Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT
75TH ANNIVERSARY
EST. 1950

Asset Management Plan

2025

Acknowledgments

This Asset Management Plan was developed by staff members of the Inland Empire Utilities Agency. The Agency gratefully acknowledges the important contributions of the authors of the various sections of this plan. In particular, the authors of the Asset Management System Summaries put forth a great deal of effort to develop system summaries that are proving to be a valuable tool in guiding asset management decisions.

Table of Contents

List of Tables

List of Figures

Executive Summary

The Inland Empire Utilities Agency is committed to providing services for its rate payers to reliably meet the business goals approved by the Agency's Board of Directors. This commitment requires the Agency to diligently and carefully manage their assets. Through asset management, the Agency can coordinate decisions and take actions that allow them to meet these business goals at the lowest lifecycle cost.

This Asset Management Plan is intended to be a useful document for those who have a deep understanding of the Agency as well as for those who are only somewhat familiar with it. To meet the needs of both audiences, this plan contains introductory and overview chapters on the Agency's function, service area, business goals, and future growth (Chapters 1 – 4) as well as more detailed information on the Agency's asset valuation, financial projections, and physical assets (Chapters 5 – 7).

The current values for Agency assets are $1.62 billion for acquisition value and $1.05 billion for depreciation. The various components of these values are summarized in Table 5-1.

The Agency's physical assets are described in Chapter 7, Asset Management System Summaries, where they are organized according to the following systems:

1. Agencywide Projects
2. Regional Water Recycling Plant No. 1 (RP-1)
3. Regional Water Recycling Plant No. 2 (RP-2)
4. Carbon Canyon Water Recycling Facility (CCWRF)
5. Regional Water Recycling Plant No. 4 (RP-4)
6. Regional Water Recycling Plant No. 5 (RP-5)
7. Recycled Water Distribution (RW) & Ground Water Recharge (GWR) Systems
8. Inland Empire Regional Composting Facility (IERCF)
9. Agency Lift Stations (LS)
10. Regional Sewer System (RSS)
11. Non-Reclaimable Wastewater System (NRW)
12. Agency Laboratory (Lab)
13. Agency Headquarters (HQ)
14. Business (BIZ) & Process Automation Control (PAC) Networks

Each system summary comprises six sections: an asset profile, a capacity profile, an asset rating, key issues, history of key assets, and potential projects. Of note is that the system summaries identify both existing and potential projects to address needed rehabilitation, replacement, and upgrades to assets. As such, these summaries provide key information for budgeting and project planning.

1 Introduction

1.1 Asset Management's Vision and Mission

VISION: Maximize the lifecycle of an asset.

MISSION: Ensure long-term asset sustainability through innovative solutions, process optimization, and a balanced approach to risk, cost, and performance.

1.2 Purpose of the Asset Management Plan

The Asset Management Plan presents the physical assets of the Inland Empire Utilities Agency (IEUA/Agency) and discusses the funding required to manage these assets to deliver the services expected by customers.

The Agency has gained real-world experience and continues to pursue industry-leading practices. The Agency has held several workshops and meetings with stakeholders and Agency Leadership to adopt an Agencywide Asset Definition. The Agency initiated an Asset Criticality Analysis pilot program, whereby, and with the use of the asset definition, began identifying and reconciling existing assets. Following that effort, several workshops were conducted to analyze the asset for criticality. These activities align with other reliability and Asset Management initiatives such as asset condition assessment (probability of failure) and risk profiles.

In addition, the Agency defines asset criticality (the consequence of failure), as a risk-based process, to determine and identify the relative importance of assets to service-delivery. Asset Criticality Analysis guides risk reduction programs for consequences of the cost of operation, cost of repair, cost of downtime; impacts to the environment and safety risk; the effect of the loss of function to our customers; and reputational risks from failures. Criticality-assessment benefits are understanding the overall impact of the system or asset failure, improving risk management, and resource planning.

Finally, the Agency aims to establish conventions and strategies to maintain Agency assets. Standard operating procedures are being developed to determine the strategies for maintenance. This development will increase reliability, efficiency, and clarity for Agency departments that participate in risk management (operational strategy, maintenance strategy, design criteria, and reliability criteria).

IEUA's 2026 Asset Management Plan is set to be completed June 2026.

1.3 Full Economic Cost of Infrastructure Service Delivery

The cost of providing infrastructure services depends on the level of service required by the Agency and the community. The Agency must show the full cost of providing that level of service so that they can set a realistic level of service based on customer expectations and appropriate service fees. The cost of infrastructure asset services is a function of the lifecycle costs and the current position of the asset in the asset lifecycle, as shown in Figure 1-1.

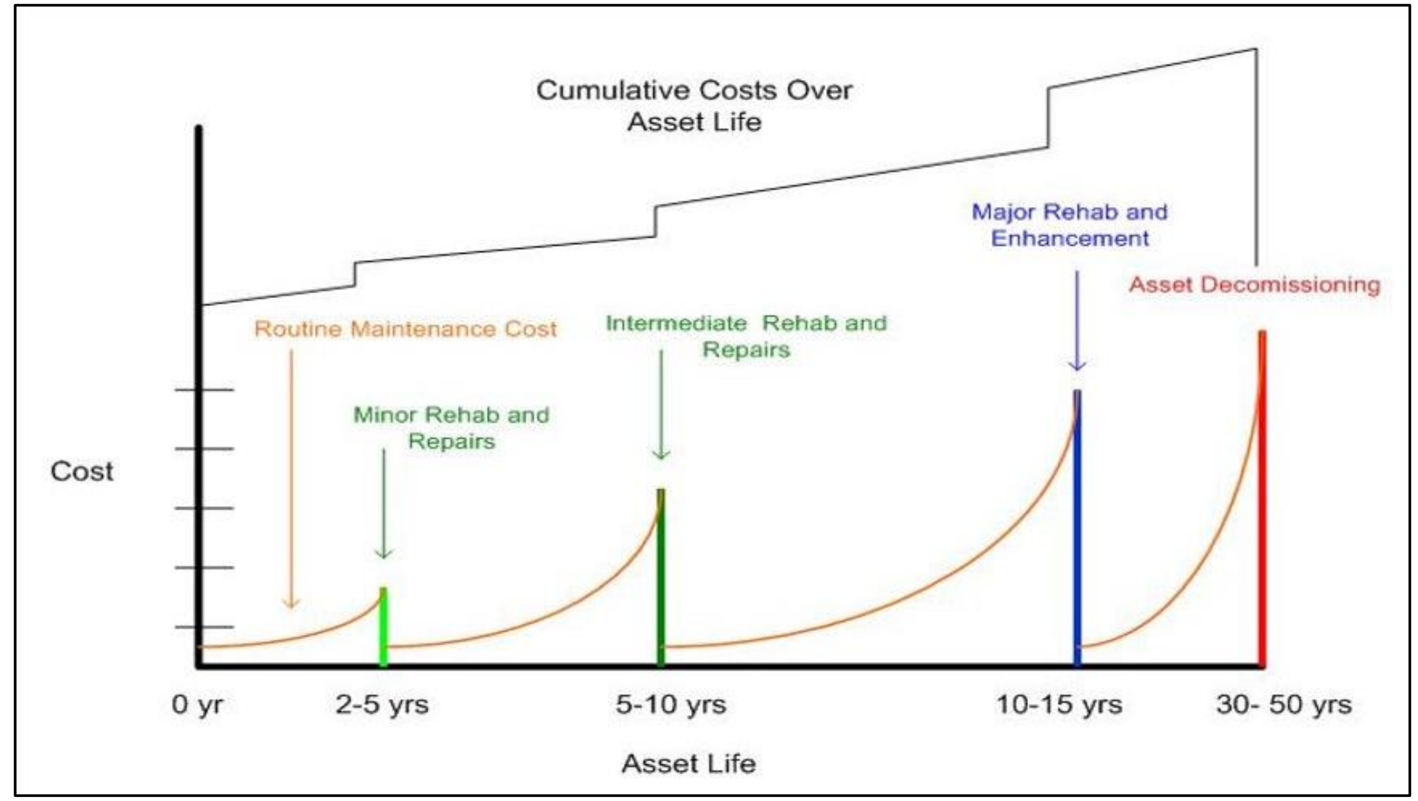

Figure 1-1 Lifecycle Cost

The Agency is better able to make decisions when they consider the lifecycle cost of assets. If costs increase in one area, then a suitable reduction or trade-off must be reflected in another area. For example, for the Agency to reduce operating and maintenance cost or business risk exposure, they can either invest capital or improve the offered levels of service.

1.4 Ongoing Asset Management Initiatives

1.4.1 Agencywide naming, hierarchy, criticality, data cleanup

IEUA utilizes two SAP modules, SAP Plant Maintenance (SAP PM) and SAP Financial Accounting (SAP FI), to ensure accurate asset management and financial tracking. This asset management system was implemented in 2007, when IEUA adopted SAP as its Enterprise Resource Planning (ERP) software solution. Both SAP Plant Maintenance (SAP PM) and SAP Financial Accounting (SAP FI) maintain independent asset registers to track IEUA's asset inventory. However, these registers contain discrepancies when compared to actual plant conditions. These discrepancies include fully depreciated assets, retired assets no longer in service, assets incorrectly categorized under the wrong facility or functional location, missing assets currently in operation, asset names that do not conform to the newly established asset naming conventions, and assets which have not been assigned a criticality score. To resolve these issues, Asset Management's Agencywide Asset Hierarchy & Criticality Project EN25048 aims to perform a gap analysis and field verification of IEUA's asset inventory, develop a standardized SAP hierarchy and asset naming convention, assign asset criticality scores, reconciliation of the financial fixed asset register, and quality assurance and quality control of asset upload data into SAP.

1.4.2 Preventative Maintenance (PM) Optimization

Preventive maintenance optimization is a critical component of an effective asset management program, focusing on enhancing the reliability and longevity of infrastructure while minimizing operational costs and asset downtime. By systematically analyzing equipment performance data, failure patterns, and maintenance histories, organizations can refine maintenance schedules to align with actual asset needs rather than relying on rigid time-based intervals. This data-driven approach helps prioritize resources, reduce unnecessary interventions, and prevent unplanned downtime, thereby improving overall asset performance. IEUA's effort to integrate PM Optimization into the broader asset management strategy supports informed decision-making, risk mitigation, regulatory compliance, and sustainable asset lifecycle planning.

1.4.3 Condition Assessment Program

Condition assessment is a fundamental component of an asset management program, providing critical insights into the current state and performance of physical assets. Through systematic inspections, testing, and monitoring, condition assessments help identify signs of wear, degradation, or potential failure across infrastructure and equipment. This information enables IEUA to make informed decisions about maintenance, rehabilitation, or replacement, optimizing asset life and performance. By integrating condition data with risk and criticality analyses, IEUA can prioritize investments, allocate resources efficiently, and ensure the safety and reliability of core services.

1.4.4 Predictive Maintenance

In asset management, Predictive Maintenance (PdM) strategies are used to regularly monitor the condition of assets. IEUA's Asset Management Unit's Reliability Group implements the PdM Program, which collects data through condition monitoring, enabling the real-time condition of assets. The premise of PdM is a proactive approach that minimizes unexpected breakdowns, reduces repair cost, extends the Mean Time Between Failure (MTBF), monitors the actual equipment health through quantifiable means, and performs advanced analysis and failure detection. In addition, when sudden changes or variations in the equipment's condition are manifested, they are often found during the regular Maintenance Reliability rounds as a collaboration with the Maintenance Department. The ability to monitor equipment lends itself to helping Maintenance optimize intervals between corrective repairs, minimizing the number and cost of unscheduled repairs created by machine-train failures, improving the overall equipment reliability, and assisting the Asset Management Group with accurately determining an asset's remaining useful life.

1.4.5 Mechanical Discipline

The mechanical discipline involves variance trending of the PdM test results, which includes the following:

- Vibration analysis to measure imbalance, misalignment, and bearing defects in rotating equipment
- Oil analysis to predict lubricant and equipment degradation
- Airborne ultrasound
- Infrared thermograph to detect hot spots

In addition to PdM activities for mechanical equipment, laser alignment techniques are also used to enhance rotating machinery accuracy to increase the machinery's operating life span

1.4.6 Electrical Discipline

The electrical PdM Program includes the following tests:

- Oil analysis for transformers
- Ultrasound to detect arcing
- Infrared thermography to detect hot spots
- Circuit breakers and protective relays testing
- Medium-voltage feeder cable testing to determine the health of cables and insulation

1.4.7 Civil Discipline

The civil aspect of PdM includes the following:

- Closed-circuit television (CCTV) assessments of buried pipe and manhole structures
- Sonar assessments of inverted siphons
- Structural sampling, testing, and analysis of concrete assets
- Water level monitoring
- Debris accumulation prediction in the collection system
- Corrosion monitoring on underground and exposed piping

2 Inland Empire Utilities Agency Overview

2.1 Service Area

IEUA is a regional wastewater treatment agency and wholesale distributor of imported water serving approximately 950,000 people throughout western San Bernardino County. Under the leadership of a directly elected five-member Board of Directors, the Agency is committed to supporting the needs of its service area and safeguarding public health through significant investments in a diverse water supply portfolio, reliable municipal/industrial wastewater collection and treatment services, and other related utility services in a regionally planned and cost-effective manner.

As a member agency of the Metropolitan Water District of Southern California (Metropolitan), IEUA provides supplemental water supplies, primarily via the State Water Project (SWP) to the cities of Chino, Chino Hills, Fontana via Fontana Water Company and portions of West Valley Water District, Montclair via Monte Vista Water District, Ontario, Rancho Cucamonga via Cucamonga Valley Water District, and Upland (including San Antonio Water Company). IEUA also replenishes local groundwater supplies with captured rainwater and recycled water produced by IEUA that is later extracted by local water agencies for use as a drinking water supply.

Water recycling is a critical component of the water resources management strategy for IEUA and the Chino Basin. The Agency is responsible for treating 50 million gallons per day of wastewater, on average, received from seven sewerage agencies including the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland, and the Cucamonga Valley Water District. This water is treated to Title 22 regulations set forth by the State Division of Drinking Water and distributed to its retailers for agriculture, municipal irrigation, industrial uses, and groundwater replenishment.

IEUA currently operates five regional wastewater treatment plants: Regional Water Recycling Plant No.1 [RP-1 (Ontario)], RP-2 Solids (Chino), RP-4 (Rancho Cucamonga), Carbon Canyon Water Recycling Facility (Chino), and RP-5 (Chino).

In conjunction with these facilities, IEUA also maintains and operates:

- The Chino Desalter I (located in Chino) on behalf of the Chino Basin Desalter Authority, which uses reverse osmosis technology to remove salt and nitrates from groundwater pumped from 14 wells throughout the Chino Basin. It produces 10.9 MGD of high-quality drinking water, serving the water needs of approximately 35,000 people.
- The Inland Empire Regional Composting Facility (located in Rancho Cucamonga) on behalf of the Inland Empire Regional Composting Authority, which uses biosolids from the wastewater treatment process to produce over 230,000 cubic yards of high-quality compost each year for local landscaping and horticultural use, marketed under the name SoilPro.
- 46 groundwater recharge basins across 19 recharge sites designed to hold stormwater run-off, imported water, and IEUA recycled water to replenish alluvial aquifers and groundwater supply. Through partnership with the Chino Basin Water Conservation District and the San Bernardino Flood Control District, IEUA's groundwater recharge framework enhances the current reliability of local supplies for a rapidly growing population and is an integral part of the Agency's local water supply planning efforts.

The Agency also prioritizes initiatives that enhance and preserve the quality of life throughout the region, which include investments in local water resources, conservation programs, and renewable energy sources. IEUA advocates for environmental stewardship and offers several free educational resources and outreach programs to inform students and the community on ecological preservation, water awareness, and sustainability. Figure 2-1 shows the Agency service area.

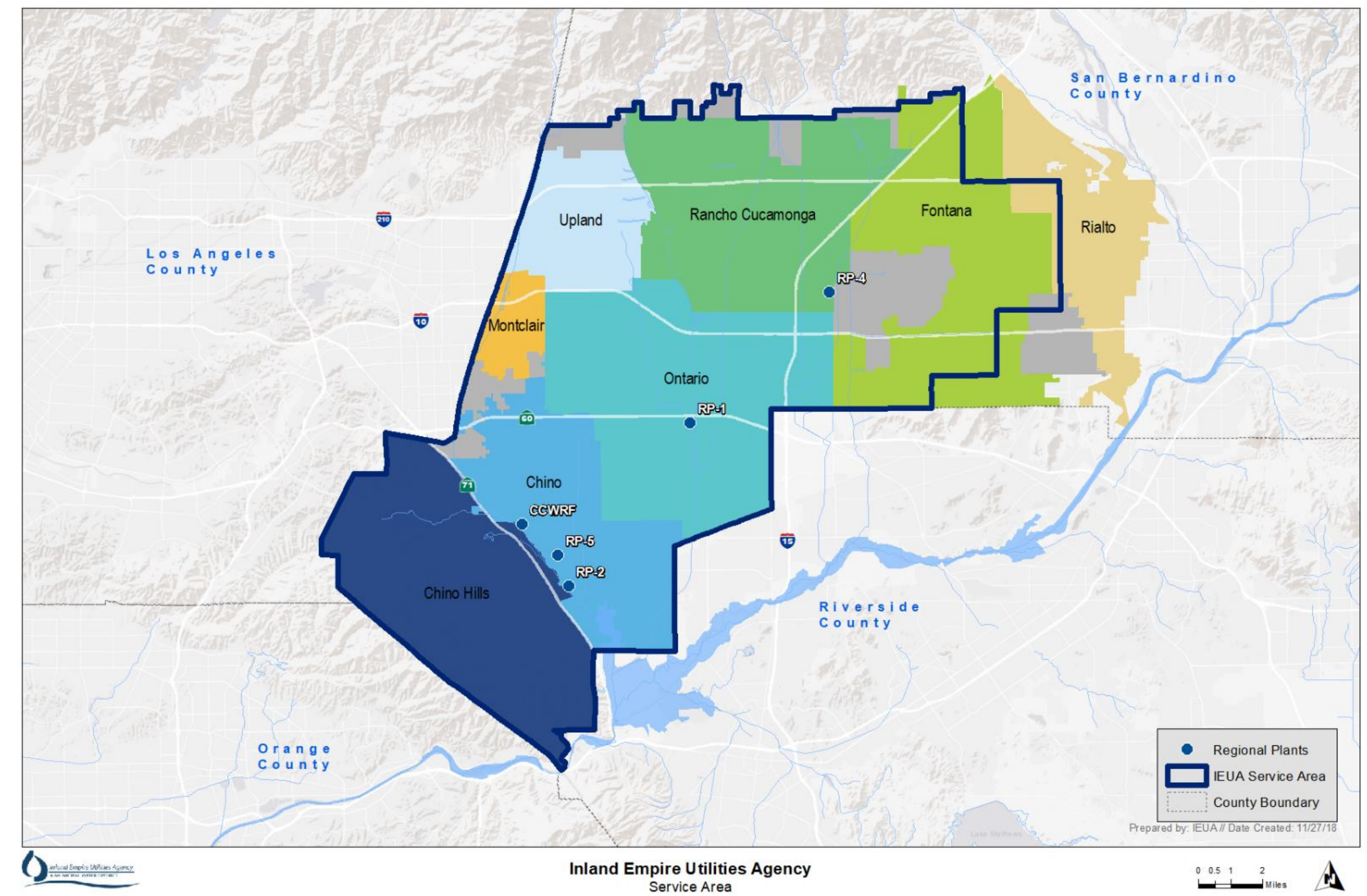

Figure 2-1 Agency Service Area

2.2 Agency Funds

Administrative Services (GG) Fund

The GG Fund serves as IEUA's general fund and capital expenses include agency supplies such as computers, printers, copiers, pooled vehicles, and other purchases.

Non-Reclaimable Wastewater (NC) Fund

Projects funded through the NC Fund are associated with IEUA's Non-Reclaimable Wastewater System (NRWS), which is a collections system physically separated from the agency's wastewater sewage system.

The NRWS includes pipelines and pump stations that serve to export high-salinity industrial wastewater generated in IEUA's service area for treatment and eventual discharge to the Pacific Ocean. The wastewater discharged to the NRWS is primarily comprised of industrial and groundwater treatment brine. The NRWS is operated by IEUA and is comprised of three independent collections systems, the North Brine Sewer System, the Etiwanda Wastewater Line (EWL), and the Inland Empire Brine Line (IEBL), also known as the South BSS.

Regional Wastewater Capital Improvement (RC) Fund

The RC Fund covers capital project costs associated with IEUA's regional wastewater systems: water recycling facilities and collection systems. Expenses charged to the RC Fund include capital projects necessary to accommodate regional growth in terms of flow, or loading, capacity.

Regional Wastewater Operation and Maintenance (RO) Fund

The RO Fund covers the operations and maintenance costs associated with IEUA's regional wastewater systems: water recycling facilities and collection system. Operations and maintenance costs can have capital components included in the Ten-Year Capital Improvement Plan (TYCIP) including the cost to rehabilitate fixed assets.

Recharge Water Fund (RW) Fund

In conjunction with Chino Basin Water Master, Chino Basin Water Conservation District, and San Bernardino County Flood Control District, IEUA implements and operates the Recycled Water Groundwater Recharge Program within Chino Basin to replenish and maintain the Chino Groundwater Basin. Infrastructure associated with the RW Fund includes a network of pipelines that directs captured stormwater, recycled water, and imported water to recharge sites. The groundwater recharge projects are a means to diversify the water supply for the region and maximize the beneficial reuse of recycled water and the yield of the Chino Basin. Recycled water recharge is a key component of the region's water supply portfolio. The more recycled water that is recharged into the Chino Groundwater Basin, the more resilient the region becomes.

Recycled Water (WC) Fund

IEUA and its member agencies have invested in the construction of a Regional Recycled Water Distribution System (RRWDS). The RRWDS consists of a network of pipelines, storage tanks, and pump stations that serve customers. IEUA's water recycling facilities maintain compliance with water recycling criteria set forth in Title 22 of the California Code of Regulations. The use of recycled water provides a high-quality alternative water source for the region that can be used directly by customers or recharged into the groundwater to improve regional resiliency. Capital projects in the WC fund are associated with the expansion and improvement of the RRWDS infrastructure.

Water Resources (WW) Fund

Projects in the WW Fund are associated with the management and distribution of imported water supplies, development and implementation of regional water use efficiency initiatives, water resources planning efforts, and support for regional water supply programs including recycled water, groundwater recharge, and stormwater management. Many projects in the WW fund are non-capital by nature.

3 Agency Business Goals

3.1 Strategic Goals and Objectives

Each strategic goal is supported by specific objectives and priority actions that IEUA aims to accomplish over the next five years. The actions listed are not a complete list of activities to achieve the Agency's goals and objectives but are priorities during the five-year Plan period.

Figure 3-1 Structure of Agency Business Goals

3.1.1 Goal 1. Water Supply Reliability

Provide a reliable and economical water supply that meets the evolving needs of the region

- Objective A. Water Supplies
  - Support the region with the retention and development of reliable, resilient, and sustainable water supplies from diverse sources.
- Objective B. Groundwater Recharge
  - Support projects and initiatives that optimize groundwater recharge in the Chino Basin.
- Objective C. Partnerships
  - Promote innovative, collaborative partnerships with local and regional agencies to strengthen long-term water supply reliability.

3.1.2 Goal 2. Public and Environmental Health

Operate in a safe and responsible manner to support the health and environmental sustainability of our communities.

- Objective D. Wastewater Treatment
    - Maintain effective wastewater operations and treatment processes to protect public health and the environment.
- Objective E. Regulatory Compliance
    - Continue to comply with all federal, state, and local laws and regulations to ensure public health and promote an ethical, safe, and healthy work environment.
- Objective F. Water Use Efficiency
    - Promote water use efficiency, education, and incentive programs to assist the region in conservation.
- Objective G. Resource Recovery
    - Manage biosolids to support Agency sustainability efforts, regional needs, and regulatory standards.
- Objective H. Environmental Impact
    - Implement and maintain environmentally sustainable business practices to support regional resilience.

3.1.3 Goal 3. Fiscal Responsibility

Responsibly manage public funds and safeguard IEUA's fiscal health to support short-term and long-term needs, while providing cost-effective services to our customers.

- Objective I. Funding and Appropriations
    - Fund operations and capital investments by maintaining reasonable service rates, adopting fees that fully support the costs of service, and seeking diverse external funding to offset overall costs.
- Objective J. Budget Planning and Reporting
    - Prepare multi-year budgets, plans, and reports to support fiscal stability.
- Objective K. Reserves
    - Maintain appropriate fund reserves which can withstand significant changes to the economy, funding sources, or operational needs.

3.1.4 Goal 4. Culture of Excellence

Foster an organizational environment where safe operations, continuous innovation, positive community engagement, and exceptional performance are consistently pursued and celebrated.

- Objective L. Work Environment
    - Engage and retain top-tier employees by fostering a collaborative work environment that values
- Objective M. Workforce Development
    - Maintain a highly skilled workforce through effective recruitment and by providing career growth opportunities, professional development, and succession planning.
- Objective N. Improvement and Innovation
    - Enhance the efficiency of internal processes and operational systems to ensure that Agency resources are used as effectively as possible.
- Objective O. Risk and Asset Management
    - Maintain robust risk and asset management practices to ensure uninterrupted service to the region.
- Objective P. Community Engagement and Advocacy
    - Provide effective public outreach and education, and advocate for the development of policies, legislation, and regulations that benefit the Agency, customer agencies, and the community.

4 Future Demand and Growth

4.1 Wastewater Flow Projection

The Agency conducts wastewater flow forecasts annually, deriving the forecast from three components: (1) historical wastewater flow trends; (2) per capita or per dwelling-unit wastewater-generation factors; and (3) expected future growth numbers provided by contracting agencies. Using these projections, the Agency determines future demands for their facilities and anticipates the modifications needed to Regional Water Recycling Plants (RWRP).

Based on analyses of the three components, the Agency has made ten-year flow projections for each of their RWRPs and for the service area. The Agency then compares the projected flows to current and future planned plant capacities, presenting alternative scenarios that reflect possible diversions, bypasses, and recycle streams. For these forecasts, the "tributary area flow" is defined as raw wastewater flow from the service area that is a natural tributary to a particular RWRP without pumps, diversion, or bypasses. In contrast, the "treated influent flow" is the actual flow that is received and treated at the RWRP. The treated influent flow is different from the tributary area flow because the RWRPs are interconnected, allowing some of the tributary flow to be rerouted between plants. In addition, treated influent flow includes the recycle streams generated during solids processing that are sent back to the plant's headworks for additional treatment.

4.2 Wastewater Flow Trends

Over the past decade the IEUA service area has experienced an increase in indoor water use efficiency as a direct result of drought, shifting public policy, more efficient building and plumbing codes, and effective conservation program campaigns. This increased efficiency has decreased the volume of wastewater flows received by IEUA treatment plants by approximately 10% since 2010. While the flows have continued to decrease, the regional population has continued to grow. The combination of an increased population but reduced wastewater flow has resulted in an increase in the strength of the wastewater coming into IEUA's treatment facilities. This trend of increased wastewater strength is expected to continue as both the population and regional water efficiency continue to increase. Current and future RWRP expansions are driven by the increased strength of wastewater flows to the facilities, rather than the volume of flows to the facilities.

Wastewater and recycled water flows have both increased from Fiscal Year (FY) 2018/2019. This increase in recycled water utilization can be attributed to the San Bernardino Avenue Lift Station and the Montclair Lift Station. The Montclair Lift Station pumps wastewater from portions of Montclair, Upland, and Chino to IEUA's RP-1 and CCWRF treatment plants. The San Bernardino Ave Pump Station pumps a portion of the flow from the City of Fontana to IEUA's RP-4 treatment plant. Together, these lift stations help shift flows that would naturally flow from one portion of the service area to a different RWRP to balance flows and keep water in the northern portion of the service area. This shift in flow allows IEUA to maximize the potential for recycled water use. These lift stations also increase regional system flexibility and allow the treatment plants to operate as an interconnected system.

Equivalent Dwelling Units (EDU) for FY 23/24 are 3,485. This is slightly lower than both the IEUA Budgeted Projections of 4,000 EDUs and the Sewage Collection Agencies (SCAs) projections of 7,778 EDUs. Two sets of projections exist to allow for conservative estimates. The SCAs' projections are required under the Regional Contract and Regional Sewage Service Ordinance No.114 and serve as a planning tool for plant treatment capacity and loading. Under the Regional Contract and Regional Sewage Service Ordinance, SCAs who report EDU projections that are lower than what the region experiences may have building moratoriums imposed. For this reason, the SCAs may make projections conservatively high. Budgeted projections are used by IEUA to project future wastewater treatment needs and fund availability. To ensure adequate fund availability, IEUA performs their own flow projections. The result of both sets of projections is the assumption that projections are conservative, ensuring the regional plants can safely and effectively treat the additional wastewater while also ensuring the agency does not over-project fund availability.

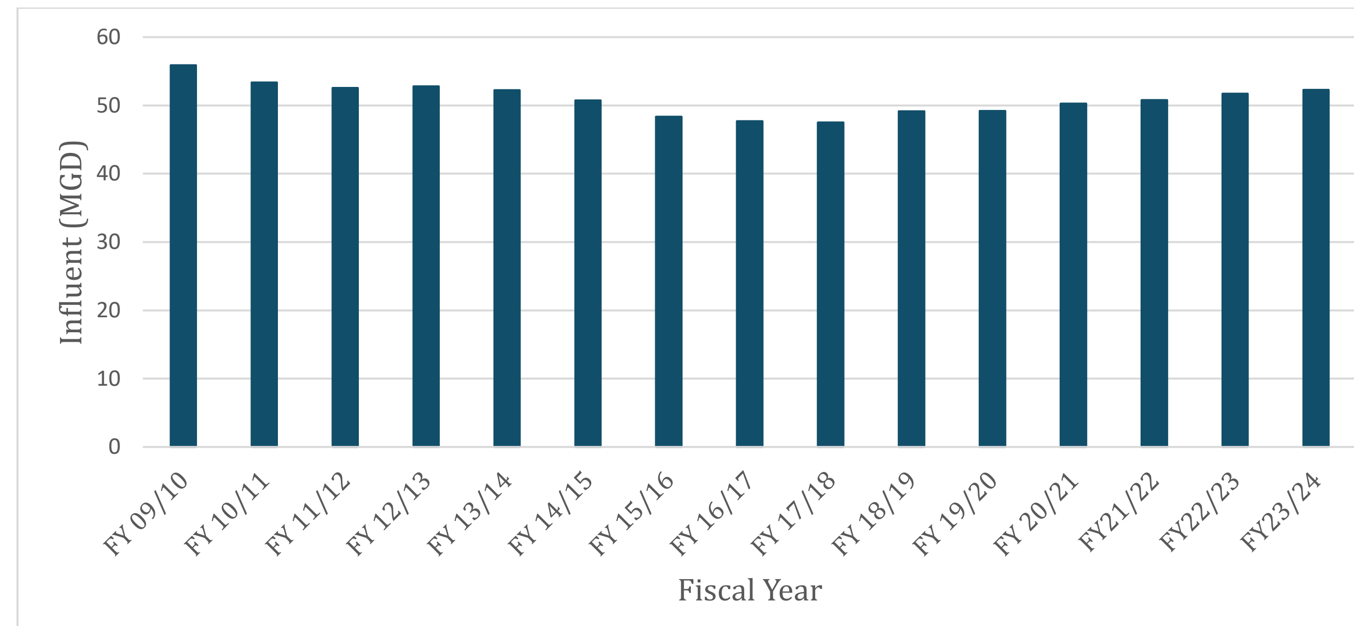

Figure 4-1 Regional Plant Wastewater Flow History

5 Infrastructure Value and Operational Cost

5.1 Asset Valuation

The replacement and depreciated values for Agency assets are summarized in Table 5-1, as of June 30, 2024

Table 5-1
Agency Replacement and Depreciated Values

Asset Group	Acquisition Value	Net Book Value (Depreciated Value)	Book Value / Replacement Value
Land	14,652,324	14,983,937	102%
Land Improvements	31,250,379	10,575,395	34%
Jobs in Progress	459,974,992	500,216,992	109%
Interceptors, Trunk Line & Inter-Ties	36,721,245	20,812,995	57%
Office Facilities	14,885,479	9,491,908	64%
Collection, Outfalls & Transfer Lines	132,723,273	43,749,512	33%
Reservoirs, Basins, Ponds, & Chlorination Stations	123,305,562	69,869,750	57%
Recycled Water Distribution System	171,167,687	118,945,470	69%
Treatment Plants, Pump Stations, & Office Buildings	314,050,701	166,176,171	53%
Equipment	291,163,856	88,908,922	31%
Intangible Assets	33,284,529	9,607,875	29%
Total	**$ 1,623,180,027**	**$ 1,053,338,927**	**65%**

5.2 Power and Chemical Usage

The agency closely monitors power and chemical usage across its facilities to ensure efficient operations and cost-effectiveness.

Table 5-2 provides a summary of the actual chemical consumption in gallons for FY 23-24, while Table 5-3 and outlines the associated costs.

Table 5-2
FY 23-24 Actual Chemical Usage in Gallons

Facility	Sodium Hypochlorite	Sodium Bisulfite	Aluminum Sulfate
RP-1	1,431,903	257,586	101,850
RP-2	24,930	-	-
CCWRF	453,128	54,475	14,013
RP-4	331,511	-	177
RP-5	476,189	115,065	-
Total (gal)	**2,717,661**	**427,126**	**116,040**
Facility	Ferric Chloride	Anti-struvite	Polymer
RP-1	252,050	17,314	152,875
RP-2	73,144	-	34,334
CCWRF	39,667	-	-
RP-4	-	-	-
RP-5	7,160	-	-
Total (gal)	**252,050**	**17,314**	**152,875**

Table 5-3
FY23-24 Actual Chemical Usage Cost

Facility	Sodium Hypochlorite	Sodium Bisulfite	Aluminum Sulfate
RP-1	2,676,962	490,447	188,335
RP-2	70,563	-	-
CCWRF	819,388	103,366	31,770
RP-4	564,578	-	6,389
RP-5	817,925	226,611	-
Total	**$ 4,949,415**	**$ 820,424**	**$ 226,493**
Facility	Ferric Chloride	Anti-struvite	Polymer
RP-1	716,449	239,901	2,391,114
RP-2	282,350	-	578,850
CCWRF	94,668	-	-
RP-4	-	-	-
RP-5	32,761	-	-
Total	**$ 1,126,227**	**$ 239,901**	**$ 2,969,964**

Table 5-4
FY 23-24 Actual Electricity Usage

Facility	Electricity (kWh)	Cost
RP-1	28,632,075	6,233,229
RP-2	2,336,946	545,954
CCWRF	9,779,841	2,191,192
RP-4	10,066,285	1,917,199
RP-5	15,084,911	2,747,367
Total	**65,900,058**	**$ 13,634,941**

6 Long-Term Asset Management

6.1 Long-Range Plan of Finance (LRPF) Model

The Long-Range Plan of Finance (LRPF) aligns the Agency's financial capacity with long-term service objectives. The LRPF uses forecasts to provide insight into the Agency's future financial capacity so that Agency strategies can achieve long-term sustainability of financial and service objectives. Actions taken in the short-term can have implications over multiple years. By projecting financial trends over a long period, the Agency can better anticipate and prepare for necessary adjustments and reduce any sudden impact to its Stakeholders and operations. This projection allows for the most cost-effective funding strategy for supporting operations and capital requirements that are in line with established policies and goals of the Agency. As outlined, the Agency's financial policies are to:

- Maintain programs that are self-supported through user fees and charges.
- Levy moderate rate increases to support program requirements.
- Employ cost containment measures that will ensure the achievement of debt-coverage ratio targets recommended by the Board of Directors.
- Maintain adequate fund balances consistent with bond covenant requirements; and
- Minimize the Agency's borrowing costs.

Development of the LRPF is ongoing, the basis for the capital projection requirements was the Agency's Ten-Year Capital Improvement Plan (TYCIP). To get the TYCIP approved in time, below is a timeline describing the process in which we need support from all Stakeholders to meet the deadlines indicated.

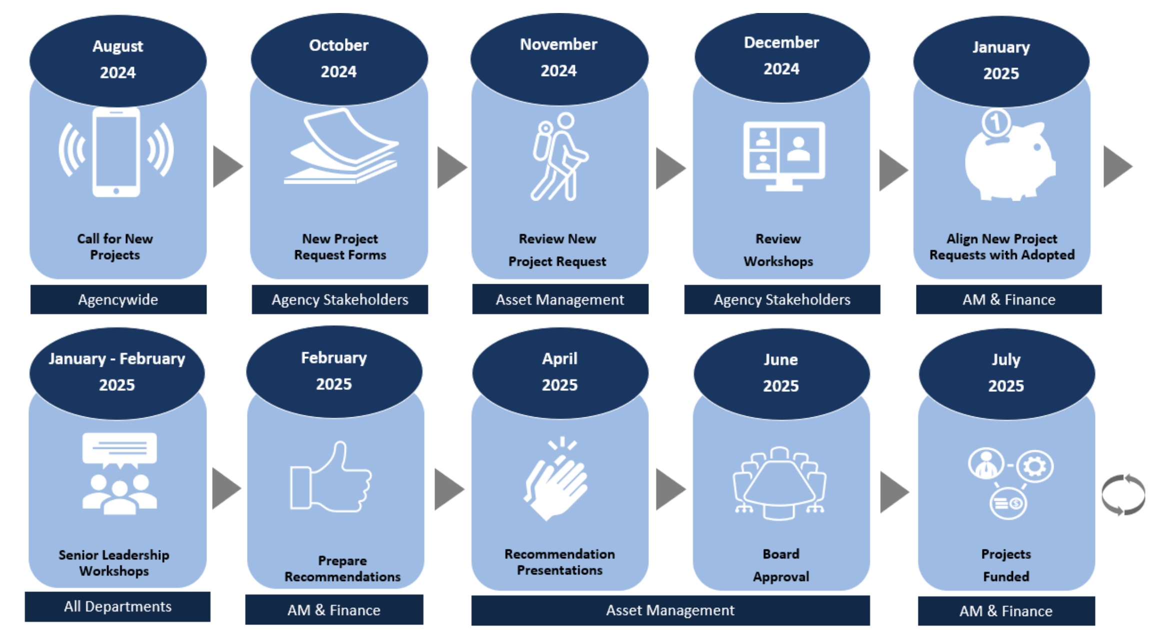

Figure 6-1 TYCIP Process

7 Asset Management System

7.1 Introduction

To assemble a comprehensive description of assets, the Agency developed summaries of each asset management system. These summaries provide the Agency with a useful tool to determine those assets that are most critical to focus on. The Agency assets are organized according to the following twelve systems.

1. Agencywide Projects
2. Regional Water Recycling Plant No. 1 (RP-1)
3. Regional Water Recycling Plant No. 2 (RP-2)
4. Carbon Canyon Water Recycling Facility (CCWRF)
5. Regional Water Recycling Plant No. 4 (RP-4)
6. Regional Water Recycling Plant No. 5 (RP-5)
7. Recycled Water Distribution System (RW)
8. Ground Water Recharge Basins (GWR)
9. Inland Empire Regional Composting Facility (IERCF)
10. Agency Lift Stations (LS)
11. Regional Sewer System (RSS)
12. Non-Reclaimable Wastewater System (NRW)
13. Agency Laboratory (Lab)
14. Agency Headquarters (HQ)
15. Business (BIZ) & Process Automation Control (PAC) Networks

When appropriate, systems have been divided into subsystems to aid in the logical presentation of information. For example, the regional water recycling plants have been divided into the following treatment process subsystems.

- Preliminary Treatment
- Primary Treatment
- Secondary Treatment
- Tertiary Treatment
- Solids Treatment
- Dewatering Treatment
- Auxiliary Systems

The Recycled Water & Ground Water Recharge Systems have been divided into the following pressure zone subsystems.

- 800-foot pressure zone
- 930-foot pressure zone
- 1050-foot pressure zone
- 1158-foot pressure zone
- 1299-foot pressure zone
- 1630-foot pressure zone (east and west)

Each summary has been developed by engineers with extensive operations experience to ensure that the systems have been thoroughly evaluated and the critical assets identified.

7.1.1 Structure of Asset Management System Summaries

The Asset Management System Summaries have been developed with a common base structure, providing a foundation for their continued use and development. The summaries are updated to reflect the current condition of each system. Each system summary follows the structure described below, beginning with a schematic, followed by a project summary table, and culminating in an asset summary.

- **Schematic** – Displays a schematic representation of the system.
- **Project Summary Table** – Lists the existing projects relating to the system along with yearly budget allocations over a ten-year period. Please note that this summary includes both capital and non-capital projects. Capital projects typically involve the acquisition, improvement, replacement, expansion, or construction of an asset. In contrast, non-capital projects are generally operational in nature. Routine operational costs such as chemicals, power, potable water, and natural gas are not included in these summary tables.
- **Asset Summaries**
  - Asset Summary – Describes the assets and their primary functions, and the key design values for assets.
  - Asset Ratings – Presents a summary score on a 1 (best) to 5 (worst) scale, based on the current performance of the asset. The standards for the scoring scale are defined in Appendix A.
  - Key Issues – Identifies issues and deficiencies based on performance data and input from Operations and Maintenance Department staff and indicates which existing projects will address each issue. If an issue is not addressed by an existing project, then the need for a potential project will be noted within the key issue description, or why a project is not being recommended at this time.
- **Planned Projects –** Describes current and future projects adopted in the TYCIP that are aimed at improving process systems.

7.1.2 Future Development of Asset Management System Summaries

The Agency will continue to maintain, update, and expand Asset Management System Summaries for future Asset Management Plans. The Asset Management System Summary for the Regional Sewer System could only be partially developed for this Asset Management Plan and will be developed further in the future.

7.1.3 Asset Management System Summaries

This section starts with Table 7-1 that summarizes Agencywide projects relating to multiple systems, that is, those not included in project tables for individual systems—followed by the Asset Management System Summaries.

