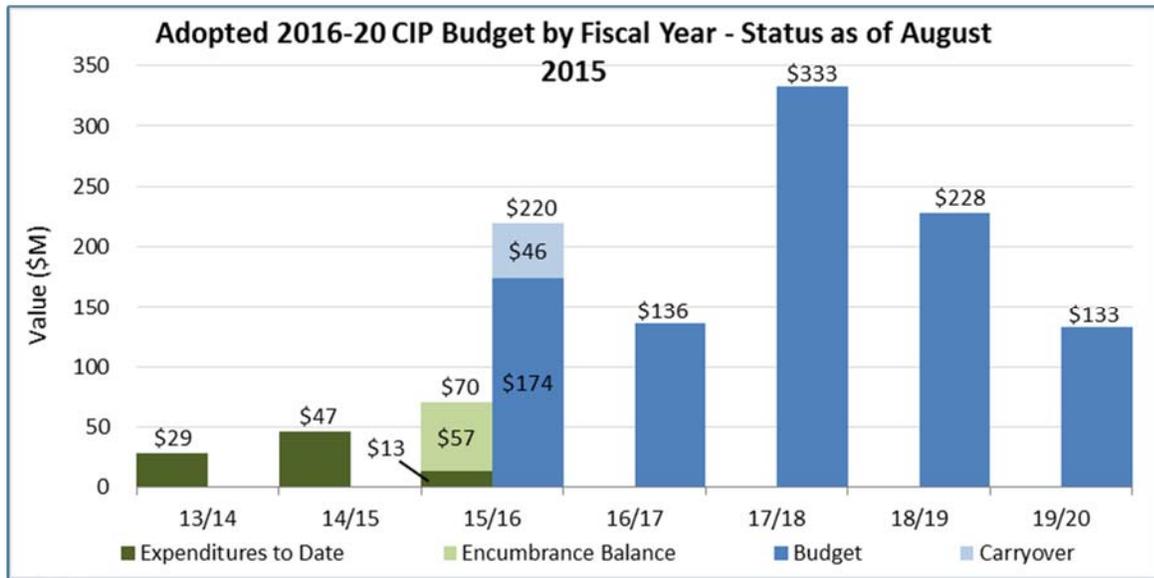


Program Cost Performance

This section provides a summary of CIP cost performance for all construction projects and non-construction activities for FY15-16 and the 2016-2020 CIP.

Adopted 2016-2020 CIP Expenditure and Encumbrances

To accommodate the proposed increase in expenditures and encumbrances over the next five years, the City is implementing a long-term financial strategy to fund needed, major capital improvements while minimizing the impact to ratepayers. FY 13-14 and FY14-5 expenditures have been adjusted to reflect the CIP portion of the 512 funding, excluding South Bay Water and Urgent and Unscheduled Cost (\$2.6M and \$1.5M respectively).



Notes

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

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

Encumbrance Balance: The amount of the remaining encumbrance committed after payments.

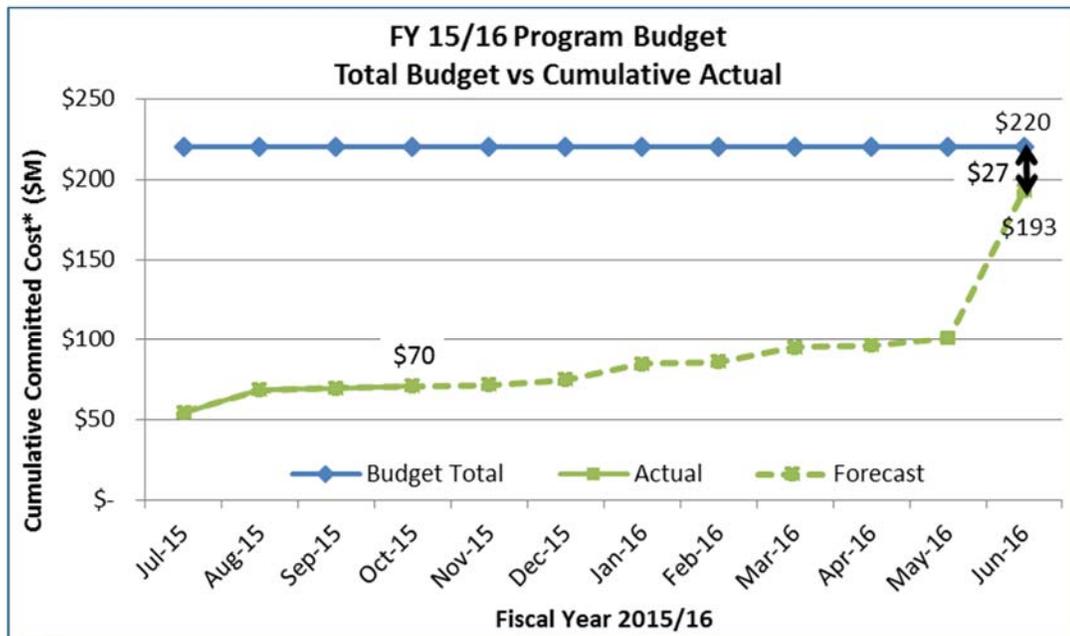
Budget: Adopted FY 2016-2020 Budget. This is new funding plus rebudgeted funds.

