San José-Santa Clara Regional Wastewater Facility

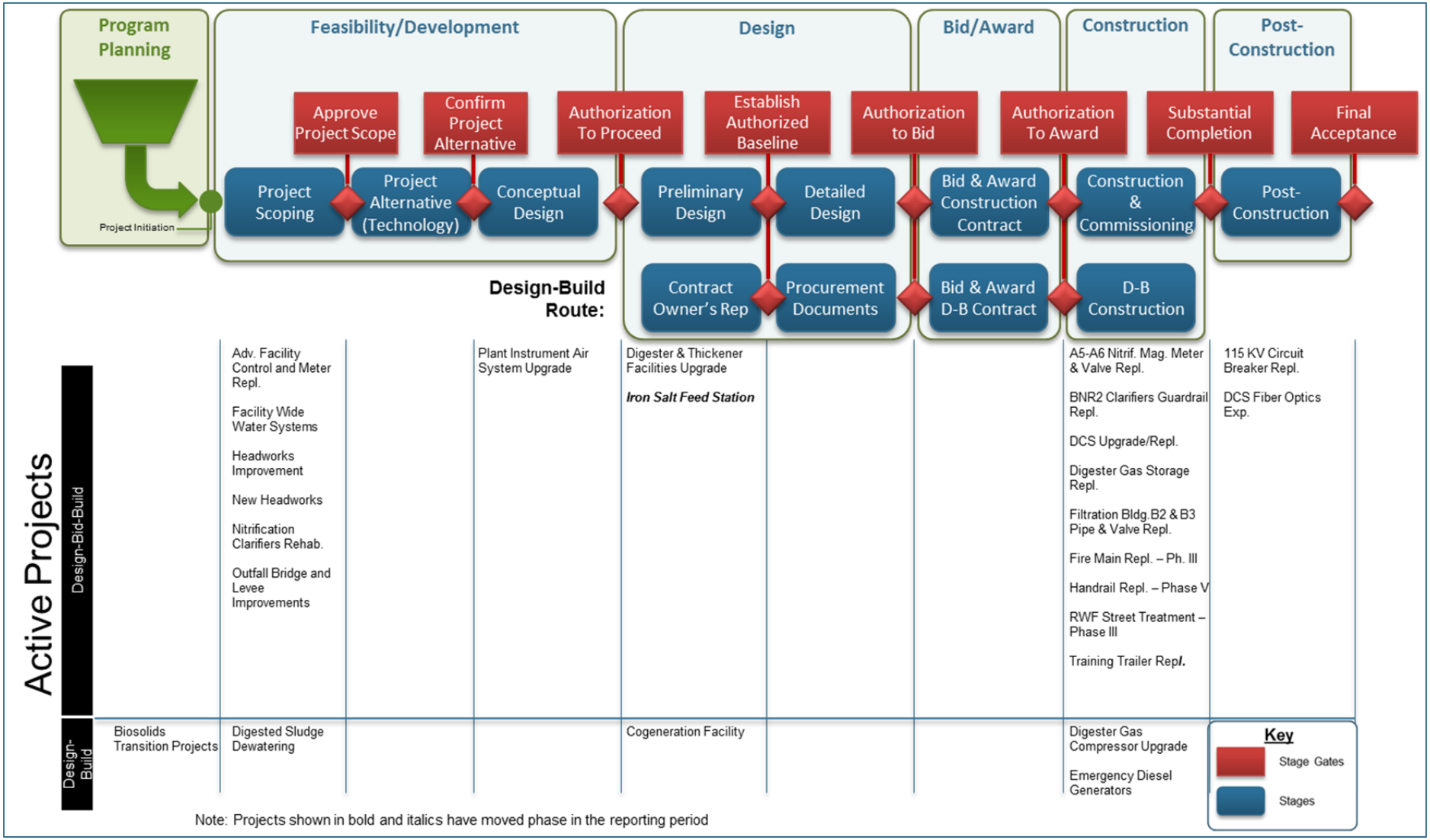
Capital Improvement Program
Monthly Status Report for September 2014

November 6, 2014

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 September 2014.