7.2 Agencywide – Asset Management System Summary

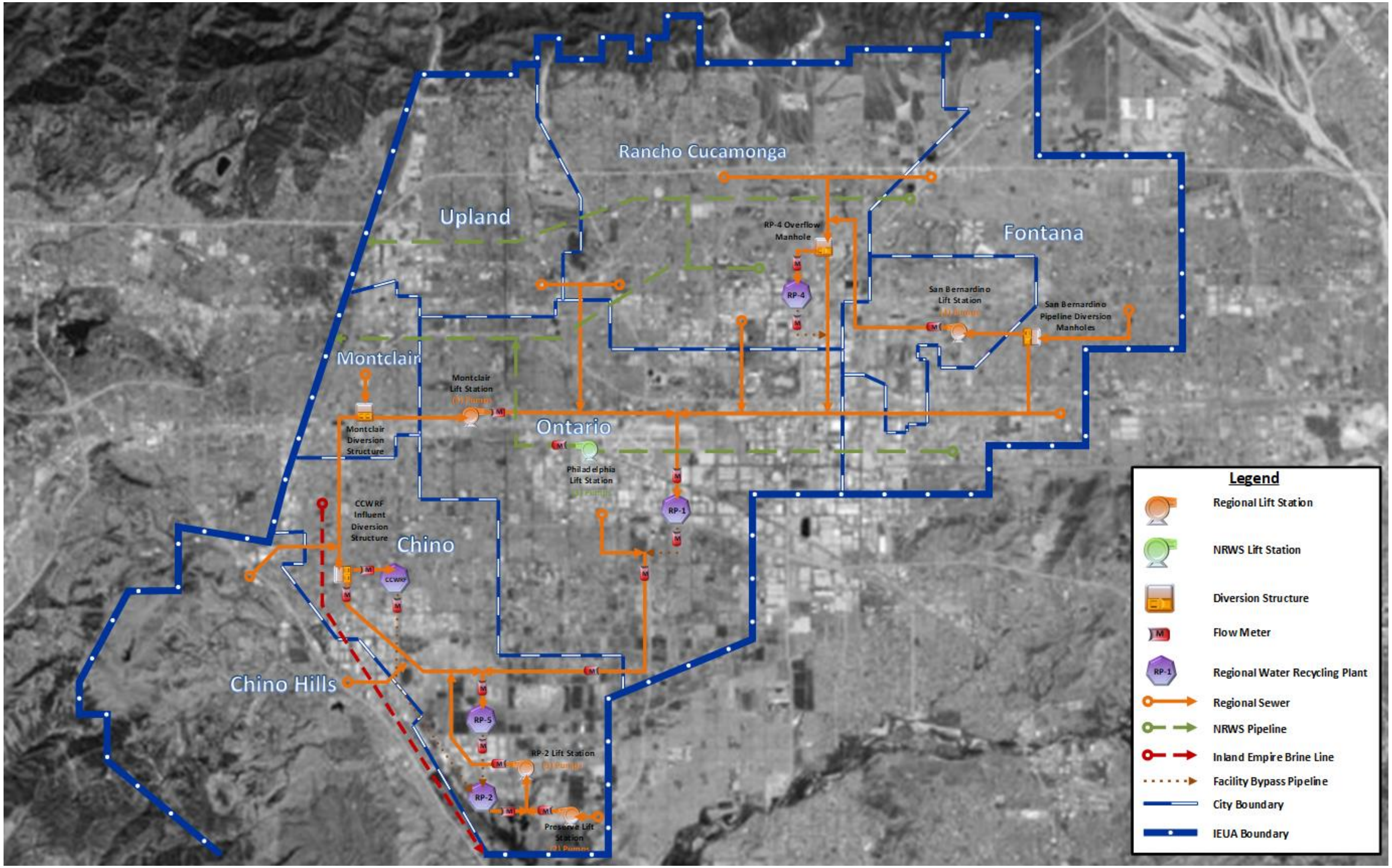

Figure 7-1 Agencywide Process Flow

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN25019	RO Emergency O&M Projects FY 24/25	Operations and Maintenance (O&M) emergency repairs to treatment facilities and collection system	RO	OM	$300,000										$300,000
2	EN25063	Agencywide Air Relief Valves	The project scope includes the replacement and standardization of air relief valves agencywide	RO	OM	$300,000										$300,000
3	WU24005	WUE Residential Device Rebates	Adds supplemental funding to MWD's base rate rebates to enhance the incentives and increase public participation	WW	OM	$22,365										$22,365
4	WU24006	WUE CII Device Rebates	Adds supplemental funding to MWD's base rate rebates to enhance the incentives and increase public participation	WW	OM	$19,700										$19,700
5	WU24011	WUE MA Administered Projects	Provides financial support for retail agencies to implement locally administered water use efficiency projects.	WW	OM	$150,000										$150,000
6	WU24013	WUE CII Turf Replacement	Offers commercial, industrial, and institutional customer incentives for turf replacement.	WW	OM	$50,000										$50,000
7	WU24014	WUE Residential Turf Replacement	Offers residential customer incentives for turf replacement.	WW	OM	$50,000										$50,000
8	PL21001	Flow & Loading Supplemental Study	Seeking the services of a Consultant Effluent flow and loading study to supplement existing data.	RO	OM	$100,000										$100,000
9	PL23004	Wastewater Flow and Loading Study	Identify current wastewater flow and loading to IEUA Regional Water Recycling Plants through direct flow monitoring and sampling at several regional sewage interceptors' locations, and to forecast future wastewater flows and loading based on service area growth projections, and water conservation efforts.	RO	OM	$114,000										$114,000
10	PL24003	Data Warehouse	Provide an off-the-shelf utility billing solution that will integrate the agencies water connection, recycled water, and sewer connection billing system.	RO	OM	$500,000										$500,000
11	PL25008	Water Quality Compliance Strategy	Identify water quality compliance issues due to existing permits and regulatory requirement changes.	RO	OM	$210,000										$210,000
12	AM24001	IEUA Asset Management Plan - Provide Consulting	Consultant shall provide technical expertise, manpower, and service to maintain IEUA's AMP accurate and current	GG	OM	$200,000										$200,000
13	FM25009	Access Gate Controls	Upgrade and modernize gate openers and receivers for equipment uniformity standards	GG	OM	$250,000										$250,000
14	AM23002	Old VFD Replacement (Recycled Water)	Project to provide material and labor to support the replacement of VFDs that have reached 15 years of service life	WC	CC	$660,000										$660,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
15	EN23034	Agencywide EV Charging Stations	Install charging stations in the following areas: Headquarters/Chino Creek Wetlands & Educational Park, Headquarter Parking Lots, RP-5, RP-1, RP-4/IERCF, CCWRF	GG	CC	$828,000										$828,000
16	AM23001	Old VFD Replacement (Wastewater)	Project shall provide material and labor to support the replacement of VFDs that have reached 15 years of service life	RO	CC	$1,100,000										$1,100,000
17	PL19005	Chino Basin Program	Preliminary Design Report and Programmatic Environmental Impact Report to begin implementation of the CBP.	WW	CC	$5,960,100										$5,960,100
18	EN24056	PLA Informational Consulting Services	Consulting for development of Project Labor Agreements	GG	OM	$75,000	$125,000									$200,000
19	EN25048	Agencywide Asset Hierarchy and Criticality Assessment	Evaluate the asset hierarchy at all Agency facilities which will lead to realigning the hierarchy to industry standards and to the standard the Agency established in the RP04 Asset Registry and Criticality Assessment.	RO	OM	$350,000	$350,000									$700,000
20	PL24002	PFAS Investigation TPB Increase	Identify the primary sources of PFAS in the Agency's water recycling facilities, implement a sewer shed scale analysis of PFAS compounds in stormwater, local runoff, wastewater from domestic, commercial, and industrial sewerage system users, and to determine the fate of PFAS compounds during the wastewater treatment processes.	RO	OM	$180,000	$50,000									$230,000
21	FM25003	Agencywide Communal Shower Rehabilitation	Reconfigure shower space to have individual shower areas at RP-1 Maintenance and RP-4 Admin Buildings.	RO	OM	$150,000	$350,000									$500,000
22	EN21020	Oracle P6 Migration and Web Hosting Serv	Upgrade P6 to software EPPMv17.x-v20.x and provide consulting services including best practices, training, canned and custom report writing.	GG	CC	$400,000	$102,656									$502,656
23	PL23012	Reg Imported Supply Reliability Analysis	Long-term modeling and analysis to identify potential impacts to local water supply reliability and quality resulting from the reduction in imported supply reliability impacted by varying hydrologist, changing regulations, proposed new facilities, and changing demands	WW	OM	$250,000	$250,000									$500,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars) 2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
24	EN20064	NSNT Sewer Siphon Replacement	The project will design and install a complete 21-inch VCP sewer bypass to the double siphon at the Cucamonga channel and 8th Street. Coordination with the San Bernardino County Flood Control and Two property owners will be required as the bypass will be installed within their Right-of-Way. In addition, the siphon will be plugged and abandoned in place. At this point, it is not expected to fill the annular space of the siphon	NC	CC	$300,000	$500,000									$800,000
25	WR25027	Urban Water Management Plan 2025	Draft the 2025 Urban Water Management Plan and Water Shortage Contingency Plan.	WW	OM	$100,000	$100,000									$200,000
	OA25001	Arc Flash Labeling (Wastewater)	Perform Arc Flash study and attach labeling to all electrical equipment that requires labeling at CCWRF, RP-2, and Prado Dechlorination Station.	RO	OM	$100,000	$100,000									$200,000
26	EN25064	Agencywide Remote Vibration Project	Implementation of agencywide remote vibration monitoring to increase asset reliability and detect early signs of catastrophic failure of critical assets.	RC	CC	$200,000	$150,000	$150,000								$500,000
27	EN25044	Asset Management Software	Develop and implement comprehensive Asset Management Software to effectively track, manage, and optimize the organization's assets throughout their lifecycle	RO	CC	$200,000	$500,000	$50,000								$750,000
28	EN25022	Development and Early Design - Compliance for Recycled Water Facilities	Design and pre-Pilot aquifer replenishment well, aquifer replenishment facilities, purified water conveyance system, and WRCRWA/ JCSD RW supplemental supplies.	WC	CC	$3,000,000	$10,000,000	$10,000,000								$23,000,000
29	WU24016	Turnkey Turf Transformation	Multi-year grant program to replace non-functional turf across 4 water districts. Work will be contracted out to a landscaping service with budgets for PR campaign, a water saving study, and administrative costs	WW	OM	$2,824,833	$2,824,833	$2,824,833								$8,474,499
30	PL18001	Calif. Data Collab. WUE Data Analytics	Assistance with the California Data Collaborative to pioneer a new water use efficiency (WUE) data infrastructure non-profit to support water managers in meeting their reliability objectives and serve the public good.	WW	OM	$10,000	$10,000	$12,500								$32,500
31	WR23004	Discover the Environment and Water (DEW)	The new education facility will act as a visitor's center for the organized field trips and tours held within the Chino Creek Wetlands and Educational Park.	WW	OM	$200,000	$200,000	$161,425								$561,425
32	EN23021	Agencywide Infiltration and Inflow Study	Pipeline Analysis, an engineering firm specializing in wastewater collection systems, will conduct field tests and monitoring.	RO	OM	$200,000	$200,000	$150,000								$550,000
33	WR20028	Upper SAR HCP& Int. Model-Water Benefits	Model for surface and groundwater flow along the Santa Ana River from Yucaipa to Prado Dam	WW	OM	$30,000	$30,000	$30,000								$90,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
34	AM24010	Agencywide O&M Manual Update	Consultant services to create an up-to-date O&M Manual for the RP-1, RP-4, and other wastewater treatment plants to meet NPDES permit requirements.	RO	OM	$1,000,000	$1,000,000	$1,000,000								$3,000,000
35	PA21002	Agencywide Coatings	The Agency's process piping is aging and requires periodic rehab or repairs. This project will ensure coating and painting for each facility is properly maintained.	RO	OM	$388,810	$445,975	$353,354	$260,955							$1,449,094
36	EN25070	Development and Early Design-Compliance for Wastewater Facilities	Design and Construction of the Advanced Water Purification Demonstration Facility at RP-4.	RC	CC	$4,500,000	$13,700,000	$12,000,000	$15,000,000							$42,200,000
37	EN25059	Security Upgrades	Upgrade Agency physical security systems such as security cameras, burglary and perimeter alarms, panic buttons, door fobs, and gate controls	GG	CC	$600,000	$600,000	$600,000	$600,000	$600,000						$3,000,000
38	EN24027	Fall Protection and Prevention Solutions at specified wastewater locations	Evaluate various locations, configurations, and buildings for fall protection systems, tie-off points, tie-off equipment, and restraint systems and design install indemnified solutions to meet CAL/OSHA Regulatory Standards	RC	CC	$996,000	$2,000,000	$2,000,000	$2,000,000	$500,000						$7,496,000
39	WR21028	Implement. of Upper SAR HCP - Wtr Benefi	Implementation of the Santa Ana River Habitat Conservation Plan (HCP) is part of the Agency's long-term water resources and environmental permitting strategy for the groundwater recharge	WW	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000			$2,000,000
40	WR16001	Water Softener Removal Rebate Program	The water softener removal program incentivizes residents to remove and dispose existing self-regenerating water softeners, removing tons of salt from the recycled water supply, and improving water quality in Chino Basin.	WC	OM	$75,000	$75,000	$75,000	$50,000	$25,000	$25,000	$25,000	$25,000			$375,000
41	WR21029	Implement. of Upper SAR HCP - Recy Water	Implementation of the Santa Ana River Habitat Conservation Plan (HCP) will support existing groundwater recharge basin maintenance and Optimum Basin Management Plan implementation, increase recycled water use by minimizing discharges, and diverting dry weather flows to regional water recycling plants and increase water supplies	WC	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000			$2,000,000
43	EP24001	Agencywide Major Facilities O&M Repair/Replacement	Replacement of aging infrastructure, safety enhancements to plant equipment and facilities and the purchase of critical spare equipment	RO	CC	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000		$9,000,000
44	FM25004	Agencywide Facilities Rehab & Repairs	Improve aesthetics of all Regional Plants throughout the Agency. Project will ensure buildings and structures for each facility are maintained	RO	OM	$60,000	$60,000	$60,000	$62,000	$64,000	$66,000	$70,000	$70,000	$70,000	$70,000	$652,000
45	PL25006	Regional Operation Planning Documents	Create Regional Operation planning documents to support regional wastewater sustainability.	RO	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
46	WR25001	Water Supply Planning Document	Create planning documents to support water sustainability and development.	WW	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000
47	WU25001	WUE General Program Fund	Project is used as an account to consolidate unspent WUE funds	WW	OM	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$50,000
48	WU25002	CBWCD Leap	Partnership with Chino Basin Water Conservation District to provide evaluations, reports, and education for residents within the IEUA service area	WW	OM	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$300,000
49	WU25003	Landscape Training Classes	Program funds landscape instructors to teach residential landscape workshops within IEUA's nine retail member agency service area	WW	OM	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$100,000
50	WU25004	Large Landscape Retrofit	Provide residential properties of 0.25 acre or larger with installation of efficient irrigation systems	WW	OM	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$1,600,000
51	WU25005	Residential Device Rebates	Supplemental funding to MWD's base rate rebates to enhance incentives and increase public participation	WW	OM	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$500,000
52	WU25006	CII Device Rebates	Supplemental funding to MWD's base rate rebates to enhance incentives and increase public participation	WW	OM	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$50,000
53	WU25007	National Theater For Children	Provide live theater performances for students K-6th focusing on water conservation, water use efficiency, and environmental issues.	WW	OM	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$400,000
54	WU25008	Sponsorships and Public Outreach	Support for regional water use efficiency marketing, public outreach, membership dues (CalWEP/AWE), BMP Support Grants, and special events	WW	OM	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$300,000
55	WU25009	WUE Pilot Program	Pilot Program for IEUA and customer agencies to implement new small projects to help better analyze programs for larger scale projects.	WW	OM	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$400,000
56	WU25010	PRV Program	Provides residential customers within high pressure zones with free Pressure Reducing Valve assessments, repairs, and replacements.	WW	OM	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$800,000
57	WU25011	MA Administered Projects	Allow retail agencies to implement a locally administered water use efficiency project	WW	OM	$290,000	$290,000	$290,000	$290,000	$290,000	$290,000	$290,000	$290,000	$290,000	$290,000	$2,900,000
58	WU25012	Small Site WBIC Upgrades	Program providing mandatory training class, landscape evaluation, and upgrading controller to a weather-based device for residential customers with a lot size smaller than 11,000 ft sq.	WW	OM	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$3,500,000
59	WU25013	CII Turf Replacement	IEUA and retail agencies funding to enhance MWD's base rate rebate to increase customer interest and participation	WW	OM	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$50,000
60	WU25014	Residential Turf Replacement	IEUA and retail agencies funding to enhance MWD's base rate rebate to increase customer interest and participation	WW	OM	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$50,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
61	WU25015	Landscape Irrigation Tune-ups	Provide residential customers within IEUA service area with landscape irrigation assessments, minor irrigation repairs, controller programming, and irrigation scheduling	WW	OM	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$5,000,000
62	FM25002	Agencywide Painting Services for Bldgs.	Painting services to improve the aesthetics of the Regional Plants throughout the Agency and ensure the buildings and structures for each facility are properly maintained.	RO	OM	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,000,000
63	EN25062	Magnolia Channel Restoration	Magnolia Channel annual cleaning and restoration.	GG	OM	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,000,000
64	FM25013	Agencywide Appliance Replacement	Replacement of outdated and damaged appliances Agencywide.	GG	OM	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$200,000
65	EN25049	Condition Assessment Planning Development and Documentation	Develop a Condition Assessment Master Plan, which will determine asset intervention options based on risk score	RO	OM	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
66	EN25050	Maintenance and Reliability Consulting Services	Review existing Preventative Maintenance tasks within CMMS System and recommend adjustments to better fit Asset Life Cycle Management requirements	RO	OM	$300,000	$300,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,600,000
67	EN25051	Regional Operation Condition Assessments	Assess current condition, remaining useful life, and rehab/repair recommendations within critical assets of the regional wastewater system	RO	OM	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$1,500,000
68	EN25052	Regional Operation Safety On-Call O&M Projects FY 24/25	On-call operations and maintenance projects regarding prompt attention to maintain a safe working environment	RO	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000
69	EN25053	Regional Operation Small On-Call O&M Projects FY 24/25	O&M projects regarding prompt attention to maintain compliance and efficiency for treatment facilities and collection systems	RO	OM	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$5,000,000
70	EN25054	Regional Operation Technical Support Projects	Internal and consulting labor to address special projects in Regional Operations that are currently undefined	RO	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000
71	EN25057	CIPO Enhancements FY 24/25	Enhance CIPO, current Project Management Documentation Tracking System, with various updates.	GG	CC	$285,000	$285,000	$285,000	$285,000	$285,000	$285,000	$285,000	$285,000	$285,000	$285,000	$2,850,000
72	FM24010	Agencywide Office Furniture Replacements	Ongoing office furniture replacement project	GG	CC	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$600,000
73	FM25005	Agencywide HVAC Equipment Replacements	Replace and upgrade failed HVAC equipment agencywide, increased cost estimate due to inflation	GG	CC	$300,000	$160,000	$170,000	$170,000	$180,000	$190,000	$190,000	$190,000	$190,000	$190,000	$1,930,000
74	FM25006	Agencywide Vehicle Replacement	Purchase of new vehicles to replace aging fleet vehicles	GG	CC	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000
75	EN25046	Regional Operation Project PDR's FY 24/25	Preliminary Design Reports for new project requests from O&M	RO	CC	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
76	FM25007	Electric Vehicle Purchase	Purchase of new electric vehicles to replace aging fleet vehicles	GG	CC	$150,000	$150,000	$200,000	$200,000	$200,000	$250,000	$250,000	$250,000	$300,000	$250,000	$2,200,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
77	EN26019	RO Emergency O&M Projects FY 25/26	Operations and Maintenance (O&M) emergency repairs to treatment facilities and collection system.	RO	OM		$300,000									$300,000
78	EN23025	Agency Power Monitoring	Purchase and install new power monitoring system on all renewable energy installation at Agency major facilities. Program new PM into existing SCADA system for each site to be used for monitoring and reporting	RC	CC		$499,457									$499,457
79	EN24034	Agencywide Roofing Phase IV at CCWRF	Most of the Agency's Regional Plants have buildings that are over 25 years old. The building's roof systems are aging and require periodic rehab or repairs. This project will ensure roof replacements and rehab for each facility are completed. A roofing assessment for the Regional Plants is currently being evaluated for repair and replacement needs. Agencywide annual maintenance for roofing	GG	CC		$200,000	$900,000								$1,100,000
80	FM21005	Structural Agencywide Roofing Phase II	Agencywide annual maintenance of roofs is needed to maintain building integrity and usefulness. The repairs/replacement will occur over a five-year period	GG	CC		$250,000	$1,050,000	$250,000	$1,021,000						$2,571,000
81	PA22003	Agencywide Paving	Most of the Agency's paved areas are aging and require periodic rehab or repairs. This project will ensure paving for each facility is properly maintained. Asphalt pavement repairs are evaluated for repair and replacement needs. Agencywide annual maintenance for paving.	RO	OM		$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$185,000	$3,385,000
82	EN22024	Asset Management Cleaning Services	Digesters are to be cleaned periodically to avoid the build-up of solids in the tank that affect the dewatering process when proper cleaning/management of the solids is not performed.	RO	OM		$500,000	$2,000,000	$1,000,000	$2,000,000	$3,000,000	$1,000,000	$3,000,000	$3,000,000	$2,992,500	$18,492,500
83	EN26007	IEUA Asset Management Plan Updates	Consultant cost to support the updating of the Agency's Asset Management Plan	GG	OM		$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$1,800,000
84	EN26004	Agencywide VFD Upgrades (Wastewater) FY25/26	Replacement of wastewater Variable Frequency Drives that have reached the end of their service life.	RO	CC		$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$8,640,000
85	EN26001	Agencywide VFD Upgrades (Recycled Water) FY25/26	Replacement of recycled water Variable Frequency Drives that have reached the end of their service life.	WC	CC		$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$960,000	$8,640,000
86	EN24033	Annular Seals	Verification of each annular seal to determine replacement.	RO	CC			$1,000,000								$1,000,000
87	PL19001	Purchase Existing Solar Installation	Evaluation of the economics of procuring the existing solar equipment at each IEUA facility to avoid electricity expenses for the energy generated from the panels moving forward.	RC	CC			$3,500,000								$3,500,000

Table 7-1
Agencywide Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
88	EN27019	Regional Operation Emergency O&M Projects FY 26/27	Fund for the Engineering and Construction Management Department to fund emergency Regional Operations O&M Projects	RO	OM			$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$2,400,000
89	WR23001	Injection Facilities	Design and construction of approximately 8 miles of purified water pipelines from the Advanced Water Purification Facility at RP-4, 16 injection wells, and 4 monitoring wells	WC	CC				$25,000,000	$38,000,000	$50,000,000	$35,000,000	$30,000,000			$178,000,000
90	EN28004	Advanced Purified Water Conveyance	Design and construction of 10 miles of purified water conveyance system needed to move purified water for the Advanced Water Purification Facility to aquifer replenishment facilities.	WC	CC				$500,000	$3,500,000	$20,000,000	$30,000,000	$19,000,000			$73,000,000
91	EN28007	Advanced Water Purification Facility	A proposed AWTF with a potential treatment capacity of approximately 15 million gallons per day (MGD). The AWTF may be constructed within existing IEUA facilities. The AWTF may utilize recycled water, potentially from Regional Water Recycling Plant No.4 (RP-4). The AWTF may include a Microfiltration (MF) treatment facility, Reverse Osmosis (RO) treatment facility, Ultraviolet-Advanced Oxidation Process (UV-AOP) treatment or similar disinfection process, booster pump station, standby power for critical processes, chemical storage, truck off-loading.	RC	CC				$12,000,000	$20,000,000	$63,000,000	$65,000,000	$63,000,000			$223,000,000
92	EN22010	GG Asset Management Project	Solicit for qualified firms to provide consulting services to meet the goal of the AM program and seek contractors to implement condition assessment activities or needed repairs or rehab. The activities will be specific to the Recycled Water Pumps Station and Reservoir Systems	GG	CC						$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$5,000,000
93	EN30005	Regional Operation Asset Management	The scope of the project includes internal and consulting labor to address capital projects, undefined, in Regional Operations.	RO	CC						$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$5,000,000
94	EN22006	RC Asset Management	Solicit for qualified firms to provide consulting services to meet the goal of the AM program and seek contractors to implement condition assessment activities or needed repairs or rehab. The activities will be specific to the Regional Lift Stations.	RC	CC									$8,000,000	$8,000,000	$16,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (OM), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.3 Regional Water Recycling Plant No.1- Asset Management System Summary

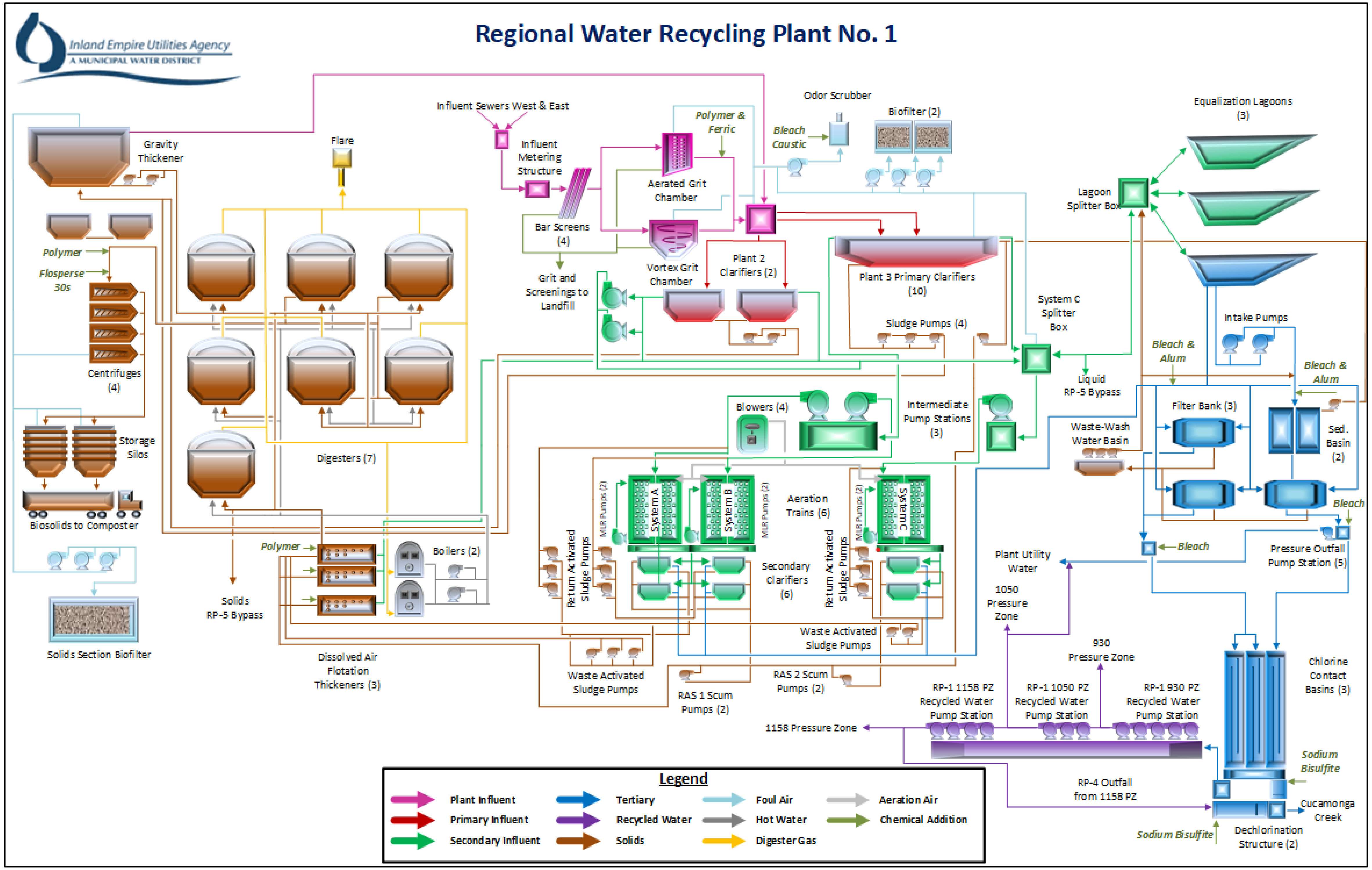

Figure 7-2 Regional Water Recycling Plant No. 1 (RP-1)

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)*										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN24020	RP-1 Dewatering Centrate Pumps	Remove existing ESSCO pumps due to poor reliability and low performance. Install new reliable pumps. Remove and replace the existing railing system.	RO	CC	$1,550,000										$1,550,000
2	EN21056	RP-1 Evaporative Cooling for Aeration Blower Building	Add evaporative cooling or AC system to prevent equipment inside blowers building from failing due to overheating.	RO	CC	$1,311,000										$1,311,000
3	EN11039	RP-1 Disinfection Pump Improvements	Replace bleach pumps and underground piping for both sedimentation basin and bleach storage which is prone to failure and provide chemical containment system within the pump area.	RC	CC	$455,000										$455,000
4	EN18006	RP-1 Flare Improvements	Replace the gas system and flares to meet air quality requirements set by the South Coast Air Quality Management District (SCAQMD).	RC	CC	$289,000										$289,000
5	EN23111	RP-1 Headworks Bar Screen System Improvement	Replace four existing influent bar screens to increase debris capture and reduce process interruptions, equipment downtime, and additional maintenance downstream of headworks.	RO	CC	$900,000										$900,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)[*]										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
6	EN17042	Digester 6 and 7 Roof Repairs	Repair cracks to the roof of digesters 6 and 7 along with a complete cleaning and inspection. Development of performance standard and/or metric for "gas tightness" of tanks, pipes, and other components of digester gas systems. Replace heavily corroded gas piping on top of digesters and coat some piping	RO	CC	$2,200,000										$2,200,000
7	FM25012	New Guard Shack at RP-1	Replace the Guard Shack with a 10x10 prefabricated or custom-built structure. Revise pathways for electrical and networking connections for future use. Recommend installing a corrugated roof structure to shade out the guard shack but still allow 360 visibilities.	RC	CC	$200,000										$200,000
8	EN25056	RP-1 Admin Building Entryways	Install Air Curtains above Access doors. Replace Visitor Entry Doors.	RO	OM	$150,000										$150,000
9	FM25010	RP-1 Office Furniture	Hire a furniture company to design the workspace layout and install new furniture.	GG	OM	$250,000										$250,000
10	EN22022	RP-1 Air Compressor Upgrades	Operations are requesting a centralized air compressor system to provide process air.	RC	CC	$1,500,000	$2,700,000									$4,200,000
11	EN23000	RP-1 Device Net Replacement	Evaluate the age and quality of MCC's with E3 overloads to determine if a partial or full replacement is required.	RO	CC	$1,000,000	$1,000,000									$2,000,000
12	EN19009	RP-1 Energy Recovery	Engineering consultant to prepare a study, alternative analysis, and financial analysis to maximize the use of DG as an energy source for long-term planning projections.	RO	CC	$1,000,000	$500,000									$1,500,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)[*]										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
13	EN20051	RP-1 MCB and Old Lab Building Rehab	Design and document related to demolition and construction of the building rehab project include cost for project management and construction administrative and inspection supports	RO	CC	$1,404,000	$860,000									$2,264,000
14	EN21053	RP-1 Old Effluent Structure Rehabilitation	Gate and stems are already severely corroded. The cost includes complete rehabilitation of structure and valves.	RO	CC	$450,000	$1,450,000									$1,900,000
15	EN24032	RP-1 Primary Clarifier #1 and #10 Rehabilitation	Perform root-cause analysis and provide best fixes of the scum collection system and the current primary clarifier influent channel flow distribution.	RO	CC	$1,210,000	$1,000,000									$2,210,000
16	EN22027	RP-1 Repurpose Lab	Design, bid, and construction will be performed to allow the building to be used for a new use. It is anticipated this will include the relocation of source control from the Main HDQ to free up space and centralize this activity and provide additional office space for Operations personnel	RO	CC	$1,500,000	$754,000									$2,254,000
17	EN22031	RP-1 Intermediate Pump Station Electrical	Replace MCC 6M and 8M with the new Allen Bradley IntelCenter. Install new 18 pulse VFDs for IPS pump motors # 2, 3, 4, 5, 8, 9, and 10. Replace the existing IPS VFDs # 1,6, and 7 due to them reaching end of useful life. Replace lighting panel LP15, associated transformer, and all 10 of the IPS pumps.	RO	CC	$500,000	$3,000,000	$3,000,000								$6,500,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)[*]										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
18	EN18025	RP-1 Secondary System Rehabilitation	Rehabilitate the concrete surfaces and recoat the metal components of the secondary clarifiers. Replace the above ground PVC sprayer piping and provide protection from UV rays.	RO	CC	$500,000	$2,000,000	$7,000,000	$2,000,000							$11,500,000
19	EN22044	RP-1 Thickening Building & Acid Phase Digester	Construct the RP-1 Solids Thickening Building to contain rotary drum thickeners, three Acid Phase Digesters, and all ancillary equipment for this system. Expand the RP-1 12kV electrical system. Complete other misc. system improvements (odor control, primary sludge VFD's, cleanouts, interim RDT, and site demolition)	RC	CC	$20,000,000	$65,000,000	$55,000,000	$5,500,000							$145,500,000
20	EN23024	RP-1 TP-1 Stormwater Drainage Upgrades	Repair the old discharge line and tie in a permanent pump or if unable to repair line, will need to be replaced. A permanent pump and pipeline installation needs to be constructed to minimize potential flooding and potential permit violation of spillover into the creek.	RO	CC	$57,000	$300,000	$904,500	$6,416							$1,267,916

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)[*]										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
21	EN24002	RP-1 Solids Treatment Expansion	Replace the existing solids thickening systems with new rotary drum thickeners to improve solids thickening. Construct three new smaller acid phase digesters to improve operational performance. Add recuperative thickening to the digestion process to increase performance and eliminate the need to construct one additional digester. Replace the existing odor control with a new two-stage Bio scrubber with carbon polishing.	RC	CC	$500,000	$4,000,000	$4,000,000	$10,000,000	$20,000,000	$8,249,000					$46,749,000
22	IS25008	Operational Technology Infrastructure New Assets	Purchase additional network infrastructure, including switches and Wi-Fi access points and controllers to support growth and expansion of the Agency. Expand technology infrastructure at RP-1 and RP-4 to support disaster recovery and business continuity.	GG	CC	$100,000	$105,000	$110,000	$130,000	$140,000	$150,000	$160,000	$170,000	$185,000	$195,000	$1,445,000
23	IS25010	Operation Technology Infrastructure for New Assets	Extend Wi-Fi coverage into process areas at treatment and operations facilities. Equipment purchased will include network infrastructure, switches, access points, and wireless controllers.	RC	CC	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$1,050,000
24	EN20045	RP-1 TP-1 Level Sensor Replacement	Replace existing bubbler level sensor system with new ultrasonic level sensors on 18 filters.	RO	CC		$500,000									$500,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)*										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
25	EN20044	RP-1 Plant 3 Primary Cover Replacement	Design a new service of primary clarifier covers which can be secured so they don't fly away in the wind but are user friendly to Operations staff who must have the ability to open and move covers as needed for inspection and housekeeping. Operations request for hinged covers to match existing hinged FRP covers with 316 SS hardware. Examples of existing FRP covers can be in drawing set D6539.	RO	CC		$400,000									$400,000
26	EN26005	RP-1 Plant Air Expansion Tank Replacement	This project includes condition assessment, removal, disposal, and replacement of existing air expansion tanks in-kind.	RO	CC		$250,000									$250,000
27	EN23102	RP-1 New Parking Lot	Parking is needed for Collections, ISS, and equipment to be moved to site after conversion of RP-1 Lab.	GG	CC		$500,000	$600,000								$1,100,000
28	EN26006	RP-1 Plant Air Expansion Tank Rehabilitation	This project includes the replacement of existing air expansion tanks to extend the useful life.	RO	OM		$100,000	$400,000								$500,000
29	EN26008	RP-1 Centrate Line Struvite Prevention	The project will add a total of 5-6 HydroFlow units to the centrifuge building for operational efficiency and struvite prevention. The project will install a power supply to the four (4) HydroFlow units at the sludge feed influent pipes at the inlet of the centrifuge and one (1) to two (2) HydroFlow units to centrate line downstream of the centrate pump.	RC	CC		$250,000	$500,000								$750,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)*										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
30	EN26009	RP-1 Grit Classifiers Replacement	Remove and replace existing headworks grit classifiers with units stored at RP-1 facility: need foundation, rework piping, electrical, communication, and SCADA DCS.	RO	OM		$250,000	$250,000								$500,000
31	EN23114	RP-1 Instrumentation and Control Enhancements	Assess all the PCN requests, design, and construct the required electrical and control wiring infrastructure needed to implement the PCN request list for a comprehensive completion to the RP-1 SCADA Migration Upgrades Project	RO	CC		$200,000	$1,000,000								$1,200,000
32	EN24029	RP-1 Tertiary Asset Manager Phase I	Replacement of 26 filter effluent valves and #4 influent tee. Rehabilitation of sodium bisulfite (SBS) pump and sedimentation basin sludge pump.	RO	CC		$500,000	$2,500,000	$989,000							$3,989,000
33	EN24028	RP-1 Utility Water Piping Asset Management Phase I	Replace all utility water piping in digester area that has reached the end of life. This will include new potable water pipelines and isolation valves to increase efficiency.	RC	CC		$120,000	$1,500,000	$700,000							$2,320,000
34	EN28002	RP-1 Centrate Treatment	Perform a pipeline condition/capacity assessment on the entire RP-1 centrate pipeline system from RP-1 to the NRW and centrate pumps. Recommendations from the pipeline assessment will be turned into another project to recover pipeline capacity. Defer the above and instead replace the pump impellers to match the design that was implemented during construction of the facility.	RC	CC				$1,600,000	$3,300,000	$3,300,000					$8,200,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)[*]										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
35	EN29006	RP-1 Dewatering Silos Levelers Relocation	Modification to the RP-1 Dewatering Silos levelers to lower the leveling screws to be able to spread the biosolids evenly throughout the silos and add an extra 30.000-40,000 lbs. of biosolids in each silo.	RO	CC					$500,000	$1,400,000					$1,900,000
36	IS28001	Operational AI and Machine Learning	Improve operational efficiency and standardization, improving water quality and reducing operational cost.	RO	CC					$300,000	$300,000					$600,000
37	EN29008	RP-1 Equalization Basin #1 Access Ramp	Design and construct an access ramp for lagoon access.	RC	CC					$35,000	$106,500	$300,000				$441,500
38	EN29009	RP-1 Operations and Maintenance Building Rehabilitation/ Modernization	Rehabilitation and modernization of conference rooms, operations lab, locker/restrooms, doors/ windows, flooring, ceiling tiles, and lighting.	RC	CC					$50,000	$450,000	$1,000,000	$8,000,000	$7,000,000		$16,500,000
39	EN24001	RP-1 Liquid Treatment Capacity Recovery	Evaluation of treatment options and provide design to upgrade the treatment plant to 40 million gallon per day.	RC	CC					$3,000,000	$12,000,000	$15,000,000	$15,000,000	$35,000,000	$50,000,000	$130,000,000
40	EN30025	RP-1 Dump Station	The project would rehabilitate the headworks gate; place key FOB for waste-haulers to gain entrance to headworks through the gate; place new concrete with wash station and related collection drains to the plant; and place removeable, chain-link fence with through gate to plant. Cameras, perimeter alarm, and other safety and security upgrades would also be made to make the station usable 7-days a week and after 3:30pm.	RC	CC						$750,000	$1,100,000				$1,850,000

Table 7-2
Regional Water Recycling Plant No.1 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)*										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
41	EN25020	RP-1 Digester Cleaning Lagoon (DCL) Lining	Place a liner material at the base and sidewalls of the DCL to prevent groundwater intrusion. The lining should be able to support heavy equipment. Depending on the RP-1 Capacity Recovery project, this project may or may not be necessary.	RO	CC								$100,000	$600,000		$700,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.3.1 Preliminary Treatment Process – RP-1

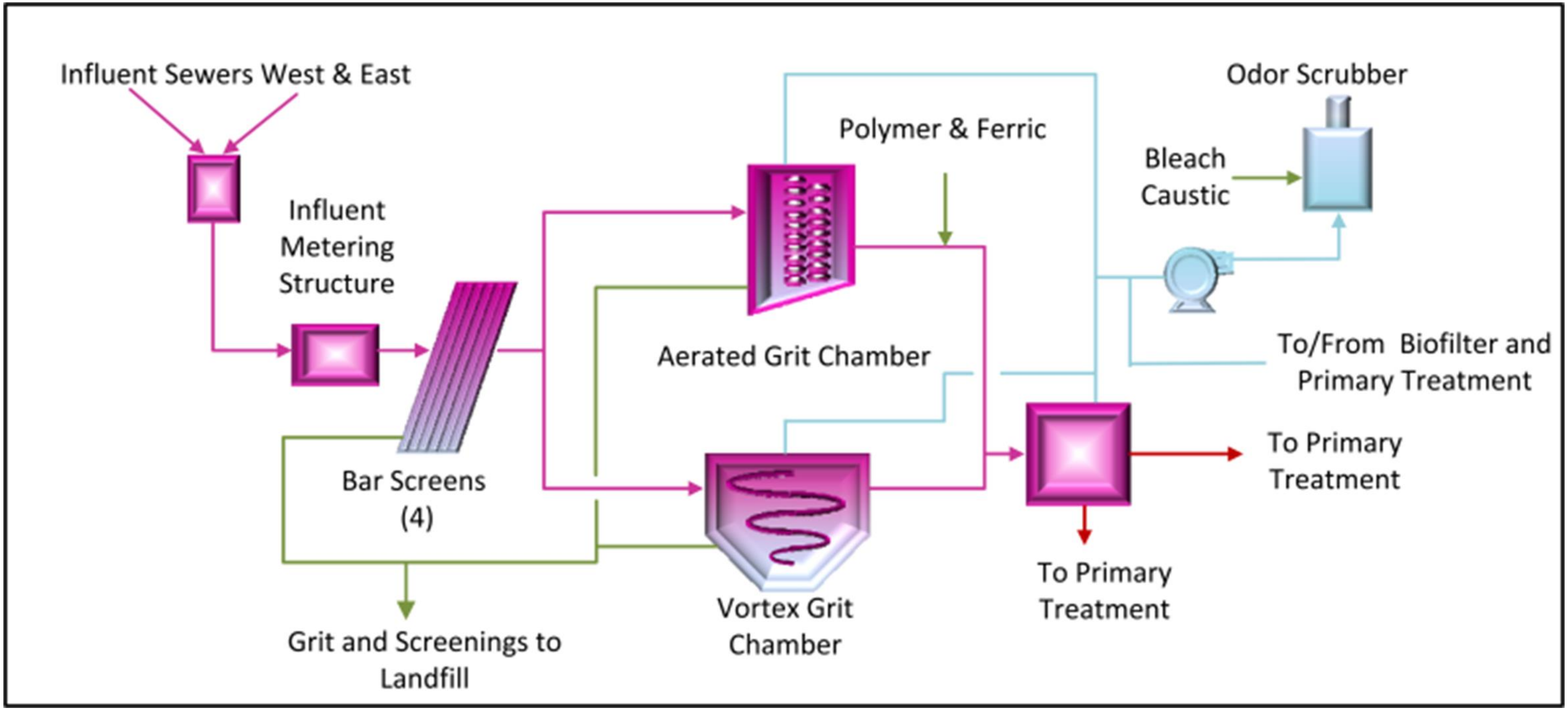

Figure 7-3 Preliminary Treatment Process RP-1

7.3.1.1 Asset Summary - Preliminary Treatment Process RP-1

Table 7-3
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Preliminary Treatment Process			44 MGD	
Influent Channel and Metering Station	Two main trunk lines (east and west) bring influent sewer flows into RP-1 through the influent structure with gates to divert flow to either of two Parshall flume flow meters. Flow from the influent metering station enters a common channel before the bar screening structure. A septage dump station for private haulers is located upstream of the screening equipment.	East Sewer West Sewer Parshall Flumes Gates Septage Station	42-inch 42-inch 2 @ 55 MGD 2 units 1 unit	 Per Unit
Screening Equipment	Gates divert the flow to six channels, four mechanical bar screens, one manual bar screen, and one bypass channel. The 3/8-inch spaced bar screens capture large debris, protecting downstream processes. A mechanical multi-rake collects debris and drops the screenings on the screening conveyance/disposal system. Liquid flow passes through the bar screen into a common channel that feeds the grit removal systems	Mechanical Screen Manual Screen Gates	4 @ 16 MGD 1 @ 27.5 MGD 15 units	 Per Unit
Aerated Grit System	Flow enters a series of three-square aerated grit chambers (AGC) through five gates. Three air-lift pumps, supplied by two air blowers, pump collected grit up to the grit washing/disposal system. Air from the blowers also provides air for agitation. Liquid flows through gates to a common channel and then to the headworks splitter box.	Chambers Pumps Blowers Gates	1 @ 44 MGD 3 @ 150 GPM 2 @ 360 scfm 10 units	 Per Unit Per Unit
Vortex Grit System	Flows from the bar screens are directed to the influent of the circular vortex grit chamber. A paddle mixer pushes flow in a circular path; grit collects at the bottom, where it is pumped to the grit washing/disposal system.	Chamber Pump Gates	1 @ 20.4 MGD 1 @ 300 GPM 4 units	
Grit Washing/Disposal System	Grit pumped from the AGC and vortex grit chamber enter the Headworks Building where it flows to two grit classifiers. The grit sinks to a submerged screw that pulls the grit out of the water and drops grit into two screw conveyors. The conveyors lift and transport the grit to a roll-off bin. The excess liquid spills out of the grit classifiers and is directed back to the bar screen structure effluent channel.	Classifiers Conveyors	2 @ 300 GPM 2 @ 3 wet tons/hr	Per Unit Per Unit
Screening Conveyance/ Disposal System	Screenings collected by the bar screens are transported by a conveyor and dropped into a hydraulic compactor. The compactor compresses the collected screenings, squeezes out excess water, and pushes the screenings to the roll-off bin.	Conveyor Compactor	5.0 hp 5.0 hp	
Ferric Chloride System	Ferric chloride is added to the liquid flow after grit removal to enhance primary treatment and to control sulfide emissions. The ferric station consists of a truck filling station, storage tank, three chemical metering pumps, and associated piping.	Tank Pumps	10,000 gallons 3 @ 37.4 gph	 Per Unit
Headworks Splitter Box	The headworks splitter box receives flow from both grit systems, the bar screen's structure bypass, and the overflow from the solids section gravity thickener. Flow can be diverted to Plant 3 rectangular clarifiers or to Plant 2 circular clarifiers for primary treatment.	Gates	3 units	
Odor Scrubber	Foul air collected in the preliminary and primary treatment processes is forced through the odor scrubber tower with plastic porous media, where a solution of bleach and caustic soda trickles against the air flow to oxidize hydrogen sulfide and other compounds. The odor scrubber is used to supplement the foul air treatment provided by the biofilter.	Blowers Valves	2 @ 8,000 scfm 2 units	Per Unit > 18-inch

7.3.1.2 Asset Ratings- Preliminary Treatment Process RP-1

Table 7-4
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Influent Channel and Metering Station	5	3	4	2	The east and west isolation gates have been replaced with the old gates abandoned in place. There is no odor control directly tied into the influent channel. The septage dump station is out of date and requires manual sampling of the septic flow prior to dumping. Severe concrete corrosion. Project EN30025 will rehabilitate the headworks gate and allow for pump station usage 7-days a week. EN23111 rehabilitated the influent channel.
Screening Equipment	1	1	2	1	The bar spacing allowed a significant number of debris to reach downstream processes and have been replaced by 3/8-inch spaced bar screens. A substantial number of the gates were broken and inoperable. In addition, the foul air containment leaks, as evident by internal smoke tests. Bar screen replacement was completed under project EN23111.
Aerated Grit System	2	4	1	2	The AGC allows large amounts of grit to pass through to downstream processes.
Vortex Grit System	4	4	5	5	The vortex grit chamber is not operated because the grit piping modifications have not been proven effective in eliminating the difficulty establishing or maintaining the prime on the new above ground pump. The pump system is difficult to evaluate during use, priming system and bladder style discharge valve are cumbersome to use and troubleshoot.
Grit Washing/Disposal System	5	4	5	5	Recent failures of the classifier and the conveyors screws have indicated excessive wear from heavy use. Equipment is overcomplex, which has caused major issues. Operations would like to revert to a more efficient and simplified system.
Screening Conveyance/Disposal System	3	5	3	3	The single conveyance system is a newer system which was replaced back in 2015. Redundancy is high due to the fact one a single system is installed and there is no other backup equipment.
Ferric Chloride System	3	2	3	3	The ferric chloride system operates effectively, but the equipment is approaching the end of its useful life.
Headworks Splitter Box	3	N/A	N/A	N/A	Concrete in the vapor space is showing significant deterioration. There is a need to confirm the condition of the concrete for this structure.
Odor Scrubber	4	3	3	4	After a long period of the odor scrubbing system being offline, it was placed back online in 2025. During the shutdown a new PH probe, ORP probe, and motor were installed along with internal cleaning being performed.

* Ratings as defined in Appendix A; General System Assets

7.3.1.3 Planned Projects – Preliminary Treatment Process RP-1

Table 7-5
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23111	RP-1 Headworks Bar Screens Improvements	Replace four existing influent bar screens to increase debris capture and reduce process interruptions, equipment downtime, and additional maintenance downstream of headworks.										
EN26009	RP-1 Grit Classifiers Replacement	Remove and replace existing headworks grit classifiers with units stored at RP-1 facility: need foundation, rework piping, electrical, communication, and SCADA DCS.										
EN30025	RP-1 Dump Station	The project would rehabilitate the headworks gate; place key FOB for waste-haulers to gain entrance to headworks through the gate; place new concrete with wash station and related collection drains to the plant; and place removeable, chain-link fence with through gate to plant. Cameras, perimeter alarm, and other safety and security upgrades would also be made to make the pump station usable 7-days a week and after 3:30pm.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.3.2 Primary Treatment Process - RP-1

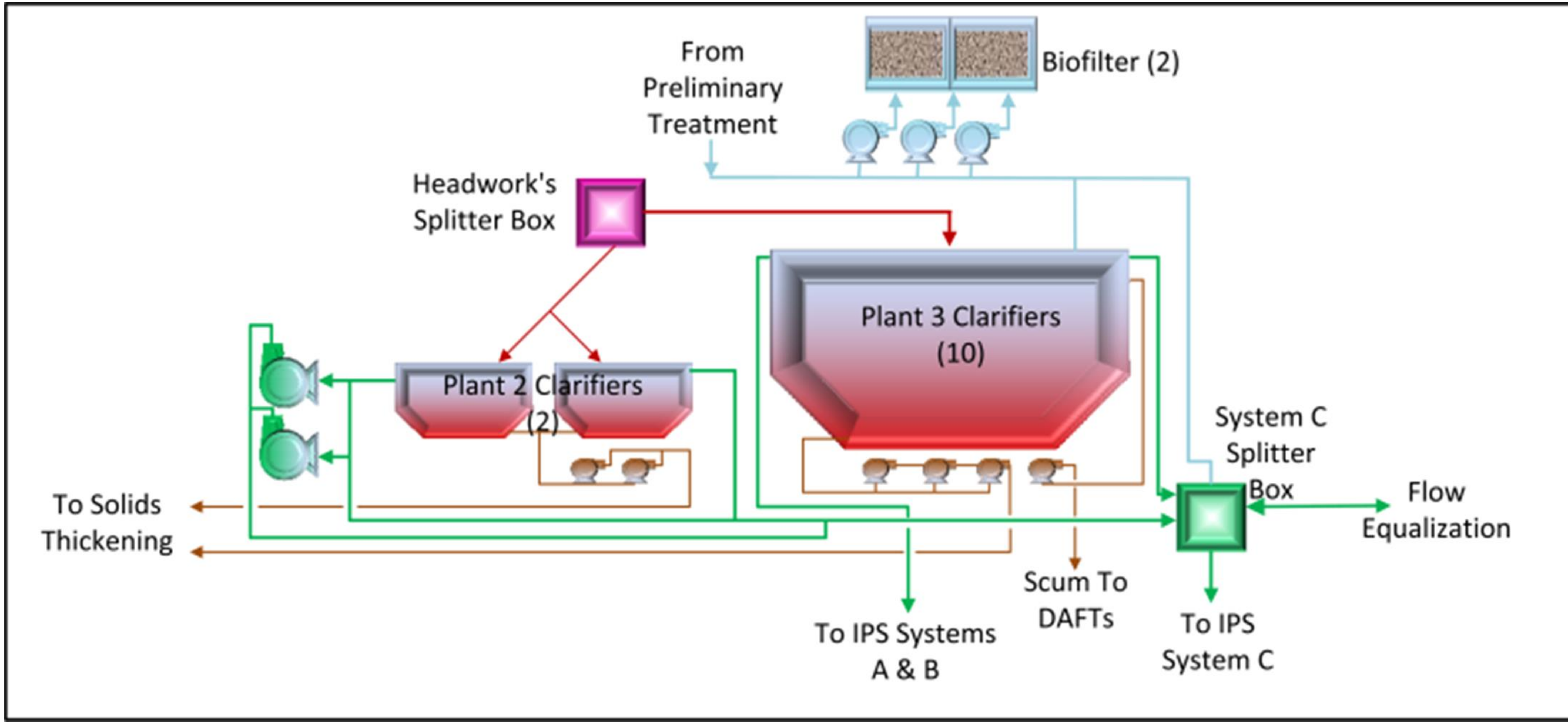

Figure 7-4 Primary Treatment Process - RP-1

7.3.2.1 Asset Summary- Primary Treatment Process RP-1

Table 7-6
Asset Summary

Process	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Plant 3			**33.6 MGD**	
Influent Channel	Two pipes from the headwork's splitter box flows to the Plant 3 influent channel. Each clarifier has three gates from the influent channel to allow flow to enter each clarifier. The channel is aerated with air from blowers to keep solids in suspension	Blowers	3 @ 25 hp	Per Unit
Primary Clarifiers	The rectangular clarifiers consist of chain-driven flights, which push settled solids and floatable solids to a sludge hopper for pumping or to scum troughs for solids processing. Each clarifier consists of three or four effluent troughs with V-notch weirs. The clarifiers are covered for odor control.	 Flight Drives Gates	10 @ 2,400 gpd/ft^2 3,500 ft^2 5 @ 0.5 hp 34 units	Per Unit Per Unit
Effluent Channel	Each effluent trough discharges into a common channel. Two legs with valves direct flow from the effluent channel to the intermediate pump system A&B wet well or the system C splitter box. The effluent channel is covered and has odor control ducting to the biofilter	Bladder Valves	2 units	
Sludge Pumping System	A series of valves opens and closes to direct solids collected in each clarifier to three pumps, sending flow to solids thickening processes.	Pumps	3 @ 412 GPM 20 hp 1 @ 550 GPM 30 hp 1 @ ? 7.5 hp	Per Unit
Scum System	Scum collected by the primary clarifiers is directed to a common wet well. Periodically a pump will pull from the wet well and pump to solids thickening processes.	Pump	1 @ 130 GPM 7.5 hp	Per Unit
Odor Control System	Three blowers pull foul air from the Plant 3 primary clarifiers, system C splitter box, and the preliminary treatment section, forcing the air through two beds of carbon rich media to allow for the biological consumption of hydrogen sulfide and other compounds.	Media Blowers Valves	9,293 ft^2 4.5 ft depth 2 @ 11,700 scfm 40 hp 1 @ 12,205 scfm 50 hp 15 units	 Per Unit > 18-inch
Plant 2			**15.1 MGD**	
Primary Clarifiers	Flow from the headworks splitter box is directed through a flow meter and a series of valves/gates to two circular clarifiers. The clarifiers are center feed with a rotating arm to push solids to a sludge hopper and floatable to the scum removal trough. Effluent from the clarifiers is piped to the Intermediate pump station wet wells. These clarifiers are put in service when flow needs to be diverted from Plant 3 but are not used during normal operation.	 Gates Valve	2 @ 2,400 gpd/ft^2 7,854 ft^2 4 units 1 unit	Per unit
Solids Pumping System	Solids collected from the Plant 2 clarifiers are directed to two pumps. The pumps send flow to solids thickening processes in the solids section	Pumps	2 @ 175 GPM 15 hp	

7.3.2.2 Asset Ratings - Primary Treatment Process RP-1

Table 7-7
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Plant 3					
Influent Channel	1	3	3	3	The influent channel blowers operates effectively; however, floatable solids tend to collect in the channel, requiring collections crew to make annual cleanings of the channel.
Primary Clarifiers	4	4	4	4	Small pieces of the chain/flight system break requiring significant maintenance activities to be repaired. The chain and flight of all the Primary Clarifier are experiencing extensive failures. The scum collector trough actuators are prone to failure over time/seizing. Scum collectors in primary clarifier no. 9 & 10 have been repaired by contractor. Issue with the sludge valves not seating properly have been a concern for both operations and maintenance. Project EN24032 has been created to perform a root-cause analysis and provide best fixes of the scum collection system. Project EN20044 will also install new primary clarifier covers.
Effluent Channel	1	2	1	1	Recent evaluations of underground piping to the intermediate pump stations have indicated extensive corrosion. Covers are in good condition, pipes are new
Sludge Pumping System	3	1	4	3	Lack of pumping capacity to meet needs. EN22044 RP-1 Thickening Building & Acid Phase Digester Project is replacing pumps
Scum Pumping System	3	3	3	3	The floatable materials form a raft in the wet well are required to be vactored regularly. Mixer installed with most current upgrade project never worked, mixer plugged nearly immediately with heavy plastic and grease-bound material, unit has been abandoned. Recommend alternative style pump discharge based mixing system. EN24032 RP-1 Primary Clarifier #1 through #10 Rehabilitation will address these issues.
Odor Control System	4	3	4	4	The biofilter was constructed on top of the old trickling filter infrastructure and has experienced leaks in the past. Issues with plugging of the perforated holes feeding to the biofilter media. To address this coating of the concrete surface has been added as part of Project EN23808.05. Isolation valves do not seat well.
Plant 2					
Primary Clarifiers	3	3	3	3	The clarifiers are not covered to control odors. East clarifier drive has a leak in the seal. Condition assessment needs to be conducted on the east clarifier.
Sludge Pumping System	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.3.2.3 Planned Projects- Primary Treatment Process RP-1

