



San José-Santa Clara
Regional Wastewater Facility

Capital Improvement Program Monthly Status Report for January 2015

March 5, 2015

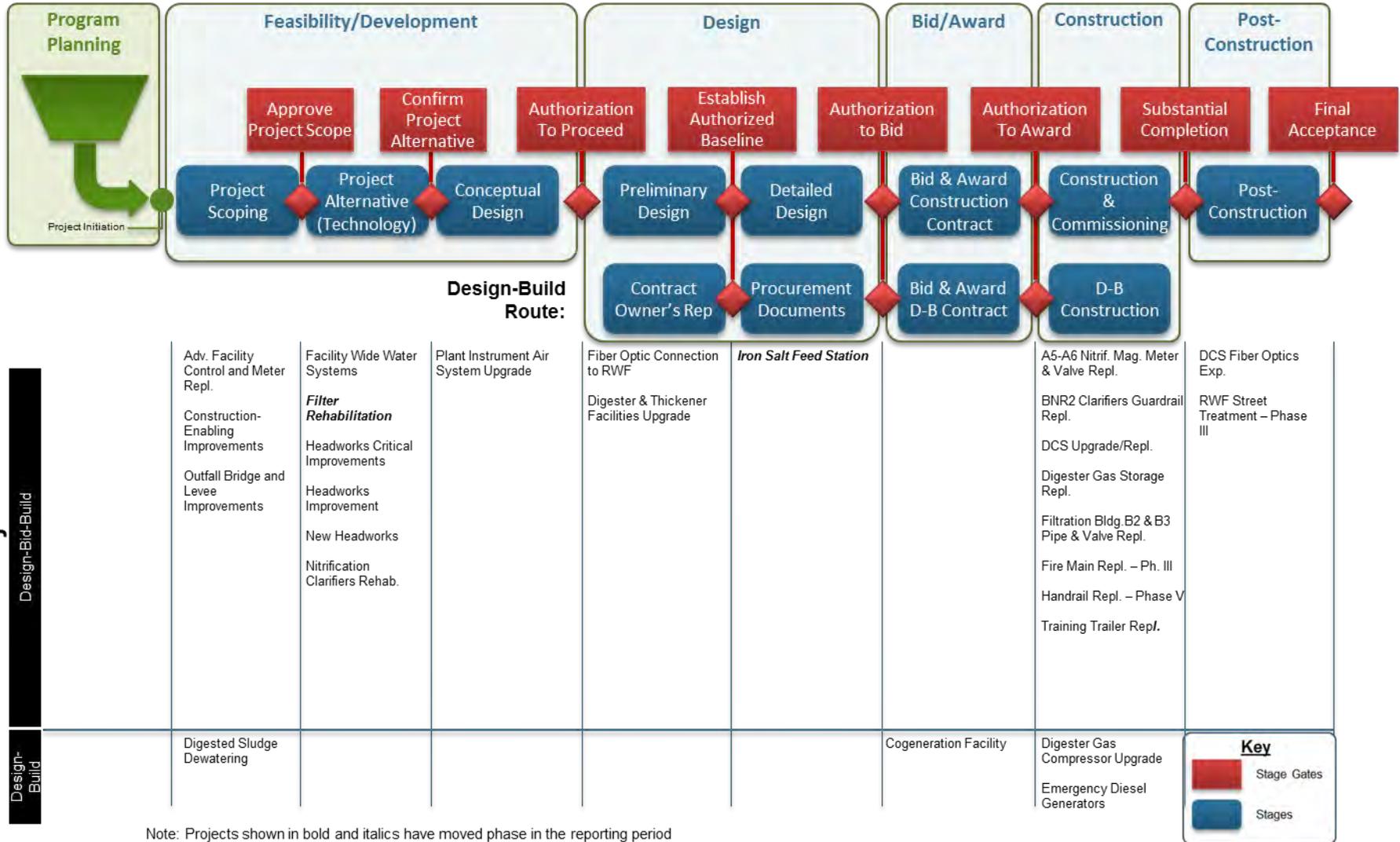
This report provides a summary of the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (Wastewater Facility or RWF) for the period of January 2015.

Report Contents

Project Delivery Model	2
Program Summary	3
Program Performance Summary	5
Program Cost Performance	6
Project Performance	8
Project Profile	12
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 Model



Program Summary

January 2015

In the month of January, the program team made significant progress. We continued to advance studies and projects through stage gates of the Project Delivery Model (PDM) process (see Program Highlight below, and figure, inside of front cover). In particular, the Filter Rehabilitation project advanced through the “Approve Project Scope” stage gate and the Iron Salt Feed Station project passed the “Establish Authorized Baseline” stage gate to begin detailed design. We continued work on estimating staffing needs for FY 15-16, building on the City’s estimated staffing levels and analyzing program consultant staffing needs.

We used our recently-finalized Project Delivery Method memo to develop recommendations on a delivery method (design-bid-build vs. design-build) for three projects: Headworks, Filter Rehabilitation, and Facility-wide Water Systems Improvements. Final approval to use design build as a delivery method is contingent on Council approval of an overall project delivery and procurement strategy in March. We continued to develop our approach for program funding, including the use of short-term debt and the Clean Water State Revolving Fund (SRF). Staff has started the SRF application process for the Digester and Thickener Facilities Upgrade. On January 23rd, staff completed a draft Proposed FY 15-16 Capital Budget and FY 16-20 CIP.