Carryover: Encumbrance Balances at the end of a FY become Carryover Funding. This is different from rebudgets, in that this is done automatically in order to utilize the funding previously committed, but not yet paid.



Fiscal Year 2015-2016 Program Budget Performance

The fiscal year program budget is \$220 million. The budget amount of \$220 million represents the 2015-2016 budget of \$174 million plus carryover of \$46 million. The budget amount excludes Reserves, Ending Fund Balance, South Bay Water Recycling, Public Art, and Urgent and Unscheduled Rehabilitation items.



*Committed costs are expenditures and encumbrance balances, including carryover (encumbrance balances from the previous fiscal year).



Project Performance

There are currently five active projects in the construction or post-construction phase with a further 19 projects in feasibility/development, design, or bid and award phases (see PDM graphic at the front of this report). All active projects are listed in the tables below. Projects in the construction phase have cost and schedule baselines established and are monitored using the City's Capital Project Management System (CPMS). These projects have green/red icons included in the table below to indicate whether they are on budget and schedule using the CPMS data as a source.

Project Performance – Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date ¹	Cost Performance ²	Schedule Performance ²
Pond A18 Northern Gate Structure	Post-Construction	Aug 2015 ³	N/A ⁴	N/A ⁴
Digester Gas Storage Replacement	Construction	Nov 2015		
A5-A6 Nitrification Mag. Meter & Valve Replacement	Construction	Mar 2016		
Emergency Diesel Generators	Construction	Aug 2016		
Digester Gas Compressor Upgrade	Construction	Sep 2016		

KEY:

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

Notes

1. Beneficial Use is defined as when the work is sufficiently complete, in accordance with the contract documents, so that the City can occupy or use the work. Beneficial Use dates are being 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 page 12.
3. Actual Beneficial Use Date
4. Due to the emergency nature of the Pond A18 Northern Gate Replacement project, cost and schedule performance measurement criteria have not been applied.



Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date ¹
Fiber Optic Connection	Bid & Award	Jul 2016
Iron Salt Feed Station	Bid & Award	Mar 2017
Cogeneration Facility	Procurement	Mar 2019
Construction-Enabling Improvements	Design	Nov 2016
Plant Instrument Air System Upgrade	Design	Jan 2018
Digester & Thickener Facilities Upgrade	Design	Jun 2019
Headworks Critical Improvements	Feasibility/Development	Apr 2017
Blower Improvements ²	Feasibility/Development	Jan 2019
Switchgear S40/G3 Relay Upgrade	Feasibility/Development	Jan 2020
Adv. Facility Control & Meter Replacement	Feasibility/Development	May 2020
Headworks Improvements	Feasibility/Development	Jan 2021
Outfall Bridge and Levee Improvements	Feasibility/Development	Jun 2021
Facilitywide Water Systems Improvements	Feasibility/Development	Dec 2021
Digested Sludge Dewatering Facility	Feasibility/Development	Dec 2021
Filter Rehabilitation	Feasibility/Development	Feb 2022
New Headworks	Feasibility/Development	Jun 2022
Nitrification Clarifiers Rehabilitation	Feasibility/Development	Aug 2022
Aeration Tanks Rehabilitation ²	Feasibility/Development	Sep 2023
Support Building Improvements	Feasibility/Development	Jan 2027

Notes

1. Beneficial Use is defined as when the work is sufficiently complete, in accordance with the contract documents, so that the City can occupy or use the work. Beneficial Use dates are being reviewed as part of project schedule reviews.
2. The Aeration Tanks and Blower Rehabilitation project has been split into two separate projects: (1) Blower Improvements and (2) Aeration Tanks Rehabilitation.