Table 7-8
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24032	RP-1 Primary Clarifier #1 through #10 Rehabilitation	Perform root-cause analysis and provide best fixes of the scum collection system and the current primary clarifier influent channel flow distribution.	CIP-Design	CIP- Construction								
EN20044	RP-1 Plant 3 Primary Cover Replacement	Design new covers for primary clarifiers which can be secured so they don't fly away in the wind but are user friendly to Operations staff who must have the ability to open and move covers as needed for inspection and housekeeping. Operations request hinged covers to match existing hinged FRP covers with 316 SS hardware. Examples of existing FRP covers can be in drawing set D6539.		CIP- Construction								

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.3.3 Secondary Treatment Process RP-1

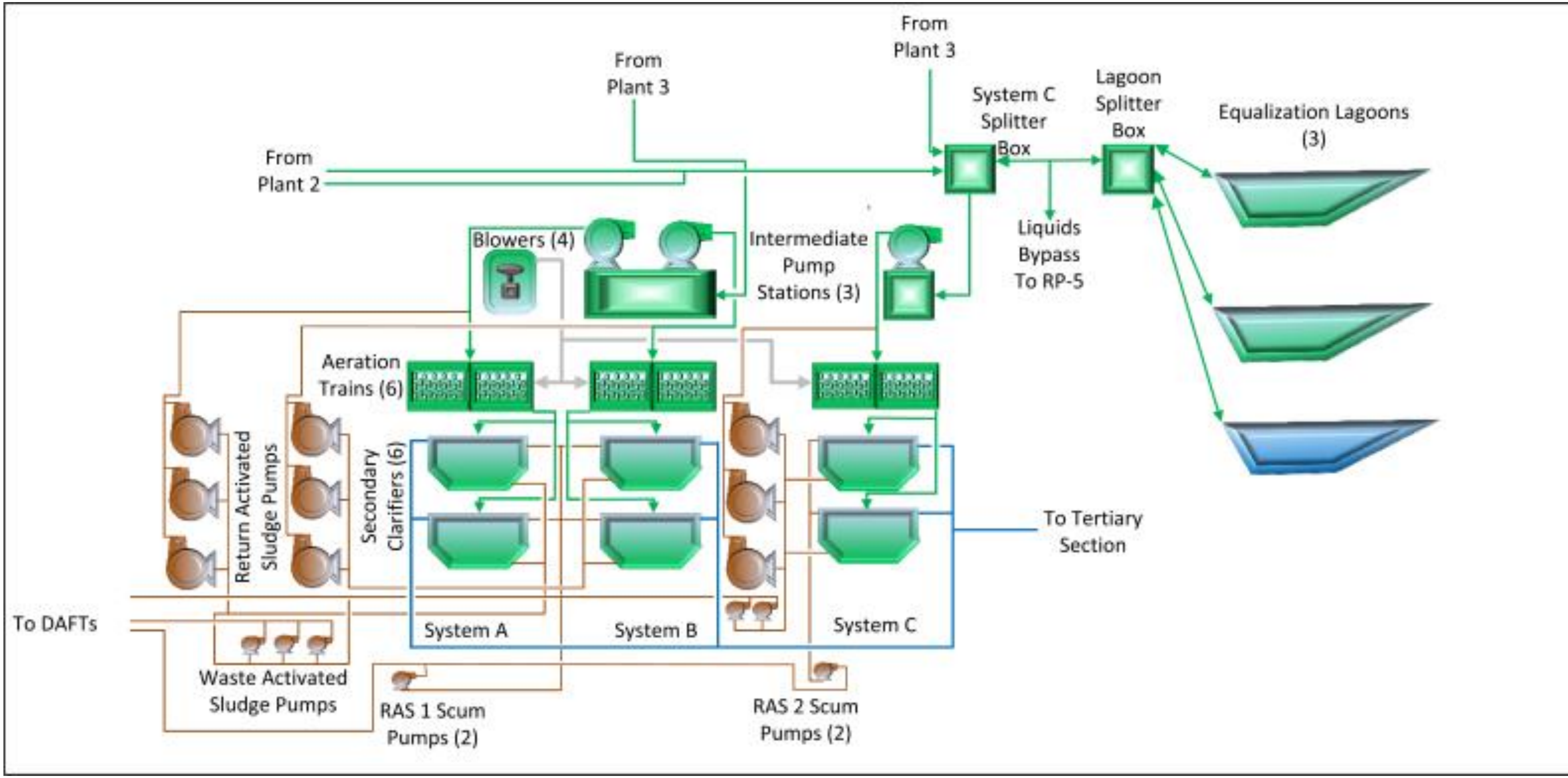

Figure 7-5 Secondary Treatment Process RP-1

7.3.3.1 Asset Summary- Secondary Treatment Process RP-1

Table 7-9
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Secondary Treatment Process			50 MGD	
Intermediate Pumps Stations	Primary effluent flows to the intermediate pump station wet wells. Wet wells can divert high flows to the flow equalization system. Three sets of pumps (System A – 3 pumps, System B – 3 pumps, System C – 4 Pumps) pump to each designated aeration system.	System A Pumps Valves System B Pumps Valves System C Pumps Valves Gates	3 @ 4,200 GPM 60 hp 4 units 3 @ 5,600 GPM 75/60/60 hp 5 units 4 @ 5,600 GPM 75 hp 5 units 5 units	 Per Unit > 18-inch Per Unit > 18-inch Per Unit > 18-inch
Flow Equalization System	Primary effluent can flow to three flow equalization lagoons to hold flows and introduce them back to the intermediate pump station later. Flow is diverted to three lagoons via motorized gates. Two lagoons have floating aerators to slow the rate at which the stored flows become septic.	Lagoon 1 Lagoon 2 Lagoon 3 Gates	1 @ 5.8 MG 1 @ 6.2 MG 1 @ 10.3 MG 3 units	
Activated Sludge System	The three activated sludge systems consist of two aeration trains each (six total). Influent gates divert a combined flow of primary effluent and return activated sludge to each train. Each train consists of four basins. The first basin mixes flows with a paddle mixer. The next three basins can add air via the fine bubble diffusion system supplied by four large blowers with automated valves to control the dissolved oxygen concentrations such that biochemical oxygen demand and total inorganic nitrogen removals are optimized.	Blowers System A & B Trains Depth Mixers System C Trains Depth Mixers Air Panels Gates Valve Valves (air)	4 @ 13,426 scfm 700 hp 9.25 psig 2 @ 14.1 MGD 4 @ 1.91 MG 17.8 ft 4 @ 15 hp 1 @ 15.9 MGD 2 @ 1.96 MG 17.8 ft 2 @ 15 hp 142 per train 22 per train 1 per system 6 units	Per Unit Per Unit Per Unit Per Unit Per Unit > 18-inch > 18-inch
Secondary Clarifiers	Effluent from two aeration trains flows in a common channel to two circular clarifiers per system (six in total). Each peripheral feel clarifier has a rotating sludge and skimmer arm. Solids settle out of the liquid flow and are pushed to a center sludge hopper for pumping. Liquid overflows the V-notched weirs.	System A & B System C	4 @ 700 gpd/ft^2 11,310 ft^2 2 @ 700 gpd/ft^2 13,273 ft^2	Per Unit Per Unit
Return Activated Sludge (RAS) Pumping System	The settled sludge in the secondary clarifiers is pumped back to the influent of the aeration system as return activated sludge (RAS) to mix with primary effluent from the intermediate pump station. The organisms in the RAS must be returned to sustain the biological process. Also, the RAS flow returns nitrate for further removal. Each system has three dedicated pumps (nine in total). The return activated sludge and wasted activated sludge pumps are located inside two separate buildings: RAS 1 (Systems A and B) and RAS 2 (System C).	RAS 1: RAS Pumps RAS 2: RAS Pumps Valves	6 @ 5,600 GPM 60 hp 3 @ 5,600 GPM 60 hp 40 units	Per Unit Per Unit > 14-inch
Waste Activated Sludge (WAS) Pumping System	The waste activated sludge (WAS) pumping system controls the activated sludge (biomass) concentrations in the aeration system. A portion of the settled solids from the secondary clarifiers is pumped out of the secondary system to solids processing as WAS.	RAS 1: WAS Pumps RAS 2: WAS Pumps	3 @ 600 GPM 7.5 hp 2 @ 600 GPM 10 hp	Per Unit Per Unit

Table 7-9
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Scum Pumping System	Scum collected by the skimmer arm of the secondary clarifiers is routed to two scum wells, where it is pumped out of the system to solids processing.	RAS 1: Scum Pumps	2 @ 580 GPM 15 hp	Per Unit
		RAS 2: Scum Pumps	2 @ 480 GPM 20 hp	Per Unit

7.3.3.2 Asset Ratings - Secondary Treatment Process RP-1

Table 7-10
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Intermediate Pump Stations	4	2	2	3	EN22031 will install new variable frequency drive technology to replace older clutch drives. EN24001 will consider options and designs to increase treatment plant to 40 MGD.
Flow Equalization System	4	4	4	4	Condition assessments have identified cracks in the bottom and sidewalls of all the storage lagoons, structures may be sinking due to observation of level changes at top asphalt areas. Operations and Maintenance staff monitor the status of cracks in the lagoons. EN29008 creates a lagoon access ramp.
Activated Sludge System	2	4	2	3	Replacing current Parkson panels to SSI diffuser disks as part of the new project No. EN18025. EN21056 will install evaporative cooling or AC system to prevent blowers from overheating in the aeration blower building. EN22022 will install a centralized air compressor system to provide process air.
Secondary Clarifiers	4	4	3	3	Collector drives, torque switches, concrete rehab, etc. Influent gates on Clarifiers 1-4 leak, Clarifier 5 and 6 influent gates need to be upgraded from slide gates to hand wheel gates, Ops currently need assistance from MM with crane to remove slide gates once installed. Replacements happened as needed, run to fail EN18025 rehabilitates the concrete surfaces, recoats metal components, and replaces the above ground PVC sprayer piping to provide protection from UV rays.
RAS Pumping System	2	2	2	2	No issues require special attention.
WAS Pumping System	2	2	2	2	No issues require special attention.
Scum Pumping System	2	2	2	2	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.3.3.3 Planned Projects - Secondary Treatment Process RP-1

Table 7-11
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN21056	RP-1 Evaporative Cooling for Aeration Blower Building	Add evaporative cooling or AC system to prevent equipment inside blowers building from failing due to overheating.										
EN22022	RP-1 Air Compressor Upgrades	Operations is requesting a centralized air compressor system to provide process air.										
EN22031	RP-1 Intermediate Pump Station Electrical Improvements	Replace MCC 6M and 8M with new Allen Bradley IntelCenter. Install new 18 pulse VFDs for IPS pump motors # 2, 3, 4, 5, 8, 9, and 10. Replace the existing IPS VFDs # 1,6, and 7 due to them reaching end of useful life. Replace lighting panel LP15, associated transformer, and all 10 of the IPS pumps.										
EN18025	RP-1 Secondary System Rehabilitation	Rehabilitate the concrete surfaces and recoat the metal components of the secondary clarifiers. Replace the above ground PVC sprayer piping and provide protection from UV rays.										
EN29008	RP-1 Equalization Basin #1 Access Ramp	Design and construct an access ramp for lagoon access.										
EN24001	RP-1 Liquid Treatment Capacity Recovery	Evaluation of treatment options and provide design to upgrade treatment plant to 40 million gallon per day.										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.3.4 Tertiary Treatment Process - Asset Management System Summary RP-1

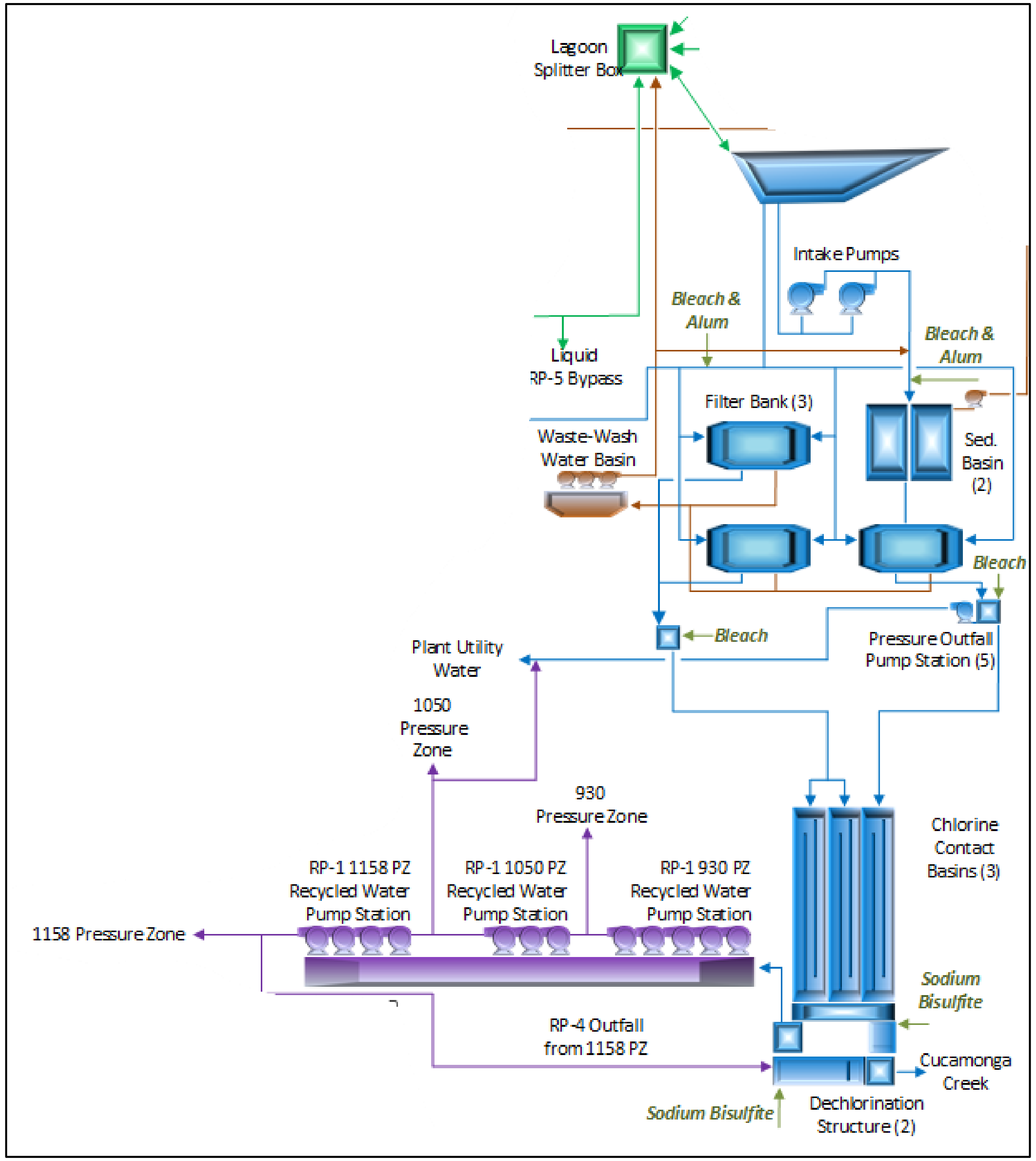

Figure 7-6 Tertiary Treatment Process RP-1

7.3.4.1 Asset Summary- Tertiary Treatment Process RP-1

Table 7-12
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Tertiary Treatment Process			44 MGD	
Intake Pump Station	Secondary effluent is conveyed across the Cucamonga Creek through a 60-inch pipeline, which feeds the tertiary section or can be diverted to Lagoon 3. The intake pumps flow from Lagoon 3 to the sedimentation basin.	Pumps	2 @ 14,000 GPM 60 hp	Per Unit
Aluminum Sulfate (Alum) System	The aluminum sulfate system consists of two large storage tanks, four pumps, piping, and appurtenances. Alum is added to the process at two locations: (1) flash mixer (FM) 1 and (2) flash mixer 2. FM-1 injects chemicals into the main feed to the tertiary section. Alum is a coagulant that helps with the removal of suspended materials in the flow path. FM-2 injects alum into the sedimentation basin influent flow, acting as a coagulant for the suspended material from the waste-wash water basin	Tanks Pumps	1 @ 20,000 gallons 2 @ 20.25 gph 1 @ 32.20 gph 1 @ 58.50 gph	
Sedimentation Basin	The sedimentation basin can receive tertiary section drainage and filter backwash water from the waste-wash water basin. The flow is mixed with aluminum sulfate at FM-2 and introduced to the mixing tank. The solids in the flow coagulate and settle to the bottom of the tank. The collected solids are pumped to solids processing, while the overflowing liquid is sent to the filters.	Total Weir Length Total Settling Tube Area Chemical Mixer Traveling Bridge Pumps	800 ft 7,600 ft^2 8 @ 3 hp 1 @ 1.5 hp 2 @ 130 GPM	
Filters	There are three filter banks, consisting of a total of 26 down-flow filters. The flow travels through layers of anthracite, sand, and gravel. The filters are regularly backwashed to remove the solids that have been filtered from the secondary effluent. Backwash water is sent to the waste-wash water basin and pumped back into the lagoons or sedimentation basin	Bank No.1 Bank No.2 & 3 Filter Loading Rate Valves	8 @ 299 ft^2 18 @ 299 ft^2 5 GPM/ft^2 118 units	Per Unit Per Unit 12 - 42-inch
Waste-Wash-Water (WWW) Basin	The waste-wash water (WWW) basin collects drainage from the entire tertiary section of RP-1 and also collects filter backwash and leakage from the three filter banks. The collected water is pumped by three pumps to: (1) equalization lagoons or (2) the sedimentation basin.	Pumps Valve	3 @ 2,100 GPM 2 units	Per Unit > 18-inch
Filter Effluent Structures	Flow from the filters enters Filter Effluent Structure 1 & 2. The structures are equipped with chlorine analyzers and peristaltic bleach pumps to maintain the chlorine residual set point at the end of each effluent structure. Chlorinated flow is conveyed to the chlorine contact basins.	Gate Valves	4 units 2 unit	 > 18-inch
Chlorination System	Four chemical tanks hold 12.5 percent bleach. One duty and one standby pump draws from the tanks to feed an injection point ahead of the filters at FM-1. Filter Effluent Structure (FES) 1 has one duty and two standby peristaltic dosing pumps. FES 2 has one duty and one standby peristaltic dosing pump. The duty pumps inject bleach into the process streams of FM-1, FES1, and FES2. Mixing at FES 1 and FES 2 is carried out with one duty and one standby Horizontal ANSI centrifugal pump each. Chlorine residual is measured throughout the tertiary process to control the chlorine dose.	Tanks ME-18 Pumps (FM-1) FES 2 Dosing Pumps FES 1 Dosing Pumps FES 2 Mixing Pumps FES 1 Mixing Pumps	4 @ 12,189 gal 2 @ 158 gph 2 @ 158 gph 3 @ 205 gph 2 @ 900 gpm 2 @ 450 gpm	Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit
Chlorine Contact Basins (CCB)	The CCB have a serpentine flow path that allows for the injected chlorine to gain contact time with the treated water to meet permit requirements. The contact basins are covered and have continuous monitoring of chlorine residual. Flow from all three contact basins merge into a common effluent channel and flow to the CCB splitter box.	Basins Gates Valves	3 @ 1.3 MG 6 units 1 unit	Per Unit >18-inch
Effluent Splitter Box	Flow entering the CCB splitter box is directed to the dechlorination structure, recycled water wet well, or the pressure outfall pipeline. Flow is controlled by gates	Gates	3 units	
Dechlorination System	Flow entering the dechlorination structures is dosed with sodium bisulfite (SBS) and travels through a serpentine flow path to allow for the SBS to neutralize any chlorine residual before flowing into Cucamonga Creek. SBS is stored in two large chemical tanks and is metered into the system via six chemical metering pumps.	Tanks Pumps	2 @ 12,500 gal 4 @ 9-90 gph 2 @ 2-20 gph	Per Unit Per Unit Per Unit

7.3.4.2 Asset Ratings - Tertiary Treatment Process RP-1

Table 7-13
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Intake Pump Station	4	3	3	3	Exterior deterioration to both pumps. Seal water lines broken. One pump is O/S will not run. One pump will run if needed to pull from TP1 influent line only. Available pump has not ran in years.
Alum System	2	2	3	3	Four new Blue White M4 pumps installed approximately three years ago. Have found ourselves with two of the four O/S due to pump tubing replacement or leaks.
Sedimentation Basin	3	3	3	3	Basin has received new parts over the past year. New drive and sweep motors, new shaft bearings, new flocculator gear box bearings, and new cable/counterweight for bridge reel. Could still use control through SCADA, new flocculator motor and gear boxes, new bridge sludge pumps, new scum well level transmitter, and new scum transfer pumps. Sludge pumps are older, experience leaking, and constant repairs needed. EN11039 Replace sedimentation basin underground piping EN24029 Rehabilitates the sedimentation basin sludge pumps.
Chlorination System	4	3	4	4	Main bleach pumps are old and receive constant leaks at diaphragms requiring rebuild. Recurring belt adjustment during monthly service. Bleach recirculation pumps continuously leak causing damage to pump and motor. Bleach tanks themselves last 1-2 years before leaks begin to occur. Main bleach tank discharge header in need of replacement due to old, bridle, and bowed CPVC piping. New FM-1 bleach injection system has seen problems when RW carrier water pressure increases above pump discharge pressure. Also, Fm1 bleach injection line check valves not operating properly allowing carrier water to back feed into CL2 lines. EN11039 Replaces bleach pumps and underground piping for bleach storage and provides chemical containment system within the pump area
Filters	4	4	3	3	All 26 filter drain valves and filters # 1-8 surface wash valves replaced approximately 4 years ago. All filter inlet valves leak and need replacement. Filter surface wash valves for remainder filter's function but could use replacement. Not all current surface wash valves are the same. Replacement would provide uniformity for both inlet and surface wash valves. Change filter level indicators from bubbler system to level transmitters. Approximately 11 filters are currently on level transmitter, and remainder of 15 are on bubbler system. Condition assessment of Filter piping within galleries needed due to recent leaks at filter #4 inlet line, the condition assessment may warrant a future project. Multiple filter effluent valves are not operating, stuck in either open or closed position. EN24029 Replaces 26 filter effluent valves.
WWW Basin	1	2	2	2	Installed new MCC, pumps, piping configuration, sump pump, and discharge valves within the last 7 years. Level transmitters replaced by E&I within the last 1 year.
Filter Effluent Structures	4	4	3	4	FES2 structurally can use repairs, replace damaged or deteriorated gates. Install influent isolation gate at front of structure. Replace deformed red wood boards with new covers. Condition assessment is needed for FES1. Will probably find structural repairs needed. Replace current structure covers. EN21053 provides rehabilitation of effluent structure and valves
Chlorine Contact Basins	3	3	3	3	Could use new flow meters with controllers and installation equipment and brackets. This will provide uniform equipment and secure installation. Current installation in poor condition and differs on each CCB. Also, each flow meter is different from each other.
Effluent Splitter Box	4	4	3	3	Complete condition assessment for structural repairs. New discharge gates needed due to deterioration. New analyzer sample piping needed. Coliform sample cabinet installation assists with keeping sample point clean.
Dechlorination System	4	3	3	4	Complete condition assessment for structural repairs. Current paddle mixer is old and could use replacement. Two out of six new SBS pumps installed. Replace remainder SBS pumps. Two new Blue white M4 peristaltic pumps installed. Newer analyzer and equipment, new bleach cleaning cycle pumps and equipment. EN24029 rehabilitates SBS pumps.

* Ratings as defined in Appendix A; General System Assets

7.3.4.3 Planned Projects - Tertiary Treatment Process RP-1

Table 7-14
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN11039	RP-1 Disinfection Pump Improvements	Replace bleach pumps and underground piping for both sedimentation basin and bleach storage which is prone to failure and provide chemical containment system within the pump area.										
EN21053	RP-1 Old Effluent Structure Rehabilitation	Gate and stems are already severely corroded. Cost includes complete rehabilitation of structure and valves.										
EN24029	RP-1 Tertiary Asset Management Phase I	Replacement of 26 filter effluent valves and #4 influent tee. Rehabilitation of sodium bisulfite (SBS) pump and sedimentation basin sludge pump.										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.3.5 Solids Treatment Process - Asset Management System Summary – RP-1

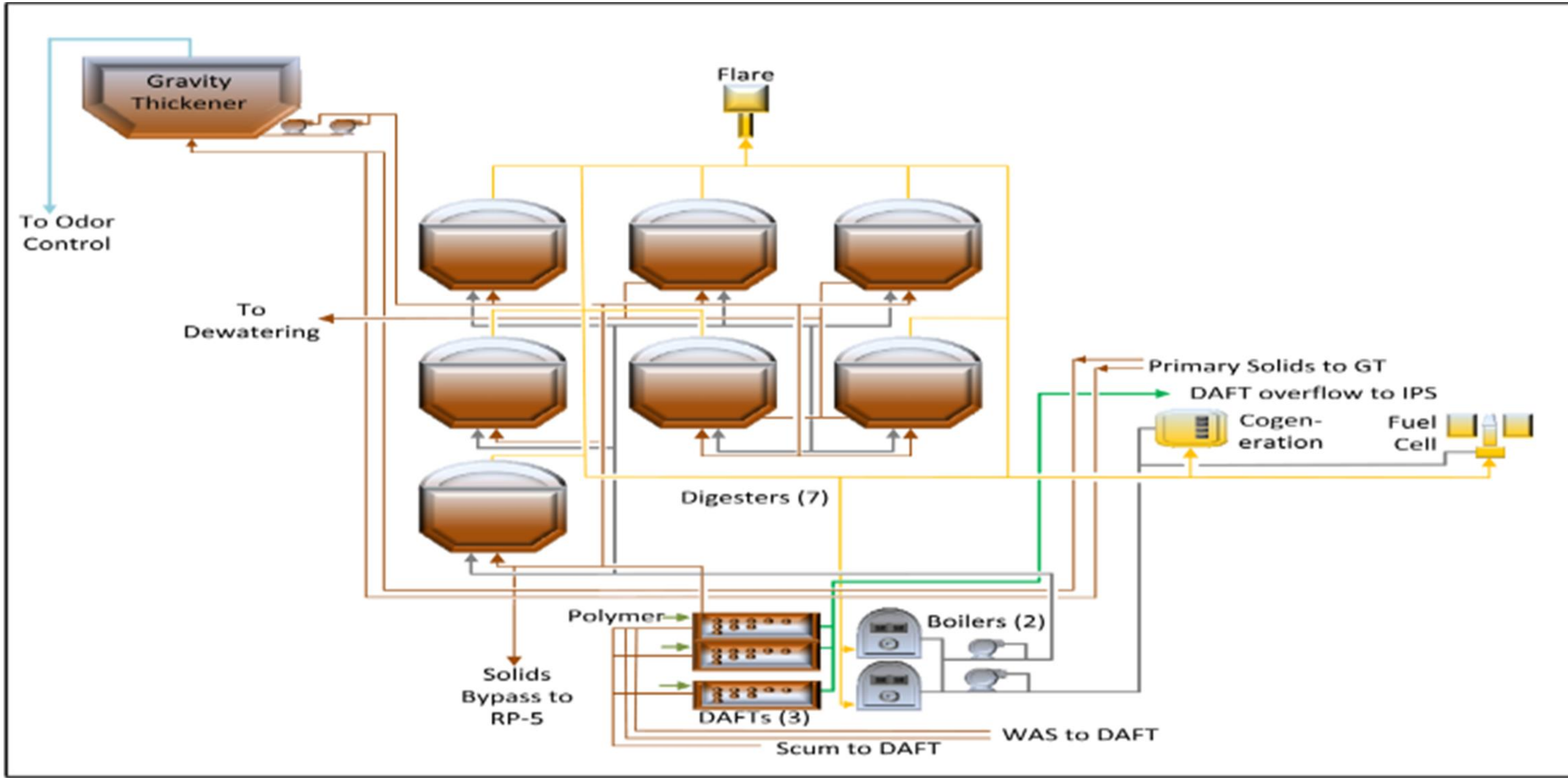

Figure 7-7 Solids Treatment Process RP-1

7.3.5.1 Asset Summary- Solids Treatment Process RP-1

Table 7-15
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Solids Treatment Process			60 MGD	
Gravity Thickener System	Solids collected from the primary clarifiers are pumped to the gravity thickener (GT) and mixed with sweetener water supplied by the utility water system. Solids are allowed to settle to the bottom of the GT. Solids are increased from 1 percent total solids to 2 to 4 percent total solids. The thickened solids are pumped to the digestion system. The liquid overflow is conveyed back to the RP-1 headworks splitter box.	Tank Drive Pumps	1 @ 299 gal/ft^2/day 3,848 ft^2 1 @ 1.0 hp 2 @ 150 GPM 15 hp	 Per Unit Per Unit
Dissolved Air Flotation Thickener (DAFT) System	The three DAFTs receive solids from the scum collection systems of the primary and secondary clarifiers and receive waste activated sludge from the secondary system. Solids entering the DAFTs are mixed with recycled flow that has been pressurized with compressed air from two large compressors and dosed with polymer. Solids float to the top, where they are skimmed off and pumped to the digestion system. Solids are thickened from ~1 percent to 4 percent total solids through this process. The liquid underflow of the DAFT flows to the system C splitter box. A solids bypass allows for the diversion of solids to the regional collection system, which flows to RP-5.	Tanks Recirculation Pumps Sludge Pumps Polymer Blending Units Pressurization Tanks Compressors	3 @ 85 gal/ft^2/day 2,100 ft^2 3 @ 1,260 GPM 6 @ 200 GPM 4 @ 8.0 gph 3 @ 2,000 gal. 2 @ 40 hp	Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit
Digestion System	Seven digesters receive thickened sludge. Digesters 1 and 2 have floating domes, while Digesters 3, 4, 5, 6, and 7 have fixed covers. The hot water system provides heat, and the sludge recirculation system transfers heat to maintain temperatures from 97 to 128 degrees Fahrenheit. Each recirculation system is equipped with a grinder. Gas-mixing systems mix the contents of the digesters. Gas piping connected to the top of each digester allows the produced gas to enter the gas conveyance system. Several pressure/vacuum relief valves and J-tube safety blow-offs are on each digester to prevent over and under pressurization.	Digester No.1 & 2 Digester No.3 & 4 Digester No.5 Digester No.6 & 7 Recirc. Pumps Heat Exchangers Tube in Tube Spiral Gas Mixers	2 @ 112,122 ft^3 2 @ 99,500 ft^3 1 @ 172,995 ft^3 2 @ 224,332 ft^3 5 @ 600 GPM 30 hp 2 @ 500 GPM 30 hp 1 @ 6.0 MMBTU/hr 6 @ 1.5 MMBTU/hr 4 @ 504 SCFM 30 hp 3 @ 3,839 SCFM 70 hp	Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit
Sludge Transfer System	To allow for phased digestion, RP-1 is equipped with several pump stations and automated valves to transfer sludge throughout the digestion system. The transfer system is designed to offer the greatest flexibility of transferring sludge to each of the seven digesters. Valves are operated from a centralized compressed air system.	Transfer A Pumps Transfer B Pumps	2 @ 400 GPM 6 @ 400 GPM	Per Unit Per Unit
Hot Water System	The hot water system consists of two loops: (1) primary (heating) and (2) secondary (delivery). The primary loop collects heat from heat exchangers at the boilers. The secondary loop pulls heated water from the primary loop and sends it to the heat exchangers at each digester. Two boilers are fueled by digester or natural gas, or both. The cogeneration heat exchangers collect heat from the water jacket and the exhaust of the cogeneration engines when the engines are in service.	Boiler Primary Loop Pumps Secondary Loop Pumps	2 @ 10.5 MMBTU/hr 2 @ 25 hp 900 GPM 3 @ 15 hp 550 GPM	Per Unit Per Unit Per Unit
Gas Conveyance and Waste Gas System	Gas collected from the digestion system enters the gas loop, which can deliver low-pressure gas to the compressors for use in the boilers or to the flares. The gas loop has several J-tubes to prevent over- pressurization. Iron sponges are used to remove hydrogen sulfide from the digester gas. Digesters 1 and 2 have a waste gas line that can deliver low-methane content gas directly to the flare.	Iron Sponges Digester 1 Flares ERB	 2 @ 210 ft^3 3 @ 537 ft^3 2 @ 350 ft^3	 Per Unit Per Unit Per Unit

7.3.5.2 Asset Ratings - Solids Treatment Process RP-1

Table 7-16
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Gravity Thickener System	4	4	4	4	Currently, the gravity thickener is overloaded, and regular upsets require the diversion of primary solids to the DAFT system or the bypass system. Project EN22044 has provided a Skid-mounted RDT System that has optimized the current thickening system. Ultimately, Project EN22044 and EN24002 will construct a new sludge thickening building with nine (9) Rotary Drum Thickeners (RDT's) to thicken primary and secondary sludge and eliminate the gravity thickener system.
DAFT System	3	4	2	2	Project EN22044 will construct a new sludge thickening building with nine (9) RDT's and eliminate DAFT 3. DAFT's 1 & 2 will be rehabilitated and operate duty/standby to thicken primary and secondary scum.
Digester System	3	4	3	3	Maintenance has an established regimen to clean and rehab one digester a year to remove collected inorganics. Digesters 6 and 7 are online and were cleaned and rehabilitated under project EN17042. Project EN22044 and EN24002 will construct three (3) acid phase digesters with 45 ft diameter and 32 ft max side water depth. EN24002 will upgrade the mixing systems and perform a condition assessment on Digester 2.. EN25020 will place a liner material at the base and sidewalls of DCL to prevent groundwater intrusion.
Sludge Transfer System	4	4	4	4	The sludge transfer system was designed to be robust. However, during phased digester with an acid phase digester online, there is a single point of failure on the main transfer pump from the first/acid phase to the second phase digesters. Project EN17082 installed two grinders to mitigate transfer pump failure issues during phased digestion.
Hot Water System	4	4	4	4	Project EN20065 replaced approx. 700 L.F. of the hot water supply and return pipelines due to heavy corrosion. To meet the additional heating demand from the three (3) future acid phase digesters, Project EN22044 will install a third boiler. There have been two emergency projects within the last 5 years. A potential engineering project will upgrade the digester gas boosters with VDFs, replace the primary and secondary hot water pumps, and upgrade the digester heat exchangers in 5-10 years. EN24028 will replace all utility water piping including potable water lines and isolation valves.
Gas Conveyance System	4	3	3	3	Project EN18006 replaced the existing flare system and piping system with three new flares and digester gas holding tank to ensure adequate control of the digester gas pressures and to meet the strict emission requirements of the South Coast Air Quality Management District. Digester 1 gas piping is older. A condition assessment is needed on the gas conveyance piping and valves. Project EN19009 will onboard an engineering consultant to prepare an analysis of using DG as an energy source for long-term planning projections. EN24002 will replace the existing odor control with a new two-stage Bio Scrubber with carbon polishing.

* Ratings as defined in Appendix A; General System Assets

7.3.5.3 Planned Projects - Solids Treatment Process RP-1

Table 7-17
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN18006	RP-1 Flare Improvements	Replace gas system and flares to meet air quality requirements by the South Coast Air Quality Management District (SCAQMD).										
EN17042	Digester 6 and 7 Roof Repairs	Repair cracks to roof of digesters 6 and 7 along with a complete cleaning and inspection. Development of performance standard and/or metric for "gas tightness" of tanks, pipes, and other components of digester gas systems. Replace heavily corroded gas piping on top of digesters and coat some piping										
EN19009	RP-1 Energy Recovery	Engineering consultant to prepare a study, alternative analysis, and financial analysis to maximize the use of DG as an energy source for long-term planning projections.										
EN22044	RP-1 Thickening Building & Acid Phase Digester	Construct the RP-1 Solids Thickening Building to contain rotary drum thickeners, three Acid Phase Digesters, and all ancillary equipment for this system. Expand the RP-1 12kV electrical system. Complete other misc. system improvements (odor control, primary sludge VFD's, cleanouts, interim RDT, and site demolition)										
EN24002	RP-1 Solids Treatment Expansion	Replace the existing solids thickening systems with new rotary drum thickeners to improve solids thickening. Construct three new smaller acid phase digesters to improve operational performance. Add recuperative thickening to the digestion process to increase performance and eliminate the need to construct one additional digester. Replace the existing odor control with a new two-stage Bio scrubber with carbon polishing										
EN26005	RP-1 Plant Air Expansion Tank Replacement	This project includes a condition assessment, removal, disposal, and replacement of existing air expansion tanks in-kind.										
EN26006	RP-1 Plant Air Expansion Tank Rehabilitation	This project includes the replacement of existing air expansion tanks to extend the useful life.										
EN24028	RP-1 Utility Water Piping Asset Management Phase I	Replace all utility water piping in digester area that have reached the end of life. This will include new potable water pipelines and isolation valves to increase efficiency.										
EN25020	RP-1 Digester Cleaning Lagoon (DCL) Lining	Place a liner material at the base and sidewalls of the DCL to prevent groundwater intrusion. The lining should be able to support heavy equipment. Depending on the RP-1 Capacity Recovery project, this project may or may not be necessary.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.3.6 Dewatering Treatment Process - Asset Management System Summary – RP-1

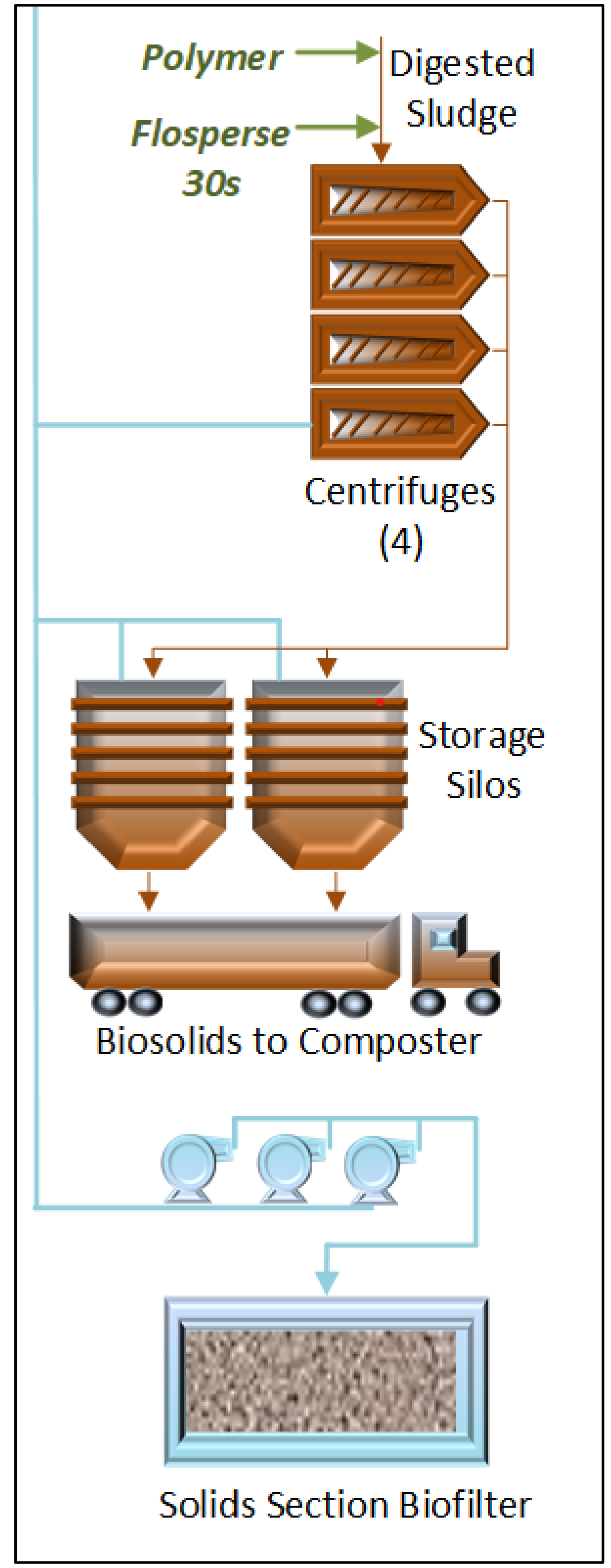

Figure 7-8 Dewatering Treatment Process RP-1

7.3.6.1 Asset Summary- Dewatering Treatment Process RP-1

Table 7-18
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Dewatering Treatment Process			60 MGD	
Sludge Grinding System	Two inline grinders ensure that large solid objects in the sludge flow are broken up into small pieces to limit the possibility of large objects causing obstructions in downstream piping or equipment.	Sludge Grinding System	2 @ 10 hp	Per Unit
Sludge Feed Pump System	Four rotary lobe pumps pull sludge from the grinders and pumps flow to the influent of the centrifuges. The sludge pumps are variable speed with flow meters, instrumentation, and controls. A series of cross-connects in the pump discharge piping allows for sludge pumps to feed different centrifuges.	Pump	4 @ 360 GPM	Per Unit
Polymer Blending System	Totes of polymer are transferred to a large day tank via two rotary lobe transfer pumps. Four polymer blending units meter polymer and dilution water to a mixing chamber. The discharge of the polymer blending unit is conveyed through a network of pipes and cross connection valves to three separate dosing points in the sludge piping.	Blending System	4 @ 5 to 30 gph	Per Unit
Centrifuge System	The sludge flow mixed with polymer enters the feed tube of the centrifuge and discharges into a spinning bowl. The centrifugal force of the spinning bowl forces the heavier solids to the edge of the bowl and the centrate to rest on top of the solids. A scroll, spinning slightly faster than the bowl, scrapes the solids around the edge of the bowl to one end of the centrifuge, up a beach, and into the discharge shoot to the conveyor. The bowl has dam plates to maintain a depth of centrate until it overflows at the other end to the centrate wet well.	Centrifuge	4 @ 360 GPM	Per Unit
Conveyor System	Two separate screw conveyor systems, configured in parallel, collect dewatered solids (cake) from each centrifuge. Solids are diverted to each system via a diverter gate and then through a series of shaftless screws until solids are discharged into the storage silos.	Conveyor System	2 trains w/ 5 conveyors ea. from 7.5 to 30 hp	
Storage Silo System	Solids from the conveyor system are dropped into two separate storage silos. The silos hold collected cake until a loading sequence is initiated, and solids are dropped through a series of gates and discharge screws into a truck trailer for hauling to an offsite facility.	Storage Silo System	2 @ 5,636 ft^3	Per Unit
Centrate and Drainage Pump System	Centrate collected from the centrifuge operation is conveyed to the centrate pump station where it is pumped to the Non-Reclaimable Wastewater System. The centrate pumps are variable speed to maintain a wet well level. Process flows generated during centrifuge startup and shutdown are conveyed to the drainage pump station, where they are pumped back into the RP-1 process by constant speed drainage pumps.	Centrate Pump System Drainage Pump System	3 @ 450 GPM 2 @ 450 GPM	Per Unit Per Unit
Anti-Struvite System	Five pumps pull chemicals from a storage tote and inject into the centrate pipes of each centrifuge and the centrate wet well. The chemical inhibits Struvite formation that forms naturally in centrate and adheres to walls of downstream piping.	Pump	4 @ 4.0 GPM 1 @ 8 GPM	Per Unit
Odor Control System	Three blowers pull foul air from the gravity thickener, miscellaneous sumps, and either the belt press or centrifuge buildings, forcing the air through a bed of carbon-rich media to allow for the biological consumption of hydrogen sulfide and other compounds.	Blower Media Depth Valves	1 @ 4,600 scfm 2 @ 13,700 scfm 5 ft 10 units	 Per Unit > 18-inch

7.3.6.2 Asset Ratings - Dewatering Treatment Process RP-1

Table 7-19
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Sludge Grinding System	1	2	2	2	No issues require special attention.
Sludge Feed Pump System	3	3	2	3	No issues require special attention.
Polymer Blending System	4	3	3	4	The current polymer blending units have thermal flow sensors that frequently need calibration causing disruptions in production. The polymer units also have issues with the solenoid valves for carrier water affecting the dilution factor on the polymer.
Centrifuge System	3	3	3	3	A current maintenance project is rehabilitating each centrifuge. Centrifuge 4 was recently rehabilitated and centrifuge 1 is out for rehabilitation now. EN26008 will install 4 HydroFlow units at the sludge feed influent pipes at the inlet of the centrifuge.
Conveyor System	3	3	4	3	Failures have occurred for vertical conveyor #2.
Storage Silo System	3	3	3	3	Level sensing equipment does not operate reliability. A potential project should replace level sensing equipment in the storage silos. Failures have occurred for the conveyor under silo. Leveling screws do not work due to design issue. EN29006 modifies the dewatering silos levelers to lower the leveling screws to spread biosolids evenly through the silos and add an extra 30,000 -40,000 lbs. of biosolids to each silo.
Centrate and Drainage Pump System	4	3	4	4	Project EN21044 replaced the drainage and centrate valves with motor-operated valves (MOVs) and integrated in the plant SCADA system. Project EN24020 removes existing ESSCO pumps and railing system to be replaced with new, more reliable pumps. EN26008 will install 1-2 HydroFlow units to centrate line downstream of the centrate pump. EN28002 will perform a condition/ capacity assessment on the centrate pipeline from RP-1 to the NRW which will result in another project to recover pipeline capacity.
Anti-Struvite System	3	3	4	4	Pumps are not reliable, and no replace in kind option is available. 1 out of 5 pumps was changed to Blue and White
Odor Control System	3	3	3	4	Condensate drains on the blower suction lines plug with grit and sludge accumulation. The drains are inaccessible, and a potential project should consider alternatives to clearing clogged blower suction drain lines Odor control system will be replaced through EN22044.

* Ratings as defined in Appendix A; General System Assets

7.3.6.3 Planned Projects Dewatering Treatment Process RP-1

Table 7-20
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24020	RP-1 Dewatering Centrate Pumps	Remove existing ESSCO pumps due to poor reliability and low performance. Install new reliable pumps. Remove and replace the existing railing system.										
EN26008	RP-1 Centrate Line Struvite Prevention	The project will add a total of 5-6 HydroFlow units to the centrifuge building for operational efficiency and struvite prevention. The project will install a power supply to the four (4) HydroFlow units at the sludge feed influent pipes at the inlet of the centrifuge and one (1) to two (2) HydroFlow units to centrate line downstream of the centrate pump.										
EN28002	RP-1 Centrate Treatment	Perform a pipeline condition/capacity assessment on the entire RP-1 centrate pipeline system from RP-1 to the NRW and centrate pumps. Recommendations from the pipeline assessment will be turned into another project to recover pipeline capacity. Defer the above and instead replace the pump impellers to match the design that was implemented during construction of the facility.										
EN29006	RP-1 Dewatering Silos Levelers Relocation	Modification to the RP-1 Dewatering Silos levelers to lower the leveling screws to be able to spread the biosolids evenly throughout the silos and add an extra 30.000-40,000 lbs. of biosolids in each silo										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.3.7 Auxiliary Systems - RP-1

7.3.7.1 Asset Summary- Auxiliary Systems RP-1

Table 7-21
Asset Summary

Process	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-1 Plant Drain	The RP-1 plant drain collects and pumps the surface runoff from storm events, wash-down water, and drains some of the treatment plants tanks and processes in the preliminary, primary, secondary, solids, and dewatering sections. The drain system receives gravity flows to a wet well, where it is pumped to the System C splitter box.	RP-1 Plant Drain	2 @ 1,585 GPM 40 hp	
TP-1 Plant Drain	The TP-1 plant drain collects and pumps surface runoff from storm events, wash-down water, and drains TP-1 tanks and processes in the tertiary section. The drain system receives gravity flows to a wet well, where it is pumped to the waste-wash water basin. A second pump station (West Wind Storm Water Pump Station) collects surface runoff and pumps water to the main TP-1 Plant Drain wet well.	TP-1 Plant Drain	2 @ 1,000 GPM 15 hp	
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE) and onsite energy generation (solar and emergency generators). The solar assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the RP-1 Power Reliability Building, where transformers and switchgear are located to distribute electrical energy throughout the facility. Diesel emergency generators are used in the event of a power failure. Three generators are located in the Energy Recovery Building and supply power to the preliminary, primary, secondary, solids and dewatering sections. One generator supplies power to the tertiary section. A final generator supplies power to the Dechlorination System. An extensive lighting system is needed to illuminate the facility during dark hours. Most lighting fixtures are equipped with light sensors to turn off when sufficient lighting is provided from the sun. Lighting units are inside each of the process buildings, on equipment walls, and along the roadways for safety.	Utility Voltage Transformers Switchgear Distribution RP-1 Generator TP-1 Generator Dechlorination Generator Mounted Lighting	12 kV 12 kV to 480 V 2 @ 12 kV to 4,160 V 1 @ 12 kV 22 @ 480 V 1 @ 4160 V 3 @ 1,250 kW 1,801 Bhp 1 @ 670 kW 896 Bhp 1 @ 30 kW > 145 units	MCCs MCCs
Utility Water System	Utility water is used for cleaning, supplying pump seal water, cooling, dilution, flushing of clogged pipes, irrigation, and other inner plant uses. The system can be supplied by the 1050-foot pressure zone pump station. The utility water system piping consists of several isolation valves and point-of-use connections.	Pipelines	Various sizes	
Potable Water System	Potable water is used throughout the plant for restrooms, cooling, odor scrubber dilution water, fire suppression, and more. The system is supplied from a service on Philadelphia Street and another service on Walnut Avenue from the city of Ontario. The system has several backflow devices to protect the drinking water system.	Backflow Devices	31 units	
Instrumentation and Control System	An extensive array of instruments is used to monitor and control the processes at RP-1. Nearly all of the processes at the plant are observed and controlled from a centralized control system known as the Supervisory Control and Data Acquisition or SCADA system. Control wiring and local panels are provided at individual pieces of equipment, and control wiring transmits data to three main control terminals at (1) Main Control Building, (2) Dewatering Building, and (3) the Tertiary Control Building.	HMI Workstations PLC I/O Hub Radio Transmitter	6 Units 16 Units 1 unit	
Yard Piping	A substantial network of pipes is used to convey flows between unit processes. The material, sizes, and service conditions of these pipes vary widely.			