Our environmental team continued to prepare for increased levels of construction, including coordination of our mitigation monitoring and reporting program (MMRP), a requirement of the Plant Master Plan Environmental Impact Report. Staff continued to respond to questions from potential proposers regarding the Request for Qualifications to prequalify design-builders for the Cogeneration Facility.

We began a round of reviews of the Facility Operations Plan (FOP) by holding a workshop with RWF O&M staff. The FOP outlines how unit processes are operated within the RWF during normal and peak flow and loading conditions. It also contains a one year look-ahead, identifying how construction of capital and maintenance projects may impact operations.

We finalized our interim guidance on Facility automation and communicated that to all staff. This interim guidance will help align existing projects with the direction being developed in the ongoing Automation Master Plan.

In January, the Technical Advisory Committee (TAC), Treatment Plant Advisory Committee (TPAC), and Transportation & Environment (T&E) Committee did not meet. On January 30th, program staff hosted a visit by staff from the City of San Diego. The City of San Diego is implementing a program management approach to its upcoming wastewater improvement program, and wanted to hear about the City of San José’s experiences in implementing the program.

Look Ahead

In February, we will continue to move forward on numerous efforts related to design consultant procurement, including the Headworks Improvements and New Headworks projects. The Cogeneration Facility team will begin reviewing SOQ’s to pre-qualify design-builders. Stage gate meetings will be held for the Biosolids Transition Strategy and Plant Instrument Air System Upgrade project. An amendment to the design consultant agreement for the Digester and Thickener Facilities Upgrade will go to TPAC and Council for consideration.

In early February, staff will present the Proposed FY 15-16 Capital Budget and FY 16-20 CIP to the Budget Office and provide an update on the 10-year funding strategy to T&E. Staff from the program and Finance will work with the tributary agencies on financing needs, which will help the program develop a funding plan.

Our resourcing work will continue, with a shift to analyzing overall staffing needs across the CIP, including engineering, O&M, and environmental staff. In addition, staff will continue working on several recruitment efforts.

Our biosolids team will continue work on a revised Biosolids Transition Strategy, based on the input received from TPAC and City Council in December.



Program Highlight – Project Delivery Model

The Project Delivery Model (PDM) is one of the most important tools implemented on the program. On a program with numerous projects, it is critical that an overarching project delivery model is established to provide a clear and consistent means of moving through the different phases of a project from beginning to end.

The PDM consists of the following components:

- **Life Cycle:** a series of discrete phases and stages laid out in chronological order. Each stage is further broken down into individual activities which define inputs, outputs, process, roles, and associated standard operating procedures and templates.
- **Governance Framework:** approval gates between stages which confirm that the project is in alignment with program mission, vision and goals.
- **Value Management:** points along the life cycle which focus on ensuring the project scope and solution provide the maximum 'value' for the project and overall CIP.
- **Program Planning:** this represents the initial program planning and project initiation processes.

All projects are required to follow the PDM, resulting in a consistency of delivery driven by the requirement to follow defined processes and use standard procedures and templates.

The PDM is most effectively communicated to staff through a graphic (Figure 1) which combines all of the elements outlined above. The PDM graphic is a 'living' document on the CIP Portal. Clicking on the different colored blocks shown in Figure 1 brings up additional information and reference documents.

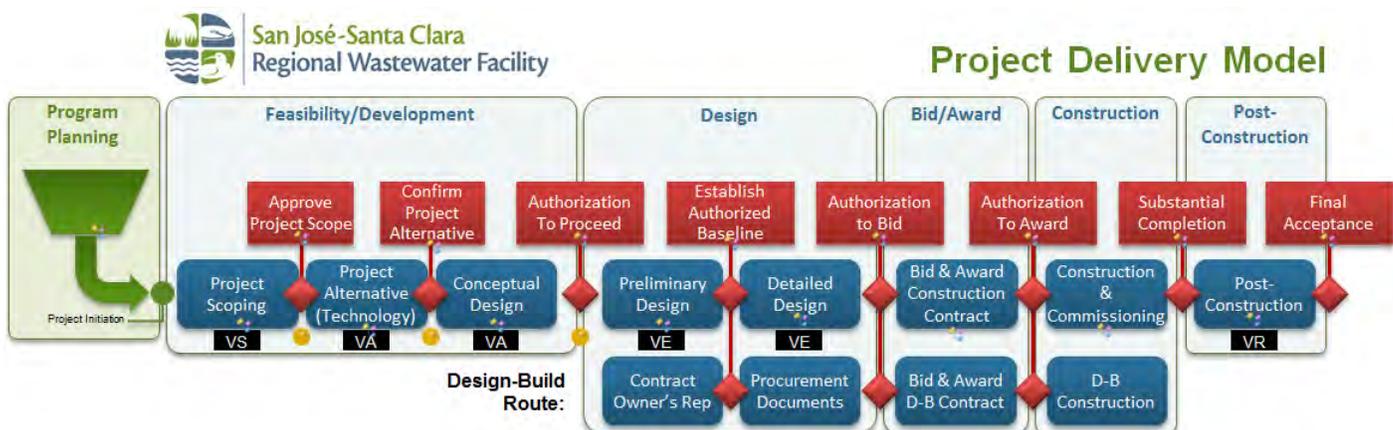


Figure 1—Project Delivery Model

Program Performance Summary

Seven 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. The target for the seventh KPI "Staffing Level" KPI will be established as part of the analysis of future staffing needs.