Report Contents

Project Delivery Model



Program Summary

September 2014

In the month of September, the program team made significant progress. Several programmatic studies and one project progressed through stage gates of the Project Delivery Model (PDM) process (see figure, inside of front cover). We saw particular focus on the development of our odor control implementation plan and biosolids transition strategy. Intense construction activity also continued within the RWF (see last page of this report). We started developing a procurement strategy for hiring various design consultants, and held an open house for potential consultants to share our upcoming projects and schedule (see Program Highlight below). We continued drafting an Operations Plan for the Wastewater Facility, which will include both unit process descriptions and an annual plan for coordinating CIP construction with ongoing operations.

We held several workshops to analyze our project schedules in a more in-depth fashion, which in turn will help us update our anticipated financial expenditures over the next 10 years. Finally, we continued driving implementation of our program tools and processes on all existing projects and brought several new staff on-board.

We held a special session with the Technical Advisory Committee (TAC) on September 22nd, to update them on the 10-year funding strategy. On that same day, CIP Program staff also attended a special TAC session on the Flow Study, which is being conducted by Carollo Engineers, under a separate agreement, outside of the program.

Look Ahead

In October, our financial planning activities will continue, as we finalize the 10-year funding strategy. In addition, we will continue to implement the PDM and Stage Gate process. We will prepare materials to present an update on the biosolids transition strategy to TAC on October 30th and the Transportation & Environment Committee (T&E) on November 3rd. In addition, we will present the Semiannual CIP status report to T&E and TAC on October 6th, the Treatment Plant Advisory Committee on October 9th, and City Council on October 28th. At the end of October, staff will begin drafting the Proposed FY 15-16 Capital Budget and FY 16-20 CIP.

Program Highlight – Vendor Open House

Implementation of the $1.5 billion 10-Year CIP will require the participation of a number of wastewater treatment vendors, including design consultants, construction contractors, and equipment suppliers. In order to encourage competition, we strive to keep these vendors informed on the CIP program's progress and schedule. On September 25th, we held our second Vendor Open House at the Wastewater Facility (the first event was held in November 2012.) Attendees were given a tour of the RWF and a brief presentation outlining the upcoming projects and procurement process. Over 80 vendors attended the event. The CIP team will continue to update interested vendors by posting information to our public website.

Figure 1—Photos from the September 25th Vendor Open House

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% (1/1)			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%	0% (0/1)[1]			Percentage of CIP projects that are completed within the approved baseline budget. ***Target: 90% of projects total expenditures do not exceed 101% of the baseline budget.***
Expenditure[2/3]	≥$94.2M	$98.2M			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 $157M= $94.2M)***
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 Level[4]	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

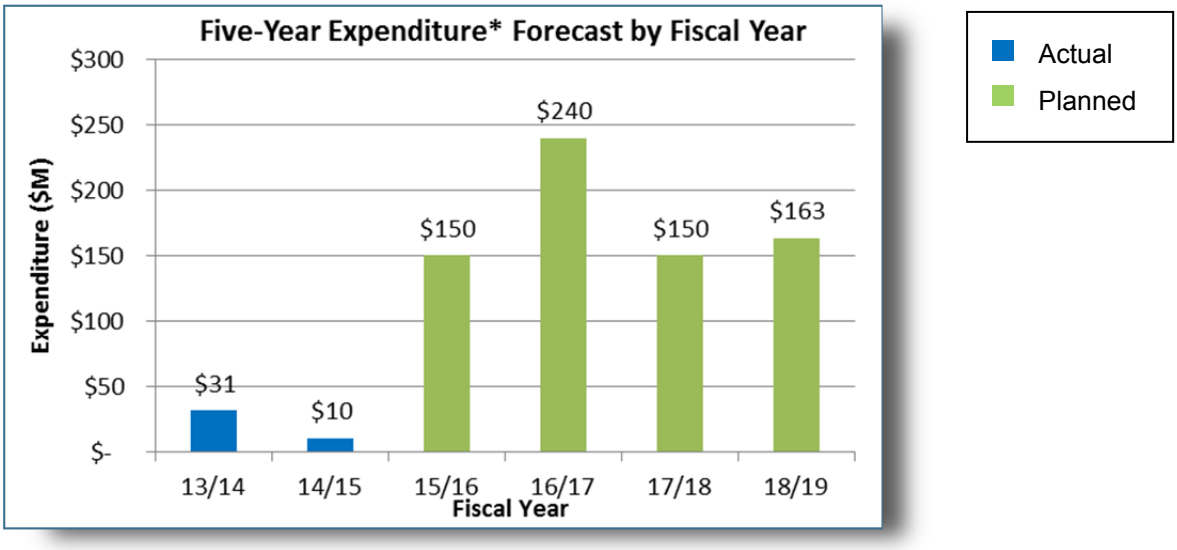
1. For the budget KPI, the number of delivered projects increased from 0 to 1. This count includes Dissolved Air Flotation (DAF) Dissolution Improvement, which is $96,260 (10.8%) over a baseline budget of $891,000.
2. FY14-15 budget excludes reserves, ending fund balance, South Bay Water Recycling, Public 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