7.3.7.2 Asset Ratings - Auxiliary Systems RP-1

Table 7-22
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-1 Plant Drain	3	3	3	3	Standing water within the plant does result in vector issues.
TP-1 Plant Drain	4	4	4	4	The West Wind Storm Water pumps Station has experienced pump failures. Intense rainfall events have overwhelmed the low capacity pumps station. Several factors can be attributed to the low capacity; inadequate pump sizing, small pump discharge piping and obstructions that clog pumps/piping limiting flow.
Electrical System	3	3	3	3	Project EN13048 installed a second 12 kV feeder from the power reliability building to TP-1. The System C main control computer (MCC) panel is located outdoors. Maintenance is planning a project to rehab and provide protection for the MCC. The Plant 3 primary MCC is aging and no longer supported by the manufacturer. Project EN14019 will rehab and replace the MCC. Lighting rehab and improvements are being evaluated and implemented by the Engineering Department. Recent investigation into the backup generator switchgear has indicated the controls are near the end of their useful life. A potential project is needed to replace 20 year old PLC. EN23000 will evaluate the age and quality of MCC's with E3 overloads to determine if a partial or full replacement is required.
Utility Water System	4	3	4	3	A potential maintenance project will rehab deteriorated portions of this system. Recent condition assessments of the main utility water feed have indicated active corrosion occurring in piping supplying most of the treatment plant. Several of the valves meant for isolation of the utility water system do not hold.
Potable Water System	3	4	4	3	EN24028 will rehab deteriorated portions of this system. Several leaks have been observed and fixed in the potable water system.
Instrumentation and Control System	5	3	3	3	The control system will be updated as part of Project EN13016. EN23114 will construct required electrical and control wiring infrastructure needed to implement the PCN request list to complete the RP-1 SCADA migration upgrades project. IS25008 and IS25010 will purchase network infrastructure including switches, Wi-Fi access points, and wireless access points to support Agency expansion and support during disaster recovery and business continuity.
Yard Piping	4	3	3	3	Observations suggest that piping around preliminary, primary, and solids processes that do not run full may have significant deterioration. A condition assessment is required to determine the scope of a potential maintenance project to rehab this system.

* Ratings as defined in Appendix A; General System Assets

7.3.7.3 Planned Projects - Auxiliary Systems- RP-1

Table 7-23
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23000	RP-1 Device Net Replacement	Evaluate the age and quality of MCC's with E3 overloads to determine if a partial or full replacement is required.										
IS25008	Operational Technology Infrastructure New Assets	Purchase additional network infrastructure, including switches and Wi-Fi access points and controllers to support growth and expansion of the Agency. Expand technology infrastructure at RP-1 and RP-4 to support disaster recovery and business continuity.										
IS25010	Operation Technology Infrastructure for New Assets	Extend Wi-Fi coverage into process areas at treatment and operations facilities. Equipment purchase will include network infrastructure, switches, access points, and wireless controllers.										
EN23114	RP-1 Instrumentation and Control Enhancements	Assess all the PCN requests, design, and construct the required electrical and control wiring infrastructure needed to implement the PCN request list for a comprehensive completion to the RP-1 SCADA Migration Upgrades Project.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

End of System Summary

7.4 Regional Water Recycling Plant No.2 – Asset Management System Summary

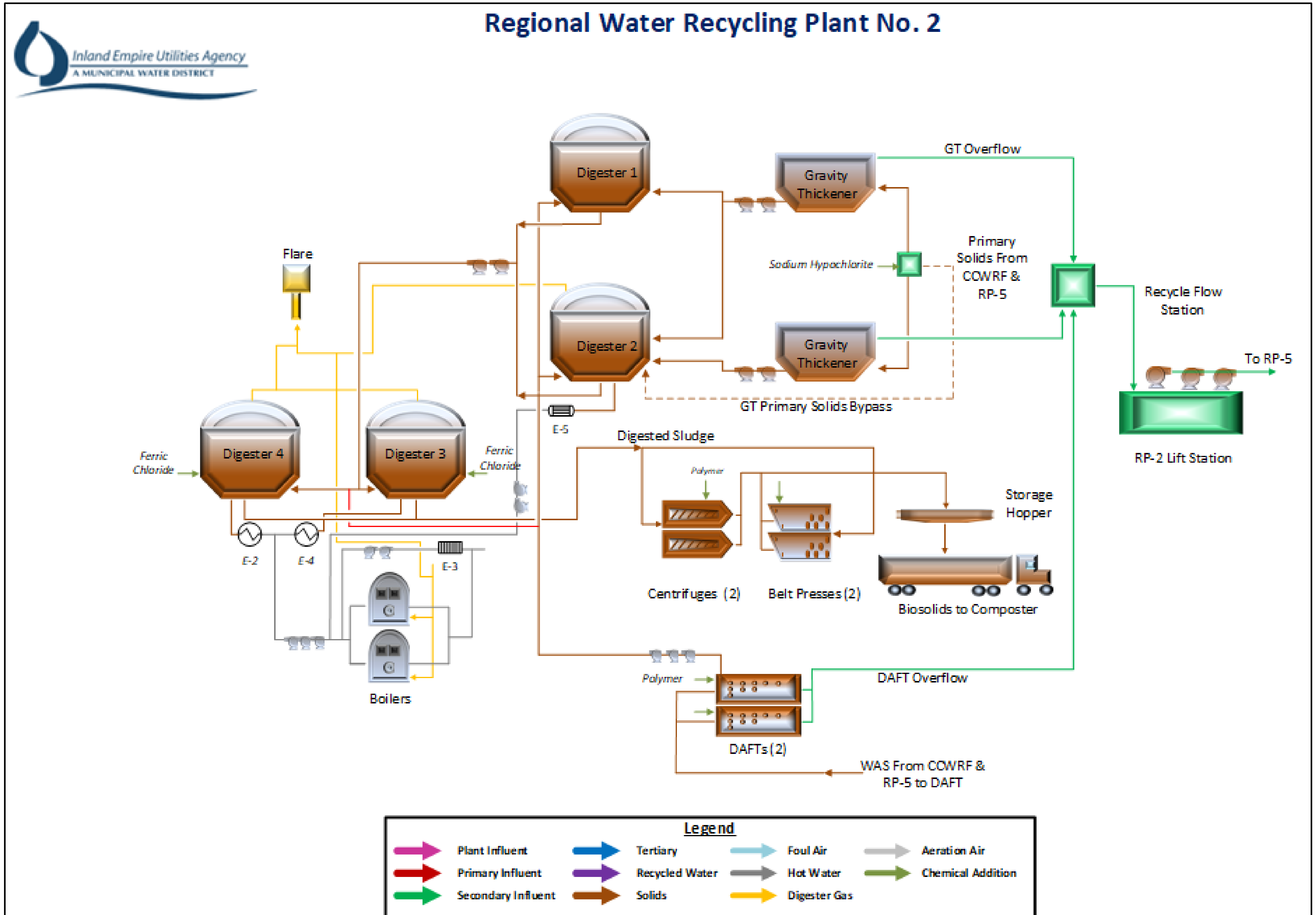

Figure 7-9: Regional Water Recycling Plant No. 2 (RP-2)

Table 7-24
Regional Water Recycling Plant No.2 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN28006	RP-2 Decommissioning	The Agency will retain a consultant to provide a preliminary design report for the decommissioning of the RP-2 facility safely and without disruption to the two facilities currently supplying solids to the RP-2 plane. These facilities are the RP-5 and CCWRF Facilities	RC	CC				$500,000	$1,000,000	$1,500,000	$1,500,000	$4,500,000	$8,000,000	$8,000,000	$25,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.4.1 Solids Treatment Process - RP-2

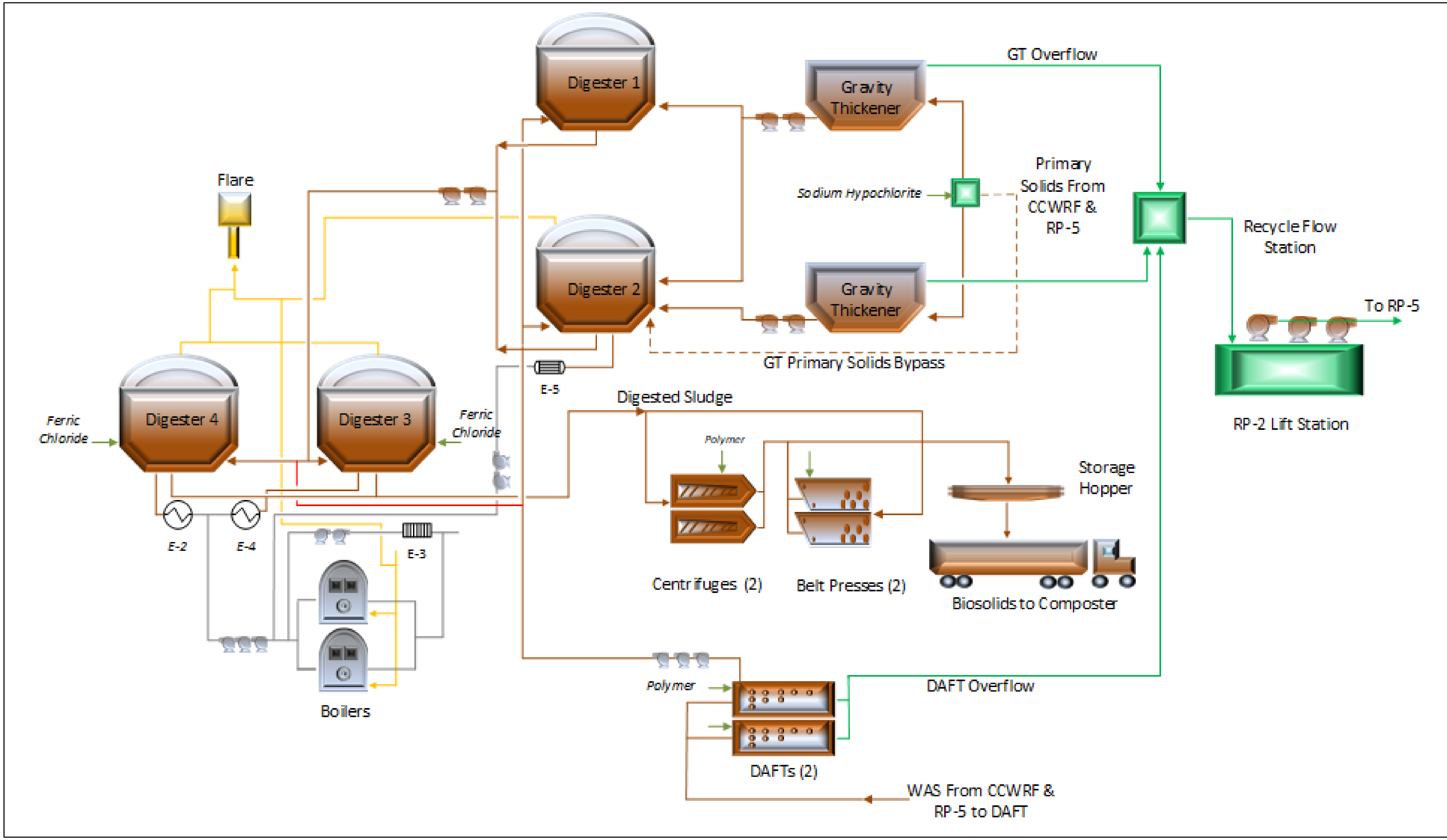

Figure 7-10 Solids Treatment Process

7.4.1.1 Asset Summary - Solids Treatment Process RP-2

Table 7-25
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Solids Treatment Process			26.4 MGD	
Gravity Thickener (GT) System	The gravity thickener (GT) distribution box receives primary clarifier sludge and scum from CCWRF and RP-5 and distributes flow to GT #1 or #2 or both. Sodium hypochlorite may be introduced to the GT if needed from a 1600-gallon storage tank onsite. Solids are allowed to settle at the bottom of the GT. Solids are increased from ~1 percent total solids (TS) to ~4 percent TS. The thickened solids are then pumped to the digestion system.	Tank Drive Pumps	2 @ 760 gpd/ft^2 1,590 ft^2 2 @ 10 hp 210 GPM 15 hp	Per Unit Per Unit
Dissolved Air Flotation Thickener (DAFT) System	The DAFT system consists of two circular tanks. Waste activated sludge from the secondary system from CCWRF and RP-5 enters the DAFT and is mixed with recycled flow that has been pressurized with compressed air and dosed with polymer. Solids float to the top, where they are skimmed off and pumped to the digestion system. Solids are thickened from 1 percent TS to 4 percent TS. The overflow of the DAFT flows to the recycle flow station. Flow from the recycle flow station flows to the RP-2 lift station, where it is returned to the RP-5 headworks.	Tanks Recirculation Pumps Sludge Pumps Polymer Blending Units Compressors	2 @ 25 gpd/ft^2 707 ft^2 5 @ 40 hp 3 @ 210 GPM 10 hp 2 @ 8.0 gph 4.5 hp	Per Unit Per Unit Per Unit Per Unit
Digestion System	The digestion system consists of three anaerobic digesters and one aerobic digester. Digester 1 is operated only when capacity is limited. Digester 2 is a fixed-dome acid anaerobic digester and receives thickened sludge from the GT and DAFT systems. Digested sludge from Digester 2 is transferred to Digesters 3 and 4. Digesters 3 and 4 are floating-dome digesters and may be fed in series or parallel depending on the mode of operation. Plate and frame heat exchangers from the hot water system and recirculation pumps maintain temperatures from 97 to 128 degrees Fahrenheit. Gas mixers recirculate digester gas and use it to mix the digesters' sludge content with gas cannon mixers. Gas piping connected to the top of each digester allows the digester gas produced to enter the gas conveyance system. Several pressure vacuum regulated valves and J-tube safety blow-offs are installed on each digester to prevent over-pressurization	Digester No.1 & 2 Digester No.3 & 4 Recirc. Pumps Heat Exchangers Tube in Tube Spiral Plate Gas Mixers	2 @ 489,565 gallon 2 @ 1.79 MG 3 @ 530 GPM 10 hp 3 @ 412 GPM 15 hp 2 @ 2.5 MMBTU/hr 2 @ 2.0 MMBTU/hr 2 @ 2.6 MMBTU/hr 3 @ 200 SCFM 25 hp	Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit Per Unit
Sludge Transfer System	RP-2 is equipped with several pumps and automated valves to transfer sludge through the digestion system.	Digester No.2 Pumps Digester 3 & 4 Pumps	2 @ 300 GPM 15 hp 2 @ 500 GPM 25 hp	Per Unit Per Unit
Hot Water System	The hot water system generates heat in the boilers and cogeneration engines. Two boilers are fueled by digesters or natural gas or both. Two tubes in tube heat exchangers are dedicated to heat Digester 2 and two spiral heat exchangers are dedicated to Digesters 3 and 4. The hot water is pumped into a hot water loop, where heat exchangers are used to heat the digestion system.	Boiler Hot Water Pumps Engine Recovery	1 @ 3.1 MMBTU 1 @ 3.7 MMBTU 2 @ 400 GPM 3 @ 500 GPM 2 @ 640 GPM 2.15 MMBTU/hr 2.68 MMBTU/hr	

Table 7-25
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Gas Conveyance and Waste System	Digester gas collected from the digestion system enters the gas loop and is used for sludge mixing, fuel for boiler, and engine co-generation, or could be wasted to a waste gas burner (flare) when excess gas is in the system. The digester gas may be stored in either a low- or high-pressure tank. Gas compressors are used to compress the digester gas into the high- pressure tank. The gas loop has several J-tubes and pressure-vacuum relief valves to prevent over-pressurization. An iron sponge using ferric oxide-impregnated media is used to reduce the hydrogen sulfide content in the gas of Digester 2 before entering the gas loop. Gas collected from the digestion system enters the gas loop, which can deliver low-pressure gas to the compressors for use in the boiler or fuel cell or to the flare. The gas loop has several J-tubes to prevent over-pressurization. Iron sponges are used to remove hydrogen sulfide from the digester gas. Digester 2 has a waste gas line that can deliver low- methane-content gas directly to the flare.	Waste Gas Burner Iron Sponges Gas Compressors	1 @ 350 ACFM 12.6 MMBTU/hr 1 @ 224 ft^3 2 @ 60 hp 1 @ 50 hp	
RP-2 Lift Station	The RP-2 lift station collects raw sewage from the Mountain Avenue interceptor, Chino Institute for Women (CIW) sewer, Butterfield force main, and recycle flows from the solids treatment facilities at RP-2, and discharges through a 24-inch pipeline to the RP-5 headworks.	Pumps	3 @ 3,300 GPM 100 hp	

7.4.1.2 Asset Ratings - Solids Treatment Process RP-2

Table 7-26
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
GT System	3	3	4	3	Rags and large debris pass through the influent distribution box and into the GT influent center-feed columns, where frequent clogging occurs. Due decommissioning of RP-2 under EN28006 further improvements will not be required.
DAFT System	4	3	4	3	Issues with capacity of DAFTs. Due decommissioning of RP-2 under EN28006 further improvements will not be required.
Digester System	4	3	3	3	Digester 2 has recently been rehabbed, but the T-lock lining system inside the digester needs to be repaired/replaced. Cracks and stains on digester walls are noted.
Sludge Transfer System	3	3	3	3	No issues require special attention.
Hot Water System	3	3	3	3	No issues require special attention.
Gas Conveyance System	3	3	3	3	No issues require special attention.
RP-2 Lift Station	4	3	3	4	Lift station emergency generator not keeping pumps running during power outages. E&I to place filter on power source to LIT. Addressed with new pump station under the RP-5 Expansion Project.

* Ratings as defined in Appendix A; General System Assets

7.4.1.3 Planned Projects - Solids Treatment Process RP-2

Table 7-27
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN28006	RP-2 Decommissioning	The Agency will retain a consultant to provide a preliminary design report for the decommissioning of the RP-2 facility safely and without disruption to the two facilities currently supplying solids to the RP-2 plane. These facilities are the RP-5 and CCWRF Facilities				CIP-Design	CIP- Construction	CIP- Construction	CIP- Construction	CIP- Construction	CIP- Construction	CIP- Construction

*Note: Types of Projects:

(blue)	CIP/O&M-Planning
(light cyan)	CIP-Design
(tan)	CIP- Construction
(rust)	Maintenance Project

7.4.2 Dewatering Treatment Process – RP-2

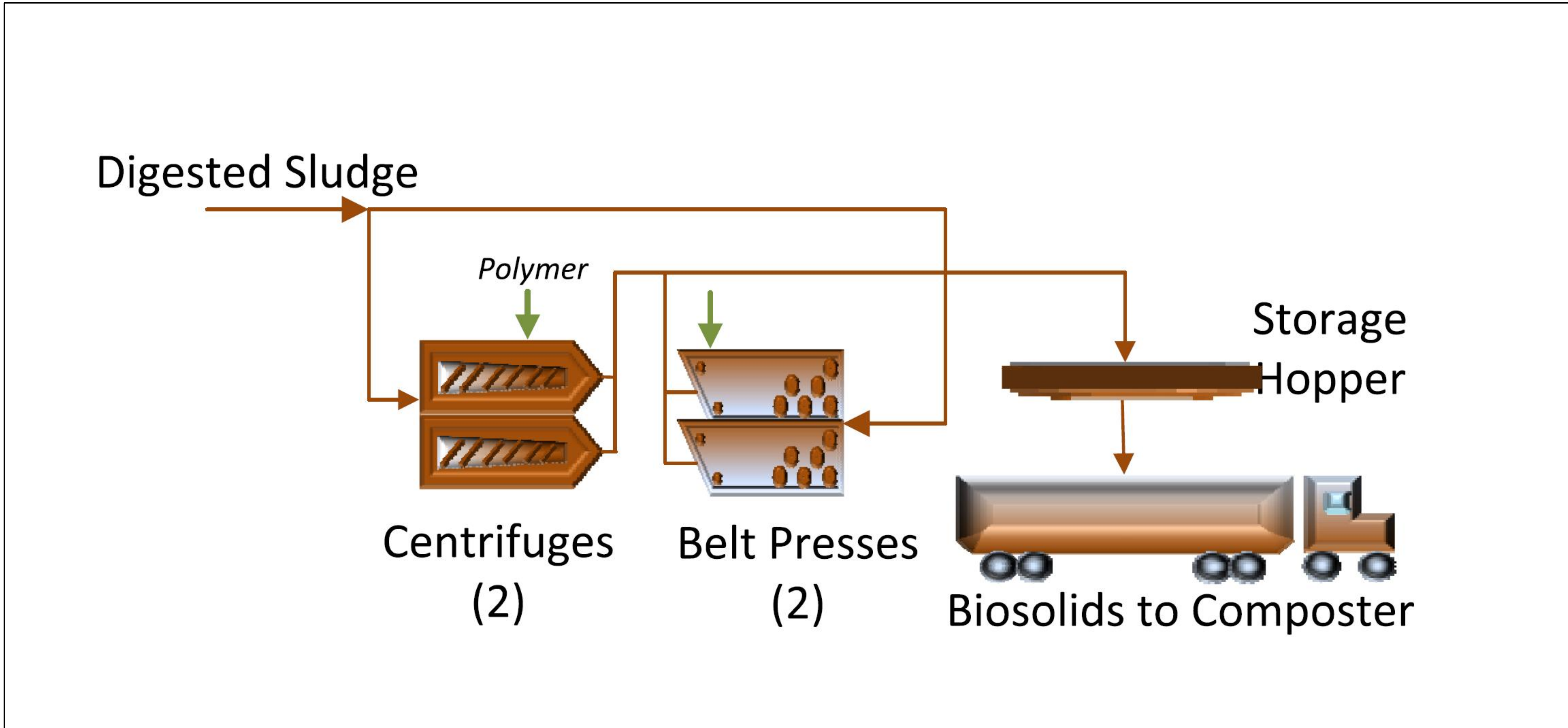

Figure 7-11 Dewatering Treatment Process RP-2

7.4.2.1 Asset Summary- Dewatering Treatment Process RP-2

Table 7-28
Asset Summary

System	Process	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Dewatering Treatment Process			30 MGD 211K wet tons per year	
Sludge Grinding System	Digested sludge from Digesters 3 and 4 pass through dedicated sludge grinders before the sludge enters the dewatering feed pumps. Three inline grinders ensure that large solid objects are broken up into small pieces to limit the possibility of plugging downstream piping or equipment.	Sludge Grinding System	3 @ 210 GPM	
Sludge Feed Pump System	Three sludge feed pumps pump sludge to the belt press system or the Centrifuge System, or both. The sludge pumps are variable speed with flow meters, instrumentation, and controls.	Sludge Feed System Pump	 3 @ 210 GPM 10 hp	
Polymer Blending System	The dewatering polymer system consists of three chemical metering pumps, three polymer blending units, and static mixers to mix the polymer with the sludge. Polymer is delivered in totes and pumped by the chemical metering pumps, mixed with dilution water, and dosed to the sludge flow	Polymer Blending System Polymer Pump Dilution	 3 @ 8.0 gph 3 @ 1200 gph	
Belt Press System	The RP-2 belt press system consists of two belt filter presses. A feed box receives sludge flow mixed with polymer and spreads flow across the width of a rotating porous belt. The sludge flow on the belt passes through a series of wedges that separate the sludge and allow collected filtrate to pass through the belt to a drip pan that is piped to the filtrate and centrate pumping system. The sludge flows then passes through the pressured zone, where sludge is pressed between two belts and allowed to drain. The compressed sludge then passes over a series of rollers that squeeze out remaining filtrate to drip pans. The belts then separate, and two scraper blades scrape the dewatered solids (cake) off each belt, dropping the processed cake onto the conveyor system. Wash-water pumps supply water to spray each belt with high-pressure water to prevent the porous belts from clogging.	Belt Press System Belt Press Wash-water pump	 2 @ 150 GPM 1,700 dry lbs/hr 3 @ 100 GPM 7.5 hp	
Centrifuge System	The sludge flow mixed with polymer enters the feed tube of the centrifuge and discharges into a spinning bowl. The centrifugal force of the spinning bowl forces the heavier solids to the edge of bowl and centrate to rest on top of the solids. A scroll spinning, slightly faster than the bowl, scraps the solids around the edge of the bowl to one end of the centrifuge, up a beach and into the discharge shoot to the conveyor. Dam plates near the center of the spinning bowl hold a depth of centrate until it overflows the opposite end of the centrifuge where it is piped to the centrate wet well.	Centrifuge System Centrifuge Main Drive Back Drive	 2 @ 325 GPM 1,200 hp 40 hp	
Conveyor System	Two belt press conveyors transfer cake from the discharge of each belt press and then transfer the collected solids up to the top of the cake hopper. Six shaftless screw conveyors transfer cake from the discharge of each centrifuge to a common belt conveyor. The dewatered cake then travels up to the cake hopper, where it is distributed evenly on the trailer of a sludge hauling truck.	Conveyor System Belt Conveyor Screw Conveyors	2 @ 44,000 lbs/hr 1 @ 350 ft^3/hr 3 hp 3 @ 700 ft^3/hr 3 hp 2 @ 700 ft^3/hr 7.5 hp 1 @ 1600 ft^3/hr 15 hp	
Cake Hopper	The cake hopper receives cake from the conveyor system and holds the cake until a loading sequence has been initiated to discharge the solid cake to a truck trailer for hauling to an offsite facility	Cake Hopper	1 @ 1,956 ft^3	
Filtrate and Centrate Pump System	Filtrate and centrate collected from the belt press and centrifuge processes are conveyed to a common wet well where they are pumped into the RP-2 lift station wet well and discharged to RP-5.	Filtrate and Centrate Pump Pumps	 2 @ 480 GPM, 7.5 hp	

7.4.2.2 Asset Ratings - Dewatering Treatment Process RP-2

Table 7-29
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Sludge Grinding System	3	3	3	3	No issues require special attention.
Sludge Feed Pump System	3	4	3	3	Sludge feed pump no. 1 has been down for several months. Due decommissioning of RP-2 under EN28006 further improvements will not be required.
Polymer Blending System	3	3	3	3	No issues require special attention.
Belt Press System	4	4	4	4	Overhauling of both belt press units to be performed over the next couple of months. Lack of capacity causes extended dewatering time. Due decommissioning of RP-2 under EN28006 further improvements will not be required.
Centrifuge System	3	3	3	3	No issues require special attention.
Conveyor System	3	3	3	3	No issues require special attention.
Cake Hopper	3	3	3	3	No issues require special attention.
Filtrate and Drainage Pump Station	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.4.2.3 Planned Projects - Dewatering Treatment Process RP-2

Table 7-30
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN28006	RP-2 Decommissioning	The Agency will retain a consultant to provide a preliminary design report for the decommissioning of the RP-2 facility safely and without disruption to the two facilities currently supplying solids to the RP-2 plane. These facilities are the RP-5 and CCWRF Facilities										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.4.3 Auxiliary Systems Dewatering Treatment Process RP-2

7.4.3.1 Asset Summary- Auxiliary Systems Dewatering Treatment Process RP-2

Table 7-31
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Plant Drain	The plant drain collects surface storm runoff, excess irrigation, and wash-down water collected in submersible drains located throughout the facility. The drain system receives gravity flows throughout the facility and is pumped to the RP-2 lagoon, the RP-2 lift station and finally to RP-5 headworks.	Plant Drain	2 @ 200 GPM	
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE and Direct Access) and onsite co-generation. The electrical feed from the grid is composed of two 12 kV feeders to the power panel switchgear, where transformers and switchgear are located to distribute electrical energy throughout the facility. A 300 kW diesel emergency generator is used in the event of a power failure to power the RP-2 lift station.	Utility Voltage Transformers Switchgear Distribution Generator	2 @12 kV 2 @ 12 kV to 480 V 2 @12 kV 5 @ 480 V 1 @ 600 kW 1 @ 300 kW	
Utility Water System	Utility water is used throughout the facility to clean, supply pump seal water, cool, dilute, flush clogged pipes, irrigate, and more. The system is supplied by the pump station. The piping consists of several isolation valves and point-of-use connections.	Pipelines Pump Station Valves	Various sizes Fed from RP-5 PS >10 units	
Potable Water System	Potable water is used throughout the plant for restrooms, cooling, odor scrubber dilution water, fire suppression, and more. The system is supplied by a service on a potable line off El Prado Rd. from the City of Chino. The system has several backflow devices to protect the drinking water system.	Backflow Devices	>10 units	
Instrumentation and Control System	An extensive array of instruments is used to monitor and control the processes at RP-2. Nearly all the processes at the plant are observed and controlled from a centralized SCADA system. Control wiring and local panels are provided at individual pieces of equipment, and control wiring transmits data to three main control terminals at RP-2.	HMI Workstation RTU PLC I/O Hub Radio Transmitter		
Yard Piping	A substantial network of pipes is used to convey flows between unit processes. The material, sizes, and service conditions of these pipes vary widely.			

7.4.3.2 Asset Ratings - Auxiliary Systems Dewatering Treatment Process RP-2

Table 7-32
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Plant Drain	3	3	3	3	No issues require special attention.
Electrical System	3	3	3	3	No issues require special attention.
Utility Water System	3	3	3	3	No issues require special attention.
Potable Water System	3	3	3	3	No issues require special attention.
Instrumentation and Control System	3	3	3	3	No issues require special attention.
Yard Piping	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.4.3.3 Planned Projects – Auxiliary Systems Dewatering Treatment Process RP-2

Table 7-33
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN28006	RP-2 Decommissioning	The Agency will retain a consultant to provide a preliminary design report for the decommissioning of the RP-2 facility safely and without disruption to the two facilities currently supplying solids to the RP-2 plane. These facilities are the RP-5 and CCWRF Facilities										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

End of System Summary

7.5 Carbon Canyon Wastewater Reclamation Facility - Asset Management System Summary

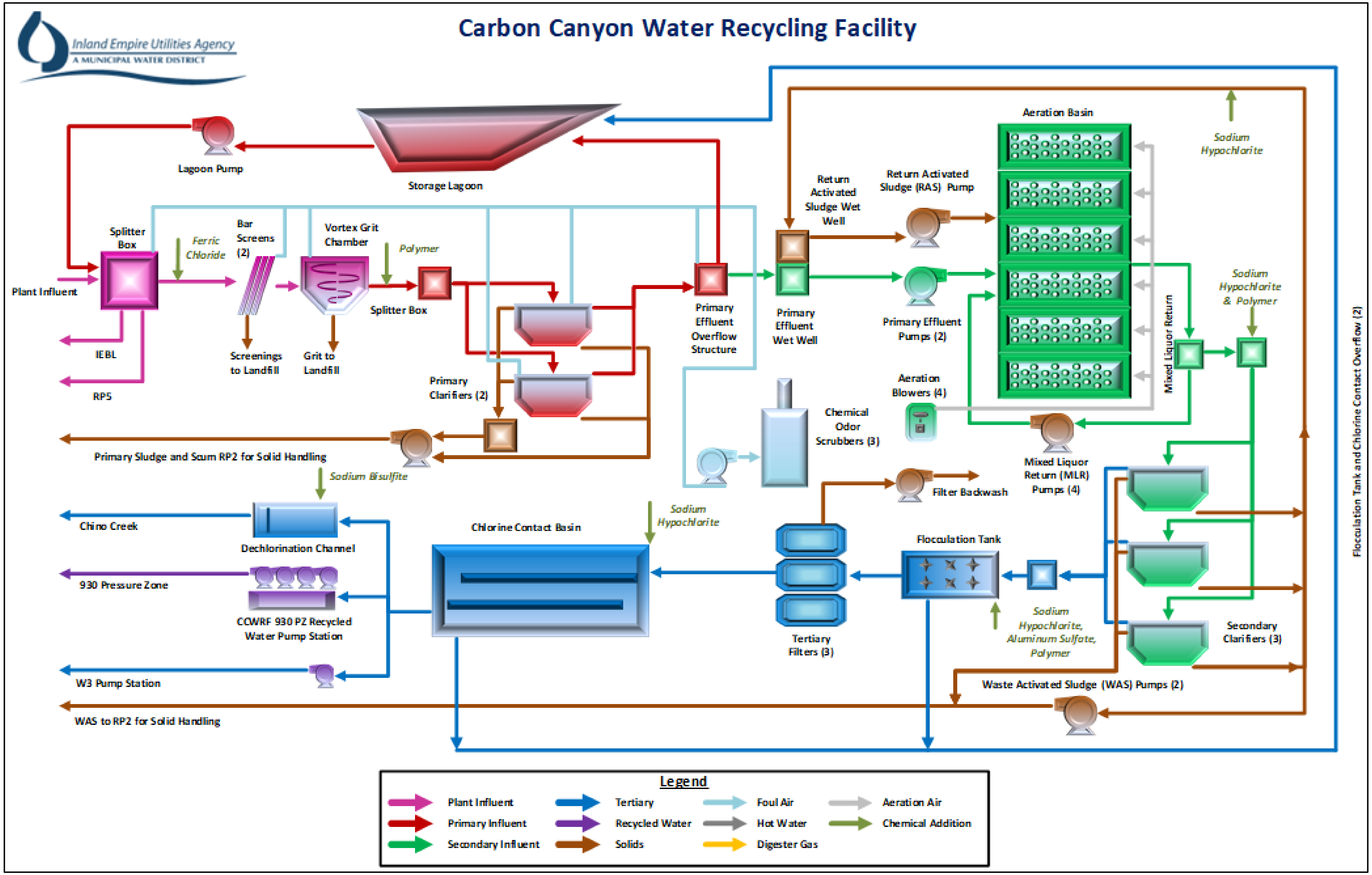

Figure 7-12 Carbon Canyon Wastewater Reclamation Facility (CCWRF)

Table 7-34
Carbon Canyon Water Recycling Facility – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN23035	CCWRF RAS Header Replacement	Replace (3) 16" connections points to the RAS main header coming from the secondary clarifiers along with replacing 22ft of 36" coated steel pipe	RO	CC	$250,000										$250,000
2	EN23038	CWRF HVAC System Upgrade	Replace existing Operations building HVAC equipment at CCWRF. Scope includes replacing chilled water air handlers, boilers, zoning, and controls.	RO	CC	$250,000										$250,000
3	EN23074	CCWRF Influent Box Rehab at the Primary	Perform urgent rehabilitation of the concrete substrates to improve the integrity of the Primary Clarifier Influent Box structure.	RO	CC	$480,000										$480,000
4	EN25068	CCWRF Fire Hydrant Valves	The scope of work will include the replacement of three (3) buried underground isolation gate valves (app. At 10ft depth) and the relocation and demolition of one (1) fire hydrant with the replacement of the isolation valves, fittings, and connections to the fire hydrant. In addition, the scope will cover as well locating 2 isolation gate valves (3" and 8"). The condition of the 2 valves will be assessed and replaced in kind if necessary.	RO	OM	$150,000	$250,000									$400,000
5	EN17006	CCWRF Asset Management and Improvements	The project will provide process improvements to the preliminary, primary and secondary treatments including the replacement of the existing headworks, the odor control system and the aeration blowers	RC	CC	$10,000,000	$6,875,000									$16,875,000
6	EN25006	CCWRF Primary Clarifier Coating	Restore concrete surfaces of primary clarifiers and apply protective coating. Replace or apply protective coating to corroded metallic components such as valves and outlet bodies.	RO	CC	$140,000	$1,260,000									$1,400,000
7	EN25007	CCWRF Primary Dewatering Wet Well Inlet Valves	The project scope consists of evaluating the drain valves and replacing them as needed.	RO	OM	$30,000	$230,000									$260,000

Table 7-34
Carbon Canyon Water Recycling Facility – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
8	EN25009	CCWRF Primary Scum Wet Well Inlet Valves	Replace inlet valves of both scum wet wells as needed	RO	OM	$100,000	$145,000									$245,000
9	EN25008	PE/RAS/MLR Concrete Structure Condition Assessment and Repair	The project scope consists of repairing concrete and equipment as needed. Asset Management would conduct a condition assessment and would provide a report.	RO	OM	$100,000	$290,000									$390,000
10	EN25005	MLR Pump Station Condition Assessment and Repair	The project scope consists of making any necessary repairs to the pedestal structure. Asset Management would conduct a condition assessment of the structure and would provide a report. It has been assumed as part of this cost estimated that up to 4 Pedestals may need to be replaced.	RO	OM	$100,000	$130,000									$230,000
11	EN23004	CCWRF Aeration Basins 1-6 Drain Valves	The project scope consists of evaluating the drain sumps to verify the type of plug used to keep from potential backflow due to the drain valves not holding. Replace the existing 6' drain valves for aeration basins 1-6.	RO	CC	$766,000	$250,000	$600,000	$185,000							$1,801,000
12	EN25045	CCWRF Electrical Improvements	The CCWRF was commissioned in 1992. Much of the electrical infrastructure is original from the original construction and is approaching the end of useful life and end of product support. These items include electrical switchgear, motor control centers (MCC), transformers, lighting panels, lighting contactors, exhaust fan control panels, and miscellaneous control panels. This project is needed to ensure the electrical system's reliability at CCWRF.	RO	CC	$500,000	$750,000	$2,725,000	$2,725,000							$6,700,000

Table 7-34
Carbon Canyon Water Recycling Facility – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
13	EN25069	CCWRF Process Improvements Phase II	Engineer and install new air drop-leg headers, diffusers, and moisture purge lines for Aeration Basins 3-6. Install the shade system to the dechlor basin. Replace the underground tank with above-ground tank. Install necessary leak detection instrumentation. Paint CCWRF Blower Air Pipelines and Mixed Liquor Return Pipes at Aeration Basins.	RC	CC	$200,000	$325,000	$400,000	$1,500,000	$5,750,000	$3,250,000					$11,425,000
14	EN30001	CCWRF Filter Inlet and Bypass Gates	Evaluate the 60-inch gates and repair or replace as needed	RO	OM		$950,000									$950,000
15	EN30002	CCWRF Outfall Discharge Structure and Culvert Rehab	The project scope consists of repairing and/or coating as necessary structure to prevent any further deterioration. Asset Management would conduct a condition assessment and provide a report.	RO	CC		$520,000									$520,000
16	EN29003	Replace Aeration Basin Influent / RAS, Step feed Gates	The project scope consists of inspecting all compromised gates, inspecting those that are currently not in use for integrity of those units and replacing them.	RO	CC		$3,800,000									$3,800,000
17	EN26014	CCWRF Secondary Clarifier Weir Covers	Install secondary weir covers (similar to RP-4) blocking the sunlight and preventing the algal growth.	RC	CC		$1,050,000									$1,050,000
18	EN24024	CCWRF Filter Effluent Structure/Piping Renamed the project to "CCWRF Subsidence Monitoring)	There is evidence that CCWRF is subsiding. A comprehensive evaluation of the soil is needed to determine how to mitigate settling and allow for site expansion in the future. This is thought to be due to poor soil blending and compaction during original plant construction	RO	OM					$50,000	$300,000	$350,000				$700,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.5.1 Preliminary Treatment Process - CCWRF

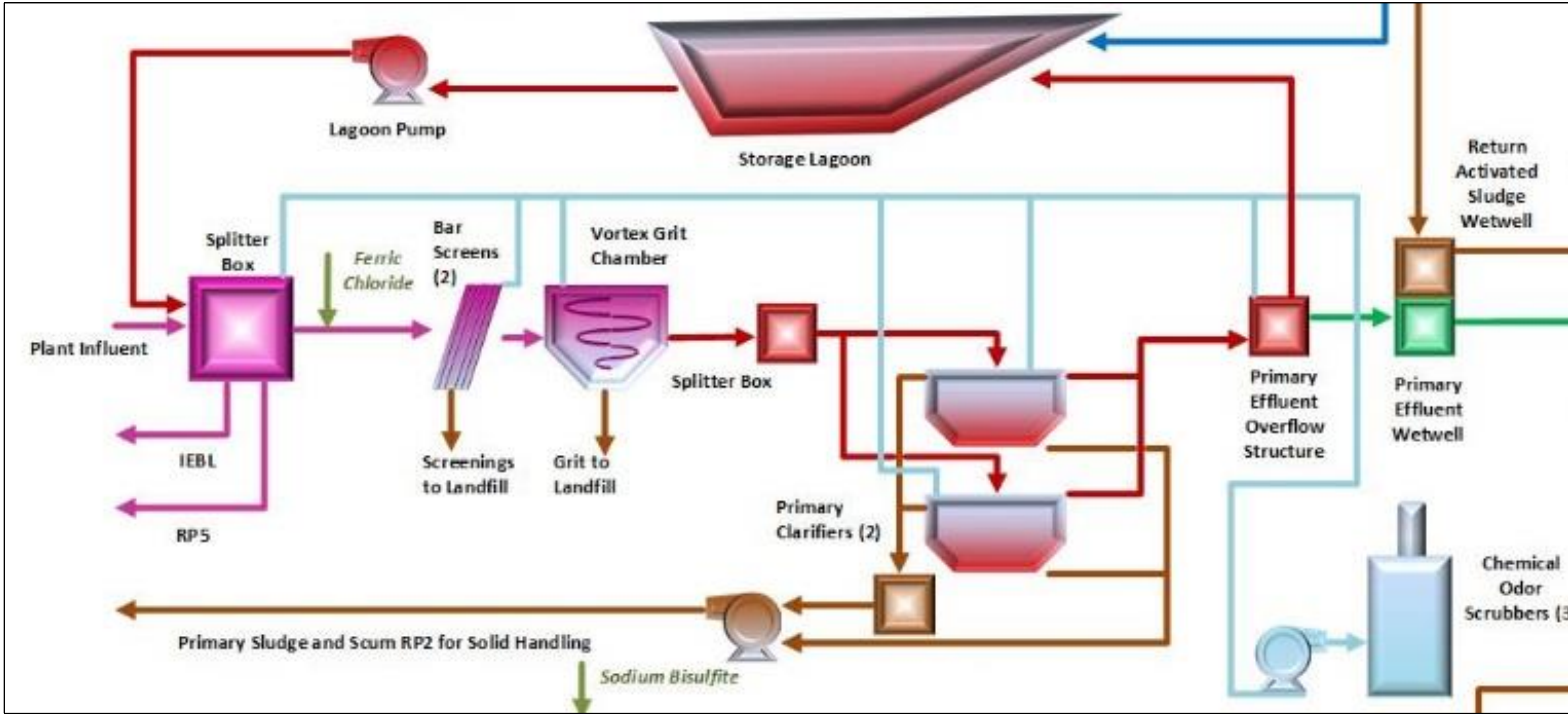

Figure 7-13 Preliminary Treatment Process CCWRF

7.5.1.1 Asset Summary- Preliminary Treatment Process CCWRF

Table 7-35
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Preliminary Treatment Process			20.3 MGD	
Influent Channel	Raw wastewater enters CCWRF through the influent diversion structure. The influent diversion structure enables CCWRF to operate as a skimming plant, taking the majority of raw wastewater and sending the remainder to RP-5. The amount of flow to RP-5 is measured at the Parshall flume downstream of the diversion structure, and CCWRF influent is measured at the Parshall flume downstream of the vortex grit chamber.	Sewer Parshall Flume Gates	54-inch 1 @ 43.9 MGD 2 units	
Screening Equipment	Gates diverts flows into three channels: two mechanical bar screens and one manual bar screen. The 5/8-inch bar screens remove rags and large debris that could damage the downstream process equipment or reduce the overall reliability and effectiveness of the treatment process. A manual bar screen provides standby capacity for the mechanical units.	Mechanical Screen Manual Screen Gates	2 @ 20 MGD 1 @ 40 MGD 3 units	Per Unit
Vortex Grit System	Flow from the bar screen structure is tangentially directed to a 16-foot- diameter circular vortex grit chamber. A paddle mixer pushes flow in a circular path; grit collects at the bottom, where it is pumped to the grit washing/disposal system.	Chamber Grit Pump Gates	1 @ 20.3 MGD 2 @ 220 GPM 15 hp 2 units	 Per Unit
Grit Washing/ Disposal System	Grit pumped from the vortex grit chamber is routed to two grit classifiers, where organic matters are removed from the grit. The grit sinks to a submerged inclined screw and moves up the ramp while being washed. The rich organic liquid from the grit classifiers is directed back to the liquid handling stream.	Classifiers	2 @ 200 GPM	Per Unit
Screening Conveyance/Disposal System	Screening collected by the bar screens is transported by a conveyor and dropped into a hydraulic washer/compactor. The collected rag is washed and organic washed off is routed to liquid treatment. The hydraulic compactor squeezes out excess water, reducing the moisture content. The compacted rags are pushed out to the roll-off bin for disposal.	Conveyor Compactor Grinder Auger	1 hp 10 hp 3 hp	
Ferric Chloride System	Ferric chloride is added to the raw wastewater flow immediately after the influent diversion structure to enhance the solids capture during primary treatment and to control odors caused by hydrogen sulfides. The ferric station consists of a truck filling station, a 7,000-gallon storage tank, two chemical metering pumps, and associated piping.	Tank Pumps	7,000 gallons 2 @ 92 gph	 Per Unit
Headworks Splitter Box	The headworks splitter box receives flow from the vortex grit chamber. The flow is normally routed to primary clarifiers; however, it can also be routed to the primary effluent structure, by passing the primary treatment.	Gates	3 units	
Odor Control Chemical Scrubber	Foul air collected in the preliminary and primary treatment processes are forced through three chemical odor control scrubbers where bleach solution is atomized to chemically remove and oxidize hydrogen sulfide and odor causing gases. The system consists of co-current scrubbing vessels, bleach metering pumps, foul air blowers, air blowers and the associated conveyance pipes.	Blower(1A) Blower(1B1,1B2) Valves	1 @ 6,500 scfm 2 @ 4,400 scfm 3 units	 Per Unit > 18-inch

7.5.1.2 Asset Ratings – Preliminary Treatment Process CCWRF

Table 7-36
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Influent Channel	4	3	3	4	CCWRF lagoon pump discharges to upstream of RP-5 and CCWRF control gates in the influent diversion structure. The flow may go to RP-5, CCWRF or both. There is no flow meter to quantify the amount of flow into the lagoon. Because of this, the lagoon flow may be double counted as CCWRF influent flow. Issues with reliability on bypass gate to RP-5. Covers are degrading. EN30001 will evaluate the 60 inch gates and repair or replace as needed.
Screening Equipment	5	4	5	4	The bar spacing allows a large volume of rags to reach downstream processes. The clearance between the bar screens and the enclosure of the structure is tight, making it difficult for maintenance or housekeeping. Downstream gates seizing up and bypass channel unusable pacing allows a large volume of rags to reach downstream processes. Project No. EN17006 will address these issues.
Vortex Grit System	4	4	3	4	The influent gates to the grit system are seizing up. Grit System bypass has never been used. No running status on SCADA due to input/output on electrical issues. Air has been disconnected and needs to be repaired. Am external condition assessment will be conducted 2025 to evaluate the grit chamber.
Grit Washing & Disposal System	3	3	3	3	Issues with reliability of pumps and failed seals.
Screening Conveyance/Disposal System	4	4	4	4	Rag builds up on scrapers and water builds up on the front end of conveyor near the drive motor. Project EN17006 will address these issues.
Ferric Chloride System	3	3	3	3	Ferric chloride system operates effectively, and re-coating of chemical containment area was recently performed. Pumps may need to be updated with newer style pumps.
Headworks Splitter Box	4	3	3	3	Fiberglass covers and concrete around the structure are in poor condition. The bypass gate failed in open position but will be addressed with project EN17006.
Odor Control Chemical Scrubber	5	5	5	5	The existing concurrent odor control system is in poor condition. The pH, H2S, pressure transmitters, pumps, and control equipment are broken and inoperable. Sections of bleach conveyance system are frequently clogged with deposits, restricting the flow chemical and requiring additional manpower for upkeep. Bleach and caustic storage tanks are more than 20 years old, and there is evidence of leakages at the flanges. A viable alternative is immediately needed for compliance and reliability. An in-house maintenance project was completed in 2015 to improve short to midterm reliability. The project installed a mist elimination at System A to prevent bleach emission and repaired System B and C fiberglass vessels to stop the leak. Project EN17006 will address these issues.