Significant Accomplishments

The projects below are described under different “packages.” In the CIP, packages are groups of projects organized within the same treatment process area.

Biosolids Package

Digester and Thickener Facilities Upgrade

The detailed design continued this month, with the design consultant submitting 90 percent completion level design documents. The project team completed the prequalification process for preselection of qualified construction contractors. Staff posted a listing of prequalified contractors to BidSync.

Digester Gas Storage Replacement

The contractor addressed outstanding construction items and ordered parts for upgrading the davit crane system. The contractor also prepared a startup and commissioning plan, with a tentative start and commissioning date of early November 2015.

Facilities Package

Cogeneration Facility

On October 7, an eight-member panel conducted design-builder interviews and selected CH2M Hill/Overaa as the top-ranked firm. Staff will recommend approval of the proposer ranking and authorization to negotiate the contract to TPAC on November 19 and Council on December 1.

Liquids Package

Iron Salt Feed Station

This month, staff received project bids, held a stage gate for approval of the bids, and obtained approval pending reallocation of funds from other projects and Council approval. Staff anticipates that the contract will be recommended to TPAC and Council for award in January 2016.

Advanced Facility Control and Meter Replacement

The RFQ was advertised on October 14, 2015 and proposals are due on November 18, 2015.

Power and Energy

Digester Gas Compressor Upgrade

Construction of the new compressor building has been completed. The forms for the pipe bridge columns, cooling tower, and chiller housekeeping pads have been formed. Construction is 40 percent complete.

Plant Instrument Air System Upgrade

The 50 percent design review was completed and the project successfully passed the Establish Baseline stage gate in October. The consultant has been developing the 90 percent detailed design, which is due in February 2016.

Programmatic Studies

Architectural Guidelines

Staff presented final Architectural Guidelines at the Final Acceptance stage gate meeting in October. A plan was proposed and accepted to conduct briefings for staff and consultants on guideline details.

Automation Master Plan (AMP) and Process Control Approach

Staff received the AMP implementation plan and prepared comments for modifications by the consultant. Staff prepared material for final acceptance of the AMP at a stage gate meeting in early November.

Traffic Circulation and Impacts

Staff reviewed and returned final comments to the consultant on the Traffic Management Plan. The study is still on schedule to be completed in November.

Flood Protection Study

Staff completed review of the draft Flood Protection Guidelines for future RWF projects. One additional alternative will be evaluated, which will move study completion to January 2016.



Explanation of Project Performance Issues

A5-A6 Nitrification Magnetic Meter & Valve Replacement

In September 2014, during startup, the project team discovered that the actuators that had been specified and installed were incompatible with the available power supply. Engineering staff determined it would be cost more to modify the electrical system than to order and install compatible actuators. In addition, O&M staff requested that the actuators match the custom actuators used in the other 14 clarifiers. The City pursued various options to resolve the issue and has recently requested a proposal from the contractor to install new actuators based on a revised specification. The existing funding will not likely be sufficient and the project will need Council approval for additional funds. Lead time of between 14 to 16 weeks will be required for ordering custom-built actuators. Contractor mobilization, actuator installation, wiring, troubleshooting and punch list-sign off will take a minimum of three weeks. Beneficial Use is expected by March 2016.

Digester Gas Compressor Upgrade

During the course of the design portion of this design-build project, it was determined that some of the equipment for this project would need to meet the explosion-proof classification of Class 1, Division 1 of the National Electric Code. This classification was more stringent than what was originally called for in the bid documents. Cost and schedule impacts were received from contractor, Anderson Pacific. In June, Council approved additional project funding and a three-month time extension due to a motor upgrade. Beneficial Use is expected by September 2016.

Digester Gas Storage Replacement

During a comprehensive review of the gas storage tank design submitted by the design consultant, Brown and Caldwell, it was noted that the removable piston legs used in the subcontractor's proposed design did not meet design standards and could cause problems with the tank's intended use. The contractor was granted a three-month, no-cost time extension to September 28 to complete design modifications to the gas holder support structure. Several owner-requested changes were evaluated during the pre-startup period, resulting in three additional change orders for additional minor work. All work requiring welding or other spark-producing activities was completed prior to the introduction of gas. The tank has successfully passed its required leakage test and is currently being commissioned. The project is within budget, and Beneficial Use is expected by the end of November 2015.