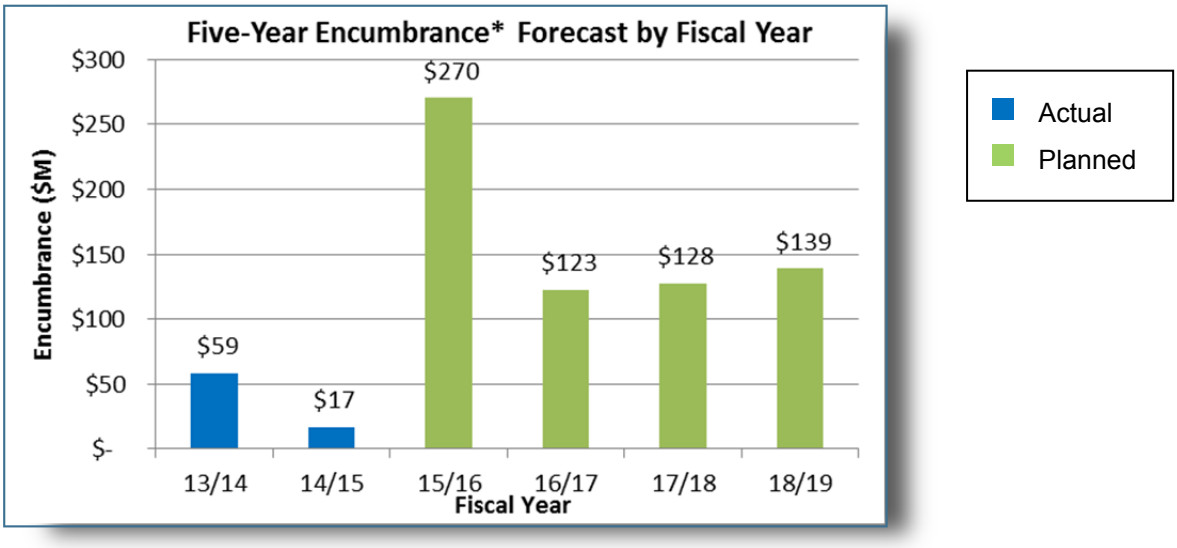
This section provides a summary of CIP cost performance for all construction projects and non-construction activities for FY14-15 and the Five-Year CIP.