* Ratings as defined in Appendix A; General System Assets

7.5.1.3 Planned Projects – Preliminary Treatment Process CCWRF

Table 7-37
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN17006	CCWRF Asset Management and Improvements	The project will provide process improvements to the preliminary, primary and secondary treatments including the replacement of the existing headworks, the odor control system and the aeration blowers										
EN30001	CCWRF Filter Inlet and Bypass Gates	Evaluate the 60-inch gates and repair or replace as needed										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.5.2 Primary Treatment Process CCWRF

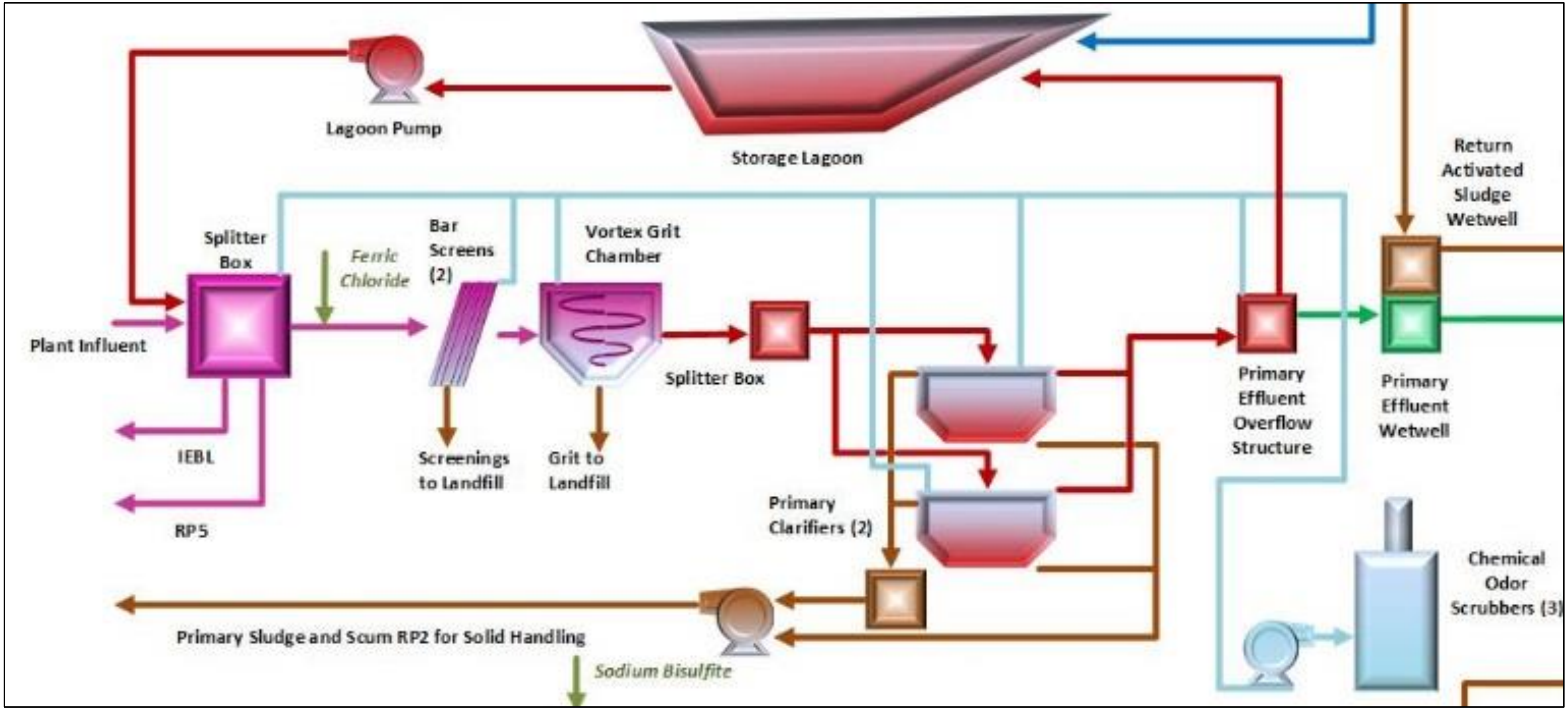

Figure 7-14 Primary Treatment Process CCWRF

7.5.2.1 Asset Summary– Primary Treatment Process CCWRF

Table 7-38
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Primary Treatment Process			13.2 MGD	
Primary Splitter Box	The splitter box receives flow from the vortex grit chamber. By using a system of gates, the flow is routed to one or two clarifiers or is bypassed to Primary Effluent Overflow Structure. The splitter box has provisions for future expansions and points of connections are established. The splitter box shares a common wall with the primary effluent structure.	Gates	3 units	
Primary Clarifiers	Two 95-foot diameter, center-feed, circular primary clarifiers provide sedimentation. Gear-driven flights direct settled solids to the center, and floatable scum to a system of pumps that discharge to an intermediate wet well for temporary storage. The primary effluent is routed by gravity to the primary effluent splitter box, where it is combined with the effluent from other primary clarifiers, and then flows by gravity to the primary effluent pump station.	Primary Clarifiers Drives Gates	2 @ 1,760 gpd/ft^2 7,088 ft^2 1 @ 0.5 hp 4 units	Per Unit Per Unit
Sludge Pumping System	Primary sludge is pumped out of the primary clarifiers continuously to RP-2 for solid handling. A system of valves automatically alternates between the two clarifiers on operator selected timer.	Pumps	2 @ 220 GPM 30 hp	Per Unit
Scum Pumping System	Scum collected in the primary clarifiers is directed to an intermediate wet well and is combined with spent bleach from System B and C. Depending on the level, a transfer pump will pull from the wet well and pump to RP-2 for solids thickening. The scum collection system and intermediate wet well are covered, and the vapor space is connected to the odor control chemical scrubbers.	Pump	2 @ 220 GPM 10.5 hp	Per Unit
Scum Transfer Wet Well	N/A	Valves	2 units	
Storage Lagoon System	Storage lagoon features an onsite, short-term storage capacity of primary effluent, secondary effluent, or tertiary effluent. The primary effluent passively overflows into the storage lagoon in the event of primary effluent pump failure or power outage. Secondary effluent can overflow into the storage lagoon if the filter influent gate closes. In addition, if a noncompliant condition is reached at the tertiary section, tertiary effluent can be overflown into the storage lagoon. The floor of the lagoon is covered with concrete, and the side slope has vegetation to counter the effect of erosion. Stored water is pumped back into the influent diversion structure on an operator selected time and is retreated in the liquid treatment process.	Storage Lagoon System Gates Pump	1 @ 9.0 MG N/A units 1 @ 1,500 GPM 30 hp	
Primary Effluent Overflow Structure	Primary treated water is routed to the primary effluent overflow structure by gravity before it reaches the primary effluent pump station. By a system of pipes established at pre-set elevations, the primary treated water is routed to (1) the primary effluent pump station for secondary treatment or (2) the storage lagoon if there is a power failure or mechanical problem or if the system is hydraulically overloaded.	Gates	N/A Units	

7.5.2.2 Asset Ratings – Primary Treatment Process CCWRF

Table 7-39
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Primary Splitter Box	4	5	4	4	Three gates are utilized to either route flow to or bypass primary clarifiers. Two gates that route flow to the primary clarifiers are normally open but are typically not exercised. Conversely, the bypass gate is normally closed and is not typically exercised. The functionality of these gates is very hard to move. Issues being addressed in EN23074 and EN23035. Currently there is no way to isolate flow to the two primary clarifiers.
Primary Clarifier	5	3	3	3	Concrete surfaces need to be recoated. Concrete is noted as eroding. EN25006 will restore concrete surfaces of primary clarifiers and apply a protective coating. In addition, a protective coating will be applied to corroded metallic components. Dewatering valve for Primary No. 2 is broken and stuck open. This will be addressed under Project EN25007. Project EN25009 will replace inlet valves of scum wet wells as needed.
Sludge Pumping System	3	3	3	3	Lack of redundancy due to scum wet well availability. Pumps were replaced with positive displacement rotary lobe pumps. Jetted lines to clean.
Scum Pumping System	3	3	3	3	The scum wet well has limited controls and instrumentation.
Scum Transfer Wet Well	4	4	4	4	Scum wet well #1 influent valve seized up. Condition inside is unknown and needs to be inspected. This will be addressed in Project No. EN25009.
Storage Lagoon System	3	4	3	3	Some erosion is noted. Only one pump is available but has been recently replaced.
Primary Effluent Overflow Structure	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.5.2.3 Planned Projects – Primary Treatment Process CCWRF

Table 7-40
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23074	CCWRF Influent Box Rehab at the Primary	Perform urgent rehabilitation of the concrete substrates to improve the integrity of the Primary Clarifier Influent Box structure.										
EN25006	CCWRF Primary Clarifier Coating	Restore concrete surfaces of primary clarifiers and apply protective coating. Replace or apply protective coating to corroded metallic components such as valves and outlet bodies.										
EN25007	CCWRF Primary Dewatering Wet well Inlet Valves	The project scope consists of evaluating the drain valves and replacing as needed										
EN25009	CCWRF Primary Scum Wet well Inlet Valves	Replace inlet valves of both scum wet wells as needed										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.5.3 Secondary Treatment Process – CCWRF

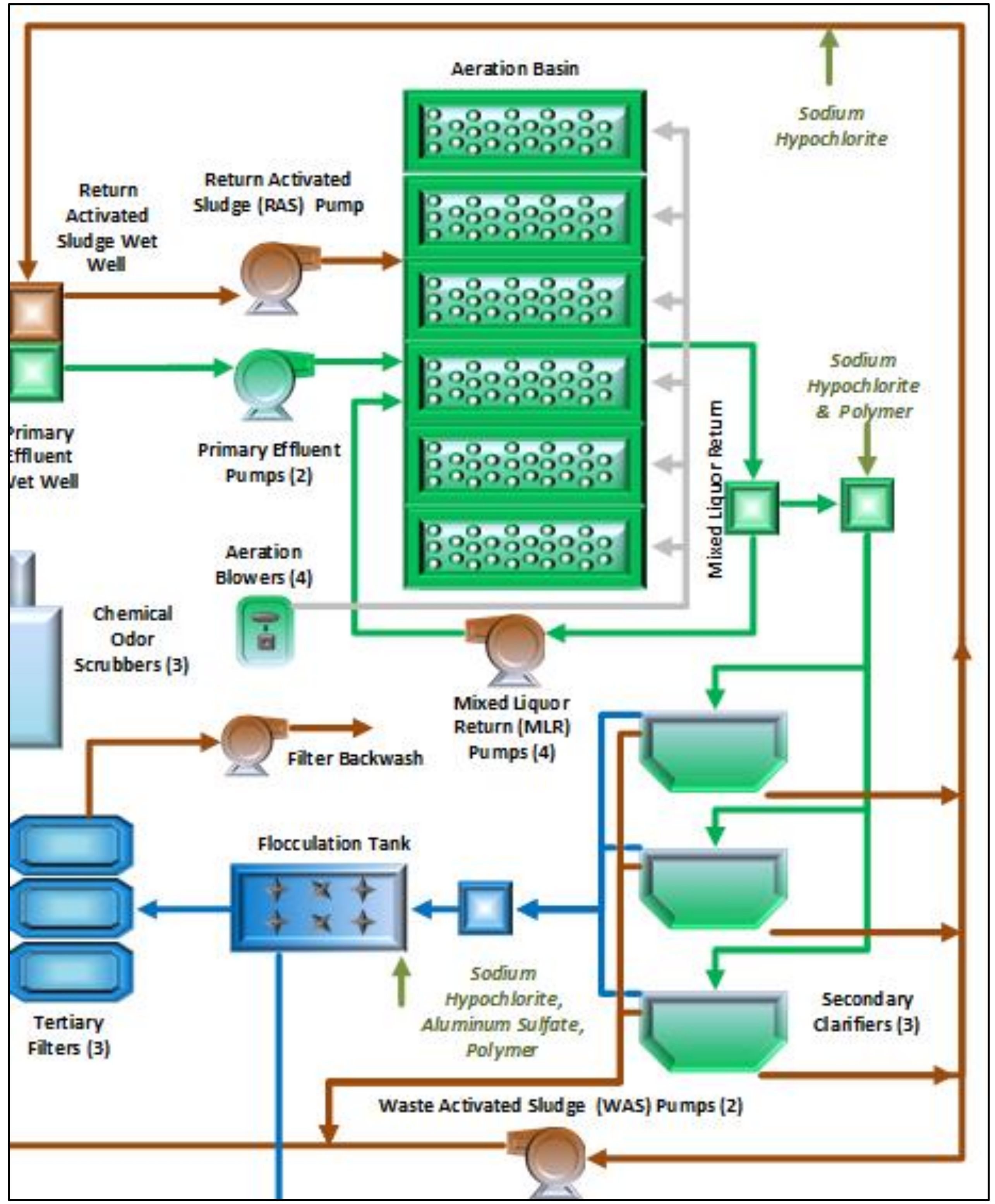

Figure 7-15 Secondary Treatment Process CCWRF

7.5.3.1 Asset Summary- Secondary Treatment Process CCWRF

Table 7-41
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Secondary Treatment Process			12.0 MGD	
Primary Effluent Pump System	Primary effluent flows by gravity into the primary effluent pump station wet well. The wet well can be interconnected with return activated sludge (RAS) wet well and serve as a common wet well by opening a gate. The normal mode of operation is to operate the primary effluent wet well and RAS wet well independently. One of two vertical-turbine pumps lifts water to the aeration basin.	Primary Effluent Pump System	2 @ 17.6 MGD 125 hp	
Activated Sludge System	There are two distribution channels for the aeration basins. By manipulating a system of gates, various combinations of primary effluent, RAS, and MLR can be introduced to the aeration basin. Normal mode of operation is to combine primary effluent, RAS, and MLR flows as one stream and distribute the stream equally to six different aeration basins. Propeller mixers are located at the distribution channel and aeration basin to promote mixing and prevent stratification of the mixed liquor. The trains, except for Train1, have baffled partitions. Each train operates in modified Ludzak-Ettinger configuration with an anoxic zone followed by three oxic zones to achieve the nitrate removal. A system of aeration sheaths, aeration control valves, and dissolved oxygen probes is used to limit or increase the volume of air introduction. The effluent from each aeration basin is combined in a common channel, a percentage of this mixed liquor is rerouted to the front of the aeration basin and the balance is routed to the secondary clarifiers.	Activated Sludge System Blowers Trains Depth Mixers Gates Valve Valves (air) MLR Pumps	6 @ 2.02 MGD 3 @ 6000 scfm 400 hp 10.3 psig 1 @ 6400 scfm 400 hp 12.1 psig 6 @ 1.49 MG 21 ft 22 @ 12 hp 5 per train 4 per system 1 (FCV), 3 (manual) per unit 4 @ 7,425 GPM 50 hp	 Per Unit Per Unit > 12-inch > 12-inch
Secondary Clarifiers	Mixed liquor from the aeration trains flows into the mixed liquor return pump station, and any unpumped mixed liquor passively flows into the secondary influent diversion structure. From the diversion structure, the flow is distributed evenly to three 120-feet-diameter, center-feed, circular secondary clarifiers. Each clarifier has a rotating sludge and skimmer arm. Solids settle to the bottom and are recycled to the aeration basin. The overflow of the secondary clarification is combined in the secondary effluent splitter box and is routed to the flocculation basin for further treatment.	Secondary Clarifiers Gates	3 @ 360 gpd/ft^2 120 ft^2 6 units	
Return Activated Sludge (RAS) Pumping System	The settled sludge in the secondary clarifiers is combined in the common header and routed by gravity into the RAS wet well located upstream of the aeration basin. The desired RAS flow rate at each clarifier is controlled by modulating a 16-inch flow-control valve on the RAS line. From the RAS wet well, RAS is pumped to the aeration basin distribution channel and is mixed with primary effluent and mixed liquor return.	RAS Pumping System Valves Gates	1 @ 17.6 MGD 125 hp 2 units 13 units	> 18-inch
Waste Activated Sludge (WAS) Pumping System	To control the microorganism concentrations in the aeration system, a portion of the settled solids from the secondary clarifiers is wasted. The known volume of WAS is pumped out of the secondary system to RP-2 for solid handling.	WAS Pumping System	2 @ 350 GPM 7.5 hp	
Scum Pumping System	Scum collected from the skimmer arm of the secondary clarifiers is routed to RP-2 for solid handling in a common line along with WAS.	Scum Pumping System	3 @ 450 GPM 5 hp	

7.5.3.2 Asset Ratings – Secondary Treatment Process CCWRF

Table 7-42
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Primary Effluent Pump System	3	2	3	2	The primary effluent and RAS pump are reconditioned at a scheduled interval. Collectively, the pump system provides adequate pumping capacity and reliability. Two primary effluent pumps and the RAS pump were reconditioned in 2013 and 2015. The concrete structure (primary effluent distribution channel) shows some evidence of leakage on top, near the output side of the primary effluent pumps which will be inspected with project EN25008.
Activated Sludge System	4	5	4	4	Evidence of concrete deterioration exists on the distribution channel leading into Basin #1. The primary effluent gate to Basin #1 is reinforced externally to the concrete structure. The extent of the deterioration appears to be superficial. Project EN23004 will replace the existing 6' drain valves for aeration basins 1-6. 6 Basins with 4 influent gates and 4 effluent gates each all need to be replaced due to deterioration. The aeration flexible sheaths are replaced at regular (every five year) intervals because of solid build up or tears in the flexible sheath that reduce oxygen transfer efficiency. Blowers #1 & #2 have been replaced with Neuros blowers. During the low flow conditions, the activated sludge system is over-aerated, resulting in excessively high dissolved oxygen concentration. The over-aeration results in waste of energy and operational challenges. Project EN17006 will address these issues. All the gates in the RAS distribution channel leading to the aeration basins are severely corroded and need to be replaced which will be addressed with EN29003.An 18-inch Solids Processing Recycle Pump and its associated piping is abandoned in place at Basin #1 and #2. The equipment shall be removed by the Maintenance Department via Work Order. Mixed Liquor Return Pump Structures are deteriorating and project EN25005 is in place to repair structures.
Secondary Clarifiers	3	3	3	3	Clarifier #1 & #2 have erosion and coating deterioration. EN26014 will install weir covers to protect clarifier from sunlight to inhibit algae growth.
RAS Pumping System	4	3	3	4	Header has pitting which was temporarily repaired. Project EN23035 will address these issues.
WAS Pumping System	3	2	3	3	No issues require special attention.
Scum Pumping System	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.5.3.3 Planned Projects – Secondary Treatment Process CCWRF

Table 7-43
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23004	CCWRF Aeration Basins 1-6 Drain Valves	The project scope consists of evaluating the drain sumps to verify the type of plug used to keep from potential backflow due to the drain valves not holding. Replace the existing 6' drain valves for aeration basins 1-6.										
EN23035	CCWRF RAS Header Replacement	Replace (3) 16" connections points to the RAS main header coming from the secondary clarifiers along with replacing 22ft of 36" coated steel pipe										
EN25005	Mixed Liquor Return Pump Station Condition Assessment and Repair	The project scope consists of making any necessary repairs to the pedestal structure. Asset Management would conduct a condition assessment of the structure and would provide a report. It has been assumed as part of this cost estimated that up to 4 Pedestals may need to be replaced.										
EN25008	PE/RAS/MLR Concrete Structure Condition Assessment and Repair	The project scope consists of repairing concrete and equipment as needed. Asset Management would conduct a condition assessment and would provide a report.										
EN26014	CCWRF Secondary Clarifier Weir Covers	Install secondary weir covers (similar to RP-4) blocking the sunlight and preventing the algal growth.										
EN29003	Replace Aeration Basin Influent / RAS, Step feed Gates	The project scope consists of inspecting all compromised gates, inspecting those that are currently not in use for integrity of those units and replacing them.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.5.4 Tertiary Treatment Process – CCWRF

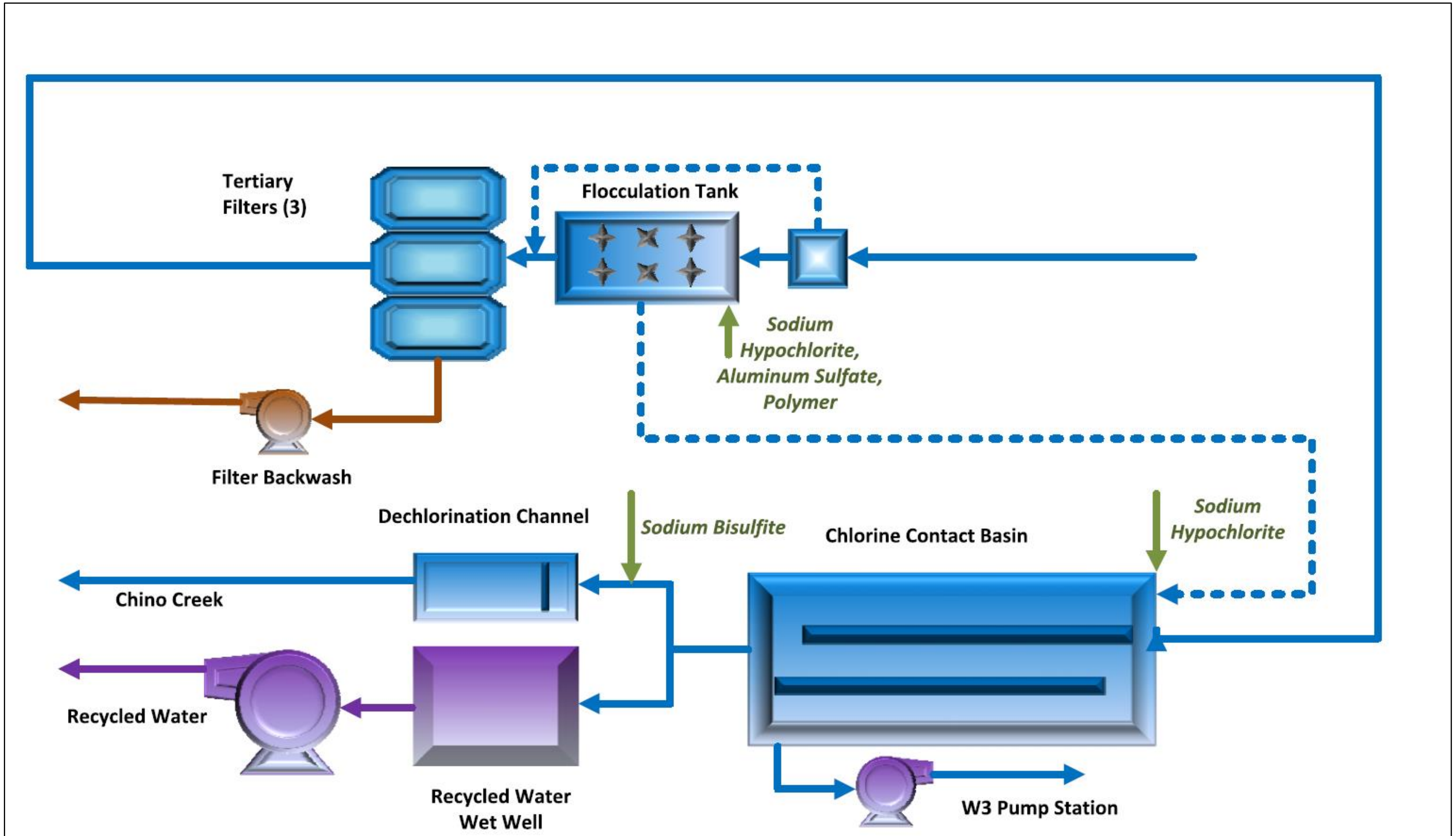

Figure 7-16 Tertiary Treatment Process CCWRF

7.5.4.1 Asset Summary- Tertiary Treatment Process CCWRF

Table 7-44
Asset Summary

System	Process Summary	Subsystem	Design Capacity (Dry Weather Average)	Notes
Tertiary Treatment Process			15.4 MGD	
Aluminum Sulfate (Alum) System	Secondary effluents from three secondary clarifiers are combined and travel to the rapid mix system, where aluminum sulfate, sodium hypochlorite, or polymer are introduced. The chemicals neutralize and destabilize the colloidal particles and enhance the solid/liquid separation. After the chemical addition and rapid mix, the water travels through a hydraulic flocculation basin in a baffled serpentine and ends up at three sand filters that are running in parallel.	Tank Pump Mechanical Mixer	1 @ 5000 gallons 2 @ 3.7 gph 1 @ 15 hp	
Filters	The water passes through three automatic backwashing sand filters. The backwashes are initiated by either timer or the head loss across the sand filter. Backwash water is sent to the filter backwash pump station and pumped back into the aeration basin for treatment. The effluent from the filters flows by gravity to the chlorine contact basin for disinfection.	Filters Travelling bridge Backwash pump Skimmer pump Filter Loading Gates Valves	3 @ 1,600 ft^2 3 @ 0.5 hp 3 @ 400 GPM 7.5 hp 6 @ 40 GPM 0.5 hp 4 GPM/ft^2 7 units 6 units	Per Unit Per Unit Per Unit Per Unit > 18-inch
Filter Backwash Pump Station	The scum, backwash water, and drainage from the filter are collected by gravity in the filter backwash pump station. Upon reaching the pre-set level, the filter backwash water is pumped back into the aeration basin for treatment.	Filter Backwash Pump Station	3 @ 950 GPM 14.8 hp	Per Unit
Chlorination System	Two 10,000-gallon bleach tanks housed indoor receive and hold 12.5 percent sodium hypochlorite (bleach) solution. Two chemical metering pumps inject bleach into the water champ located at the chlorine contact basin and provide disinfection. Two other pumps inject bleach into either filter influent or RAS for process control.	Tanks Pumps Mixers	2 @ 10,000 gallons 4 @ 77 gph 1 water champ 2 propeller mixers	Per Unit Per Unit
Chlorine Contact Basins	The chlorine contact basin is a dual-cell concrete structure that uses a serpentine flow path to achieve the required contact time and disinfection of treated water. The bleach is introduced at the beginning of the serpentine, and free chlorine remains in the water while undergoing a plug flow. The influent flow rate is measured by a Parshall flume, and chlorine residual is measured at three different locations: influent, mid, and final.	Chlorine Contact Basins Gates Valves	1 @ 1.0 MG 11 units N/A units	 > 18-inch
Effluent Splitter Box		Gates	2 units	
Dechlorination System	The final 5137 cubic feet of last pass of the chlorine contact basin is used as a dechlorination structure, where sodium bisulfite solution (SBS) is introduced. The excess effluent that is not used in the recycled water system is discharged into Chino Creek. Before the discharge, chlorine residual present in the flow is neutralized with SBS by a chemical reaction. Two units of propeller mixers and under-flow baffle promote the mixing. SBS is stored in two 5,500-gallon chemical tanks and is metered into the system via five chemical metering pumps.	Tanks Pumps Gates	2 @ 5500 gallon 2 @ 2.5 gph; 2 @ 20 gph; 1 @ 50 gph 2 units	Per Unit Per Unit

7.5.4.2 Asset Ratings – Tertiary Treatment Process CCWRF

Table 7-45
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Alum System	2	3	3	3	No issues require special attention.
Filters	3	3	3	3	The performance of three shallow bed filters is adequate. CCWRF tertiary filter media needs to be assessed for possible replacement. Weirs are currently being assessed with a Condition Assessment which is set to be completed end of 2025. Drain valves do need to be assessed due to their age.
Filter Backwash System	3	3	3	3	No issues require special attention, but the equipment is 20 years old and is approaching the end of its useful life.
Chlorination System	2	2	2	2	The chlorination system for the chlorine contact basin disinfection is adequate. The bleach injection pipe at the filter currently has a leak, a project will be put in place to address this issue.
Chlorine Contact Basins	3	3	3	3	Dechlor basin influent gate does not close properly and leaks into the chlorine contact basin a project will be put in place to address this issue.
Effluent Splitter Box	1	3	3	3	No issues require special attention.
Dechlorination System	3	3	3	3	No issues require special attention. New SBS Pumps will be updated to be concurrent with agency standards.

* Ratings as defined in Appendix A; General System Assets

7.5.4.3 Planned Projects – Tertiary Treatment Process CCWRF

There are no current or future projects for Tertiary Treatment at CCWRF.

7.5.5 Auxiliary System Tertiary Treatment Process CCWRF

7.5.5.1 Asset Summary– Auxiliary System Tertiary Treatment Process CCWRF

Table 7-46
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Plant Drain	The plant drain collects surface storm runoff, excess irrigation, and wash-down water collected in submersible drains located throughout the facility. The drain system receives gravity flows to a wet well, where it is then pumped and recycled toward the secondary clarifier influent, aeration basin, or head of the treatment process.		10 @ 150 GPM 3 hp	
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE) and from onsite energy generation (solar and emergency generators). The solar assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the maintenance building, where transformers and switchgear are located to distribute electrical energy throughout the facility. Diesel emergency generators are used in the event of a power failure. A 1500 kW generator is located in the maintenance building and supplies power to the preliminary, primary, secondary, and tertiary sections. An extensive lighting system is needed to illuminate the facility during dark hours. Most lighting fixtures are equipped with light sensors to turn off when sufficient lighting is provided from the sun. Lighting units are inside each of the process buildings, on equipment walls, and along the roadways for safety.	Utility Voltage Transformers Switchgear Distribution Generator Mounted Lighting	12 kV 12 kV to 480 V 12 kV to 4,160 V 12 kV 480 V 1 @ 1500 kW 2010 Bhp >26 units	
Utility Water (UW) System	Utility water is used throughout the facility to clean, supply pump seal water, cool, dilute, flush clogged pipes, irrigate, and more. The system is supplied by either 930-foot pressure zone or the W3 pump station. The piping consists of several isolation valves and point-of-use connections.	Pipelines W3 Pump Station Valves	Various sizes 2 @ 780 GPM 40 hp 2 @ 270 GPM 20 hp 20 units	
Potable Water System	Potable water is used throughout the plant for restrooms, cooling, odor scrubber dilution water, fire suppression, and more. The system is supplied from a service on Telephone Avenue from the City of Chino. The system has several backflow devices to protect the drinking water system.	Backflow Devices	6 units	
Instrumentation and Control System	An extensive array of instruments is used to monitor and control the processes at CCWRF. Nearly all the processes at the plant are observed and controlled from a centralized SCADA system. Control wiring and local panels are provided at individual pieces of equipment, and control wiring transmits data to two main control terminals at the main control building and the chlorine building.	HMI Workstation RTU PLC I/O Hub Radio Transmitter		
Yard Piping	A substantial network of pipes is used to convey flows between unit processes. The material, sizes, and service conditions of these pipes vary widely			

7.5.5.2 Asset Ratings – Auxiliary Systems Tertiary Treatment Process CCWRF

Table 7-47
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Plant Drain	3	3	3	3	No issues require special attention
Electrical System	4	3	4	4	Electrical system is reaching end of its useful like project EN25045 will address this issue. The 6000-gallon steel underground diesel tank used for the diesel emergency generator was installed in 1990 and is nearing the end of its useful life. A potential project shall replace the underground diesel with a smaller above ground storage tank.
Utility Water System	3	3	4	3	The pumping capacity and the efficiency of the W3 pumps have greatly decreased over time. The pumps are designed to pump 2,100 GPM total, but they pump only half of their combined design capacity. No action is required due to the redundancy of the RW system to support the W3 pumps.
Potable Water System	3	3	3	3	No issues require special attention.
Instrumentation and Control System	3	3	3	3	No issues require special attention.
Yard Piping	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.5.5.3 Planned Projects – Auxiliary Systems Tertiary Treatment Process CCWRF

Table 7-48
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN25045	CCWRF Electrical Improvements	The CCWRF was commissioned in 1992. Much of the electrical infrastructure is original from the original construction and is approaching the end of useful life and end of product support. These items include electrical switchgear, motor control centers (MCC), transformers, lighting panels, lighting contactors, exhaust fan control panels, and miscellaneous control panels. This project is needed to ensure the electrical system's reliability at CCWRF.										
EN25068	CCWRF Fire Hydrant Valves	The scope of work will include the replacement of three (3) buried underground isolation gate valves (app. At 10ft depth) and the relocation and demolition of one (1) fire hydrant with the replacement of the isolation valves, fittings, and connections to the fire hydrant. In addition, the scope will cover as well locating 2 isolation gate valves (3" and 8"). The condition of the 2 valves will be assessed and replaced in kind if necessary.										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

End of System Summary

7.6 Regional Water Recycling Plant No.4 - Asset Management System Summary

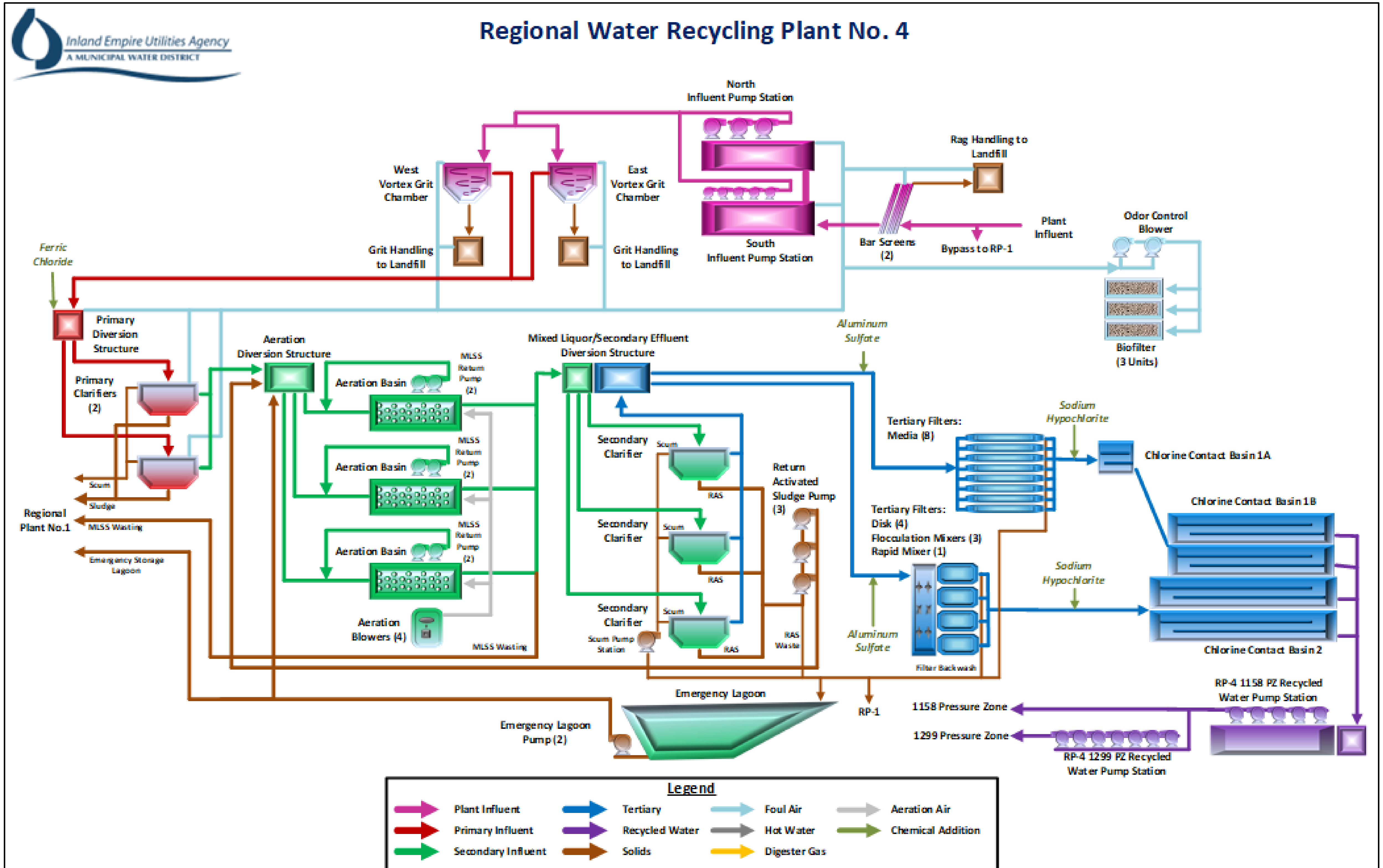

Figure 7-17 Regional Water Recycling Plant No. 4 (RP-4)

Table 7-49
Regional Water Recycling Plant No.4 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN24031	RP-4 Manhole Surcharge Remediation	Engineering design consultant to provide design plans and specifications to eliminate the manhole surcharging and rehabilitate surcharge manholes located outside RP-4.	RC	CC	$600,000										$600,000
2	EN23123	RP-4 Outfall Valve Replacement and Blow	Install four new 42" butterfly isolation valves. Remove broken 42" butterfly valve on Airport Drive and replace with spool to relieve system bottleneck. Bring 19 existing blow offs above grade with wharf hydrants.	WC	CC	$1,780,000										$1,780,000
3	FM25014	RP-4 Scissor Lift	Purchase of the new towable scissor lift will be stored at RP-4.	RC	CC	$70,000										$70,000
4	EN21041	RP-4 Chlorine Contact Basin Cover Repair	The scope of work includes assessing the existing covers, determining the full extent of the corrosion and erosion concerns, and providing the immediate repair or replacement of the covers. This will also provide the design and construction of the diversion from Passive Overflow to the Lagoon System.	WC	CC	$100,000	$4,008,900									$4,108,900
5	EN20057	RP-4 Process Improvements Phase II	Replace aeration control valves; install return activated sludge pump and new variable frequency drives; rehabilitate trident filters; modifications to aluminum sulfate dosing system; and minor structure improvements	RO	CC	$2,200,000	$4,300,000	$2,800,000								$9,300,000
6	EN22039	RP-4 SCADA Performance Improvement	Install new control panel and 2 new sets of redundant controllers in server room. Existing Secondary redundant controller remains while the tertiary redundant controller will be repurposed as the second Secondary redundant controller Alarms to be modified to connect to the new controllers.	RC	CC	$300,000	$350,000	$270,000								$920,000

Table 7-49
Regional Water Recycling Plant No.4 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
7	EN26010	RP-4 Process Improvements Phase III	1. Integrate aeration basin ammonia valves, nitrate probes, and transmitters into new SCADA. 2. Replace MLR valves with motor-operated valves. 3. Fill three aeration basin bullseyes with concrete. 4. Re-line biofilter with new concrete (with coating inspector) and assess replacing wood chip media with engineered media. 5. Build new ferric chloride shade structure. 6. Upgrade Grit Chamber No. 2: add cleaning platform, handles, foul air damper/piping, and replace 4 slide gates. 7. Demo south influent pumps; modify wet wells for isolation and install 4 large VFD pumps in North wet well. 8. Reduce IPS discharge header (42"→30"), replace influent flow meter, and downsize bypass (24"). 9. Reconfigure foul air lines from splitter box to primary #2 with new 4" line, fittings, and damper.	RC	CC		$500,000	$2,000,000	$7,500,000	$1,500,000						$11,500,000
8	EN25002	SSI Aeration Disk Replacement	SSI Aeration Disk Replace RP-1, RP-4 and RP-5.	RO	CC		$100,000	$550,000	$200,000	$1,200,000		$250,000	$1,200,000			$3,500,000
9	EN28008	RP-5 O&M Building	O&M building facility with workspace and office space for assigned personnel in operations and maintenance units.	RC	CC				$3,000,000	$20,000,000	$20,000,000	$5,000,000				$48,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.6.1 Preliminary Treatment Process – RP-4

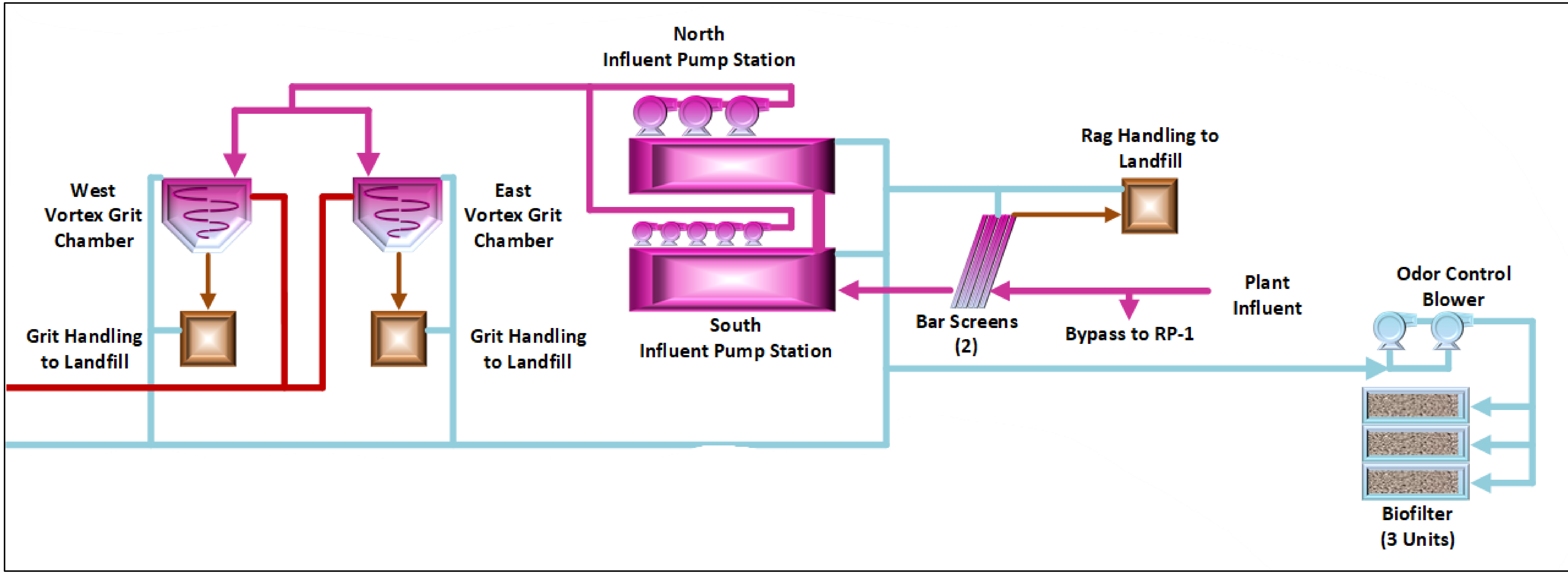

Figure 7-18 Preliminary Treatment Process RP-4

7.6.1.1 Asset Summary- Preliminary Treatment Process RP-4

Table 7-50
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Preliminary Treatment Process			16.1 MGD	
Influent Channel	Raw wastewater enters the plant through a 42-inch gravity sewer pipeline. A composite sample and other instrumentation are used to monitor the plant's influent flow, which establishes the official influent monitoring control point for the treatment plant.	Sewer	42-inch	
Screening Equipment	Influent flow is diverted into two channels. The 3/8-inch spaced bar screens capture large debris, protecting downstream processes. A mechanical multi-rake collects debris and drops the screenings on the screening conveyance/disposal system. These units remove all solids before the solids enter the treatment plant. Screened solids are washed, compacted, and conveyed to a waste storage bin to await landfill disposal.	Multi-Rake Bar Screen Gates	2 @ 30.0 MGD each 0.5 hp each 4 units	Peak
Influent Pump Station	The screened wastewater enters the south influent wet well and then flows into the north wet well. The southern influent pump station is equipped with five dry-mount pumps, and the north influent pump station is equipped with two submersible pumps with a standby unit. Both influent pump stations lift screened wastewater into a common pipeline, which enters the headworks flow diversion structure. The lifted flow enters the common pipeline, equipped with a magnetic flow meter that records the daily flow through the plant. The common pipeline has a flow meter bypass for flow meter maintenance. Metered flow enters two diversion structures where gates regulate flow through the grit removal system.	Pumps Valves Influent Flow Meter Valves	3 @ 6,000 GPM 100 hp 5 @ 3,275 GPM 50hp 8 units 1 @ 48.3 MGD 3 units	Per Unit Per Unit > 12-inch
Vortex Grit System	The metered flow is diverted into two separate grit-removal systems. Each grit-removal system is equipped with a vortex grit chamber and classifier. Grit and other inorganic material are removed before entering the primary treatment process. The material is conveyed to a waste storage bin to await landfill disposal.	Vortex Grit System Paddle Drive Pump Gates	2 @ 14 MGD 2 @ 0.5 hp 2 @ 250 GPM 10 hp 8 units	Per Unit Per Unit Per Unit
Grit Washing & Disposal System	Grit pumped from the vortex grit chamber is routed to two grit classifiers, where organic matters are removed from the grit. The grit sinks to a submerged inclined screw and moves up the ramp while being washed. The organic rich liquid from the grit classifiers is directed back to the liquid handling stream	Classifier	2 @ 50 GPM 5 hp	
Screening Conveyance/Disposal System	Screening collected by the bar screens is transported by a conveyor and dropped into a washer compactor. The washer compactor reduces the organics on the screenings before discharging into a hauling bin.	Conveyor Washer Compactor	3 hp 150 ft^3/hr 1 @ 5 hp	
Odor Control System	The foul air is extracted from the influent screening enclosure, influent pump stations, the grit-removal vortex chambers, the grit-waste storage bins, and the primary clarifiers, and conveyed to the media biofilters to remove odorous compounds. The odor control system is equipped with two blowers and three biofilters.	Foul Air Fan Biofilter Pump Valves	2 @ 12,500 scfm 30.8 hp 3 @ 5,011 ft^3 2 @ 214 GPM 3 hp 10 units	Per Unit Per Unit Per Unit > 18-inch

7.6.1.2 Asset Ratings - Preliminary Treatment Process RP-4

Table 7-51
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Influent Channel	1	3	2	2	Piping into headworks showed signs of moderate deterioration but does not require immediate attention. The influent manholes are showing signs of deterioration. EN24031 will onboard a consultant to eliminate the manhole surcharge and rehabilitation surcharge outside RP-4.
Screening Equipment	1	2	2	2	The washer/compactor is undersized, leading to occasional failures and overflows. Collaborating with engineering to develop a project plan for full system replacement.
Screening Conveyance/Disposal	2	4	3	4	There was difficulty accessing the south pump station without the entire headworks being taken offline. The southern 5 pumps are difficult to maintain and are approaching the end of their useful life but have little run time due to upgrades to the pumps in north wet well. Both wet wells showed signs of moderate deterioration but did not require immediate attention. Project EN26010 will reduce the IPS discharge header size from 42" to 30", replace the influent flow meter, and reduce the meter bypass to 24” The washer/compactor is undersized, leading to occasional failures and overflows. Collaborating with engineering to develop a project plan for full system replacement.
Influent Pump Station	3	3	3	3	No issues require special attention.
Vortex Grit System	3	2	3	2	No issues require special attention.
Grit Washing/Disposal System	3	2	3	3	No issues require special attention.
Odor Control System	3	3	4	3	Air balance was not performed on the new headworks handling building. In addition, the new air louvers need to be braced open to supply air exchange. Further evaluation of this system is needed to address these issues. A potential project may be needed.

* These ratings are defined in Appendix A

7.6.1.3 Planned Projects - Preliminary Treatment Process RP-4

Table 7-52
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24031	RP-4 Manhole Surcharge Remediation	Engineering design consultant to provide design plans and specifications to eliminate the manhole surcharging and rehabilitate surcharge manholes located outside RP-4.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.6.2 Primary Treatment Process – RP-4

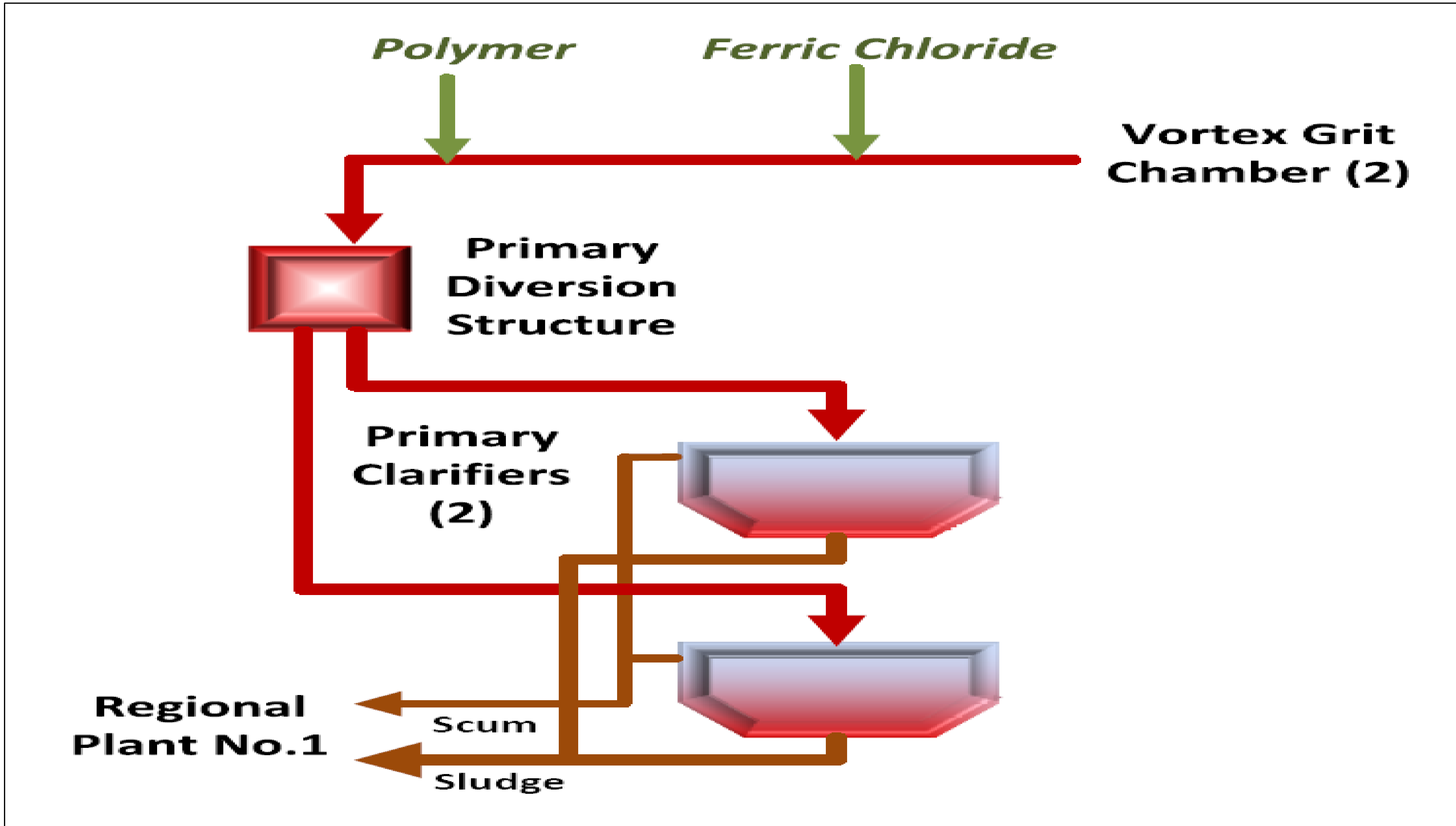

Figure 7-19 Primary Treatment Process RP-4

7.6.3.1 Asset Summary- Primary Treatment Process RP-4

Table 7-53
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Primary Treatment Process			14 MGD	
Primary Diversion Structure	The preliminary treated flow enters a common 54-inch pipeline and is conveyed to the primary diversion structure. The flow is equally distributed into two 36-inch pipelines, each feeding a circular primary clarifier.	Gates	3 units	
Ferric Chloride System	Ferric chloride is dosed into the raw wastewater before screening. The chemical is used to remove phosphorous and to improve the settling/removal characteristics within the primary clarifiers.	Pump Chemical Tank	2 @ 53.1 gph 8,000 gallons	Per Unit
Primary Clarifiers	The facility is equipped with two covered primary clarifiers. The treatment process removes settable solids and floatable scum and grease. There is no solids-handling at RP-4; therefore, all the settled and floatable solids are introduced back into the trunk sewer downstream of RP-4, where they can be processed at RP-1. Solids are wasted out of the clarifier by gravity through actuated valves. Each clarifier is equipped with a flow meter to monitor all solids wasted from the primary treatment process. Primary effluent is conveyed through a 54-inch pipeline.	Primary Clarifier Drive	2 @ 1,617 gpd/ft^2 8,660 ft^2 0.33 hp	Per Unit
Sludge/Scum Wasting System	The solids which settle and thicken into sludge are gently mixed by the rotating rake arms on the bottom of the primary clarifiers; this process releases gas bubbles and allows the sludge to compact. A pipe conveys sludge by gravity into the trunk sewer to RP-1; all wasted sludge is recorded by flow meter and automatic control valves. The solids that float and thicken into scum are skimmed into scum beach and stored in a small wet well. A pipe conveys scum by gravity into the trunk sewer to RP-1.	Scum Valves Sludge Valves Actuated Sludge Valves	2 units 6 units 2 units	 6-inch > 6-inch

7.6.3.2 Asset Ratings - Primary Treatment Process RP-4

Table 7-54
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Primary Diversion Structure	2	2	2	2	No issues require special attention.
Ferric Chloride System	2	N/A	3	3	No issues require special attention.
Primary Clarifiers	1	1	1	1	No issues require special attention.
Sludge/Scum Wasting System	2	2	2	2	No issues require special attention.

* These ratings are defined in Appendix A.

7.6.3.3 Planned Projects - Primary Treatment Process RP-4

There are no current or future projects for Primary Treatment Process at RP-4.