Project Profile

Construction-Enabling Improvements Project

An increased volume of CIP-related construction activity is placing new demands on existing RWF infrastructure. This \$3.8M project will provide the necessary infrastructure to support increased construction activity across the RWF site. It will coordinate demands on traffic, security, and space while minimizing impacts to ongoing facility operations.

A major feature of the Construction-Enabling Improvements Project is a new “construction only” guarded entrance at the intersection of Zanker Road and Mike Tocce Lane along the southern boundary of the site. This entrance will allow worker and truck traffic to more safely and efficiently approach RWF site parking and staging areas from Highway 237 without disrupting daily plant operations.

The project also provides worker parking; contractor staging areas; a security and badging trailer for workers; security lighting; and fencing along with utility connections to support temporary contractor trailers. In addition, the project provides trailer space for the CIP Construction Management Team adjacent to the existing temporary trailer site at the Environmental Services Building.

As a cost-savings measure, existing infrastructure will be reused wherever possible.

Designed by the City’s Public Works staff along with a local consultant, the project will commence construction during the summer of 2016.

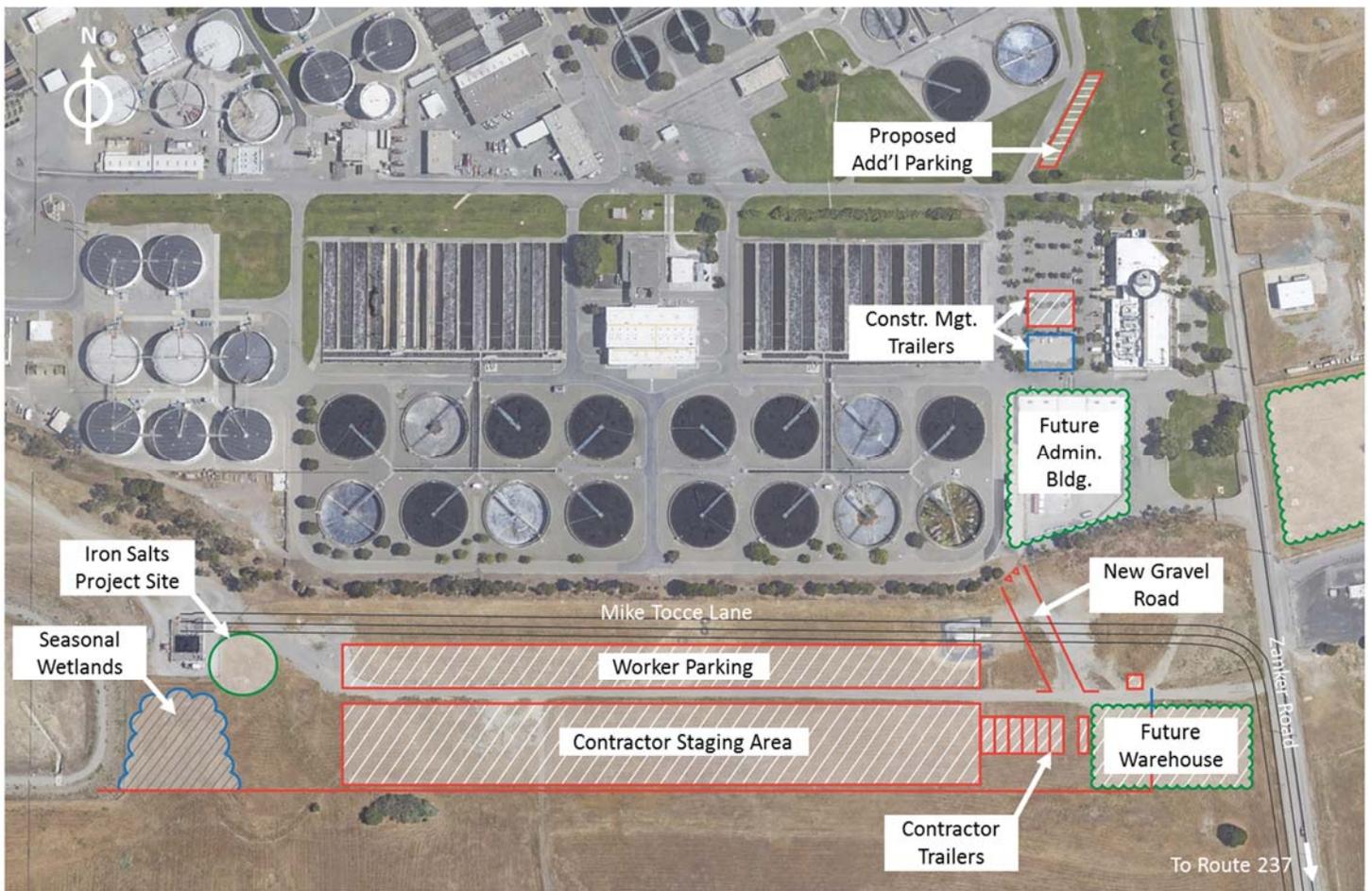


Figure 2 – Construction-Enabling Improvements Project Site Layout

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Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