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



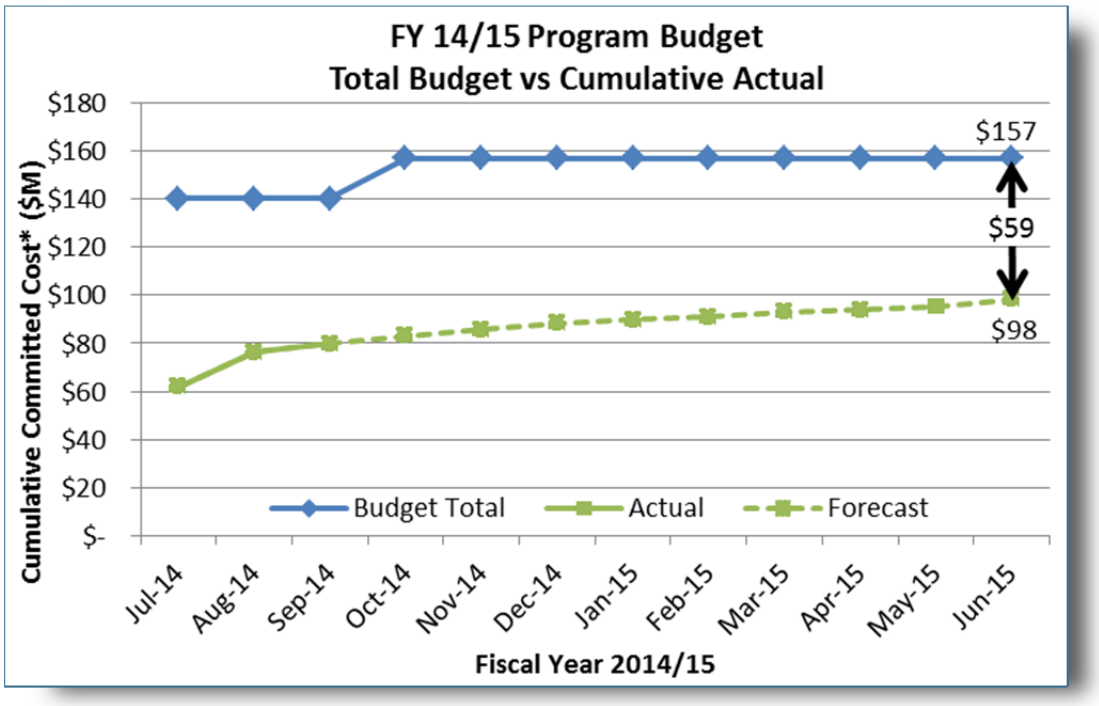
*Encumbrance defined as: Financial commitments, such as purchase orders or contracts, which are chargeable to an appropriation and for which a portion of the appropriation is reserved

Fiscal Year 2014-2015 Program Budget Performance

The fiscal year program budget is $157 million. The budget amount of $157 million represents the 2014-2015 budget of $104 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 $59 million is primarily due to the following activities that are now expected to occur in FY15-16:

- Award of the Cogeneration Facility design-build contract
- Award of construction contracts for the Iron Salt Feed Station, Plant Instrument Air System Upgrade, and Switchgear S40/G3 Relay Upgrade projects
- Award of design contracts for critical rehabilitation work in the Headworks Improvements and Nitrification Clarifier Rehabilitation projects



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

Project Performance

There are currently 13 active projects in the construction or post-construction phase with a further 11 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		
115KV Circuit Breaker Replacement	Post-Construction	Jul 2014		
A5-A6 Nitrification Mag. Meter & Valve Replacement	Construction	Nov 2014		
RWF Street Rehabilitation - Phase III	Construction	Nov 2014		
BNR-2 Clarifier Guardrail Replacement	Construction	Mar 2015		
Filtration Building B2 & B3 Pipe & Valve Replacement	Construction	Mar 2015		
Handrail Replacement - Phase V	Construction	Mar 2015		
Fire Main Replacement - Phase III	Construction	Apr 2015		
Training Trailer Replacement	Construction	May 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

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 9.
3. Beneficial use dates pending Contractor's Schedule.

Project Performance – Pre-Baselined Projects

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

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

Facility-wide Water Systems Improvements

The project team held a scoping workshop with CIP and operations and maintenance (O&M) staff to review the project's needs and objectives, solicit input regarding issues with the Wastewater Facility's aging water systems, and explore innovative ways to address the RWF's future water demands.

Digester Gas Compressor Upgrade

In preparation for constructing the foundation for the new digester gas compressor building, the design-builder successfully relocated existing underground utilities and submitted structural calculations for City review.

Emergency Diesel Generators

The project team started the application process required for PG&E to review and approve the submittals for the four new three-megawatt generators.

Iron Salt Feed Station

The project successfully passed the Authorization to Proceed Stage Gate, enabling the project team to begin work on the preliminary design. The consultant, CH2M HILL, is scheduled to present the preliminary design report toward the end of October for City review.

Programmatic Studies

Final technical memorandums were issued for the Design Criteria and Sizing Basis Study and Asset Management Strategy. Both studies are anticipated to be completed in October.

Three studies passed the Approve Scope Stage Gate: Aeration Demands and Biosolids Production Assessment, Automation Master Plan, and Yard Piping Condition Assessment Plan. Consultant service orders are expected to be executed and work to commence on these studies in October.