Program Key Performance Indicators – Fiscal Year 2014-2015

KPI Description	Target	Actual	Status	Trend	Measurement
Schedule	85%	100% (2/2) ¹			Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone. Target: 85% of projects delivered within 2 months of approved baseline schedule or better.
Budget	90%	50% (1/2)			Percentage of CIP projects that are completed within the approved baseline budget. Target: 90% of projects delivered are within 101% of the baseline budget.
Expenditure^{2/3}	≥\$95.8M	\$93.9M			Total CIP actual + forecast committed cost for the fiscal year compared to CIP fiscal year budget. Target: Forecast committed cost meets or exceeds 60% of budget for Fiscal Year 14/15 (60% of \$159.6M= \$95.8M)
Procurement	100%	100% (7/7)			Number of actual + forecast consultant and contractor procurements compared to planned for the fiscal year. Target: Forecast /actual procurements for fiscal year meet or exceed planned.
Safety	0	0			Number of OSHA reportable incidents associated with CIP construction for the fiscal year. Target: zero incidents.
Environment/Permits	0	0			Number of permit violations caused by CIP construction for the fiscal year. Target: zero violations.
Staffing Level⁴	TBD	TBD	TBD	TBD	Percentage of authorized staffing level Target: to be determined

KEY:

Cost:  Meets or exceeds KPI target  Does not meet KPI target

Notes

1. For the Budget KPI, the number of completed projects increased from one to two. This count includes 115KV Circuit Breaker Replacement, which was accepted on October 23, 2014.
2. FY14-15 budget excludes reserves, ending fund balance, South Bay Water Recycling, Public Art and Urgent and Unscheduled Rehabilitation items
3. The Expenditure KPI Target Forecast percentage has been adjusted to reflect the decision to report against the total program budget including contingency (previously the total budget did not include contingency allowance).
4. Staffing level KPI measured quarterly; all other KPIs measured monthly.

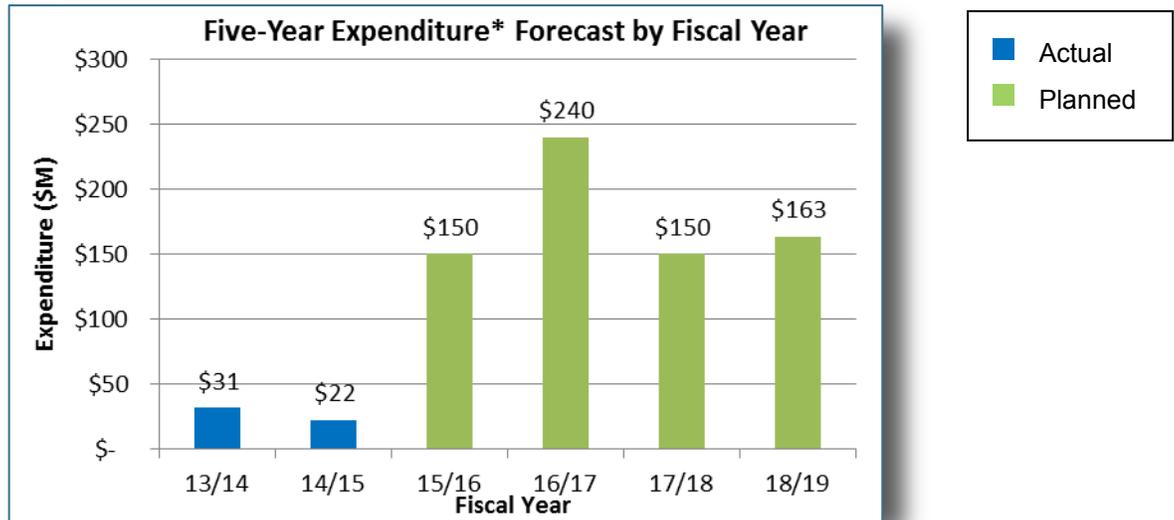


Program Cost Performance

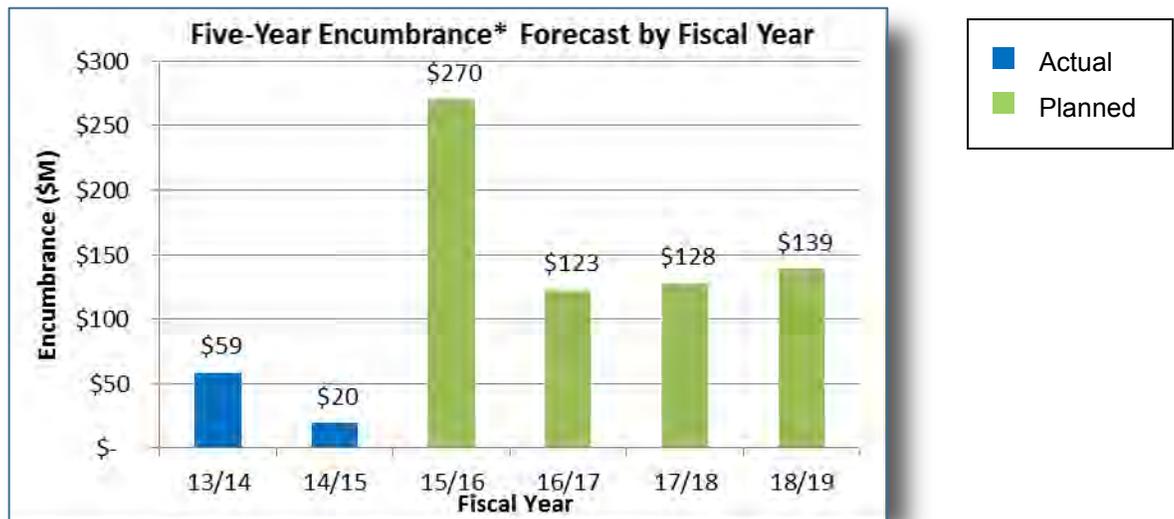
This section provides a summary of CIP cost performance for all construction projects and non-construction activities for FY14-15 and the Five-Year CIP.