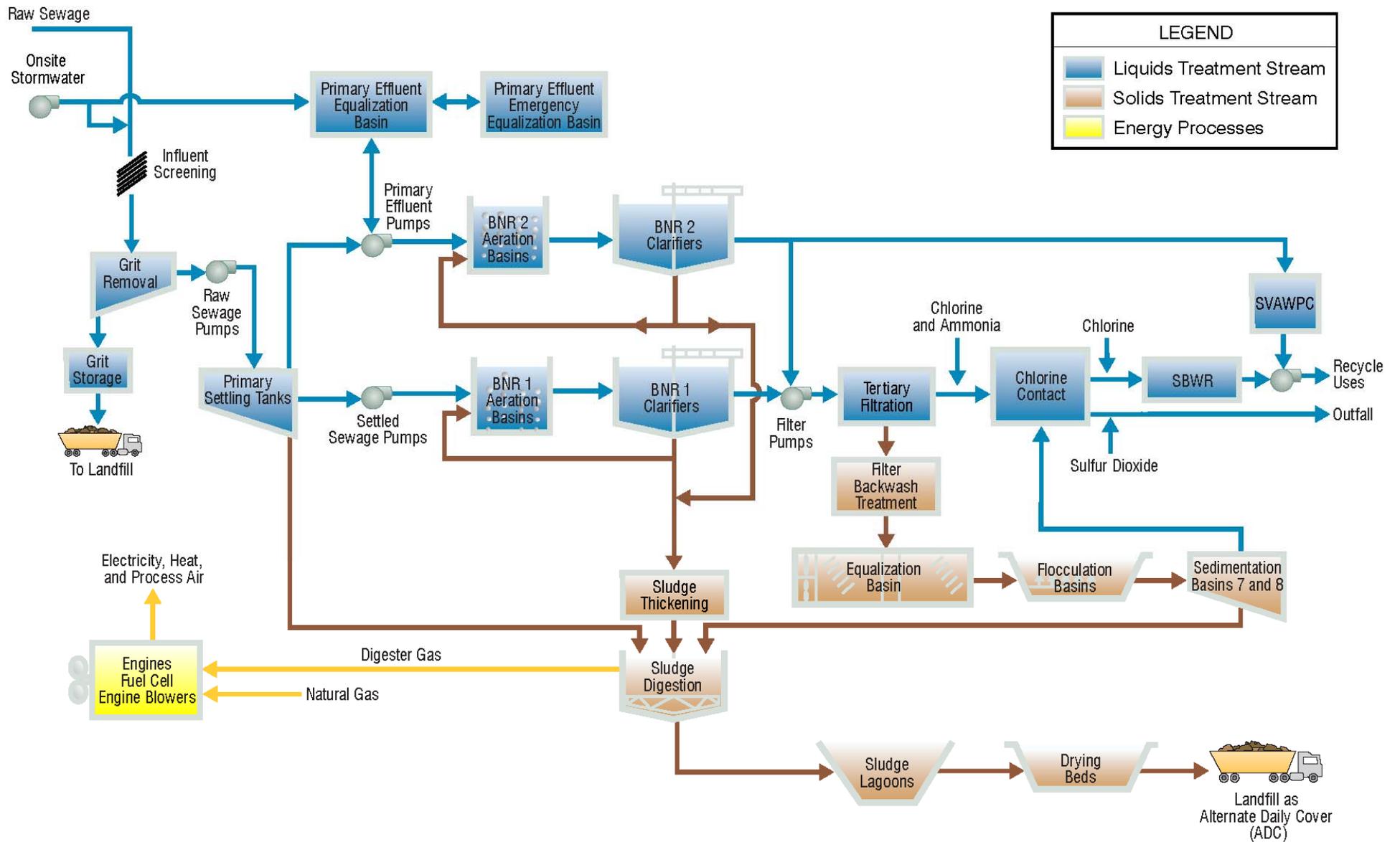


Figure 3 — Current Treatment Process Flow Diagram



Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