Biosolids Transition

Brown and Caldwell issued draft technical memorandums for sidestream treatment, heat recovery, site evaluations, and business case evaluations, for City review. These documents will form the basis for the strategy and recommendations to be presented to TPAC in November and Council in December.

Explanation of Project Performance Issues

A5-A6 Nitrification Mag. Meter & Valve Replacement

A design issue was encountered during the startup of the project in September 2014. The electric motor specified in the design documents was 3 phase power, which is what the contractor submitted on, staff approved, and contractor installed. During the startup and turnover preparation, it was identified that while there is 3 phase power available further 'upstream' the power available at the actuator panel is only single phase. It has been determined that it would be more costly to pull additional wire to the actuator than it would be to reorder a single phase actuator/motor for each of the two valves in question. In addition, O&M has requested that the installation be single phase for consistency with other similar clarifiers. The contractor has submitted a proposal to install the requested single phase actuators, but it will require additional funds beyond the remaining contingency. A Council memo is being prepared to request additional funds to resolve the actuator issue. The approval for funding, approximately $25K, is expected by January/February 2015, with installation by end of March.

Project Profile

Aeration Demands & Biosolids Production Assessment Study

The RWF has an existing process simulator that allows City staff to model the aeration treatment process stages using the BioWin™ software package. To provide more accurate estimates of flows and solids that can be used as a basis of design for upcoming CIP projects, staff needs a simulator to model equipment and treatment processes throughout the RWF.

This study will upgrade and expand the existing RWF process simulator to a Facility-wide simulator. This will extend the current modeled configuration to include preliminary, primary, secondary, and tertiary treatment streams, as well as primary effluent equalization, sludge thickening, sludge digestion, digested solids dewatering, and side stream treatment. To update and calibrate the process simulator, the consultant, Carollo Engineers, will conduct sampling that will be analyzed by the RWF's laboratory.

The first outputs from the study will provide updated estimates of future aeration demands and biosolids production, to inform current and future CIP projects. The updated simulator will also be used to answer key process inter-relationship questions for various upcoming upgrades, and will allow the impacts of planned modifications to existing treatment facilities to be accurately assessed. In the future, the simulator will be used to support ongoing Facility operations.

The consultant will begin work next month and the study is anticipated to be completed before June 2015. Study Budget: $586,604.