7.6.4 Secondary Treatment Process – RP-4

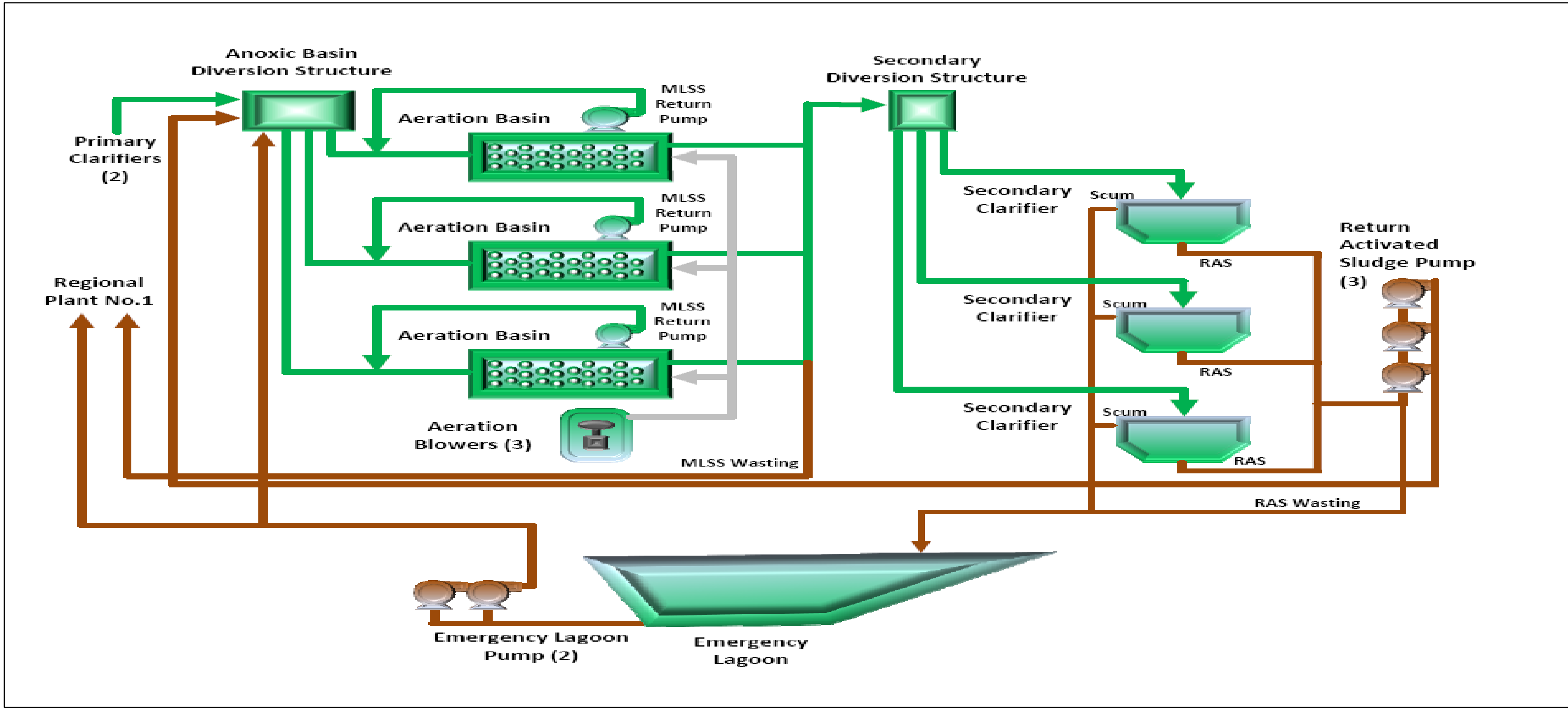

Figure 7-20 Primary Treatment Process RP-4

7.6.4.1 Asset Summary- Secondary Treatment Process RP-4

Table 7-55
Asset Summary

System	Process Summary	Subsystem	Design Capacity (Dry Weather Average)	Notes
Secondary Treatment Process			14.0 MGD	
Anoxic Basin Diversion Structure	Primary effluent enters the anoxic basin diversion structure and is mixed with return activated sludge in this structure. The combined flow then enters each of the three anoxic basins via manually controlled diversion gates.	Gates	6 units	
Anoxic Basin	One anoxic basin is designated for each of the three activated sludge treatment systems. Each system is composed of an anoxic basin and an aeration basin. The anoxic basin is equipped with three mixers to keep solids in suspension throughout the basin. The mixed liquor suspended solids at the end of the aeration basin is returned to the anoxic basin for treatment. The anoxic basin effluent is diverted through launders into two 30-inch pipelines, which equally feed both aeration basin trains.	Anoxic Basin Mixer Gates	3 @ 7.0 MGD 3 @ 6.2 hp 6 units	Per unit Per Unit
Activate Sludge System	An aeration basin is designated for each of the three activated sludge treatment systems. The basins are divided into two trains, and each train is further subdivided into four zones: an extended anoxic zone, oxic zone, another anoxic zone, and another oxic zone. Each zone provides the correct biological environment to consume carbonaceous waste, breakdown ammonia, and reduce pathogens in the mixed liquor. The anoxic zones are equipped with mixers to ensure the solids remain in suspension throughout the treatment process. The oxic zones are equipped with fine-bubble-air diffusers. The diffused air supports the biological process and provides mixing within the zone. A submersible mixed-liquor return pump is strategically placed at the end of the first oxic zone to recycle flow to the anoxic basin for more efficient treatment and nitrate removal. The treatment system is equipped with four blowers to provide pressurized air to the oxic zones. Typically, only one or two blowers are needed during the day for the treatment process.	Activated Sludge System Blowers Blower Valves Trains Depth Mixers Disc Air Diffusers Valve Valve (air) MLR Pump MLR Valve	3 @ 7.0 MGD 4 @ 8,000 scfm 400 hp 13.07 psig 6 units 6 @ 1.54 MG 15.7 ft 6 @ 4 hp 2400 per train 1 per train 6 units 6 @ 14,800 GPM 40 hp 6 units	Per Unit Per Unit >14-inch Per Unit Per Unit > 18-inch > 12-inch Per Unit >30-inch
Mixed Liquor Diversion Structure	The mixed liquor enters a common 66-inch pipeline, which feeds the bottom of the mixed liquor diversion structure. The flow is then split equally through three launders, and each launder feeds a secondary clarifier through a 48-inch pipeline.	Gates	3 units	
Secondary Clarifier	The facility is equipped with three secondary clarifiers. The secondary treatment process provides an environment for the gravity separation of solids from the mixed liquor. The clarified secondary effluent exits the clarifier through a 48-inch pipeline. Scum accumulated on the surface of each of the secondary clarifiers is wasted either to RP-1 or the emergency lagoon. The settled solids are referred to as activated sludge. The activated sludge is recycled to the anoxic basin diversion structure through the return activated sludge pump station. The return activated sludge (RAS) pump station is equipped with three pumps and has a common 24-inch suction pipeline from each secondary clarifier. To control the population of biological species, activated sludge can be wasted from the common effluent pipeline from the aeration basin; wasted activated sludge is diverted to RP-1 for further treatment.	Secondary Clarifier	3 @ 848 gpd/ft^2 16,500 ft^2	
Return Activated Sludge (RAS) Pumping System	The RAS pumping system is designed to return the settled biomass in the secondary clarifiers to the head of the activated sludge system. The system is designed to pump at a rate of 30 to 100 percent of the full average daily flow of the facility.	Pump Valves	3 @ 6,076 GPM 75 hp 15 units	Per unit > 18-inch
Waste Activated Sludge (WAS) Station	The WAS station is designed to remove the excess biomass from the activated sludge system. Biomass can be removed as mixed liquor suspended solids (MLSS) from the common aeration basin effluent pipeline or from the discharge of the RAS pumping system. MLSS is wasted directly to the trunk sewer, which is treated at RP-1. Wasted RAS can be discharged to either RP-1 or the emergency lagoon.	Valves	3 units	6-inch
Emergency Lagoon	The emergency lagoon is located at the southern end of the plant. The primary function of the lagoon is to recycle the filter effluent backwash from the trident filters and aqua aerobics filters. plant drainage is also diverted to the lagoon. The recycled flow is pumped into the anoxic basin diversion structure or can be diverted to Regional Plant No.1	Emergency Lagoon Pump Valves	1 @ 4.0 MG 2 @ - 3,155 GPM 75 hp 2 units	 Per unit > 16-inch

7.6.4.2 Asset Ratings – Secondary Treatment Process RP-4

Table 7-56
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Anoxic Basin Diversion Structure	3	N/A	3	3	No issues require special attention.
Anoxic Basin	3	3	3	3	EN26010 will integrate aeration basin ammonia control valves, nitrate probes, and transmitters into a new SCADA, and fill three aeration basin bullseyes with concrete. Project EN25002 will replace the SSI aeration disks planning will begin in 2025/2026 fiscal year.
Activated Sludge System	3	1	4	2	Project EN20057 will replace all air control valves on the aeration basins to provide better communication with SCADA. The existing communication system has compatibility issues. The mixed liquor return pump VFDs were installed during the expansion in 2000 and are experiencing failures. VFD for MLR pump 5 is out of service and interlocked VFD for MLR pump 6. VFDs have been replaced through the VFD agencywide replacement project. EN26010 will remove the current MLR valves and install motor-operated valves.
Mixed Liquor Diversion Structure	3	N/A	2	3	No issues require special attention.
Secondary Clarifiers	2	2	2	2	No issues require special attention.
RAS Pumping System	3	4	4	3	Project EN 20057 will provide a new redundancy RAS pump. It will also look at the piping configuration to improve operational flexibility to return activated sludge back to the aeration basins.
WAS System	3	3	3	3	No issues require special attention.
Emergency Lagoon	1	1	3	2	No issues require special attention.

* These ratings are defined in Appendix A

7.6.4.3 Planned Projects – Secondary Treatment Process RP-4

Table 7-57
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN20057	RP-4 Process Improvements Phase II	Replace aeration control valves; install return activated sludge pump and new variable frequency drives.										
EN26010	RP-4 Process Improvements Phase III	1) Integrate aeration basin ammonia control valves, nitrate probes, and transmitters into a new SCADA. 2) Remove the current MLR valves and install motor-operated valves 3) Fill the three aeration basin bullseyes with concrete. 4) Removal of the existing lining on biofilter and repair and install new concrete lining; ensure a coating inspector is included; and investigate if feasible, replace the existing wood chip media with engineered media. 5) Construct a new ferric chloride shade structure 6) Grit Chamber No. 2, a new platform for cleaning access to the cyclone separator; adding handles to all covers; upgrading the classifier foul air removal system with an air damper and piping; and replacing 4 leaking slide gates. 7) Demo south influent pump station pumps; Modify wet well to allow isolation; and Modify North wet well to allow 4 large variable speed pumps 8) Reduce the IPS discharge header size from 42" to 30"; Replace the influent flow meter; and Reduce the meter bypass to 24". 9) Demolish the current fitting from the primary influent splitter box foul air line to primary #2; Connect with new fitting and install a 4" foul air line along the North to the east side of primary #2; Connect new 4" foul air line to existing 16" primary #2 foul air line; and install a damper on new 4" line near the connection to the existing 16" foul air line.										
EN25002	SSI Aeration Disk Replacement	SSI Aeration Disk Replace RP-1, RP-4 and RP-5.										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.6.5 Tertiary Treatment Process RP-4

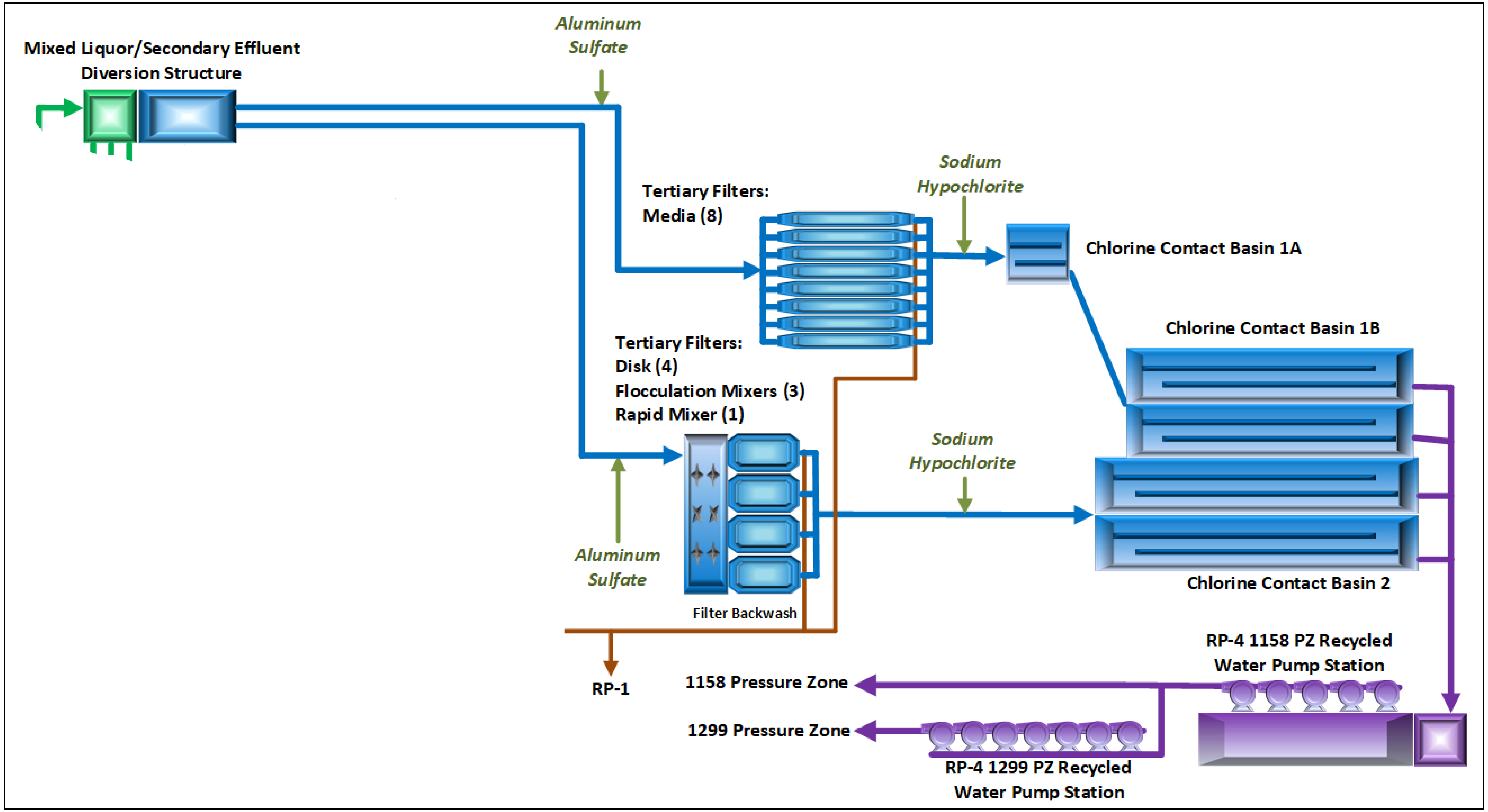

Figure 7-21 Tertiary Treatment Process RP-4

7.6.6.1 Asset Summary- Tertiary Treatment Process RP-4

Table 7-58
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Tertiary Treatment Process			14.0 MGD	
Secondary Effluent Diversion Structure	The secondary effluent structure is fed through the bottom by a 66-inch pipe. Flow can be diverted to three different locations: the Trident media filters, Aqua-Aerobics Disk filters, or the emergency lagoon. The Trident media filters are fed by a 36-inch pipe, the cloth filters are fed by a 48-inch pipe, and a 48-inch pipe is used to bypass flow to the emergency lagoon. A 30-inch pipe connects the Aqua-Aerobics system to the 48-inch bypass pipe.	Secondary Effluent Diversion Structure Gates Motorized Gates	 3 units 2 units	 One (1) Future
Aluminum Sulfate (Alum) System	Chemicals can be added to the secondary effluent that is feeding either filtration system for the purpose of coagulation or pre-filter disinfection. Alum is stored in the maintenance building in one bulk storage tanks and at the trident filter building in two smaller transfer tanks.	Tank Transfer Tank Transfer Pump Pump Trident Filters Aqua Filters	1 @ 2,200 gallons 2 @ 400 gallons 2 @ 90 gph 2 @ 17.2 gph 2 @ 17.2 gph	 Per unit Per unit Per unit Per unit
Filters (Trident and Aqua-Aerobics)	The filtration systems consist of two different technologies: the Trident Anthracite Media Filters and the Aqua-Aerobics Disk Filters. Both technologies filter solids from the secondary effluent before undergoing their separate disinfection systems. The Trident filter must not exceed a filter loading rate of five gallons per minute per square foot (GPM/ft^2), and the Aqua-Aerobics filter cannot exceed a filter loading rate of six gallons per minute per square foot (GPM/ft^2). The Trident-filtered effluent feeds Chlorine Contact Basin 1A through a 36-inch pipe, and the Aqua-Aerobics-filtered effluent feeds Chlorine Contact Basin 2 through a 48-inch pipe.	Absorption Clarifier Media Filter Backwash Pump High Rate Backwash Pump Low Rate Backwash Blower Valves	8 @ 11 GPM/ft^2 140 ft^2 8 @ 5 GPM/ft^2 313 ft^2 2 @ 4,200 GPM 100 hp 2 @ 1500 GPM 15 hp 2 @ 1120 scfm 30 hp 16 units	Per unit Per unit Per unit Per unit Per unit > 18-inch
Filters (Trident and Aqua-Aerobics)	The filtration systems consist of two different technologies: the Trident Anthracite Media Filters and the Aqua-Aerobics Disk Filters. Both technologies filter solids from the secondary effluent before undergoing their separate disinfection systems. The Trident filter must not exceed a filter loading rate of five gallons per minute per square foot (GPM/ft^2), and the Aqua-Aerobics filter cannot exceed a filter loading rate of six gallons per minute per square foot (GPM/ft^2). The Trident-filtered effluent feeds Chlorine Contact Basin 1A through a 36-inch pipe, and the Aqua-Aerobics-filtered effluent feeds Chlorine Contact Basin 2 through a 48-inch pipe.	Aqua Disk Filters Rapid Mixer Flocculation Mixer Backwash Pump Helical Gear Drive Gates Valves	4 @ 5.8 GPM/ft^2 646 ft^2 1 @ 5 hp 3 @ 1 hp 8 @ 200 GPM 3 hp 4 @ 15,597 lb.-inch ¾ hp 3 units 4 units	Per unit Per unit Per unit Per unit > 18-inch
Chlorination System	Disinfectant chemical, in the form of 12.5 percent sodium hypochlorite (bleach) solution, is dosed to the filtered effluent at two locations: Chlorine Contact Basin 1A and Chlorine Contact Basin 2. The chlorine dose typically ranges from 5 to 15 milligrams per liter. The bleach is intimately mixed into solution using a mixer at the influent of both chlorine contact basins. Bleach is stored in two bulk storage tanks east of the Aqua Aerobics filter.	Tank Pump Trident Filters Disk Filters RAS Pipeline CCB1A CCB2 Water champ Mixer	2 @ 9,500 gallons 1 @ 100 gph 1 @ 100 gph 1 @ 100 gph 2 @ 100 gph 2 @ 100 gph 2 @ 30 GPM 7.5 hp	Per unit Per unit Per unit Per unit

Table 7-58
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Chlorine Contact Basins (CCB)	The facility is equipped with two chlorines contact basin systems. The Trident-filtered effluent feeds into a coupled chlorine contact basin consisting of Chlorine Contact Basin 1A and 1B, and Aqua-Aerobics- filtered effluent feeds into Chlorine Contact Basin 2. The chlorine contact basin effluent is required to meet California Department of Public Health's Title 22-approved disinfection contact time of 450 milligrams-minutes per liter and a modal contact time of 90 minutes to discharge into the recycled water distribution system. The final effluent is pumped into the recycled water distribution system; therefore, the final effluent does not need to be dechlorinated at RP-4. Free Chlorine analyzers were installed at both CCB1 and CCB2 in 2022 to comply with Free Chlorine Disinfection Tier 1 requirements from Division of Drinking Water for groundwater recharge purposes.	CCB1A & 1B CCB2 Gates CCB1A CCB1B CCB2 Valves CCB1B	7.0 MGD 1.15 MG 7.0 MGD 1.01 MG 1 units 2 units 2 units 1 units	T22 Report T22 Report > 18-inch

7.6.6.2 Asset Ratings – Tertiary Treatment Process RP-4

Table 7-59
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Secondary Effluent Diversion Structure	3	2	2	2	A leak has been identified on the structure. A condition assessment should be performed to determine a course of action.
Alum System	3	3	4	4	Project EN20057 will replace the existing alum injection lines to the filters and add access points along the injection lines for process troubleshooting and line cleaning. Additionally, the day tanks at the trident filter room will be demolished and alum will be fed directly from a centralized location.
Trident Filters	4	2	2	2	The absorption media and filter media are routinely replaced by maintenance staff. Multiple backwash, effluent, and waste valves do not isolate completely, flow is wasted to the lagoon and recirculated within the plant, many actuators leak air or are no longer utilized, and anthracite is found in the anoxic basin. A complete retrofit is required. Project EN17110 will address this issue. However, the retainer grating and mesh at the clarification zones were not replaced and are corroding away. EN20057 will rehabilitate the trident filters and replace the aluminum gratings and mesh to protect the loss of absorption media. Replacement of influent and clarification piping, media, and six magnetic flowmeters. Additionally, the project will also replace damaged seals that caused process water leakage. Repairs to leaky wall penetrations and replacement of waste gate limit switches.
Aqua-Aerobics Disk Filters	3	3	3	3	The fabric covers for the aqua disk filters protects the instrumentation and equipment from sunlight. However, the fabric covers are costly to replace and are susceptible to wind damage. EN20057 will design and construct a sturdier shade structure for the aqua disk filters.
Chlorination System	2	2	2	2	The chlorine inspection vault covers are not rated for traffic and are showing signs of failure. EN20057 will replace damaged vault covers with new traffic rated covers.
Chlorine Contact Basin	5	3	3	3	The concrete covers on the top of the CCB are failing structurally and need to be replaced. Several covers are showing signs of severe cracks and corrosion. Project EN21041 will replace all CCB covers at both CCBs. Additionally, the project will also provide a passive overflow at the Recycled Water wet well immediately downstream of the CCBs.
Effluent Diversion Structure	3	3	3	3	No issues require special attention.

* These ratings are defined in Appendix A

7.6.6.3 Planned Projects – Tertiary Treatment Process RP-4

Table 7-60
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN20057	RP-4 Process Improvements Phase II	Rehabilitate trident filters; modifications to aluminum sulfate dosing system; and minor structure improvements										
EN21041	RP-4 Chlorine Contact Basin Cover Repair	The scope of work includes assessing the existing covers, determining the full extent of the corrosion and erosion concerns, and providing the immediate repair or replacement of the covers. This will also provide the design and construction of the diversion from Passive Overflow to the Lagoon System.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.6.7 Auxiliary System - RP-4

7.6.7.1 Asset Summary– Auxiliary System Tertiary Treatment Process RP-4

Table 7-61
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE) and from onsite energy generation (wind and emergency generators). The wind asset is owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the power panel switch gear, where transformers and switchgear are located to distribute electrical energy throughout the facility. Diesel emergency generators are used in the event of a power failure. One outside generator is located in the northern portion of the facility and supplies power to the preliminary, primary, secondary, and tertiary sections. An extensive lighting system is needed to illuminate the facility during dark hours. Most lighting fixtures are equipped with light sensors to turn off when sufficient lighting is provided from the sun. Lighting units are inside each of the process buildings, on equipment walls, and along the roadways for safety.	Utility Voltage Transformers Switchgear Distribution Generator Wind Turbine Mounted Lighting	1 @ 12 kV 8 @ 12 kV to 480 V 10 @ 12 kV 5 @ 480 V 1 @ 2,000 kW 2,847 Bhp 1 @ 1 MW > 50 units	 MCCs
Utility Water System	Utility water is used throughout the facility to clean, supply pump seal water, cool, dilute, flush clogged pipes, irrigate, and more. The system is supplied by the 1158-foot pressure zone pump station. The piping consists of several isolation valves and point-of-use connections.	Pipelines Pump Station Valves	Various sizes See *1158 Pressure Zone* 2 units	 6-inch
Potable Water System	Potable water is used throughout the plant for restrooms, cooling, odor scrubber dilution water, fire suppression, and more. The system is supplied by three connections on 6th Street from the Cucamonga County Water Department. The system has several backflow devices to protect the drinking water system.	Backflow Devices Valves	5 units 10 units	>2-inch >2-inch
Instrumentation and Control System	An extensive array of instruments is used to monitor and control the processes at RP-4. Nearly all the processes at the plant are observed and controlled from a centralized SCADA system. Control wiring and local panels are provided at individual pieces of equipment, and control wiring transmits data to the main control centers.	HMI Workstation PLC I/O Hub Radio Transmitter	8 units 7 units 5 units 1 unit	
Yard Piping	A substantial network of pipes is used to convey flows between unit processes. The material, sizes, and service conditions of these pipes vary widely.			

7.6.7.2 Asset Ratings – Auxiliary Systems Tertiary Treatment Process RP-4

Table 7-62
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Electrical System	3	3	3	3	Upgrade the back-up generator control panel and monitor signals because it is obsolete and is no longer supported by the manufacturer.
Utility Water System	3	3	4	4	Project EN21041 will design and construct a passive overflow line to take non-compliant water to the lagoon from the 1158 pump station wet well, eliminating the need for manual valving and non-compliant water from backing up into upstream processes.
Potable Water System	3	3	2	3	No issues require special attention.
Instrumentation and Control System	3	3	4	3	Multiple control systems need to be optimized, activated sludge wasting, and influent pump control. The SCADA migration should address these concerns or may need to addressed internally. EN22039 will install a new control panel and 2 new sets of redundant controllers in a server room. There is currently no project in place to address DO controls.
Yard Piping	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.6.7.3 Planned Projects – Auxiliary Systems Tertiary Treatment Process RP-4

Table 7-63
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23123	RP-4 Outfall Valve Replacement and Blow	Install four new 42" butterfly isolation valves. Remove broken 42" butterfly valve on Airport Drive and replace with spool to relieve system bottleneck. Bring 19 existing blow offs above grade with wharf hydrants.										
FM25014	RP-4 Scissor Lift	Purchase of the new towable scissor lift will be stored at RP-4.										
EN22039	RP-4 SCADA Performance Improvement	Install new control panel and 2 new sets of redundant controllers in server room. Existing Secondary redundant controller remains while the tertiary redundant controller will be repurposed as the second Secondary redundant controller Alarms to be modified to connect to the new controllers.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

End of System Summary

7.7 Regional Water Recycling Plant No.5 - Asset Management System Summary

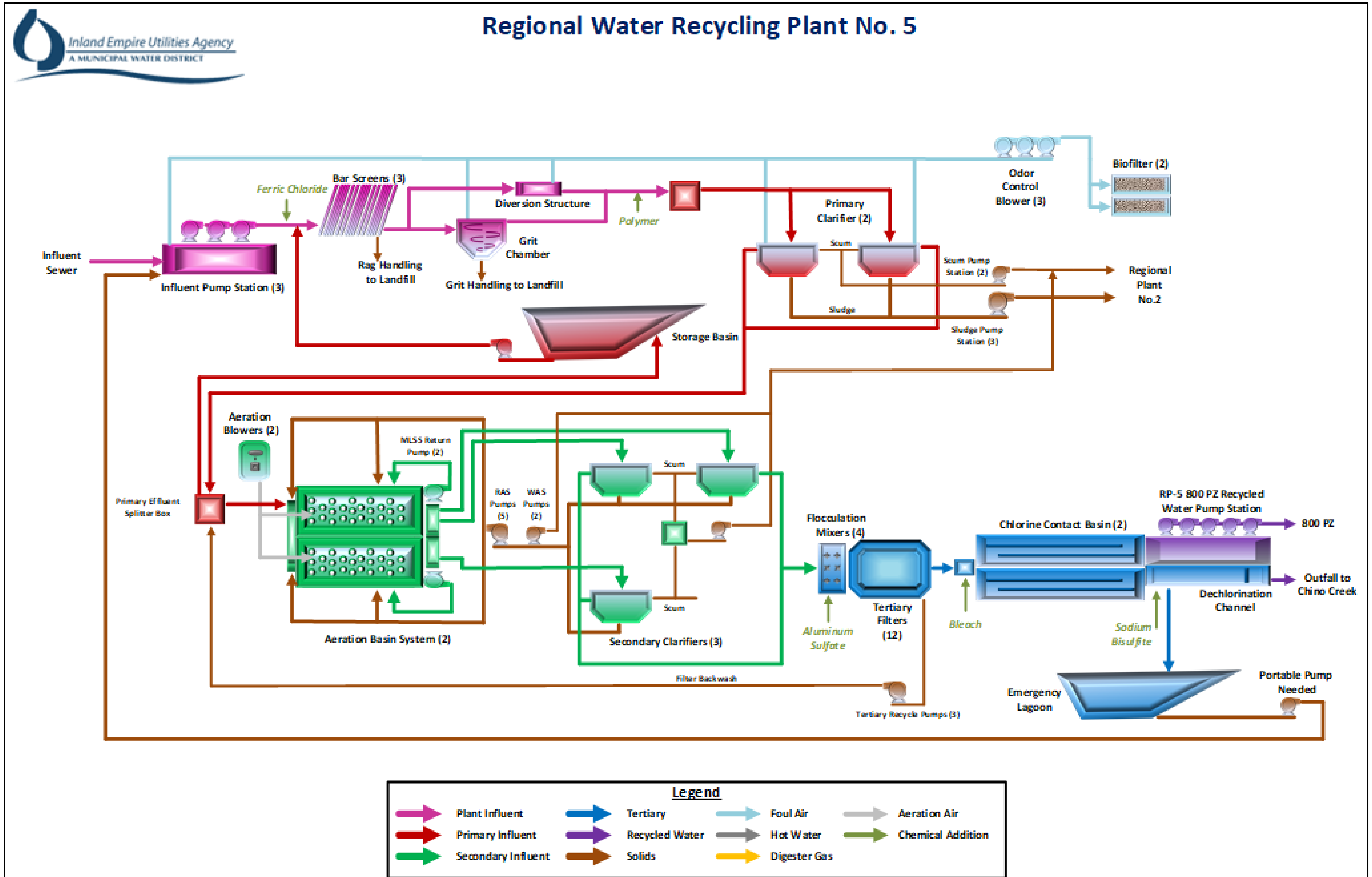

Figure 7-22: Regional Water Recycling Plant No. 5 (RP-5)

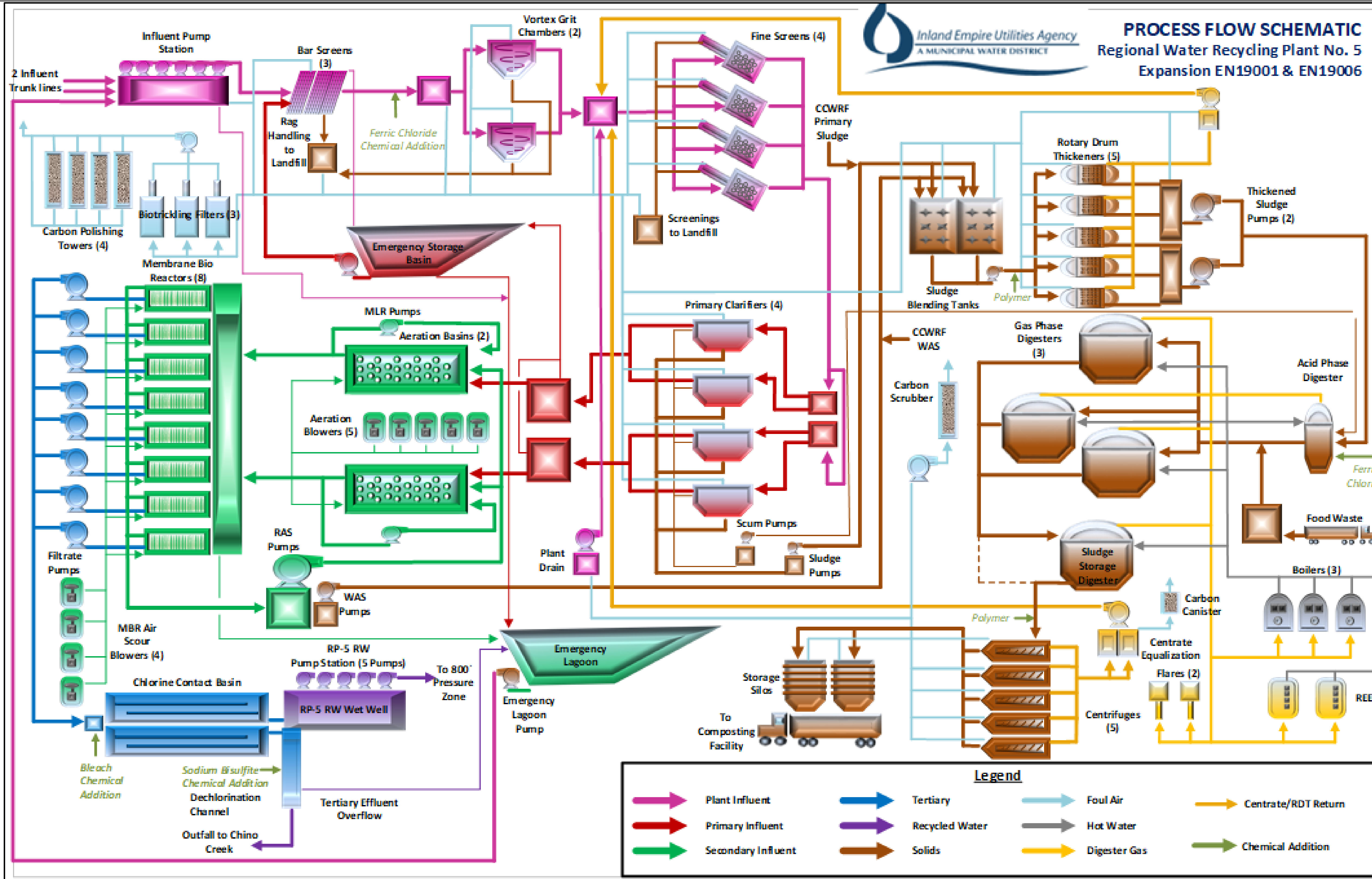

Figure 7-23 RP-5 Expansion Scheduled for Completion in December 2026

Table 7-64
Regional Water Recycling Plant No.5 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN23003	Central Plant Cooling Tower Replacement	Install new cooling tower and connect in parallel to the existing cooling tower system. Modify and upgrade mechanical piping, electrical and control systems as needed to suit the new configuration. Install a new filtration system to address the dusty environment which causes extensive cooling tower maintenance. Demolish the existing old cooling tower once the new cooling tower is in place and operations. Retain a consultant for system design and engineering services during construction.	GG	CC	$1,555,000	$800,000									$2,355,000
2	EN19001	RP-5 Expansion to 30 MGD	Expansion of Influent Pump Station and new wet well. Headworks improvements: screens, grit chamber, fine screens, screenings/grit building. Two new primary clarifiers and four new primary clarifier covers. Improvements to the existing aeration basin including new diffusers and mixed liquor pumps. Demolish two secondary clarifiers and construction a 30 MGD MBR system. UV disinfection system. New centralized odor control system for solids and liquids. Emergency overflow and storm water system. New Mountain Avenue Lift Station and Modifications to Butterfield Ranch Pump Station.	RC	CC	$28,000,000	$7,000,000	$10,000,000								$45,000,000
3	EN19006	RP-5 Biosolids Facility	Project scope will include the detailed design by an outside consultant followed by construction activities of the treatment plant. Scope also includes the necessary permitting, compliance, testing, commissioning and startup.	RC	CC	$17,000,000	$2,000,000	$2,000,000								$21,000,000
4	EN25025	REEP Return to Service Capital	This project will provide the capital purchase of Auxiliary components and SCADA upgrades to meet current Agency engineering guidelines. The project would prepare the REEP and its auxiliary equipment to produce power from digester gas, methane and the mixture there of.	RC	CC	$2,800,000	$4,300,000	$500,000								$7,600,000

Table 7-64
Regional Water Recycling Plant No.5 – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
5	EN26013	RP-5 Low Pressure DG holder	This project is requesting to construct a new low pressure digester gas holder, see attached tech memo from 2018.	RC	CC		$1,000,000									$1,000,000
6	EN26012	RP-5 Emergency Overflow Pond Lining	This project is requesting to line EOP with an HDPE type liner or other lining product part of the basin until a concrete liner is installed. A drain system under would also be required for the liner to the unlined potion to equalize ground water to or control pumping by the new EOP pump station. Alternative design can use a concrete liner anticipated to be about 7.5 feet thick on the bottom and taper from 7.5' to 1' on sides.	RC	CC		$1,000,000									$1,000,000
7	EN28008	RP-5 O&M Building	New O&M Building facility with work space and office space to house assigned personnel in the Operations and Maintenance Units. Shop area for equipment washdown, equipment repair, operations lab, etc. Office space, showers, locker rooms, bathrooms, break rooms, common areas, etc. Parking space for fleet vehicles. All associated support equipment for an office environment	RC	CC				$3,000,000	$20,000,000	$20,000,000	$5,000,000				$48,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (OM), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.7.1 Preliminary Treatment Process – RP-5

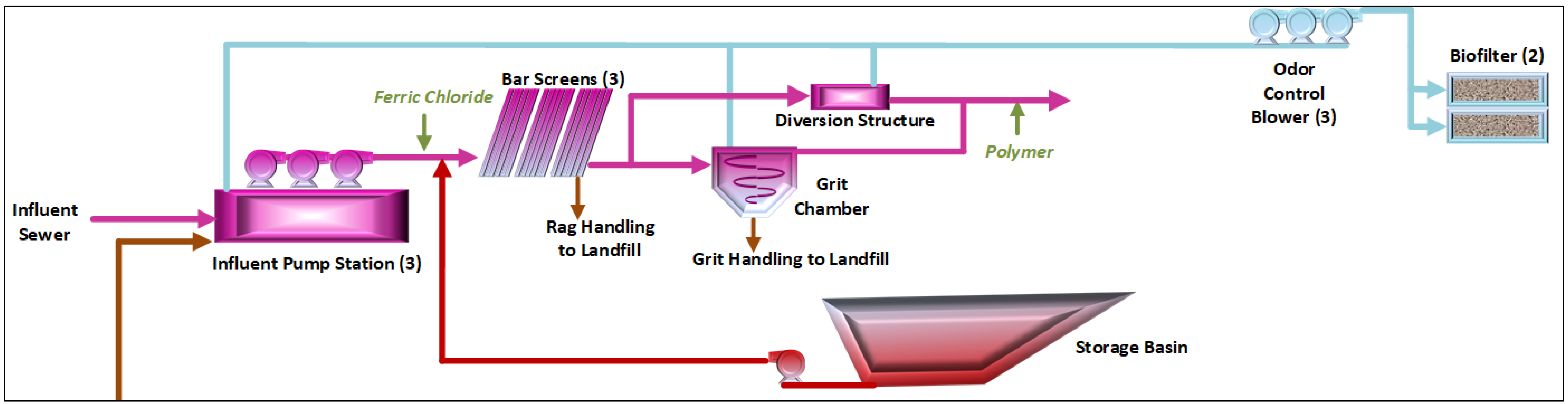

Figure 7-24 Preliminary Treatment Process – RP-5

7.7.1.1 Asset Summary - Preliminary Treatment Process– RP-5

Table 7-65
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Preliminary Treatment Process			16.3 MGD	
Influent Trunk Lines	Raw wastewater enters RP-5 through the 42-inch Chino interceptor diversion and 66-inch Kimball interceptor.	Kimball Interceptor Chino Interceptor	66-inch 42-inch	
Influent Pump Station (IPS)	The influent pump station collects raw sewage from the 42-inch Chino interceptor diversion and 66-inch Kimball interceptor. The streams enter the influent junction box and flow through manually-operated isolation gates into two separate wet wells. The RP-5 influent pump station conveys plant influent flow to the headworks. Once lifted to the headworks, flow proceeds through the entire plant by gravity. Three VFD-controlled, wet-pit submersible, non-clogging, centrifugal pumps located in the IPS wet wells lift the combined flow and convey the raw sewage to the headworks through a 42-inch diameter discharge line. The west wet well holds two pumps, while the east wet well holds the third pump, with space for one future pump. A 36-inch-diameter magnetic flow meter in the combined discharge line measures the flow.	Influent Pump Station Valves Influent Magmeter	3 @ 8,333 GPM 200 hp 7 units 1 @ 32-inch Dia.	Per Unit > 18-inch
Screening Equipment	The headworks consist of bar screens with screenings washers and compactors and also grit basins with grit washers. Two mechanical climber-type bar screens are installed along with a screw conveyor and screenings washer/compactor. One manual bar screen is also installed as a standby unit.	Mechanical Screen Manual Screens	2 @ 30 MGD each 1 @ 30 MGD	Per Unit
Vortex Grit Chamber	When wastewater leaves the bar screen channels, it enters a mechanically induced vortex grit basin, which separates the heavier grit particles from the lighter organics. The heavier particles settle to the bottom of the chamber from where they are removed from the basin by the constant-speed recessed impeller grit pumps.	Chamber Pump Gates	1 unit @ 30 MGD 2 @ 250 GPM 25 hp 2 units	 Per Unit
Grit Washing/Disposal System	The grit removal system separates grit, sand, and other heavy particles from lighter organics in the influent wastewater flow, removing this material to protect downstream equipment and processes. The fluidized grit is pumped to the grit washers, where it is dewatered before being discharged into disposal bins. The grit washers include a cyclone separator to remove additional water and concentrate the solids. They also contain a classifier mechanism that accepts the underflow from the cyclone unit. This classifier further separates the solids using a screw mechanism to transport the grit upward out of a settling tank. The grit removal system includes manually operated gates and valves to allow for bypassing each component of the facility. The duty pump and duty grit washer are selected by opening the appropriate manually operated plug valves. There are provisions to accommodate the expansion of the grit removal system if needed. A second grit basin could replace the existing grit basin bypass pipeline, and a third pump can be added to the grit pumping station. The excess liquid spills out of the grit classifiers and is directed back to the bar screen structure effluent channel	Grit Washing/Disposal Classifiers	 2 @ 13 ft^3/hr	Per Unit
Screening Conveyance/Disposal System	Screening collected by the bar screens is transported by a conveyor and dropped into a hydraulic washer-compactor. The compactor compresses the collected rags, squeezing out excess water, and pushes the rags to the roll-off bin.	Conveyor Washer Compactor	1 @ 5.0 hp 1 @ 32 ft^3/hr	
Ferric Chloride System	Ferric chloride is added to the liquid flow after grit removal to increase solids capture during primary treatment and to control odors caused by hydrogen sulfides. The ferric station consists of a truck filling station, 9,600-gallon storage tank, three chemical metering pumps and associated piping.	Tank Pumps	9,600 gallons 2 @ 53 gph	 Per Unit
Biofilter	Odors collected in the preliminary and primary treatment processes are forced through three biofilter media cells, where hydrogen sulfide gas is removed through biological processes.	Cells Blowers	2 @ 667 ft^3 3 @ 13,200 scfm 30 hp	Per Unit Per Unit

7.7.1.2 Asset Ratings - Preliminary Treatment Process RP-5

Table 7-66
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor Condition	Redundancy	Function	Reliability	Key Issues for Further Investigation
Influent Trunk Sewer	3	3	3	3	No issues require special attention.
Influent Pump Station	3	3	3	3	The influent pump station wet well accumulates floating debris which does not get pumped by the submersible pumps. The wet well needs routine Vactor cleaning, which is tedious and inefficient.
Screening Equipment	3	3	3	4	Fine screens are being considered to replace the current bar screens. The new fine screens will screen out smaller unwanted inorganics to pass through into the system, allowing for better and more efficient process treatment. Project EN19001 will address this issue.
Vortex Grit System	3	3	3	3	No issues require special attention.
Grit Washing/ Disposal System	3	3	3	3	No issues require special attention.
Screening Conveyance/Disposal System	3	3	3	3	No issues require special attention.
Ferric Chloride System	2	3	3	3	Ferric Chloride system pumps have been replaced 2025
Headworks Splitter Box	2	3	3	3	No issues require special attention.
Biofilter	3	3	3	4	No issues require special attention, but routine media replacement is required to maintain facility air-quality compliance. A more efficient system is being installed to reduce frequent re-occurring media replacement with EN19001.