Adopted 2015-2019 CIP Expenditure and Encumbrances

To accommodate the proposed increase in expenditures and encumbrances over the next five years, the City is developing a long-term financial strategy to fund the needed, major capital improvements while minimizing the impact to ratepayers.



*Expenditure defined as: Actual cost expended associated with services and construction of physical asset which may include encumbered amounts from previous years



*Encumbrance defined as: Financial commitments, such as purchase orders or contracts, which are chargeable to an appropriation and for which a portion of the appropriation is reserved

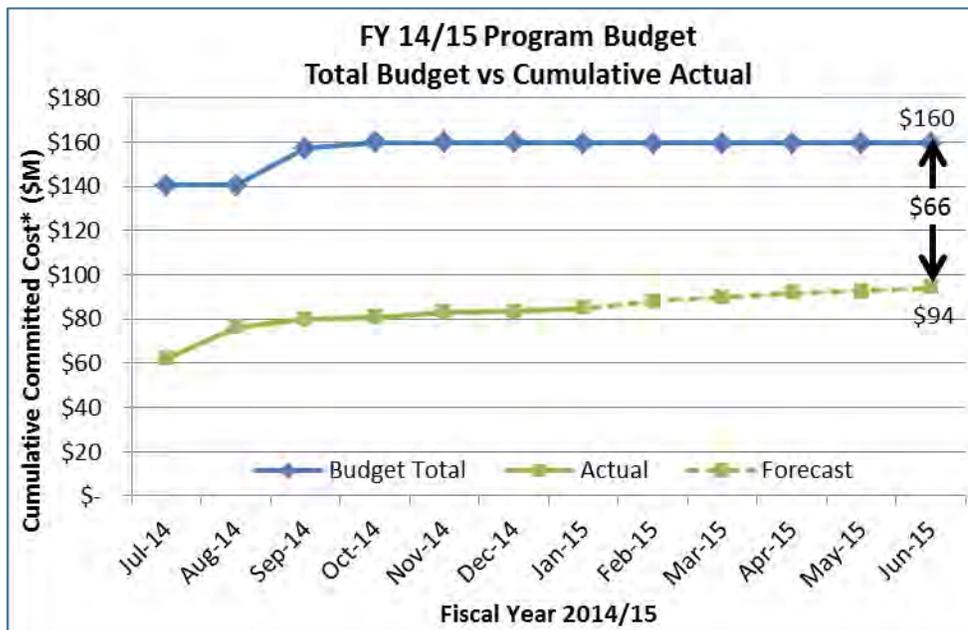


Fiscal Year 2014-2015 Program Budget Performance

The fiscal year program budget is \$160 million. The budget amount of \$160 million represents the 2014-2015 budget of \$107 million plus carryover of \$53 million. The budget amount excludes reserves, ending fund balance, South Bay Water Recycling, Public Art and Urgent and Unscheduled Rehabilitation items. The budget now includes contingency allowance, which had been excluded from the amount shown in the August report.

The projected year-end variance of approximately \$66 million is primarily due to the following reasons:

- Award of the Cogeneration Facility design-build contract and technical support services agreement are now expected in FY15-16 (\$24 million).
- Award of construction contracts for the Iron Salt Feed Station, Plant Instrument Air System Upgrade, and Switchgear S40/G3 Relay Upgrade projects are anticipated in FY15-16 (\$18 million).
- Award of a design contract for critical rehabilitation work in the Headworks Improvements is expected in FY15-16 (\$4 million).
- Award of a design contract for the Advanced Facility Control and Meter Replacement project has been removed from the forecast while the project team reevaluates the scope to determine the best way to implement the project (\$2 million).
- Lowered forecasts for consultant services for the Emergency Diesel Generators, Fiber Optic Connection to RWF, and Plant Instrument Air System Upgrade projects (\$2 million).
- Lower than expected expenditures and encumbrances in Equipment Replacement (\$1 million).



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



Project Performance

There are currently 12 active projects in the construction or post-construction phase with a further 13 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
Distributed Control System (DCS) Fiber Optics Network Expansion	Post-Construction	May 2014		
RWF Street Rehabilitation - Phase III	Post-Construction	Nov 2014		
A5-A6 Nitrification Mag. Meter & Valve Replacement	Construction	Mar 2015		
Filtration Building B2 & B3 Pipe & Valve Replacement	Construction	Mar 2015		
BNR-2 Clarifier Guardrail Replacement	Construction	May 2015		
Fire Main Replacement - Phase III	Construction	Apr 2015		
Handrail Replacement - Phase V	Construction	Aug 2015		
Training Trailer Replacement	Construction	Jun 2015		
Digester Gas Storage Replacement	Construction	Jun 2015		
DCS Upgrade/Replacement	Construction	Jun 2016		
Digester Gas Compressor Upgrade	Construction	Jul 2016		
Emergency Diesel Generators	Construction	Aug 2016		

KEY:

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

Notes

- 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.
- An explanation of cost and schedule variances on specific projects identified in this table is provided on page 10.



Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date ¹
Cogeneration Facility	Procurement	Sep 2018
Iron Salt Feed Station	Design	Apr 2017
Digester & Thickener Facilities Upgrade	Design	Sep 2018
Construction-Enabling Improvements	Feasibility/Development	Aug 2016
Headworks Critical Improvements	Feasibility/Development	Feb 2017
Plant Instrument Air System Upgrade	Feasibility/Development	Feb 2017
Adv. Facility Control & Meter Repl. Ph. 2	Feasibility/Development	Jun 2019
Digested Sludge Dewatering Facility	Feasibility/Development	Jun 2020
Headworks Improvements	Feasibility/Development	Jun 2020
Outfall Bridge and Levee Improvements	Feasibility/Development	Jul 2020
Facility-wide Water Systems Improvements	Feasibility/Development	Jul 2021
Nitrification Clarifiers Rehabilitation	Feasibility/Development	Feb 2022
New Headworks	Feasibility/Development	Mar 2022

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.



Significant Accomplishments

Digester and Thickener Facilities Upgrade

The 30% design review comments and recommendations on the draft Preliminary Design Report for the digesters and dissolved air flotation tanks (DAFT) have been submitted to the design consultant, Brown and Caldwell. Additional workshops were conducted in January to further define supporting facilities (e.g. biogas piping, screening facility layout, and waste gas burner upgrades).

Biosolids Transition Strategy

The City accepted the final Biosolids Transition Strategy report submitted by Brown and Caldwell. Staff will be returning to Council with odor and cost information for the biosolids transition in spring 2015.

Filter Rehabilitation

The project passed the Approve Project Scope stage gate on January 22, 2015. A Project Delivery Alternatives Workshop was held on January 27, 2015 to review delivery options.

Headworks Projects

A Project Delivery Alternatives Workshop was held on January 28, 2015 to review delivery options. The draft Request for Qualifications (RFQ) is currently being prepared.

Iron Salt Feed Station

The project passed the Establish Authorized Baseline stage gate on January 22, 2015. The design consultant, CH2MHill, has submitted the 60% design submittal including drawings, specifications, cost estimate, and final geotechnical report. These design documents are under review.

Digester Gas Compressor Upgrade

Construction on the new gas compressor building continues. The base foundation was completed in January, 2015.

Cogeneration Facility

Statements of Qualifications from prospective design-build entities are being prepared and are due on February 3. Development of the Request for Proposal (RFP) is being finalized and is planned to be issued in late March.

Facility-wide Water Systems

The project scope has been finalized and the RFQ is being developed to bring a consultant firm onboard to further develop this project. The RFQ is expected to be released in late February.

Traffic Circulation and Impacts Study

The service order has been finalized and issued to the consultant, David J Powers and Associates.



Explanation of Project Performance Issues

A5-A6 Nitrification Mag. Meter & Valve Replacement

In September 2014, during startup, the project discovered that the actuators that had been specified and installed were incompatible with the available power supply. Engineering staff determined it would be more costly to modify the system than to order and install compatible actuators. In addition, O&M staff requested that the actuators match those used in the other clarifiers. The contractor has submitted a proposal for the requested equipment. Beneficial use is expected by the end of March 2015.

Handrail Replacement - Phase V

For safety reasons, the contractor has only been replacing handrails on empty aeration basins. November through April is designated as the rainy season during which O&M staff need to have aeration basins available in the event of heavy rains. As a result, the contractor has suspended work until the end of April 2015. Work is expected to resume when the remaining basins become available. Beneficial Use is expected by late May 2015.



Project Profile

Outfall Bridge and Levee Improvements

This project has three components; (1) rehabilitation/replacement of the footbridge above the outfall weir, (2) rehabilitation/replacement of the Pond A-18 water control gate structures (north and south structures) and (3) refurbishment/replacement of an electrical transformer located adjacent to the outfall weir.

A condition assessment evaluation was performed by a consulting engineering firm in early November 2014 for the outfall bridge and Pond A-18 water control gates structures. After receiving the draft report completed in late December 2014, staff is reviewing the condition of the northern gate structure to determine if the current project schedule for replacement needs to be accelerated.

Outfall Bridge

The existing outfall bridge extends approximately 65 feet across the Artesian Slough over the outfall weir and is comprised of timber elements. This facility supports the monitoring equipment needed to collect data to demonstrate compliance with the Wastewater Facility's NPDES permit. Operators use the bridge to collect water samples two to three times daily. The bridge was last rehabilitated in 2000 and the project will consider replacing the bridge with a new structure or address replacement of a significant number of the timber components and supports experiencing degradation.

Gate Structures

Pond A-18 is a former salt production pond purchased by the City in 2004. The western levee of the pond contains two large water control gate structures, one at the northern area near Coyote Slough and the other in the southern area near the outfall weir. The gate structures permit bay water to flow in and out of the pond via tidal action allowing mixing in the pond and preventing stagnation. Each structure has two 48 inch diameter pipes that extend approximately 50 feet through the levee with combination flap/slide gate valves connected at the ends. The structures also include timber headwalls and wingwalls which create a wider levee section above the buried pipes and allow operations staff to manually operate the gate valves on both ends of the pipe to manage water levels in the pond. Both the northern and southern structures include a trash rack on the Artesian Slough to minimize debris impact to the gate valve operations.