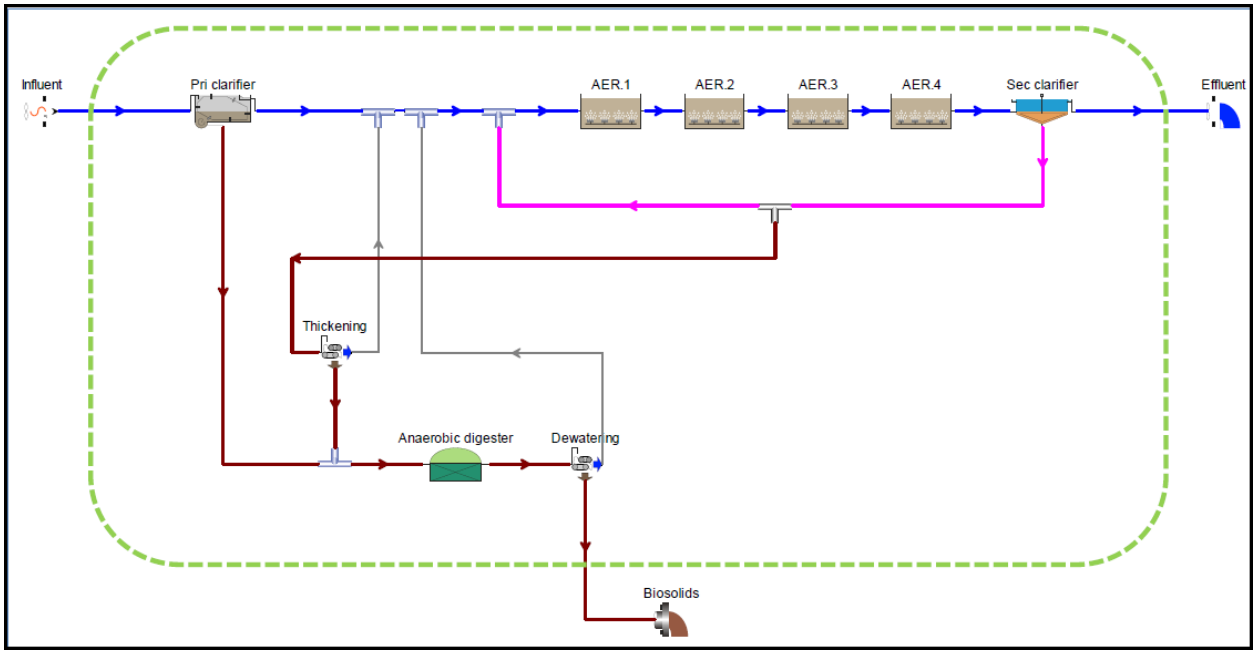


Figure 2— Example of a Process Modeling Diagram

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Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