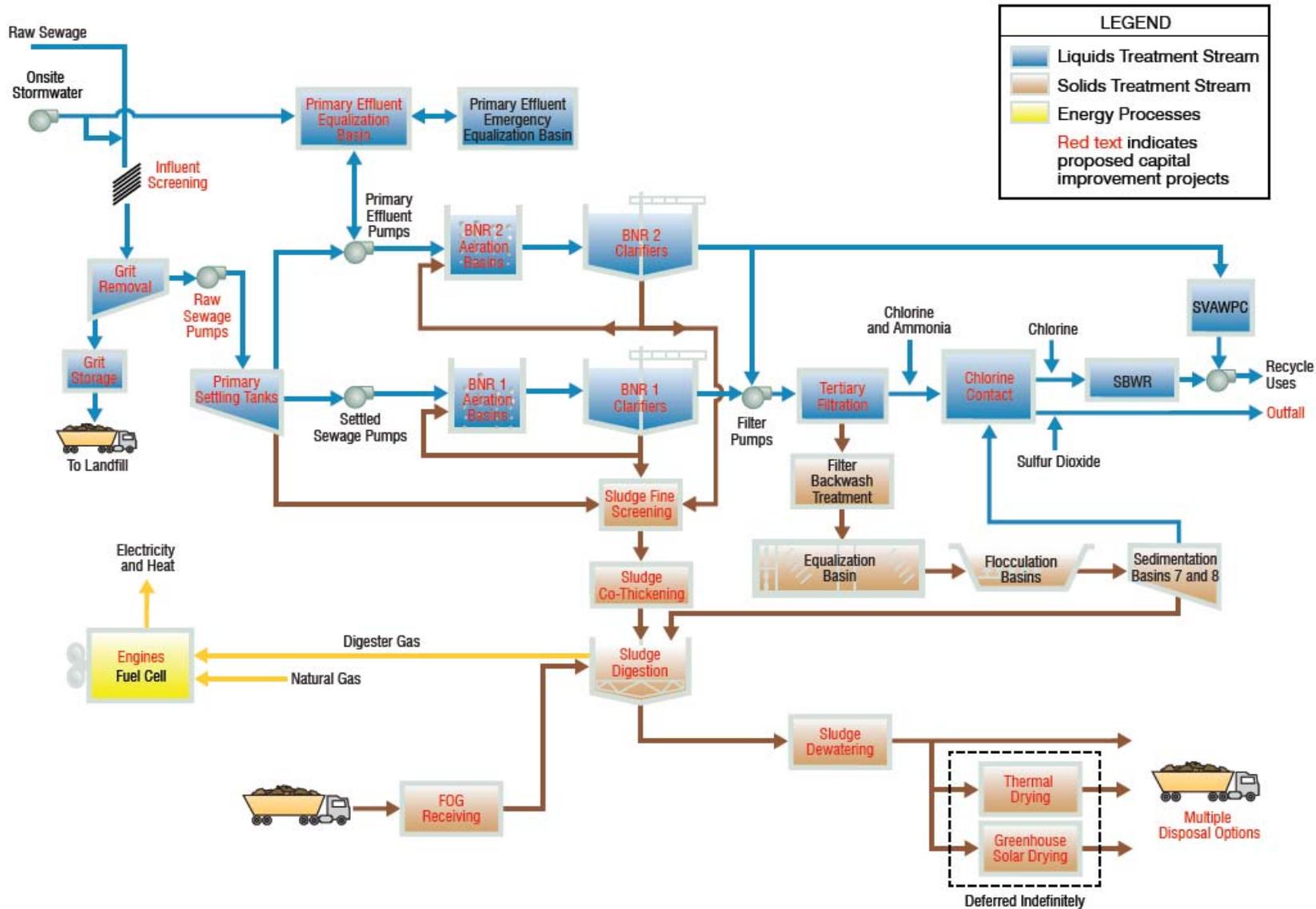


Figure 4 — Proposed Treatment Process Flow Diagram



Active Construction Projects – Aerial Plan



Figure 5 - Active Construction Projects