The gate structures were constructed in 2004. Age, exposure to the elements and tidal action has led to many timber components experiencing fatigue or failure. In addition, tidal action and turbulence associated with water discharges has resulted in erosion and scour damage. Erosion along the adjacent levee slopes, scour beneath the structure and sinkholes within the levee are all evident at the two gate structure locations. The north gate structure experiences more saltwater influence than the south gate structure due to closer proximity to the bay. As a result the structure has experienced more deterioration. This structure is currently being evaluated to determine if it is necessary to expedite its repair/replacement which would separate this component from the project.

Electrical Transformer

An existing electrical transformer (4160v to 480v) is located adjacent to the sulfur dioxide building near the outfall weir and supports all electrical equipment within the outfall channel and at the weir. The transformer is in need of refurbishment and may be relocated as it currently sits at the edge of a levee which has eroded since its original installation.

Project Budget: \$9,828,000



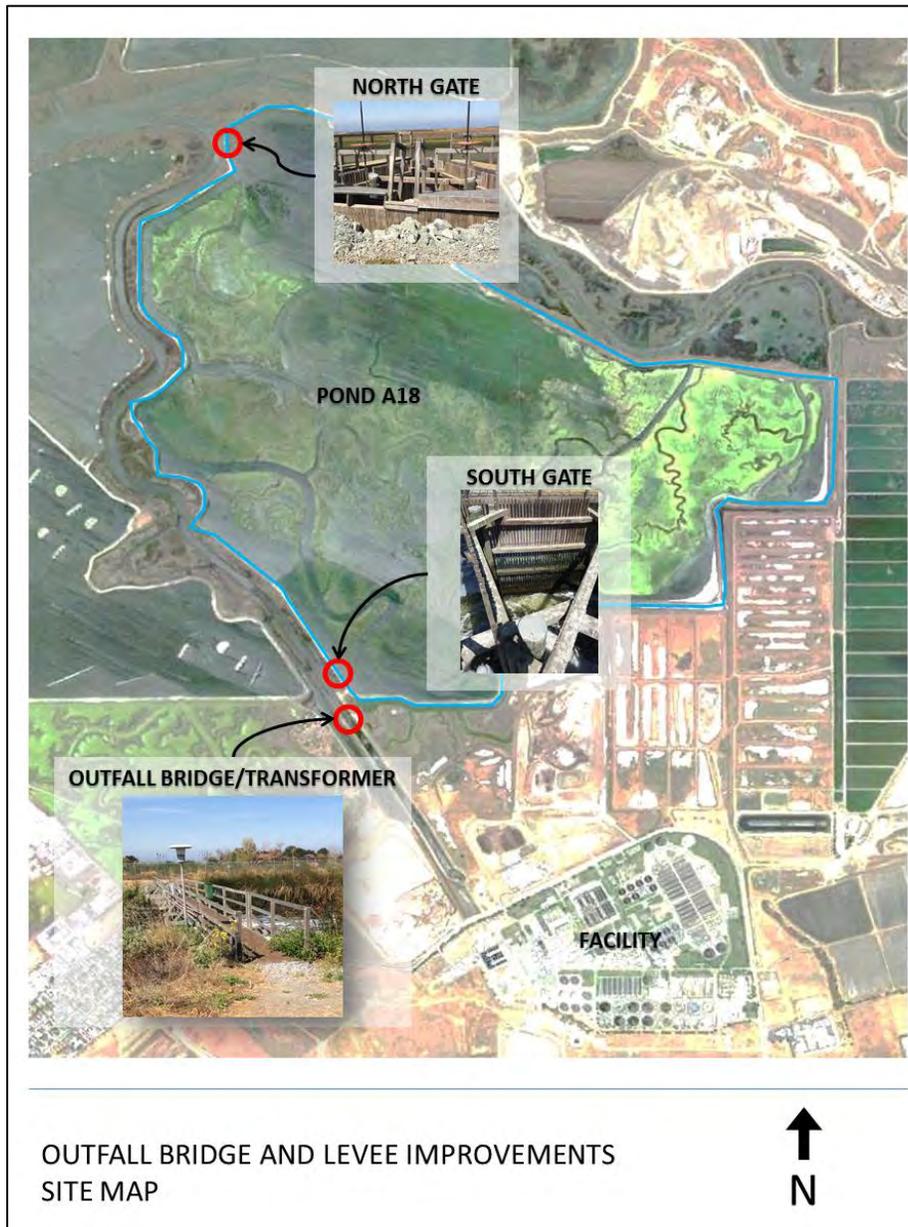


Figure 2—Outfall Bridge and Levee Improvements Project Location Map

Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

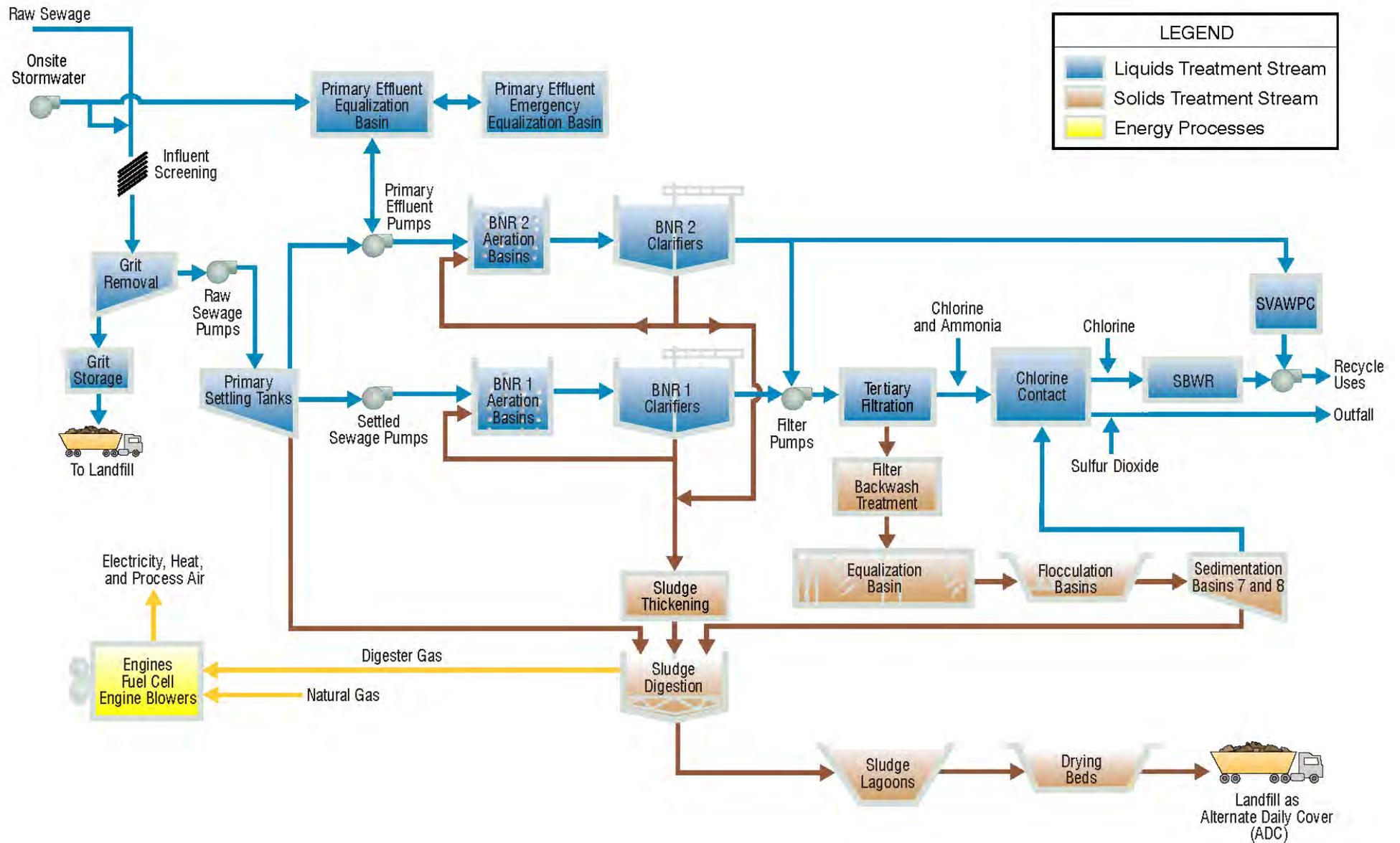


Figure 3—Current Treatment Process Flow Diagram



Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

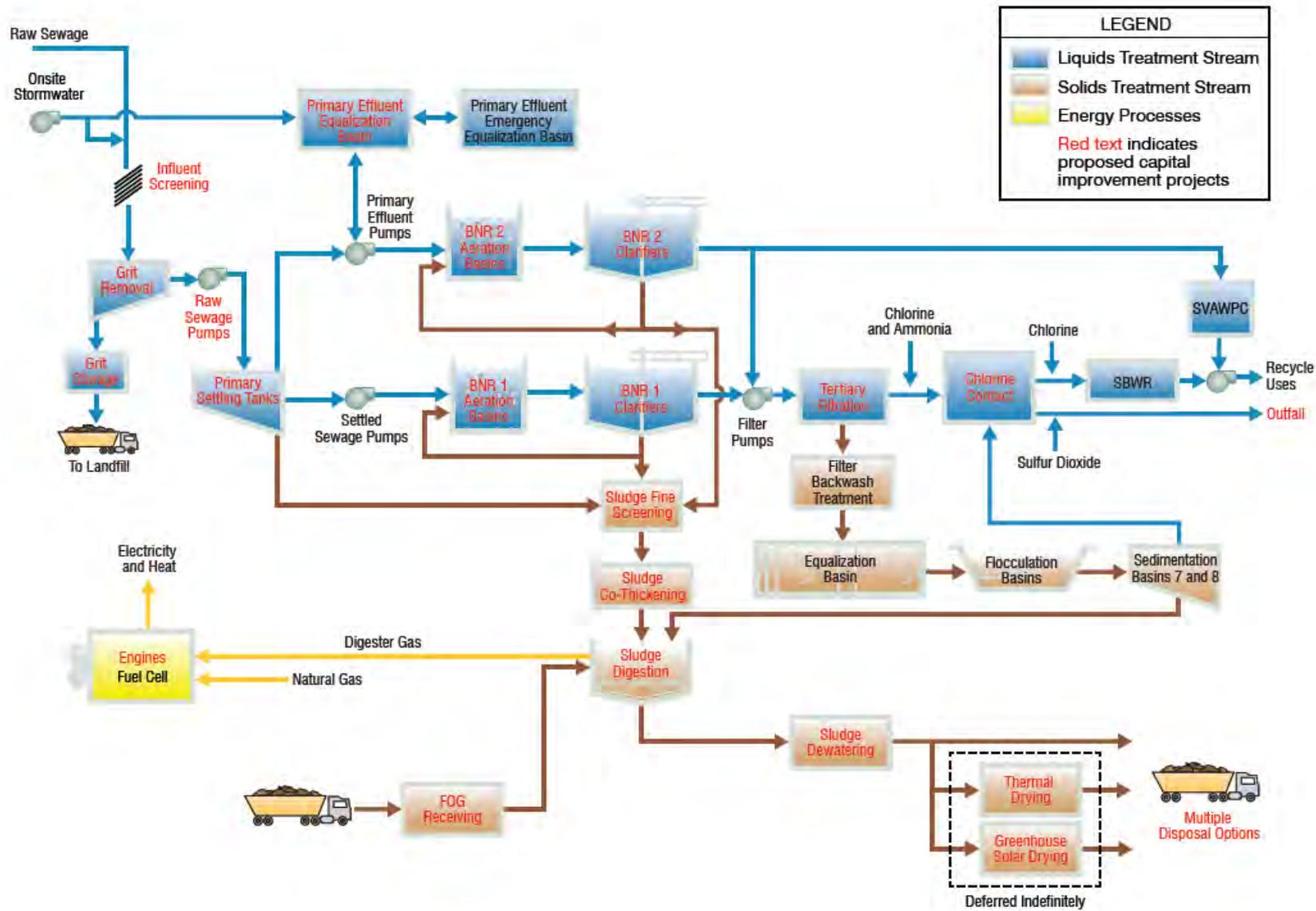


Figure 4—Proposed Treatment Process Flow Diagram



Active Construction Projects – Aerial Plan

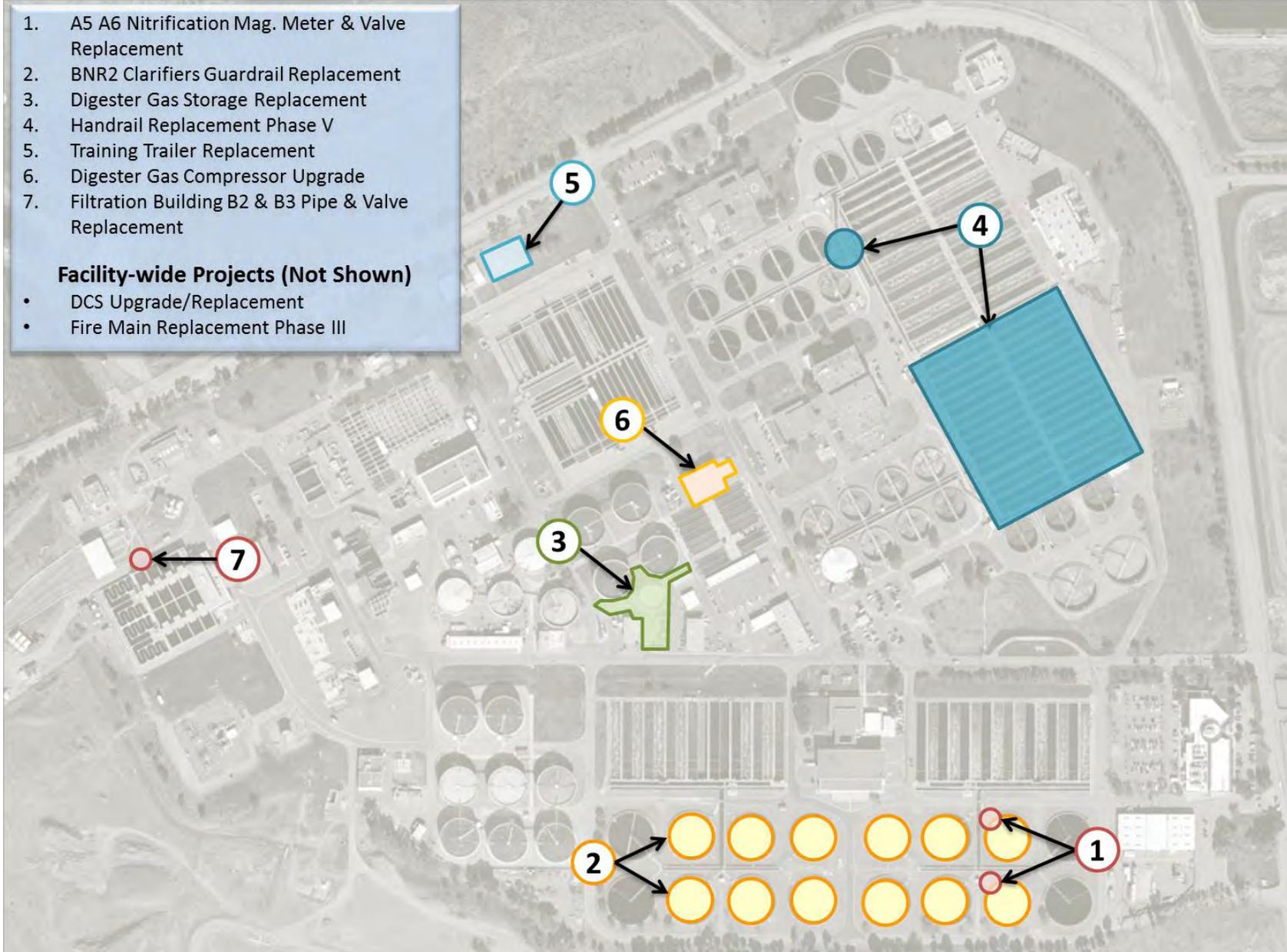


Figure 5—Active Construction Projects