* Ratings as defined in Appendix A; General System Assets

7.7.1.3 Planned Projects - Preliminary Treatment Process RP-5

Table 7-67
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN19001	RP-5 Expansion to 30 MGD	Expansion of Influent Pump Station and new wet well. Headworks improvements: screens, grit chamber, fine screens, screenings/grit building. Two new primary clarifiers and four new primary clarifier covers. Improvements to the existing aeration basin including new diffusers and mixed liquor pumps. Demolish two secondary clarifiers and construction a 30 MGD MBR system. UV disinfection system. New centralized odor control system for solids and liquids. Emergency overflow and storm water system. New Mountain Avenue Lift Station and Modifications to Butterfield Ranch Pump Station.	CIP- Construction	CIP- Construction	CIP- Construction							
EN19006	RP-5 Biosolids Facility	Project scope will include the detailed design by an outside consultant followed by construction activities of the treatment plant. Scope also includes the necessary permitting, compliance, testing, commissioning and startup.	CIP- Construction	CIP- Construction	CIP- Construction							

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.7.2 Primary Treatment Process - RP-5

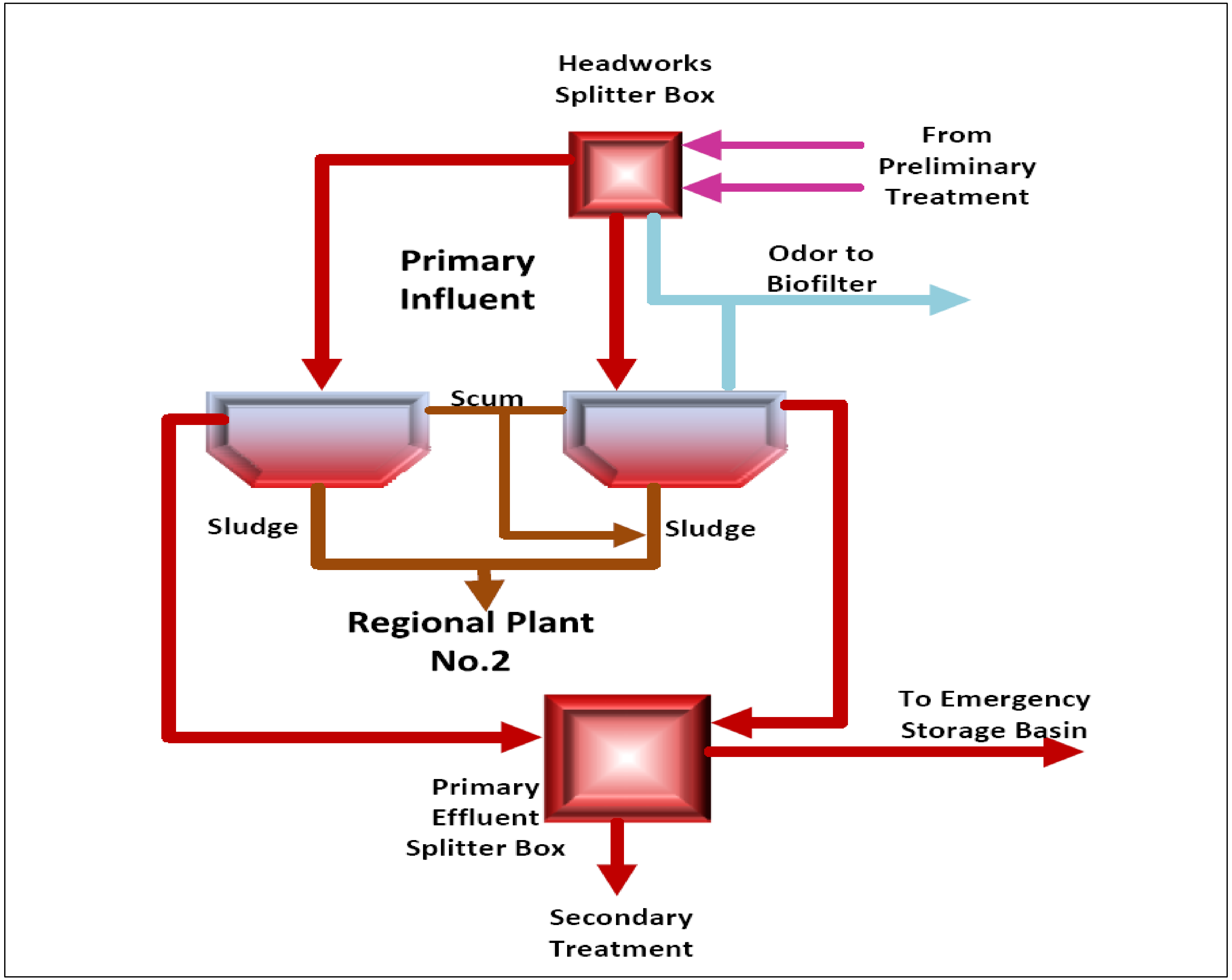

Figure 7-25 Primary Treatment Process

7.7.2.1 Asset Summary- Primary Treatment Process RP-5

Table 7-68
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Primary Treatment Process			16.3 MGD	
Headworks Splitter Box	The headworks splitter box receives flow from the grit systems, bar screen channel, and the bar screens structure bypass. Distribution valves in this area direct the wastewater flow to Primary Clarifiers 3 and 4.	Gates	3 units	
Primary Clarifiers	There are two circular primary clarifiers located north of the aeration basins at RP-5. Each covered clarifier is 100 feet in diameter, with a sidewall depth of 12 feet. The average surface overflow rate for each clarifier is 8.3 MGD, with a maximum of 15 MGD. The solids that settle out in the clarifiers are pumped to RP-2 for treatment. The clarified flow passes over a weir and into the aeration basins.	 Drive Gates	2 @ 2,075 gpd/ft^2 7,854 ft^2 1 @ ¾ hp 2 units	Per Unit
Primary Effluent Splitter Box	The primary effluent from the clarifiers flows into the primary effluent splitter box. The purpose of the splitter box is to allow diversion of the primary clarifier effluent to either the aeration basin or the emergency storage basin. The amount of flow directed to either structure can be adjusted from slide gates.	Gates	2 units	
Sludge Pumping System	The primary sludge pump station pumps settled sludge from the primary clarifiers sludge hoppers to the solids handling facilities at RP-2. There are three primary sludge pumps: one dedicated to each primary clarifier and one that serves as a common standby. Each pump suction line contains a sludge grinder (Muffin Monster) to reduce the size of the pumped solids and help prevent plugging. Sludge withdrawal from each clarifier is controlled by adjustable pumping cycles to maintain a constant sludge blanket level within the clarifier.	Pumps	3 @ 230 GPM 30 hp	Per Unit
Scum Pumping System	Scum arms with a skimmer mechanism remove scum from the clarifier water surface. Scum deposits into the scum beach and then flows by gravity into a main scum wet well that receives scum from both primary clarifiers. The scum well has a mixer to help ensure that the scum does not thicken and result in pumping difficulties.	Pump	2 @ 230 GPM 15 hp	Per Unit
Emergency Overflow Pond	The unlined 17 MG emergency storage basin (located downstream of the dechlorination basin at the end of the plant) can be used to store final plant effluent if the effluent does not meet the permit requirements. The basin does not have a permanent pumping facility, but it has the capability to return flow to the headworks through a 16-inch line with the use of temporary pumps. This same line can be used to divert flow (by gravity) from the influent pump station wet well to the emergency overflow pond in an emergency situation.		1 @ 17 MG	Unlined
Emergency Storage Basin (ESB) System	Downstream of the primary clarifiers, there is a primary effluent box with an adjustable weir gate that can be used to divert flow to the 6.8 MG emergency storage pond. The weir gate is manually set such that primary effluent in excess of a selected flow rate goes over the weir gate into the lagoon. The effluent is then pumped back to the headworks when the influent rate is low enough to allow all flow to continue to downstream processes. The Emergency Storage Basin Pump Station returns diverted primary effluent to the headworks-structure bar-screen influent channel. Three VFD-controlled, wet-pit submersible, non-clog, centrifugal pumps located in the wet well lift the diverted primary effluent and transmit it to the headworks through a 20-inch-diameter transmission line. A variety of instruments are installed at the ESB pump station to collect data and control operation of the pumps. A 20-inch-diameter magnetic flow meter in the combined discharge line measures the combined discharge flow and transmits the information to the Supervisory Control and Data Acquisition (SCADA) control system. A level transmitter and high- and low-low level switches monitor the liquid level in the wet wells and provide information to control the pumps.	Basin VFD Pumps	1 @ 6.8 MG 3 @ 3,000 GPM 60 hp	 Per Unit

7.7.2.2 Asset Ratings Primary Treatment Process RP-5

Table 7-69
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Headworks Splitter Box	2	3	3	3	No issues require special attention.
Primary Clarifiers	5	3	3	5	It is recommended to repair the severely corroded areas on the skimmer arms and steel in the vapor space as soon as possible or the next maintenance interval. Project EN19001 will address this.
Primary Effluent Splitter Box	3	3	4	3	Modifications to the 12-foot weir gate and automation of the slide gate to allow flow to the aeration basin will better optimize the flow equalization of plant treatment process. Project EN19001 will address this. After Project EN19001 is completed under normal operation conditions this weir gate will not need to be modulated.
Sludge Pumping System	3	3	3	3	No issues require special attention.
Scum Pumping System	3	3	3	3	No issues require special attention.
Emergency Overflow Pond	4	3	4	3	Temporary pumps must be used to pump flows from the pond to the headworks. There are no operational impacts at this time and will likely be addressed when a new RP-5 solids handling facility is built. It is unknown whether the pond is intended as a containment system. A survey of historical records does not reveal whether compacted clay liner or geomembrane was used. The pond has 6 feet of accumulated solids. There are no operational impacts at this time and will likely be addressed in the RP-5 Expansion. Project EN19001 will address this with a new pump station at EOP.
ESB System	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.7.2.3 Planned Projects - Primary Treatment Process RP-5

Table 7-70
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN19001	RP-5 Expansion to 30 MGD	Expansion of Influent Pump Station and new wet well. Headworks improvements: screens, grit chamber, fine screens, screenings/grit building. Two new primary clarifiers and four new primary clarifier covers. Improvements to the existing aeration basin including new diffusers and mixed liquor pumps. Demolish two secondary clarifiers and construction a 30 MGD MBR system. UV disinfection system. New centralized odor control system for solids and liquids. Emergency overflow and storm water system. New Mountain Avenue Lift Station and Modifications to Butterfield Ranch Pump Station.										
EN19006	RP-5 Biosolids Facility	Project scope will include the detailed design by an outside consultant followed by construction activities of the treatment plant. Scope also includes the necessary permitting, compliance, testing, commissioning and startup.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.7.3 Secondary Treatment Process – RP-5

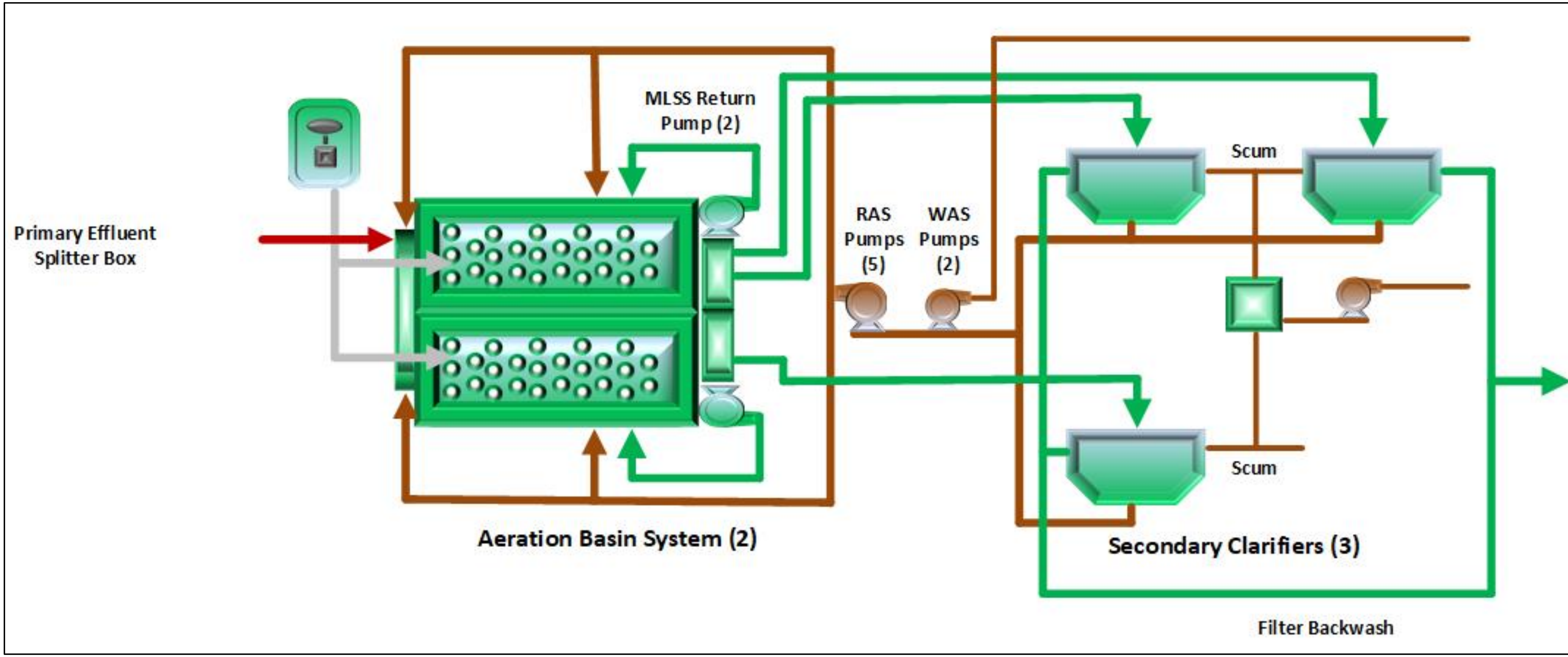

Figure 7-26 Secondary Treatment Process

7.7.3.1 Asset Summary- Secondary Treatment Process RP-5

Table 7-71
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Secondary Treatment Process			17.1 MGD	
Activated Sludge System	The activated sludge system is two-stage biological-nutrient-removal suspended-growth system that provides biological treatment to convert soluble BOD to biomass able to settle. The activated sludge consists of biological processes that use dissolved oxygen to promote the growth of biological flocculation, which then removes organic material. The process converts ammonia to nitrites, nitrates, and ultimately nitrogen gas. There are two aeration basins (four trains) located south of the primary clarifiers. Each aeration basin contains eleven zones. Four zones in each basin are dedicated anoxic zones, and seven zones are available aeration zones. The aeration zones are aerated via the Parkson air membrane system supplied by two single-stage centrifugal blowers with inlet/variable diffuser guide vanes and motorized butterfly control valves that control dissolved oxygen concentrations. Each aeration basin contains up to eight pairs of anoxic mixers to minimize solids settlement in anoxic zones. Influent gates divert a combined flow of primary effluent and return activated sludge available to feed three zones on each aeration basin. Each aeration basin contains a mixed liquor return pump in the effluent channel, which can be used to pump nitrate-rich mixed liquor back to the aeration basin, where denitrification can occur.	Blowers Trains Panels Depth Mixers Gates Valve MLR Pumps	2 @ 17.1 MGD 2 @ 7,500 scfm 500 HP 11.5 psig 2 @ 5.16 MG 195 19 ft 20 @ 7.5 hp 32 units 1 unit 2 @ 6,300 GPM	Per Unit Per Unit Per System Per System Per System
Secondary Clarifiers	Effluent flow from the aeration basins is transferred through 36-inch gravity pipelines into the secondary clarifiers (four in total) through the bottom of the center column. The flow then travels up into a feed well that contains a flocculation zone. The flow passes through diffusers in the side of the feed well and is directed toward the bottom of the clarifier by a baffle. Each clarifier has a rotating sludge and ducking skimmer arm to collect scum off the surface. The solids settle to the bottom of the clarifier and are either returned to the aeration basin or wasted to RP-2. The overflow effluent is directed through a 54-inch pipeline to the tertiary filters.	Secondary Clarifiers Gates	3 @ 356 gpd/ft^2 13,273 ft^2 4 units	Per Unit
Return Activated Sludge (RAS) Pumping System	Some of the settled sludge in the secondary clarifiers is pumped back to the influent of the aeration system as return activated sludge (RAS) to mix with primary effluent, called mixed liquor suspended solids (MLSS). The RAS is returned to the aeration basin by the 5 RAS pumps to maintain the biological process.	RAS Pumping System Valves	5 @ 2,500 GPM 3 - 20-inch units	Per Unit
Waste Activated Sludge (WAS) Pumping System	To control the excess biological concentrations in the aeration system, the settled solids from the secondary clarifiers are "wasted" and pumped out of the secondary system to solids processing as waste activated sludge (WAS). WAS is pumped to and treated at RP-2.	WAS Pumping System	2 @ 100 GPM 7.5 hp	
Scum Pumping System	Scum collected from the skimmer arm of the secondary clarifiers is routed to a scum well, where it is pumped out of the system to solids processing at RP-2.	Scum Pumping System	2 @ 600 GPM 15 hp	

7.7.3.2 Asset Ratings - Secondary Treatment Process RP-5

Table 7-72
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Activated Sludge System	5	4	4	4	There are capacity concerns with future flow and the condition of the aeration diffusers. EN19001 will address the capacity, performance, and condition issues.
Secondary Clarifiers	3	3	3	3	No issues require special attention
RAS Pumping System	3	3	3	3	No issues require special attention
WAS Pumping System	3	3	3	3	No issues require special attention
Scum Pumping System	3	3	4	3	System is manual and cannot be controlled through SCADA system.

* Ratings as defined in Appendix A; General System Assets

7.7.3.3 Planned Projects - Secondary Treatment Process RP-5

Table 7-73
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN19001	RP-5 Expansion to 30 MGD	Expansion of Influent Pump Station and new wet well. Headworks improvements: screens, grit chamber, fine screens, screenings/grit building. Two new primary clarifiers and four new primary clarifier covers. Improvements to the existing aeration basin including new diffusers and mixed liquor pumps. Demolish two secondary clarifiers and construction a 30 MGD MBR system. UV disinfection system. New centralized odor control system for solids and liquids. Emergency overflow and storm water system. New Mountain Avenue Lift Station and Modifications to Butterfield Ranch Pump Station.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.7.4 Tertiary Treatment Process– RP-5

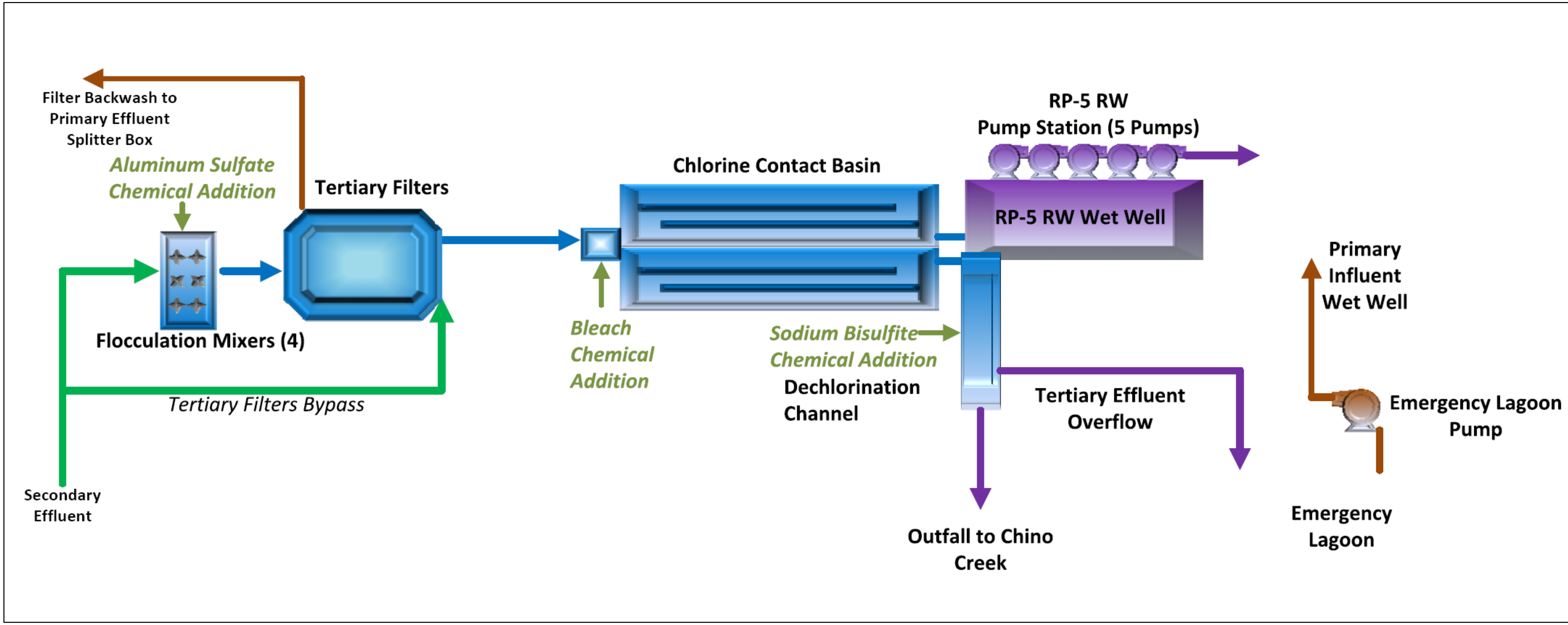

Figure 7-27 Tertiary Treatment Process

7.7.4.1 Asset Summary- Tertiary Treatment Process RP-5

Table 7-74
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Tertiary Treatment Process			16.3 MGD	
Aluminum Sulfate (Alum) System	Alum is used with cationic polymer to provide flocculation upstream of the tertiary filters. The addition of these two chemicals should result in an increase in floc size, which will increase particulate removal by the filters. The alum system consists of a storage tank and two chemical metering pumps in a duty/standby mode of operation. Alum is drawn from the storage tank and pumped to the influent channel to the tertiary filters. Space and connections for an additional future tank and chemical pumps are provided to accommodate future plant flows.	Tank Pumps	560 gallons 2 @ 14 gph	Per Unit
Flocculation Tank	To provide optimum removal of particulates during the filtration process, chemicals are added at the flocculation tank at the influent side of the filters. There is one rapid mixer and four VFD-controlled flocculators at this site.	Rapid Mixer Mixer	1@ 30 hp 1@ 3 hp 1@ 2 hp 1 @ 1.5 hp 1@ 1 hp	
Filters	The Parkson continuous backwash tertiary filters provide physical treatment to remove suspended solids and lower the turbidity of the secondary effluent. There are twelve tertiary filters and a filter recycle pump station with three submersible pumps that return filter backwash to the primary effluent splitter box. The tertiary filters are located south of the secondary clarifiers. Each tertiary filter contains six 50-square-foot modules. Flow that enters the tertiary filters comes from the secondary clarifiers. Secondary effluent is injected with chemicals to aid with filtration in the rapid mix and flocculation basin. The effluent travels through three pipes, each of which provides influent to a group of four filters. Filter influent then travels through the filter feed valves and into each filter influent manifold, where it is distributed to the bottom of each module.	Filters Filter Loading Recycle Pumps Gates	12 @ 300 ft^2 5 GPM/ft^2 3 @ 420 GPM 7.5 hp 1 units	Per Unit Per Unit
Chlorination System	The sodium hypochlorite system has multiple applications throughout the plant. The main purpose of the system is to provide disinfection of the plant effluent before final discharge. Hypochlorite (bleach) may also be used for housekeeping purposes. It can be added to the return activated sludge (RAS) to prevent the growth of filamentous organisms, which inhibit good settling in the secondary clarifiers. It can also be added to the secondary clarifier weirs and to the tertiary filter influent channel to prevent the growth of algae in these areas. The sodium hypochlorite system consists of four storage tanks and three sets of chemical metering pumps. One set, consisting of five pumps, is used for disinfection. These pumps hypochlorite to the chlorine mixer at the beginning of the chlorine contact basin. The second set of two pumps is used for RAS dosing and sends hypochlorite to the RAS line before the aeration basin. The third set of two pumps is used for algae control. This set pumps hypochlorite into a dilution water line and the mixture is sent to the secondary clarifier weirs and filter influent channel. Space and connections for future RAS and algae control chemical pumps are provided to accommodate future plant flows. The filter recycle pump station consists of three submersible pumps, which return tertiary filter backwash to the primary effluent splitter box.	Tanks Pumps Water Champ Mixer	4 @ 10,500 gallons 9 @ 77 gph 1 @ 20 hp 1 @ 30 hp	Per Unit Per Unit
Chlorine Contact Basins	After flow passes through the tertiary filters, it enters the chlorine contact channels, where the water is chlorinated and then mixed to improve disinfectant contact and obtain the necessary compliance concentration and detention times. The chlorinated water then travels through a serpentine pattern of channels to recycled water demand or the dechlorination channel, where the chlorine is removed from the water before discharge to the outfall.	Chlorine Contact Basins Gates	2 @ 0.9 MG 4 units	Per Unit
Dechlorination System	Flow entering the dechlorination structure is injected with sodium bisulfite (SBS) and travels through a serpentine flow path, allowing SBS to neutralize any chlorine residual before flowing into Chino Creek through a 48-inch effluent flow meter and out through an outfall 60-inch pipeline. SBS is stored in two large chemical tanks and is metered into the system via four chemical metering pumps. The dechlorination basin final effluent gate is used to stop plant effluent flow to the outfall, if the final effluent flow does not meet water quality standards. The dechlorination basin final effluent gate is a motorized sluice gate. When it is closed, flow is diverted over a 23-foot-long, fixed, broad-crested weir and through a pipeline into the adjacent emergency lagoon.	Tanks Pumps Gates	2 @ 5,100 gallons 4 @ 53 gph 3 units	

7.7.4.2 Asset Ratings Tertiary Treatment Process RP-5

Table 7-75
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Alum System	4	3	4	3	Run to fail, will be retired with the completion of EN19001.
Flocculation Tank	3	3	3	3	No issues require special attention. Flocculation tank will be retired with the completion of EN19001
Filters	4	3	4	4	The filters require significant maintenance. Project EN19001 will address this by removing the filters and replacing them with the new MBR system.
Chlorination System	3	2	2	2	No issues require special attention.
Chlorine Contact Basins	3	3	3	3	No issues require special attention.
Dechlorination System	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.7.4.3 Planned Projects - Tertiary Treatment Process RP-5

Table 7-76
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN19001	RP-5 Expansion to 30 MGD	Expansion of Influent Pump Station and new wet well. Headworks improvements: screens, grit chamber, fine screens, screenings/grit building. Two new primary clarifiers and four new primary clarifier covers. Improvements to the existing aeration basin including new diffusers and mixed liquor pumps. Demolish two secondary clarifiers and construction a 30 MGD MBR system. UV disinfection system. New centralized odor control system for solids and liquids. Emergency overflow and storm water system. New Mountain Avenue Lift Station and Modifications to Butterfield Ranch Pump Station.										
EN19006	RP-5 Biosolids Facility	Project scope will include the detailed design by an outside consultant followed by construction activities of the treatment plant. Scope also includes the necessary permitting, compliance, testing, commissioning and startup.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

There are no current or future projects for Tertiary Treatment Process at RP-5.

7.7.5 Auxiliary Systems- RP-5

7.7.5.1 Asset Summary- Auxiliary Systems RP-5

Table 7-77
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Plant Drain	The plant drain collects surface storm runoff, excess irrigation, and wash-down water collected in submersible drains located throughout the facility. The drain system receives gravity flows to a wet well, where the flow is then pumped and recycled toward the head of the treatment process.			
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE) and from onsite energy generation (solar and emergency generators). The solar assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the power panel switchgear, where transformers and switchgear are located to distribute electrical energy throughout the facility. Diesel emergency generators are used in the event of a power failure. Two generators are located at the south section and supply power to the preliminary, primary, secondary, tertiary sections, and headquarters An extensive lighting system is needed to illuminate the facility during dark hours. Most lighting fixtures are equipped with light sensors to turn off when sufficient lighting is provided from the sun. Lighting units are inside each of the process buildings, on equipment walls, and along the roadways for safety.	Utility Voltage Transformers Switchgear Distribution Generator Mounted Lighting	1 @ 12 kV 6 @ 12 kV to 480 V 8 @ 12 kV 3 @ 480 V 2 @ 1,000 kW > 50 units	MCCs
Utility Water System	Utility water is used throughout the facility to clean, supply pump seal water, cool, dilute, flush clogged pipes, irrigate, and more. The system is supplied by the RP-5 RW pump station. The piping consists of several isolation valves and point-of-use connections	Pipelines Pump Station Valves	Various sizes 2 @ 1,925 GPM 3 @ 1,925 GPM 30 units	
Potable Water System	Potable water is used throughout the plant for restrooms, cooling, odor scrubber dilution water, fire suppression, and more. The system is supplied from a 6-inch W1 line off Kimball Ave. from the City of Chino. The system has several backflow devices to protect the drinking water system.	Backflow Devices Valves	>25 units >25 units	
Instrumentation and Control System	An extensive array of instruments is used to monitor and control the processes at RP-5. Nearly all the processes at the plant are observed and controlled from a centralized SCADA system. Control wiring and local panels are provided at individual pieces of equipment, and control wiring transmits data to the main control terminals.	HMI Workstation RTU PLC I/O Hub Radio Transmitter	 1	
Yard Piping	A substantial network of pipes is used to convey flows between unit processes. The material, sizes, and service conditions of these pipes vary widely.			

7.7.5.2 Asset Ratings - Auxiliary Systems RP-5

Table 7-78
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Plant Drain	3	3	3	3	No issues require special attention.
Electrical System	3	3	3	3	No issues require special attention.
Utility Water System	4	3	3	5	Line breaks and issues with valving are occurring more frequently. No current project is in place to address issue.
Potable Water System	3	3	3	3	No issues require special attention.
Instrumentation and Control System	2	2	2	3	No issues require special attention.
Yard Piping	3	3	3	3	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.7.5.3 Planned Projects - Auxiliary Systems RP-5

Table 7-79
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN25025	REEP Return to Service Capital	This project will provide the capital purchase of Auxiliary components and SCADA upgrades to meet current Agency engineering guidelines. The project would prepare the REEP and its auxiliary equipment to produce power from digester gas, methane and the mixture there of.										
EN26012	RP-5 Emergency Overflow Pond Lining	This project is requesting to line EOP with an HDPE type liner or other lining product part of the basin until a concrete liner is installed. A drain system under would also be required for the liner to the unlined potion to equalize ground water to or control pumping by the new EOP pump station. Alternative design can use a concrete liner anticipated to be about 7.5 feet thick on the bottom and taper from 7.5' to 1' on sides.										
EN28008	RP-5 O&M Building	New O&M Building facility with workspace and office space to house assigned personnel in the Operations and Maintenance Units. Shop area for equipment washdown, equipment repair, operations lab, etc. Office space, showers, locker rooms, bathrooms, break rooms, common areas, etc. Parking space for fleet vehicles. All associated support equipment for an office environment										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

End of System Summar

7.8 Recycled Water & Groundwater Recharge Systems - Asset Management System Summary

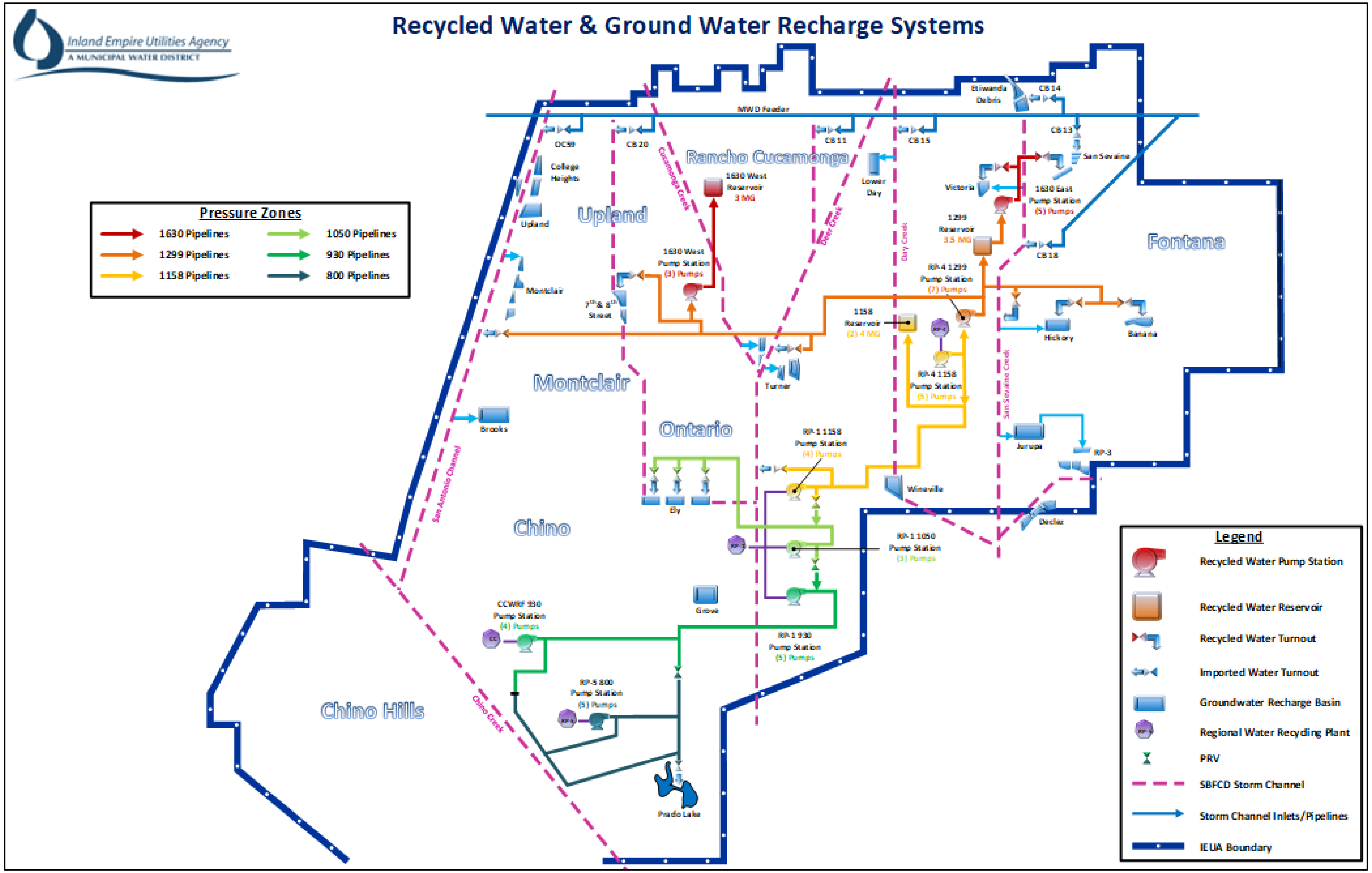

Figure 7-28 Recycled Water Distribution (RW) & Groundwater Recharge Systems (GWR)

Table 7-80
Recycled Water Distribution and Ground Water Recharge Systems – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN24055	RP-3 Diversion Structure Height Extension	Design and construct a 2-foot wall extension on top of the new RP-3 diversions structure.	WC	CC	$28,500										$28,500
2	RW25001	Identifying and Removing PFAS Used in Well Drilling	Drill or rehabilitate wells to test for PFAS, then develop an MWD Grant Report for funding support.	WC	OM	$600,000										$600,000
3	EN24054	Recycled Water Distribution Evaluation	Hire a consultant to assess current RW conveyance and propose alternatives to increase distribution in north and south regions.	WC	OM	$100,000										$100,000
4	EN25017	WC Emergency O&M Projects FY 24/25	Provide engineering and construction management funds for urgent repairs to the recycled water system.	WC	OM	$150,000										$150,000
5	EN22028	Philly RW Gravity Line Abandonment	Remove manhole and pipeline within recharge basin, seal remaining pipeline to prevent basin drainage if failures occur.	WC	OM	$250,000										$250,000
6	EN20031	Recycled Water Program Strategy 2025	Use updated agency demands to maintain a variable-scenario RW model, ensuring results are available for planning.	WC	OM	$800,000										$800,000
7	EN15002	1158 Reservoir Site Cleanup	Evaluate and potentially remove old oil piping/residue from 1158 Reservoir, then develop a mitigation plan if needed.	WC	CC	$500,000										$500,000
8	EN23121	1299 Reservoir Paint/Coating Repairs and	Blast interior surfaces to SSPC-SP10, apply epoxy coatings, perform minor structural fixes, and add safety upgrades.	WC	CC	$19,500										$19,500
9	EN23124	1630 East Pump Station VFD Installation	Install a new VFD for a 200 HP pump, wiring, and programming to integrate improved motor control.	WC	CC	$75,000										$75,000
10	EN23113	RW/GWR Safety Work Improvements For Basin	Construct a secure platform with railings, toe boards, and a lockable gate for safe actuator access.	RW	CC	$742,865	$15,000									$757,865

Table 7-80
Recycled Water Distribution and Ground Water Recharge Systems – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
11	EN25003	Install 2 RW Isolation Valves at Edison Avenue Pipeline	Install two 30-inch isolation valves on the Edison Avenue RW pipeline to enhance operational flexibility.	WC	CC	$50,000	$350,000									$400,000
12	EN23119	RW SCADA Migration	Upgrade SCADA hardware, create PCNs, separate RW/GWR HMIs, and isolate RW pump stations from wastewater systems.	WC	CC	$800,000	$2,510,000	$990,000								$4,300,000
13	EN24007	1299 RW PS Rehab	Repair or replace seven VFDs, motors, split-case pumps, and associated valves at the 1299 RW Pump Station.	WC	CC	$600,000	$2,000,000	$5,000,000								$7,600,000
14	IS22005	RW / GWR SCADA Infrastructure Replacement	Purchase two servers and switches to replace end-of-life SCADA equipment for reliable RW operations.	RW	CC	$40,000	$43,200	$46,656	$50,388	$54,420	$58,773	$63,475	$68,553	$74,037		$499,502
15	EN25023	New Recycled Water Project PDR's FY 24/25	Create preliminary design reports for upcoming recycled water initiatives requested by O&M.	WC	CC	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,000,000
16	EN25028	Recycled Water Condition Assessments	Hire master service contractors to evaluate critical RW infrastructure, establishing repair/rehab recommendations.	WC	OM	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,000,000
17	EN25029	Recycled Water Connections	Design and construct new RW connections to expand service and meet customer needs.	WC	OM	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
18	EN25032	Recycled Water Hydraulic Modeling FY 24/25	Provide ongoing hydraulic modeling support for effective recycled water planning and optimization.	WC	OM	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$400,000
19	EN25033	Recycled Water O&M Projects FY 24/25	Perform various operations and maintenance repairs to ensure recycled water system reliability.	WC	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000
20	EN25034	Recycled Water Planning Documents	Engage a consultant to develop planning documents for future water supply sustainability options.	WC	OM	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,500,000

Table 7-80
Recycled Water Distribution and Ground Water Recharge Systems – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
21	EN23037	Etiwanda Interceptor Grade Break RW Rel	Remove the existing 36-inch line and install 4,800 feet of new 42-inch recycled water pipeline.	WC	CC		$500,000									$500,000
22	EN26017	WC Emergency O&M Projects FY 25/26	Supporting Engineering and Construction Management to fund emergency repairs to the recycled water system.	WC	OM		$150,000									$150,000
23	EN22049	GWR-RW OIT Upgrades	Replace five Operator Interface Terminals annually for three years at 17 GWR/RW sites, ensuring updated controls, reliability, and IEUA-led installations.	RW	CC		$50,000	$50,000								$100,000
24	EN24008	930 RW Pipeline Blow Off Upgrade	Extend blow-off lateral, add a wharf hydrant, concrete pad, and protective bollards for secure operations.	WC	CC		$150,000	$800,000	$347,000							$1,297,000
25	EN27003	Recycled Water Emergency O&M Projects	Supporting Engineering and Construction Management to fund emergency repairs to the recycled water system	WC	OM			$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$1,200,000
26	EN24005	1630 West Reservoir Paint/Coating Repair	Clean and recoat delaminated or corroded areas using SSPC-SP11 prep, apply epoxy/urethane, and perform small safety fixes.	WC	CC				$50,000	$1,500,000						$1,550,000
27	EN16065	RW Connections to JCSD	Construct recycled water infrastructure to serve Jurupa Community Services District.	WC	CC				$3,000,000	$6,000,000	$6,000,000	$6,000,000				$21,000,000
28	EN24006	930 Reservoir Paint/Coating Repairs and	Remove defective coatings, reapply protective layers, address structural issues, and enhance safety, ensuring reservoir longevity and reliability.	WC	CC				$50,000				$2,000,000			$2,050,000
29	WR23002	RW Interconnection to the City of Rialto	Design and build 11 miles of 24-inch pipeline, a pump station, and connect to IEUA's 1158 zone for RW service.	WC	CC				$24,000,000	$20,000,000	$30,000,000	$25,000,000	$26,000,000			$125,000,000

Table 7-80
Recycled Water Distribution and Ground Water Recharge Systems – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
30	WR23001	Injection Facilities	Construct ~8 miles of pipelines from RP-4's AWPF, plus 16 injection wells and 4 monitoring wells for replenishment.	WC	CC				$25,000,000	$38,000,000	$50,000,000	$35,000,000	$30,000,000			$178,000,000
31	EN22009	WC Asset Management Project	Obtain consultant and contractor services for RW pump station/reservoir asset management, condition assessments, and upgrades.	WC	CC									$9,000,000	$9,000,000	$18,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.8.1 800 Pressure Zone (RW)

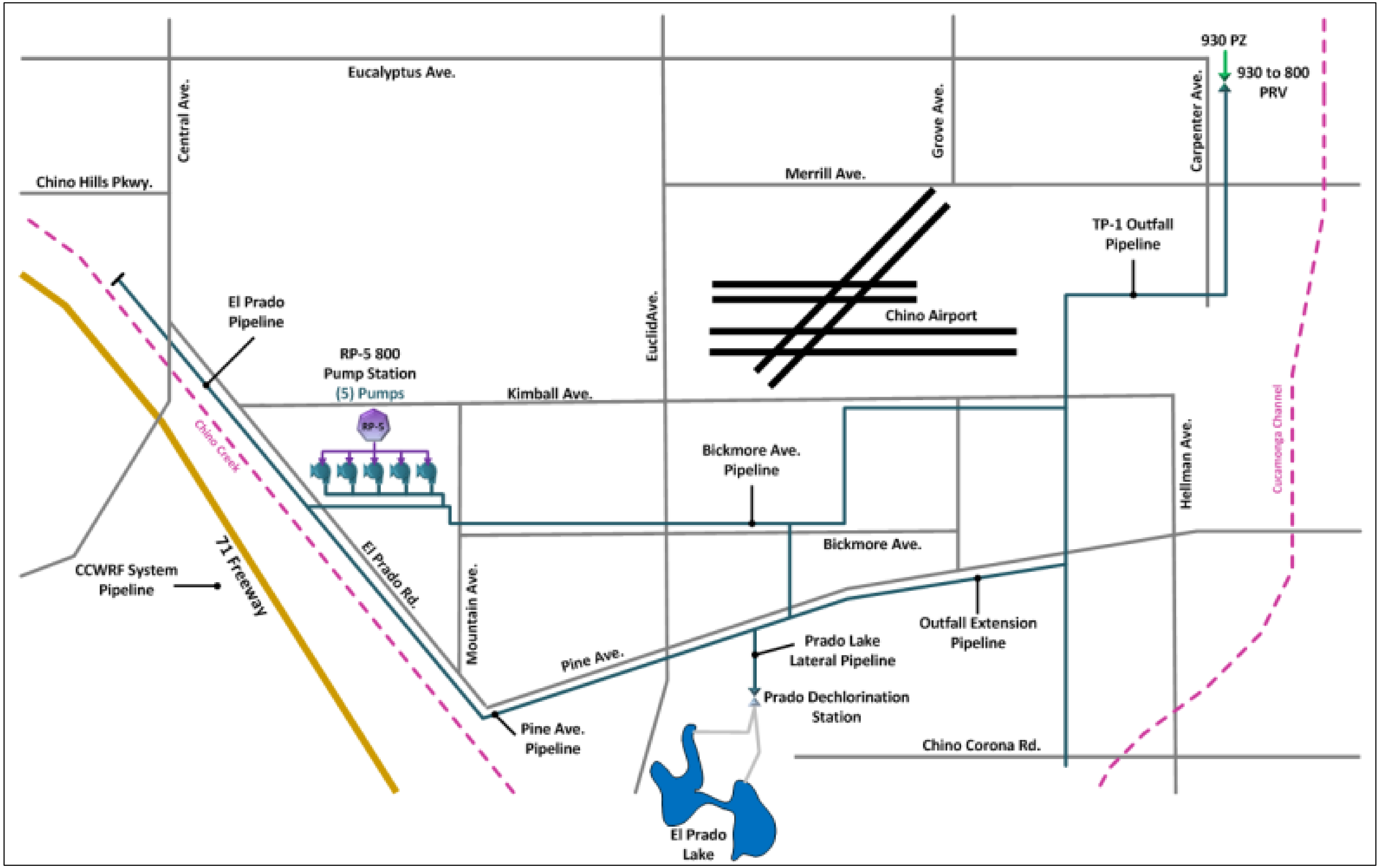

Figure 7-29 800 Pressure Zone (RW)

7.8.1.1 Asset Summary– 800 Pressure Zone (RW)

Table 7-81
Asset Summary

System Sub System(s)	Asset Profile	Design Capacity (Min, max, peak and/or average)	Notes
930 to 800 PRV	The 930 to 800 PRV is located at the intersection of Eucalyptus Ave. and Carpenter Ave. and is utilized to maintain the downstream pressure in the 800 Pressure Zone. The system includes a 16" Cla-Val PRV, flow meter, and pressure transmitter. The system has a design flow range of 200 GPM to 14,000 GPM.	200 – 14,000 GPM	
RP-5 800 Pumps	The RP-5 800 Pump Station provides recycled water to the 800 Pressure Zone for direct use by agricultural customers, the City of Chino, and San Bernardino County for feed water to El Prado Lake. The pump station is comprised of 5 pumps: • (2) 150 hp vertical turbine, VFD driven, 1,925 GPM Pumps • (3) 150 hp vertical turbine, constant speed, 1,925 GPM Pumps The RP-5 800 Pump Station has two selectable automatic control philosophies: • Wet Well Level Control – the pumps will be modulated to maintain an operator adjustable wet well level set point normally set at 14'. Pressure Control – the pumps will be modulated to maintain an operator adjustable discharge pressure set point normally set at 120 psi.	2 @ 1,925 GPM 3 @ 1,925 GPM	VFD Constant
TP-1 Outfall Pipeline	TP-1 Outfall Pipeline – 15,700 LF of 30" pipeline running from the 930 to 800 PRV to Chino Corona Rd.	30" – 13,200 GPM	6.0 ft/s max velocity(mv)
Outfall Extension Pipeline	6,600 LF of 30" pipeline running along Pine Ave. from the TP-1 Outfall Pipeline to the Prado Lake Lateral continuing with an additional 6,700 LF of 14" pipeline from the Prado Lake Lateral to El Prado Golf Course.	30" – 13,200 GPM 14" – 2,875 GPM	6.0 ft/s mv
Prado Lake Lateral Pipeline	535 LF of 30" pipeline running from the Outfall Extension Pipeline continuing with an additional 2,100 LF of 24" pipeline to the Prado Lake Dechlorination Station.	30" – 13,200 GPM 24" – 8,500 GPM	6.0 ft/s mv
Pine Ave. Pipeline	2,200 LF of 16" pipeline running from the El Prado Golf Course to RP-2.	16" – 3,755 GPM	6.0 ft/s mv
El Prado Pipeline	12,800 LF of 10" pipeline running from RP-2 to the CCWRF.	10" – 1,500 GPM	6.0 ft/s mv
Bickmore Pipeline	Consists of multiple pipeline segments including: • 5,500 LF of 18" pipeline running along Kimball Ave. from the TP-1 Outfall Pipeline to Rincon Meadows Rd. • 5,600 LF of 18" pipeline running along Rincon Meadows Rd. from Kimball Ave. to Bickmore Ave. continuing with an additional 1,550 LF of 12" pipeline from Bickmore Ave. to Pine Ave. • 6,300 LF of 30" pipeline along Bickmore Ave. from Rincon Meadows Rd. to San Antonio Ave. • 2,700 LF of 18" pipeline along Bickmore Ave. from San Antonio Ave. to Mountain Ave. • 2,500 LF of 18" pipeline running from the intersection of Mountain Ave. and Bickmore Ave. to RP-5. • 1,000 LF of 10" pipeline running from RP-5 to the El Prado Pipeline.	30" – 13,200 GPM 18" – 4,750 GPM 10" – 1,500 GPM	6.0 ft/s mv
Prado Sleeve Valve	The Prado Dechlorination Station provides dechlorinated recycled water to El Prado Lake. The station is comprised of the following main components: A 12" sleeve flow control valve with 14" magnetic flow meter and pressure transmitter	300 – 14,000 GPM	
Prado SBS Pumps	The Prado Dechlorination Station provides dechlorinated recycled water to El Prado Lake. The station is comprised of the following main components: • (2) 5 gph sodium bisulfite chemical metering pumps • (3) 20 gph sodium bisulfite chemical metering pumps • (2) upstream chlorine analyzers • (2) downstream chlorine analyzers biased to measure sodium bisulfite The flow control is automatically controlled either to maintain a flow control set point or an upstream pressure set point. The sodium bisulfite chemical metering pumps are controlled maintain a downstream sodium bisulfite residual.	2 @ 0.5 – 5 gph 3 @ 2 – 20 gph	

7.8.1.2 Asset Ratings – 800 Pressure Zone (RW)

Table 7-82
Asset Ratings

Process	Location Area	Rating Scale 1 = New, 5 = Failed					Key Issues for Further Investigation
		Condition	Capacity	Function	Reliability	Efficiency	
930 to 800 PRV	930	1	3	2	1	1	No issues require special attention.
RP-5 800 Pumps	800	1	3	3	2	1	No issues require special attention.
TP-1 Outfall Pipeline	800	3	3	3	2	2	No issues require special attention.
Outfall Extension Pipeline	800	3	3	3	3	2	No issues require special attention.
Prado Lake Lateral Pipeline	800	2	3	3	3	2	No issues require special attention.
Pine Ave. Pipeline	800	2	3	3	4	2	No issues require special attention.
El Prado Pipeline	800	2	3	3	3	1	No issues require special attention.
Bickmore Pipeline	800	1	4	5	2	1	At a maximum velocity of 6 ft/s, the 18” diameter sections of the Bickmore Pipeline have a capacity of 4,750 GPM. All recycled water supply from RP-5 is conveyed through the Bickmore Pipeline; and therefore, the current average daily RP-5 recycled water supply of 7,000 GPM exceeds the recommended capacity. In addition, when the RP-5 pump station is discharging 7,000 GPM, the discharge pressure at the pump station exceeds the pressure setting of the emergency pressure relief valve and discharges recycled water back into the RP-5 wet well.
Prado Sleeve Valve	800	1	2	2	1	1	No issues require special attention.
Prado SBS Pumps	800	1	2	2	1	1	No issues require special attention.

* Ratings as defined in Appendix A; General System Assets

7.8.1.3 Planned Projects – 800 Pressure Zone (RW)

There are no current or future projects for 800 Pressure Zone (RW).

7.8.2 Auxiliary Systems - 800 Pressure Zone

7.8.2.1 Asset Summary– 800 Pressure Zone Auxiliary Systems (RW)

Table 7-83
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-5 800 Pump Station	• Electrical System – The electrical energy to power the RP-5 800 pump station is obtained from the RP-5 treatment facility, which receives power from the local electrical grid (SCE) and from onsite energy generation (solar, biogas internal combustion engines, and emergency generators). The solar assets are owned and operated by private firms as part of power purchase agreements. The biogas internal combustion engines are owned by the Agency, but leased to a private firm producing biogas at the RP-5 solids handling facility. The electrical feed from the grid is composed of two 12 kV feeders through the RP-5 treatment facility to Power Center 3, where transformers and switchgear are located to distribute electrical energy to the RP-5 800 pump station. Diesel emergency generators are used in the event of a power failure. Two 1.0 MW generators are located south of Power Center 3 and supply power to the RP-5 treatment facility including the RP-5 800 pump station. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the RP-5 800 pump station. All the processes of the pump station are observed and controlled by the RP-5 treatment facility SCADA system. Local control wiring is fed from the individual pieces of equipment to MCCs and input/output (I/O) hubs in Power Center 3. The I/O hubs then transmit the control data by fiber optic cable to the Foxboro SCADA servers.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 2 @ 12 kV to 480 V 1 @ 480 V 2 @ 480 V 2 @ 1,100 kW 1,490 Bhp 1 unit N/A N/A 3 units 1 unit	 2 Feeders MCCs RP-5
Prado Dechlorination Station	• Electrical System – The electrical energy to power the Prado dechlorination station is obtained from the local electrical grid (SCE). The electrical feed from the grid is composed of a 480 V feeder, a main power switch, and an automatic transfer switch before terminating in MCC-1. A recently upgraded 27 kW Kohler diesel generator is located in the Prado sodium bisulfite pump room for use in a power failure. • Utility Water System – The utility water system is supplied using recycled water from upstream of the sleeve valve and is used mainly for wash-down water in the pump and analyzer buildings. The piping consists of several isolation valves and point-of-use connections. • Potable Water System – The potable water system is used throughout the Prado dechlorination station for restrooms, sinks, and eye-wash stations. The system is supplied from a service on Johnson Ave. from the City of Chino. The utility water system is supplied using recycled water from upstream of the sleeve valve and is used mainly for wash-down water in the pump and analyzer buildings. The piping consists of several isolation valves and point-of-use connections. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the Prado dechlorination station. All the processes of the dechlorination station are observed and controlled by the local programmable logic controller (PLC) system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and local PLC located in Control Panel 3300. Control data is then sent to RP-5 and RP-1 through a radio transmitter for remote access to the control system.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 480 V N/A 1 @ 480 V 1 @ 480 V 1 @ 27 kW 36 Bhp 1 unit N/A 1 unit 1 unit 1 unit	 2 Feeders ATS MCCs CP 3300 CP 3300

7.8.2.2 Asset Ratings – 800 Pressure Zone Auxiliary Systems (RW)

Table 7-84
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-5 800 Pump Station					
Electrical System	1	2	2	2	No issues requiring immediate attention
Instrumentation and Control System	2	3	2	3	No issues requiring immediate attention
Prado Dechlorination Station					
Electrical System	3	3	3	3	No issues requiring immediate attention
Utility Water System	3	3	3	3	No issues requiring immediate attention
Potable Water System	3	3	3	3	No issues requiring immediate attention
Instrumentation and Control System	2	1	2	1	No issues requiring immediate attention

* Ratings as defined in Appendix A; General System Assets

7.8.2.3 Planned Projects – 800 Pressure Zone Auxiliary Systems (RW)

There are no current or future projects for 800 Pressure Zone Auxiliary Systems (RW).