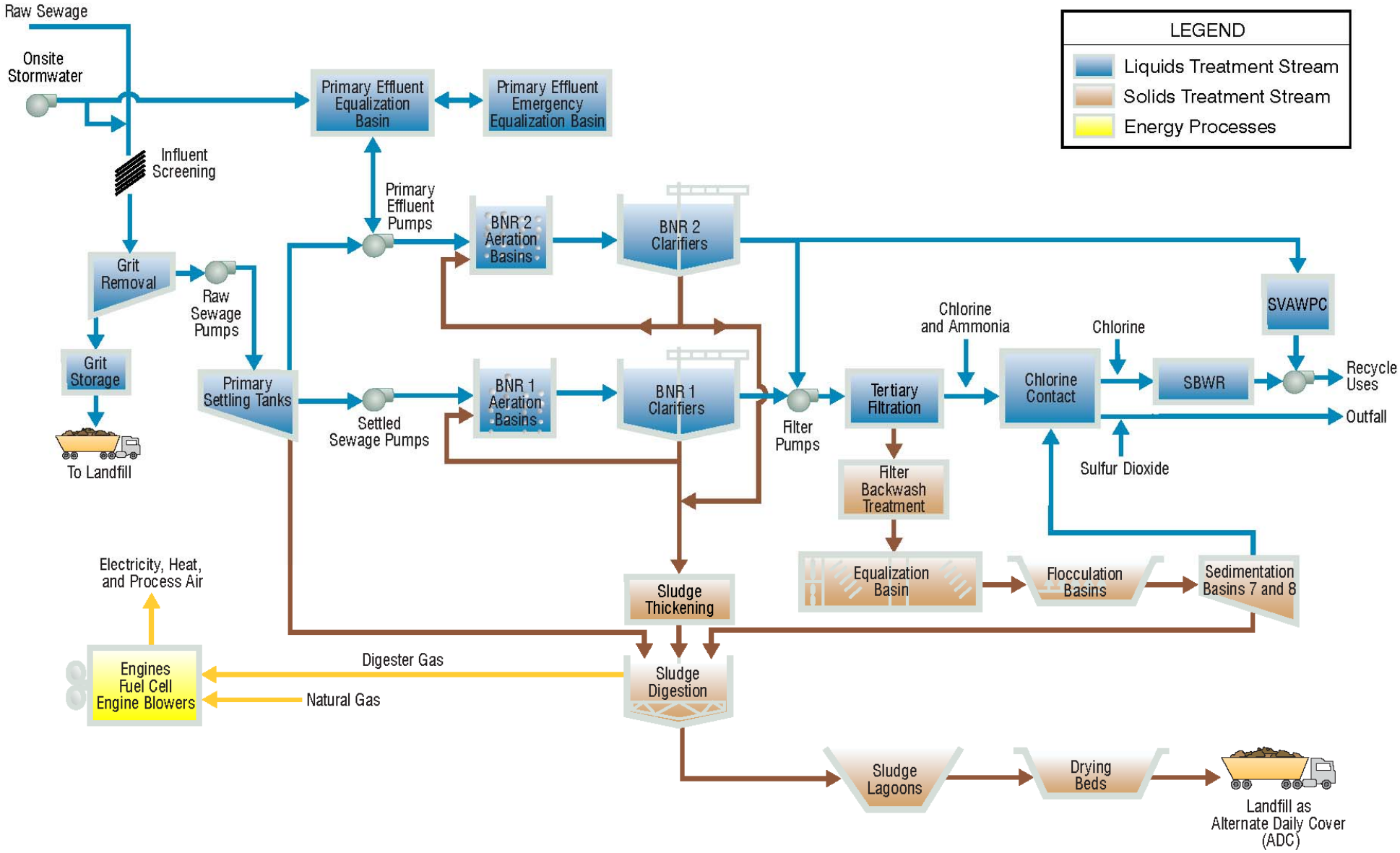

Figure 3—Current Treatment Process Flow Diagram

Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

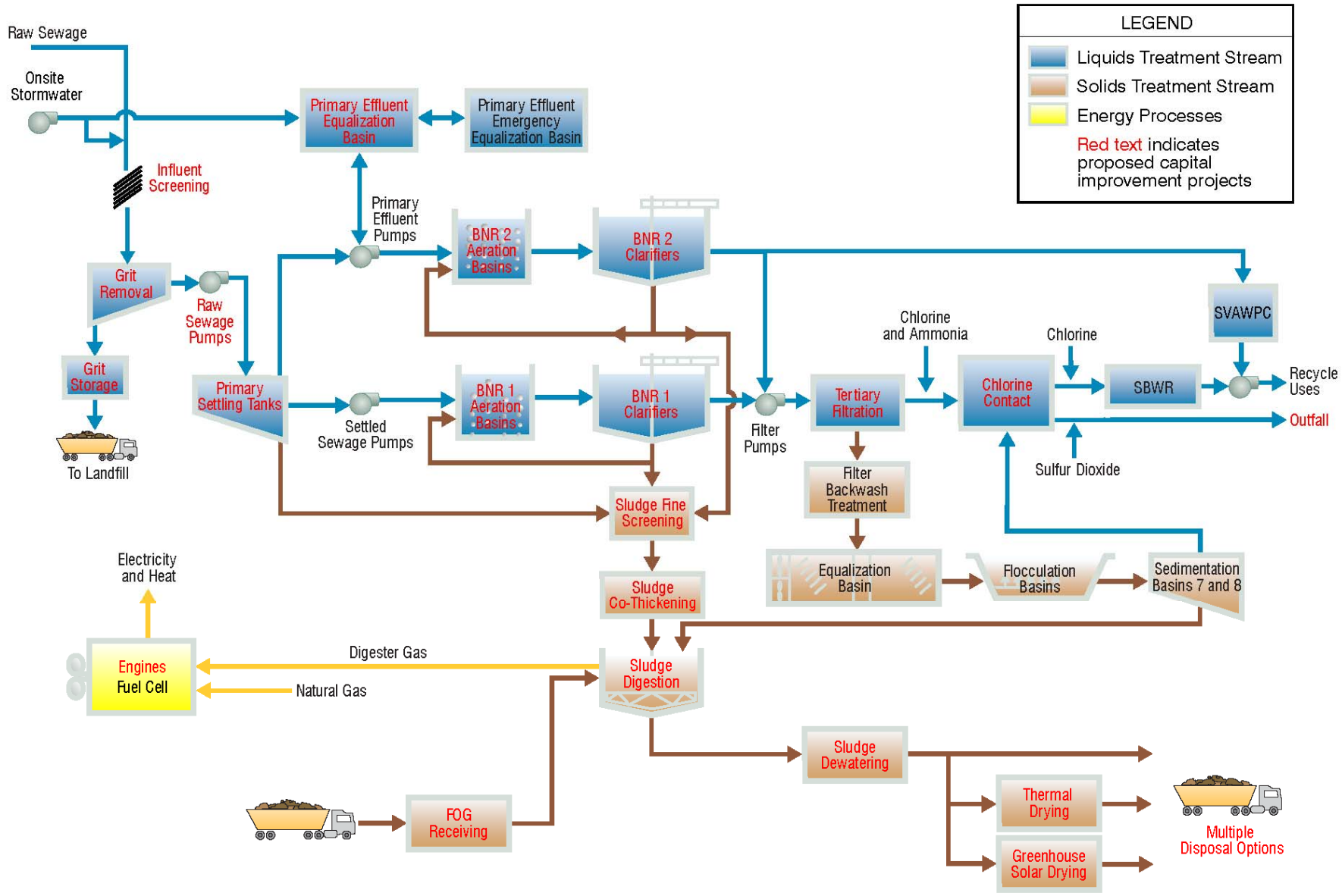

Figure 4—Proposed Treatment Process Flow Diagram

Active Construction Projects – Aerial Plan

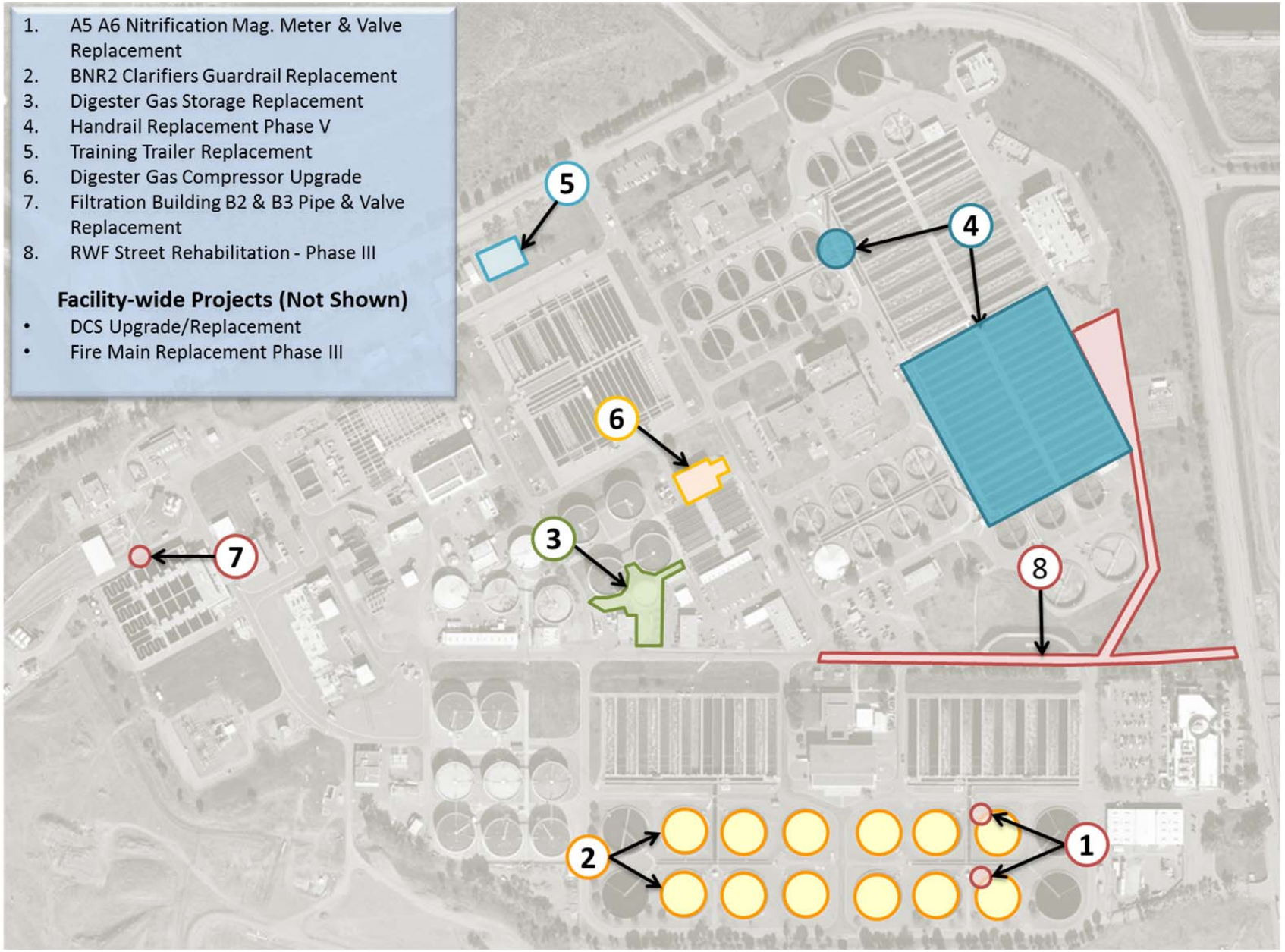

Figure 5—Active Construction Projects