7.8.3 930 Pressure Zone (RW)

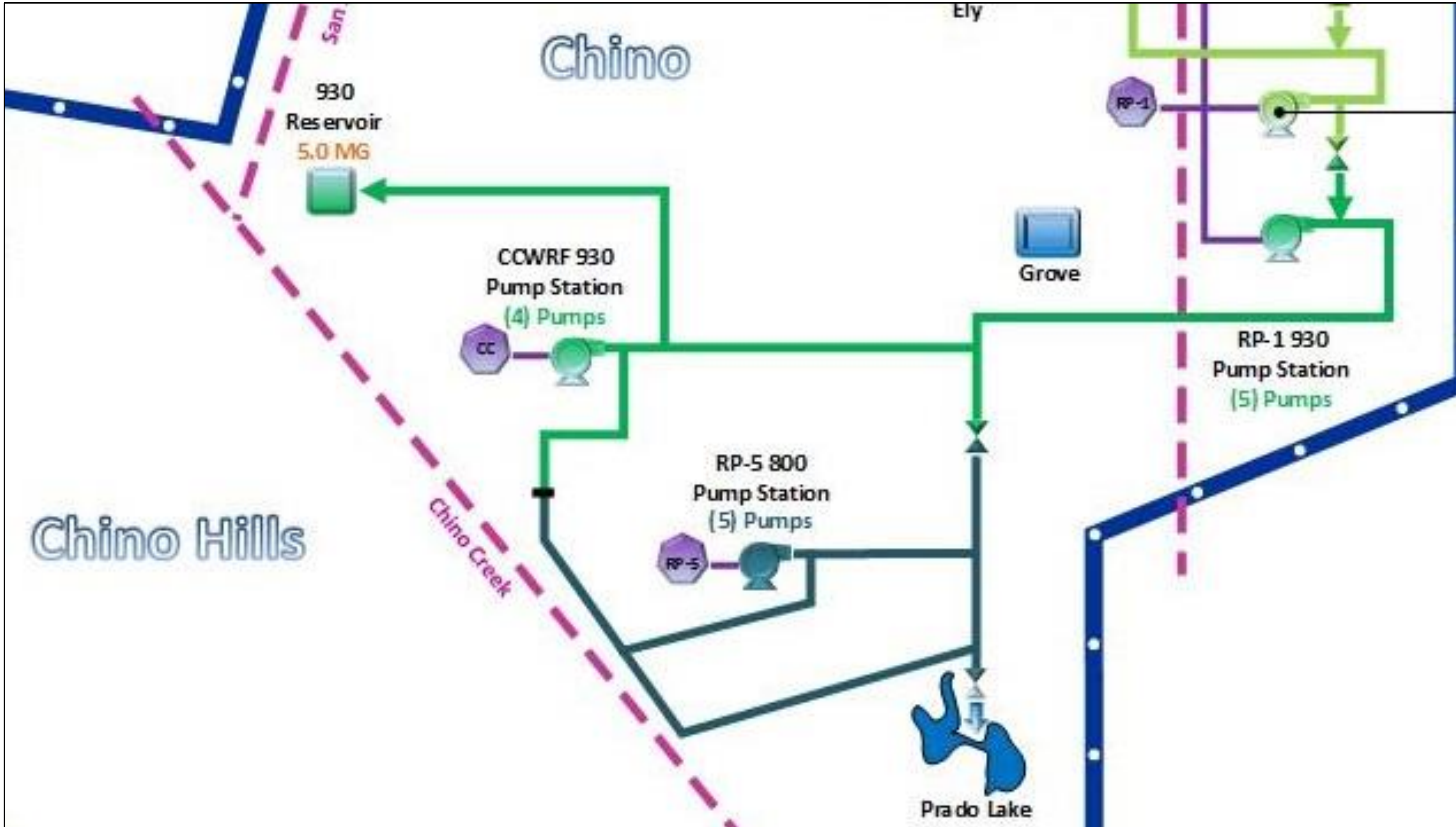

Figure 7-30 930 Pressure Zone (RW)

7.8.3.1 Asset Summary– 930 Pressure Zone (RW)

Table 7-85
Asset Summary

System	Process Summary	Design Capacity (Min, max, peak and/or average)	Notes
RP-1 930 Pump Station	The RP-1 930 pump station provides recycled water to the 930 pressure zone for direct use by agricultural customers, the City of Chino, and the City of Chino Hills. The pump station is composed of five pumps: • Three 150 hp vertical-turbine, VFD-driven, 2,790 GPM pumps • Two 500 hp vertical-turbine, VFD-driven, 9,330 GPM pumps The RP-1 930 pump station is automatically controlled to maintain a discharge-pressure set point of about 55 psi.	3 @ 2,790 GPM 2 @ 9,330 GPM	VFD VFD
CCWRF 930 Pump Station	The CCWRF 930 pump station provides recycled water to the 930 pressure zone for direct use by agricultural customers, the City of Chino, and the City of Chino Hills. The pump station is composed of (2) 300 hp vertical-turbine, VFD-driven, 2,585 GPM pumps, and (3) 300 hp vertical turbine, constant, 2,585 GPM pumps. The CCWRF 930 pump station is automatically controlled to cycle pumps on and off based on level set points of the RP-1 recycled water wet well.	2 @ 2,585 GPM 3 @ 2,585 GPM	VFD Constant
930 Reservoir	The 930 reservoir provides recycled water supply to the 930 pressure zone. The 930 reservoir is located north of Galloping Hills Road in the City of Chino Hills. The reservoir has a design capacity of 5 million gallons (MG), a diameter of 170 feet, and a maximum water surface level of 30 feet, and it is equipped with a level transmitter, flow meter, and inlet/outlet check valves.	1 @ 5 MG	
CCWRF System Pipeline	2,300 LF of 30-inch pipeline from CCWRF to the intersection of Monte Vista Ave. and Chino Hills Parkway, continuing with an additional 5,200 LF of 20-inch pipeline along Monte Vista Ave. between Chino Hills Parkway and Edison Ave	30 -inch – 13,200 GPM 20-inch – 5,900 GPM	6.0 ft/s max velocity(mv)
Edison Segment A Pipeline	18,500 LF of 30-inch pipeline from the intersection of Chino Hills Parkway and Telephone Ave. to the intersection of Euclid Ave. and Eucalyptus Ave.	30-inch – 13,200 GPM	6.0 ft/s mv
Edison Segment B Pipeline	15,900 LF of 30-inch from the intersection of Euclid Ave. and Eucalyptus Ave. to the TP-1 outfall pipeline.	30-inch – 13,200 GPM	6.0 ft/s mv
TP-1 Outfall Pipeline	12,800 LF of 30-inch pipeline from RP-1 to the 930 to 800 pressure reducing valve (PRV).	30-inch – 13,200 GPM	6.0 ft/s mv
930 to 800 Pressure Reducing Valve (PRV)	The 930 to 800 PRV is located at the intersection of Eucalyptus Ave. and Carpenter Ave. and is used to maintain the downstream pressure in the 800 pressure zone. The system includes a 16-inch Cla-Val PRV, flow meter, and pressure transmitter. The system has a design flow range of 200 GPM to 14,000 GPM	200 – 14,000 GPM	

7.8.3.2 Asset Ratings – 930 Pressure Zone (RW)

Table 7-86
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
TP-1 930 Pumps	2	3	2	3	No issues requiring immediate attention
CCWRF 930 Pumps	1	2	2	3	No issues requiring immediate attention
930 Reservoir	2	2	2	2	No issues requiring immediate attention. EN24006 will rehabilitate defective coatings and address structural issues within the reservoir.
CCWRF System Pipeline	3	3	4	3	The condition of the pipeline is unknown at this time. A potential project is needed to address this issue. EN24008 will extend blow off lateral, add a wharf style hydrant, concrete pad, and protective bollards for secure operations.
Edison Segment A Pipeline	2	3	3	1	The pipeline is not electrically isolated at the point of connection with CCWRF System Pipeline or Edison Segment B Pipeline, which link both cathodic protection systems. A potential project is needed to address these issues.
Edison Segment B Pipeline	2	3	3	1	There is no valve at Eucalyptus Ave. and Central Ave to isolate the west side of the system. No cathodic protection taking place on the pipeline and the inspection locations have been paved over. A potential project is needed to address these issues. Project EN25003 will install isolation valves on the Edison Ave RW Pipeline to enhance operational flexibility.
TP-1 Outfall Pipeline	4	5	4	1	During high recycled-water-demand periods, it has been common to flow more than 18,000 GPM through this pipeline to maintain system pressures. This equates to a flow velocity of more than 8 ft/s, which is not recommended for long-term operation. Because of the age of the pipeline and the operational requirements placed on the pipeline, condition assessment should be performed. In addition, a TBD project has been identified in the TYCIP to address the segment of pipeline from Chino to Schaeffer.
930 to 800 PRV	1	3	2	1	No issues requiring immediate attention

* Ratings as defined in Appendix A; General System Assets

7.8.3.3 Planned Projects – 930 Pressure Zone (RW)

Table 7-87
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN25003	Install 2 RW Isolation Valves at Edison Avenue Pipeline	Install two 30-inch isolation valves on the Edison Avenue RW pipeline to enhance operational flexibility.										
EN24008	930 RW Pipeline Blow Off Upgrade	Extend blow-off lateral, add a wharf hydrant, concrete pad, and protective bollards for secure operations.										
EN24006	930 Reservoir Paint/Coating Repairs and	Remove defective coatings, reapply protective layers, address structural issues, and enhance safety, ensuring reservoir longevity and reliability.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.8.4 Auxiliary System – 930 Pressure Zone

7.8.4.1 Asset Summary– 930 Pressure Zone Auxiliary Systems (RW)

Table 7-88
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-1 930 Pump Station	• Electrical System – The electrical energy to power the RP-1 930 pump station is obtained from the RP-1 treatment facility, which receives power from the local electrical grid (SCE) and from onsite energy generation (solar, fuel cell, and emergency generators). The solar and fuel cell assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the RP-1 power reliability building (PRB), where transformers and switchgear are located to distribute electrical energy throughout the facility. TP-1 and the RP-1 930 pump station are powered through the H9 breaker. The RP-1 treatment facility has three 1.25 MW diesel generators located in the PRB, and TP-1 has one 670 kW diesel generator; however, these generators were not designed to maintain operation of the recycled water pump stations during a power failure. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the RP-1 930 pump station. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to I/O hub and PLC in the RP-1 930 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-1 server workstation for remote access and transition of control data into the RP-1 SCADA system.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 2 @ 12 kV to 480 V 1 @ 480 V 1 @ 480 V N/A 1 unit N/A 1 unit 1 unit 1 unit	 2 Feeders MCCs RP-1
CCWRF 930 Pump Station	• Electrical System – The electrical energy to power the CCWRF 930 pump station is obtained from the CCWRF treatment facility, which receives power from the local electrical grid (SCE) and from onsite energy generation (solar and emergency generators). The solar assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the CCWRF electrical room, where transformers and switchgear are located to distribute electrical energy throughout the facility. The CCWRF treatment facility has one 1.50 MW diesel generator located in the main electrical room; however, this generator was not designed to maintain operation of the recycled water pump station during a power failure. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the CCWRF 930 pump station. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from individual pieces of equipment to an I/O hub and PLC in the CCWRF recycled-water pump-station control room. Fiber optic cable is then used to connect the local PLC to the CCWRF radio transmitter to send the signal to the new recycled-water master server located at RP-1.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 1 @ 12 kV to 480 V N/A 1 @ 480 V N/A 1 unit N/A 1 unit 1 unit 1 unit	 MCCs LCP 1200 LCP 1200 CCWRF

Table 7-88
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
930 to 800 Pressure Reducing Valve (PRV)	• Electrical System – The electrical energy to power the 930 to 800 PRV station is obtained from onsite energy generation located in the PRV and stored in onsite 12 V batteries. There is no electrical feed from the grid. There is no emergency generation for this site. • Instrumentation and Control System – Control of the PRV is maintained hydraulically and does not require an automated control system. System flow and pressure are monitored at the 930 to 800 PRV. Local wiring is fed from individual pieces of equipment to a local PLC. The PLC is connected to a remote telemetry unit, which transmits the signals back to RP-1 over a 4G data network to the GWR PLC	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 V DC N/A N/A N/A N/A N/A 1 unit 1 unit N/A N/A	 Onsite Generation 4G
930 Reservoir	• Electrical System – The electrical energy to power the 930 reservoir is obtained from the local electrical grid (SCE), which is composed of a 120 V feeder to a local control panel along Galloping Hills Road. The 930 reservoir does not have emergency power generation in case of power failure. • Instrumentation and Control System – Level, flow, and valve position are monitored at the 930 reservoir. Local control wiring is fed from individual pieces of equipment to an I/O hub and PLC in the 930 reservoir local control panel. A radio antenna is then used to connect the local PLC for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A N/A N/A N/A N/A 1 unit 1 unit 1 unit 1 unit	 CCWRF

7.8.4.2 Asset Ratings – 930 Pressure Zone Auxiliary Systems (RW)

Table 7-89
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-1 930 Pump Station					
Electrical System	3	3	3	4	RP-1 has three emergency diesel generators, and TP-1 has one emergency diesel generator to produce an effective electrical load of 3.5 MW. RP-1 has a varying electrical demand, ranging from 3.0 MW to as high as 4.8 MW depending on the amount of recycled water pumped. Therefore, RP-1 typically does not have the emergency generation capability to power the three recycled water pump stations located at the facility. The Agency would not be able to maintain the operation of the recycled water system if a sustained loss of utility power were to occur.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention
CCWRF 930 Pump Station					
Electrical System	3	3	3	4	CCWRF has one emergency diesel generator rated to produce an electrical load of 1.5 MW. CCWRF has a base electrical demand, without recycled water pumping, ranging from 600 kW to 800 kW. The expansion of the CCWRF recycled water pump station will provide five 300 hp pumps for a total power demand of about 1,100 kW. Therefore, the CCWRF emergency diesel generator will not be able to provide the required electrical load for CCWRF and the maximum production of the recycled water pump station.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention
930 to 800 PRV Station					
Electrical System	1	3	3	3	No issues requiring immediate attention
Instrumentation and Control System	1	3	3	3	No issues requiring immediate attention
930 Reservoir					
Electrical System	2	2	2	2	No issues requiring immediate attention
Instrumentation and Control System	2	2	2	2	No issues requiring immediate attention

* Ratings as defined in Appendix A; General System Assets

7.8.4.3 Planned Projects – 930 Pressure Zone Auxiliary Systems (RW)

There are no current or future projects for 930 Pressure Zone Auxiliary Systems (RW)

7.8.5 1050 Pressure Zone (RW/GWR)

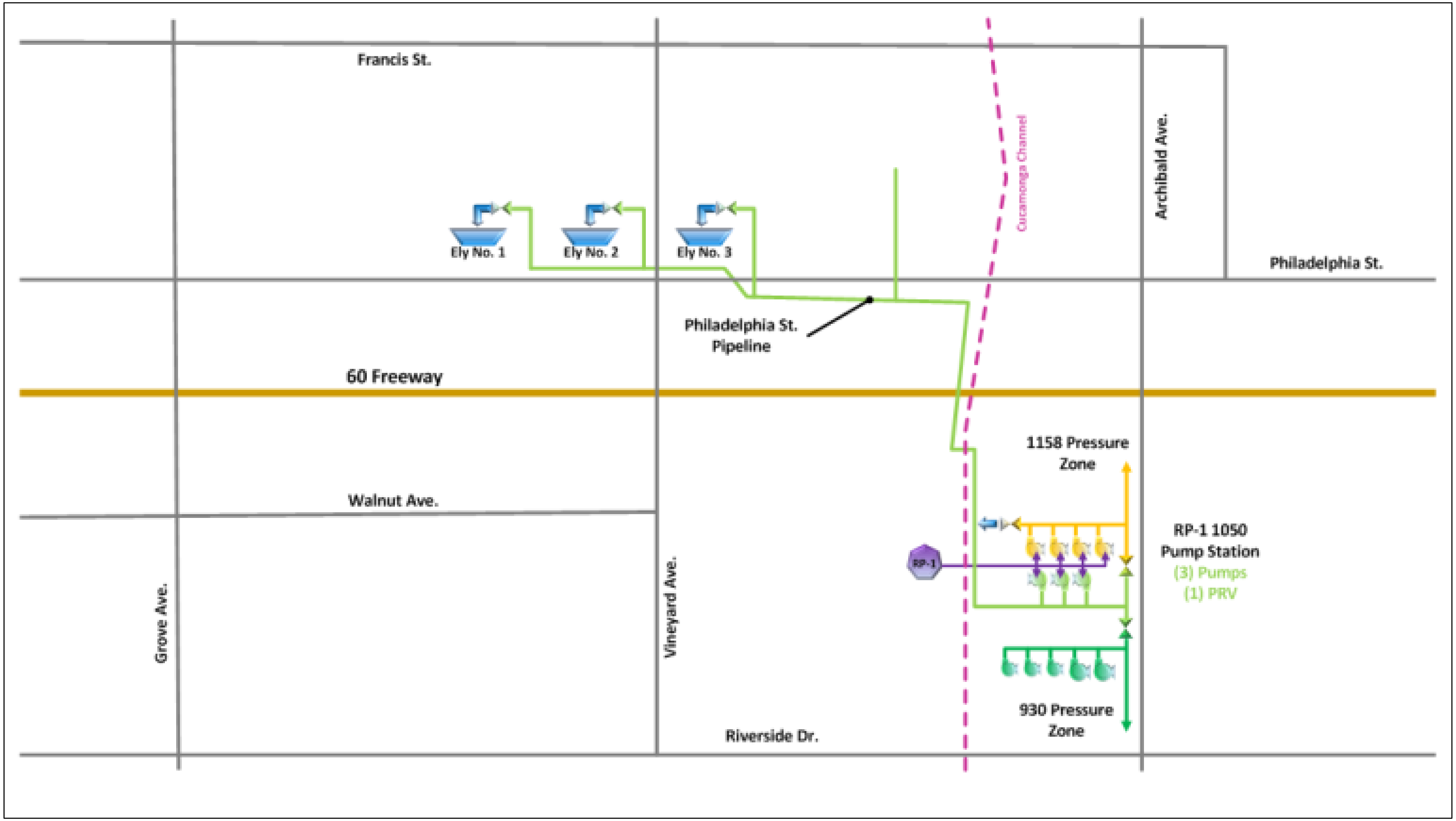

Figure 7-31 1050 Pressure Zone (RW/GWR)

7.8.5.1 Asset Summary– 1050 Pressure Zone (RW/GWR)

Table 7-90
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-1 1050 Pump Station	The RP-1 1050 pump station provides recycled water to the RP-1 utility water system, the 1050 pressure zone for direct use by the City of Ontario, and to Ely Basin for groundwater recharge. The pump station is composed of three 350 hp vertical-turbine pumps, VFD-driven, 3,750 GPM pumps. The 1050 pump station is automatically controlled to maintain a discharge-pressure set point of about 115 psi	RP-1 1050 Pumps	3 @ 3,750 GPM	VFD
1050 Pipelines	Philadelphia Street Pipeline – 2,650 LF of 30-inch pipeline from the 1050 pump station to the 60 freeway, continuing with an additional 6,950 LF of 24-inch pipeline to Ely Basin No. 1.	Philadelphia St. Pipeline	30-inch – 13,200 GPM 24-inch – 8,500 GPM	6.0 ft/s mv
1050 to 930 Pressure Reducing Valve (PRV)	The 1050 to 930 PRV is located at RP-1 and is used to transfer excess recycled water from the 1050 pressure zone to the 930 pressure zone when low pressures are experienced in the 930 pressure zone. The system includes a 24-inch Cla-Val PRV and 24-inch magnetic flow meter. The system has an operating flow range from 700 GPM to 20,000 GPM.	1050 to 930 PRV	700 – 20,000 GPM	
Ely Basin Turnouts	This system is composed of three separate turnouts, each including a 12-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to Ely Basin Nos. 1, 2, and 3. Each turnout is designed for flow rates ranging from 700 GPM to 3,100 GPM.	Ely Basin Turnouts	3 @ 700 – 3,100 GPM	

7.8.5.2 Asset Ratings– 1050 Pressure Zone (RW/GWR)

Table 7-91
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-1 1050 Pump Station	3	3	3	4	The VFD manufacturer no longer supports this equipment. Maintenance is running the VFD till the end of useful life and then when will replace each VFD through Maintenance. No project needed to address this issue.
1050 Pipelines	2	2	2	1	Project EN22028 will remove manhole and pipeline within the Ely basin, sealing the remaining pipeline to prevent basin drainage if failures occur.
1050 to 930 Pressure Reducing Valve (PRV)	2	3	2	2	No issues require special attention
Ely Basin Turnouts	3	3	4	4	No issues require special attention

*Ratings as defined in Appendix A; General System Assets

7.8.5.3 Planned Projects– 1050 Pressure Zone (RW/GWR)

Table 7-92
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN22028	Philly RW Gravity Line Abandonment	Remove manhole and pipeline within recharge basin, seal remaining pipeline to prevent basin drainage if failures occur.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.8.6 Auxiliary Systems– 1050 Pressure Zone

7.8.6.1 Asset Summary– 1050 Pressure Zone Auxiliary Systems (RW/GWR)

Table 7-93
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-1 1050 Pump Station	• Electrical System – The electrical energy to power the RP-1 1050 pump station is obtained from the RP-1 treatment facility, which receives power from the local electrical grid (SCE) and from onsite energy generation (solar, fuel cell, and emergency generators). The solar and fuel cell assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the RP-1 power reliability building (PRB), where transformers and switchgear are located to distribute electrical energy throughout the facility. TP-1 and the RP-1 1050 pump station are powered through the H9 breaker. The RP-1 treatment facility has three 1.25 MW diesel generators located in the PRB, and TP-1 has one 670 kW diesel generator; however, these generators were not designed to maintain operation of the recycled water pump stations during a power failure. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the RP-1 1050 pump station. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the RP-1 1158 and 1050 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-1 server workstation for remote access and transition of control data into the RP-1 SCADA system.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 2 @ 12 kV to 480 V 2 @ 480 V 1 @ 480 V N/A 1 unit N/A 1 unit 1 unit 1 unit	 MCCs RP-1
1050 to 930 PRV	• Electrical System – The electrical energy to power the 1050 to 930 PRV is looped powered through the RP-1 1158 and 1050 pump station PLC. Since the power draw to operate this system is negligible, the 670 kW TP-1 diesel generator will power the 1158 and 1050 pump station PLC during a power failure. • Instrumentation and Control System – The 1050 to 930 PRV consists of a 24-inch Cla-Val PRV with position indication and control and a 24-inch flow meter. All of the processes of the PRV are observed and controlled by the 1158 and 1050 pump station PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the 1158 and 1050 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-1 server workstation for remote access and transition of control data into the RP-1 SCADA system.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A N/A N/A 1 @ 670 kW 896 Bhp 1 unit N/A 1 unit 1 unit 1 unit	 PLC Loop TP-1 RP-1
Ely Basin Turnouts	• Electrical System – The electrical energy to power the three Ely Basin recycled water turnouts is provided by three independent solar panels. The turnouts do not have emergency power generation in case of power failure. • Instrumentation and Control System – Each of the three Ely Basin recycled water turnouts has a 10dB Yagi antenna that transmits control data to a PLC located at Ely Basin No. 1. The PLC at Ely Basin No. 1 then transmits control data back to the GWR workstation server located at RP-1 for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 24 VDC N/A N/A N/A N/A N/A 1 unit 1 unit 1 unit 4 units	 Solar

7.8.6.2 Asset Ratings – 1050 Pressure Zone Auxiliary Systems (RW/GWR)

Table 7-94
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-1 1050 Pump Station					
Electrical System	3	3	3	4	RP-1 has three emergency diesel generators, and TP-1 has one emergency diesel generator to produce an effective electrical load of 3.5 MW. RP-1 has a varying electrical demand ranging from 3.0 MW to as high as 4.8 MW, depending on the amount of recycled water pumped. Therefore, RP-1 typically does not have the emergency generation capability to power the three recycled water pump stations located at the facility. Normally, the 1050 pump station supplies utility water for RP-1. Utility water is critical to maintain operation of the facility.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention
1050 to 930 PRV					
Electrical System	2	3	3	3	No issues requiring immediate attention
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention
Ely Basin Turnouts					
Electrical System	3	4	3	3	No issues requiring immediate attention
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention

* Ratings as defined in Appendix A; General System Assets

7.8.6.3 Planned Projects– 1050 Pressure Zone Auxiliary Systems (RW/GWR)

There are no current or future projects for 1050 Pressure Zone Auxiliary Systems (RW/GWR).

7.8.7 1158 Pressure Zone (RW)

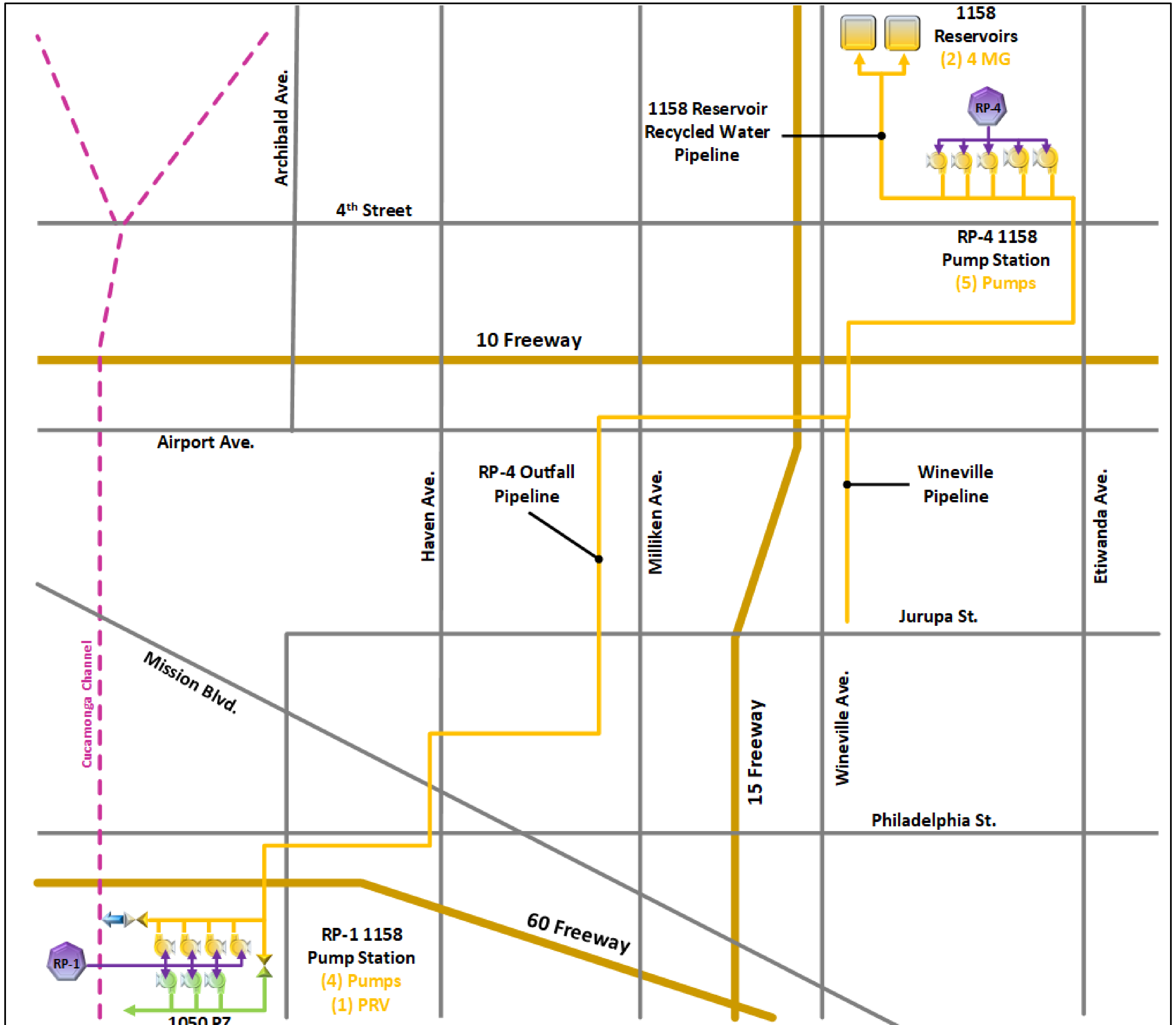

Figure 7-32 1158 Pressure Zone (RW)

7.8.7.1 Asset Summary– 1158 Pressure Zone (RW)

Table 7-95
Asset Summary

System Sub System(s)	Asset Profile	Design Capacity (Dry Weather Average)	Notes
1158 Reservoirs	The 1158 reservoirs provide recycled water supply to the 1299 pump station suction header and the 1158 pressure zone. The 1158 reservoirs are located at the intersection of Etiwanda Ave. and 6th St. in the City of Rancho Cucamonga within the GenON Power Generation Facility. Each 1158 reservoir has a design capacity of 4 million gallons (MG), a diameter of 145 feet, and a maximum water surface level of 34 feet, and each is equipped with a level transmitter, flow meter, and altitude valve. The 1158 reservoirs are normally operated between 4 feet and 32 feet, providing an operational capacity of 3.5 MG.	2 @ 4 MG	3.5 MG (Op. Cap.)
RP-4 1158 Pumps	The RP-4 1158 pump station provides recycled water to the 1299 pump station suction header, to 1158 reservoirs, and to the 1158 pressure zone for direct use by the City of Fontana and the City of Ontario. The pump station is composed of five pumps: • Three 200 hp vertical-turbine, VFD-driven, 2,500 GPM pumps • Two 300 hp vertical-turbine, VFD-driven, 7,200 GPM pumps The RP-4 1158 pump station is automatically controlled to maintain the level in the RP-4 effluent wet well structure.	3 @ 2,500 GPM 2 @ 7,200 GPM	VFD VFD
RP-1 1158 Pumps	The RP-1 1158 pump station provides recycled water to the 1299 pump station suction header, to 1158 reservoirs, and to the 1158 pressure zone for direct use by the City of Fontana and the City of Ontario. The pump station is composed of four 400 hp vertical-turbine, VFD-driven, 2,700 GPM pumps. The RP-1 1158 pump station is automatically controlled to cycle pumps on and off to maintain a time-of-day level set point of the 1158 reservoirs. In addition, the pumps can automatically be switched to VFD control to maintain the RP-1 effluent wet well level when a low-level setting is reached.	4 @ 2,700 GPM	VFD
RP-4 Outfall Pipeline	25,200 LF of 42-inch pipeline from RP-4 to the intersection of DuPont Ave. and Jurupa St., 15,000 LF of 36-inch pipeline from DuPont Ave. and Jurupa St. to the intersection of Archibald Ave. and Philadelphia Ave., and 4,200 LF of 42-inch pipeline from Archibald Ave. and Philadelphia Ave. to RP-1.	42-inch – 25,900 GPM 36-inch – 19,000 GPM	6.0 ft/s mv
1158 Reservoir Pipeline	4,200 LF of 48-inch pipeline from RP-4 to the 1158 Reservoirs.	33,800 GPM	6.0 ft/s mv
Wineville Pipeline	5,400 LF of 24-inch pipeline along Wineville Ave. from Airport Dr. to Jurupa St., 8,000 LF of 36-inch pipeline along Francis Street from Jurupa St. to Etiwanda Ave., 8,300 LF of 36-inch pipeline along Marlay Avenue from Etiwanda Ave. to Banana Ave., 2100 LF of 36-inch pipeline along Banana Avenue from Marlay Ave. to Chaparral Dr., and 7,400 LF of 36-inch pipeline along the south side of Chaparral Drive from Banana Ave. to Hemlock Ave.	8,500 GPM	6.0 ft/s mv
1158 to 1050 PRV	The 1158 to 1050 PRV is located at RP-1 and used to transfer excess recycled water from the 1158 pressure zone to the 1050 pressure zone when the 1158 reservoirs reach a high-level set point. The system includes a 16-inch Cla-Val PRV and 24-inch magnetic flow meter. The system has an operating flow range from 300 GPM to 17,000 GPM.	300 – 17,000 GPM	
RP-4 EDVs	The RP-4 EDVs are located at RP-1 and used to discharge excess recycled water when the 1158 reservoirs reach a high-level set point. The excess recycled water is treated through the RP-1 north dechlorinating structure before being discharged to the Cucamonga Channel. The turnout includes two 16-inch motor-operated globe-style EDVs, flow meter, and bypass pipeline. Each EDV has an operating flow range from 500 GPM to 11,000 GPM.	2 @ 500–11,000 GPM	

7.8.7.2 Asset Ratings – 1158 Pressure Zone (RW)

Table 7-96
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
1158 Reservoirs	1	3	3	1	It is recommended that the annual monitoring testing is performed at the reservoirs highest operating level. Project EN15002 will evaluate old oil piping from the 1158 reservoir and develop a mitigation plan to potentially remove if needed.
RP-4 1158 Pumps	3	3	3	3	No issues requiring immediate attention.
RP-1 1158 Pumps	3	3	3	3	The VFD manufacturer no longer supports this equipment. Maintenance is running the VFD till the end of useful life and then when will replace each VFD through Maintenance. No project needed to address this issue.
RP-4 Outfall Pipeline	3	3	3	3	In late 2008, the pipeline was converted to the 1158 recycled water pressure zone. Condition Assessment performed in 2017.
1158 Reservoir Pipeline	2	2	2	2	A potential project is needed to repair these issues. Project EN16065 will connect a recycled water line to JCSD. Project WR23002 will design and install an 11 mile long 24-inch pipeline, pump station, and will connect to the 1158 zone for RW service.
Wineville Pipeline	2	3	3	2	No issues requiring immediate attention.
1158 to 1050 PRV	2	2	2	3	No issues requiring immediate attention.
RP-4 EDVs	3	2	2	3	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.8.7.3 Planned Projects– 1158 Pressure Zone (RW)

Table 7-97
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN15002	1158 Reservoir Site Cleanup	Evaluate and potentially remove old oil piping/residue from 1158 Reservoir, then develop a mitigation plan if needed.										
EN16065	RW Connections to JCSD	Construct a recycled water infrastructure to serve Jurupa Community Services District.										
WR23002	RW Interconnection to the City of Rialto	Design and build 11 miles of 24-inch pipeline, a pump station, and connect to IEUA's 1158 zone for RW service.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.8.8 Auxiliary Systems – 1158 Pressure Zone

7.8.8.1 Asset Summary– 1158 Pressure Zone Auxiliary Systems (RW)

Table 7-98
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-4 1158 Pump Station	• Electrical System – The electrical energy to power the RP-4 1158 pump station is obtained from the local electrical grid (SCE) and from onsite energy generation (wind and emergency generators). The solar and wind assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the power panel switch gear, where transformers and switchgear are located to distribute electrical energy throughout the facility. The RP-4 treatment facility has one 2.0 MW diesel generator located in the northern portion of the facility; however, the generator was not designed to maintain operation of the recycled water pump stations during a power failure. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the RP-4 1158 pump station. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the RP-4 1158 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-4 server workstation for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 4 @ 12 kV to 480 V 1 @ 480 V 2 @ 480 V 1 @ 2,000 kW 2,847 Bhp 1 unit N/A 1 unit 1 unit 1 unit	 MCCs Small Pumps PLC 5 RP-4
RP-1 1158 Pump Station	• Electrical System – The electrical energy to power the RP-1 1158 pump station is obtained from the RP-1 treatment facility, which receives power from the local electrical grid (SCE) and from onsite energy generation (solar, fuel cell, and emergency generators). The solar and fuel cell assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the RP-1 power reliability building (PRB), where transformers and switchgear are located to distribute electrical energy throughout the facility. TP-1 and the RP-1 1158 pump station are powered through the H9 breaker. The RP-1 treatment facility has three 1.25 MW diesel generators located in the PRB, and TP-1 has one 670 kW diesel generator; however, these generators were not designed to maintain operation of the recycled water pump stations during a power failure. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the RP-1 1158 pump station. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the 1158 and 1050 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-1 server workstation for remote access and transition of control data into the RP-1 SCADA system.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 2 @ 12 kV to 480 V 2 @ 480 V 1 @ 480 V N/A 1 unit N/A 1 unit 1 unit 1 unit	 MCCs RP-1
1158 Reservoirs	• Electrical System – The electrical energy to power the 1158 reservoirs is obtained from the local electrical grid (SCE), which is composed of a 120 V feeder to a local control panel on 6th Street. The 1158 reservoirs do not have emergency power generation in case of power failure. • Instrumentation and Control System – Level, flow, and valve position are monitored at the 1158 reservoirs. Local control wiring is fed from individual pieces of equipment to an I/O hub and PLC in the 1158 reservoir local control panel. Fiber optic cable is then used to connect the local PLC to the RP-4 server workstation for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A N/A N/A N/A N/A N/A 1 unit 1 unit 1 unit	 PLC 5C RP-4

Table 7-98
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
1158 to 1050 PRV	• Electrical System – The electrical energy to power the 1158 to 1050 PRV is looped powered through the 1158 and 1050 pump station PLC. The 670 kW TP-1 diesel generator will power the 1158 pump station and 1050 pump station PLC during a power failure, since the power draw to operate this system is negligible. • Instrumentation and Control System – The 1158 to 1050 PRV consists of a 16-inch Cla-Val PRV with position indication and control and a 24-inch flow meter. All of the processes of the PRV are observed and controlled by the 1158 and 1050 pump station PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the 1158 and 1050 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-1 server workstation for remote access and transition of control data into the RP-1 SCADA system.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A N/A N/A 1 @ 670 kW 896 Bhp 1 unit N/A 1 unit 1 unit 1 unit	 PLC Loop TP-1 RP-1

7.8.8.2 Asset Ratings – 1158 Pressure Zone Auxiliary Systems (RW)

Table 7-99
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-4 1158 Pump Station					
Electrical System	3	3	3	4	RP-4 has one 2.0 MW emergency diesel generator. The generator can produce only enough power to reliably power the RP-4 1158 small pumps, reducing the overall capacity of the pump station. The RP-4 1158 pump station is the only discharge location for the facility; therefore, a utility power failure will reduce the discharge capacity for the facility. Project EN22003 will address this issue.
Instrumentation and Control System	3	3	3	3	
RP-1 1158 Pump Station					
Electrical System	3	3	3	4	RP-1 has three emergency diesel generators, and TP-1 has one emergency diesel generator to produce an effective electrical load of 3.5 MW. RP-1 has a varying electrical demand, ranging from 3.0 MW to as high as 4.8 MW depending on the amount of recycled water pumped. Therefore, RP-1 typically does not have the emergency generation capability to power the three recycled water pump stations located at the facility. Project EN22003 will address this issue. Project EN13048 will provide a second 12kV feeder to TP-1 to support the RP-1 1158 pump station.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
1158 Reservoirs					
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
1158 to 1050 PRV					
Electrical System	2	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.8.8.3 Planned Projects – 1158 Pressure Zone Auxiliary Systems (RW)

There are no current or future projects for 1158 Pressure Zone Auxiliary Systems (RW).

7.8.9 1299 Pressure Zone (RW)

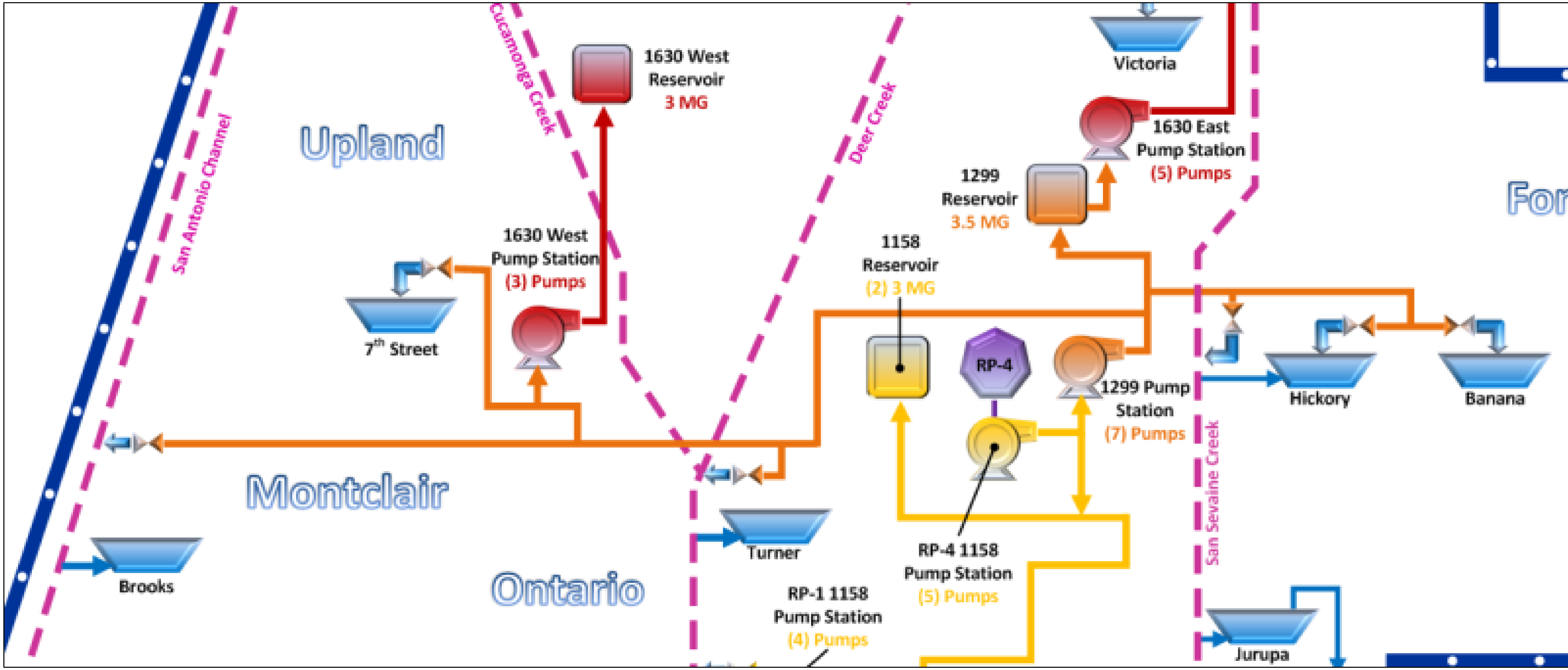

Figure 7-33 1299 Pressure Zone (RW)

7.8.9.1 Asset Summary– 1299 Pressure Zone (RW)

Table 7-100
Asset Summary

System Sub System(s)	Asset Profile	Design Capacity (Dry Weather Average)	Notes
1299 Reservoir	The 1299 reservoir provides recycled water supply to the 1630 east pump station suction header and the 1299 pressure zone. The 1299 reservoir is located at the intersection of East Ave. and Baseline Ave. in the City of Rancho Cucamonga on an existing Cucamonga Valley Water District (CVWD) potable water reservoir site. The 1299 reservoir has a design capacity of 3.5 million gallons (MG), a diameter of 165 feet, and a maximum water surface level of 22 feet, and is equipped with a level transmitter. The 1299 reservoir is normally operated between 4 feet and 20 feet, providing an operational capacity of 2.6 MGD.	3.5 MG	2.6 MG
RP-4 1299 Pumps	The RP-4 1299 pump station provides recycled water to the 1299 pressure zone for direct use by CVWD, Monte Vista Water District (MVWD), the City of Fontana, the City of Ontario, and the City of Upland, and for groundwater recharge at Brooks Basin, 8th St. Basin, Turner Basin, Hickory Basin, Banana Basin, Jurupa Basin, and RP-3 Basin. The pump station is composed of seven pumps: • Two 350 hp horizontal-split case, VFD-driven, 4,185 GPM pumps • Five 350 hp horizontal-split case, VFD-driven, 4,600 GPM pumps The 1299 pump station is automatically controlled to cycle pumps on and off to maintain a time-of-day level set point of the 1299 reservoir.	2 @ 4,185 GPM 5 @ 4,600 GPM	
Etiwanda Pipeline	4,100 LF of 36-inch pipeline along Etiwanda Ave. from RP-4 to Whittram Ave.	19,000 GPM	6.0 ft/s mv
North Etiwanda Pipeline	1,800 LF of 42-inch pipeline along Etiwanda Ave. from Whittram Ave. to Arrow Route.	25,900 GPM	6.0 ft/s mv
Whittram Ave. Pipeline	7,500 LF of 16-inch along Whittram Ave. from Etiwanda Ave. to Banana Basin.	3,750 GPM	6.0 ft/s mv
1299 Zone Recycled Water Pipeline	12,500 LF of 36-inch pipeline from the termination of the North Etiwanda Pipeline to the 1299 Reservoir.	19,000 GPM	6.0 ft/s mv
RP-4 West Ext. Phase I Pipeline	14,200 LF of 30-inch pipeline along 6th St. from Etiwanda Ave. to Cleveland Ave.	13,200 GPM	6.0 ft/s mv
RP-4 West Ext. Phase II Pipeline	10,400 LF of 30-inch pipeline from the termination of the RP-4 West Extension Phase I Pipeline at 6th St. and Cleveland Ave. to Archibald Ave. and 4th St., continuing with an additional 2,200 LF of 24-inch pipeline to 4th St. and Cucamonga Creek.	30-inch – 13,200 GPM 24-inch – 8,500 GPM	6.0 ft/s mv
San Antonio Channel Segment A	14,900 LF of 24-inch pipeline from the termination of the RP-4 West Extension Phase II pipeline at 4th St. and Cucamonga Creek to I St. and Sultana Ave.	8,500 GPM	6.0 ft/s mv
San Antonio Channel Segment B	12,200 LF of 30-inch pipeline from the termination of the San Antonio Channel Segment A Pipeline at I St. and Sultana Ave. to San Bernardino Ave. and Benson Ave., continuing with an additional 11,250 LF of 24-inch pipeline to Orchard St. Turnout.	30-inch – 13,200 GPM 24-inch – 8,500 GPM	6.0 ft/s mv
7th & 8th St. Pipeline	10,500 LF of 16-inch pipeline from 4th St. and Corona Ave. to 8th St. Basin turnout.	3,750 GPM	6.0 ft/s mv
FMM Turnout	The turnout includes two 12-inch motor-operated butterfly valves, a flow meter, and a pressure transmitter to provide recycled water to Hickory Basin and Banana Basin. The turnout is designed for flow rates ranging from 200 GPM to 6,000 GPM.	200 – 6,000 GPM	Historical Data
San Sevaine Channel Turnout	The turnout includes a 10-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to San Sevaine Channel. Recycled water discharged in the channel can then be conveyed to Hickory Basin or to Jurupa Basin for groundwater recharge. The turnout is designed for flow rates ranging from 200 GPM to 2,200 GPM.	200 – 2,200 GPM	Historical Data
Turner Basin Turnout	The turnout includes a 10-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to Deer Creek. Recycled water discharged in the lined creek can then be conveyed to Turner Basin Nos. 3 and 4 for groundwater recharge. The turnout is designed for flow rates ranging from 300 GPM to 3,500 GPM.	300 – 3,500 GPM	Historical Data
8th St. Basin Turnout	The turnout includes a 12-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to 8th St. Basin. The turnout is designed for flow rates ranging from 200 GPM to 3,000 GPM.	200 – 3,000 GPM	Design Specifications
Orchard Turnout	The turnout includes a 16-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to San Antonio Channel. Recycled water discharged in the channel can then be conveyed to Brooks Basin for groundwater recharge. The turnout is designed for flow rates ranging from 1,000 GPM to 10,000 GPM.	1,000 – 10,000 GPM	Design Specifications

7.8.9.2 Asset Ratings – 1299 Pressure Zone (RW)

Table 7-101
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
1299 Reservoir	1	2	3	2	There is only one level transmitter for the reservoir. If the level transmitter fails, it shuts down the entire system. A redundant level transmitter should be installed on the reservoir. These issues should be addressed by the Maintenance Department. Project EN23121 rehabilitates the reservoir paint and coatings, performs minor structural fixes, and adds safety upgrades.
RP-4 1299 Pumps	4	3	3	3	Impellers wear due to cavitation. Early investigation shows that cast iron material wears prematurely in highly chlorinated water. Further evaluation is needed to determine if a potential project is needed. Project EN24007 will repair or replace 7 VFDs, motors, split-case pumps, and associated valves at the RP-4 1299 RW Pump Station.
Etiwanda Pipeline	2	3	2	2	No issues requiring immediate attention. Project EN23037 will remove the existing 36-inch line and install 4,800 ft of new 42-inch RW pipeline.
North Etiwanda Pipeline	2	2	2	2	No issues requiring immediate attention.
Whittram Ave. Pipeline	2	4	2	2	At a max velocity of 6 ft/s, the Whittram Ave. pipeline has a capacity of 3,750 GPM. The San Sevaine Channel turnout has a max flow of 2,200 GPM, and the FMM turnout has a maximum flow of 6,000 GPM, which exceeds the Whittram Ave. pipeline max recommended velocity.
1299 Zone Recycled Water Pipeline	2	2	2	2	No issues requiring immediate attention.
RP-4 West Ext. Phase I Pipeline	2	3	2	2	No issues requiring immediate attention.
RP-4 West Ext. Phase II Pipeline	2	3	2	2	No issues requiring immediate attention.
San Antonio Channel Segment A	2	3	2	2	No issues requiring immediate attention.
San Antonio Channel Segment B	3	3	2	2	No issues requiring immediate attention.
7th & 8th St. Pipeline	3	4	3	3	At a maximum velocity of 6 ft/s, the 7th and 8th St. pipeline has a capacity of 3,750 GPM. The 8th St. basin turnout has a maximum flow of 3,000 GPM, and the 1630 west recycled water pump station has a maximum flow of 4,000 GPM. Therefore, the 1630 west recycled water pump station and 8th St. basin turnout cannot be operated simultaneously without exceeding the maximum recommended velocity of the pipeline. A project was identified on FY 2015/16 TYCIP to address this issue but no project number has been assigned.
FMM Turnout	3	3	2	3	No issues requiring immediate attention.
San Sevaine Channel Turnout	1	1	1	3	A potential project to ensure adequate cathodic protection may be needed.
Turner Basin Turnout	1	3	3	3	No issues requiring immediate attention.
8th St. Basin Turnout	3	3	3	3	No issues requiring immediate attention.
Orchard Turnout	1	2	2	3	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.8.9.3 Planned Projects Profile – 1299 Pressure Zone (RW)

Table 7-102
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23121	1299 Reservoir Paint/Coating Repairs and	Blast interior surfaces to SSPC-SP10, apply epoxy coatings, perform minor structural fixes, and add safety upgrades.										
EN24007	1299 RW PS Rehab	Repair or replace seven VFDs, motors, split-case pumps, and associated valves at the 1299 RW Pump Station.										
EN23037	Etiwanda Interceptor Grade Break RW Rel	Remove the existing 36-inch line and install 4,800 feet of new 42-inch recycled water pipeline.										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.8.10 Auxiliary Systems - 1299 Pressure Zone

7.8.10.1 Asset Summary– 1299 Pressure Zone Auxiliary Systems (RW)

Table 7-103
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-4 1299 Pump Station	• Electrical System – The electrical energy to power the RP-4 1299 pump station is obtained from the RP-4 treatment facility, which receives power from the local electrical grid (SCE) and from onsite energy generation (wind and emergency generators). The wind assets are owned and operated by a private firm as part of power purchase agreements. The electrical feed from the grid is composed of a 12 kV feeder to the power panel switch gear, where transformers and switchgear are located to distribute electrical energy throughout the facility. The RP-4 treatment facility has one 2.0 MW diesel generator located in the northern portion of the facility; however, the generator was not designed to maintain operation of the recycled water pump stations during a power failure. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the RP-4 1299 pump station. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the RP-4 1299 pump station electrical room. Fiber optic cable is then used to connect the local PLC to the RP-4 server workstation for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 2 @ 12 kV to 480 V 1 @ 480 V 1 @ 480 V N/A 1 unit N/A 1 unit 1 unit 1 unit	 MCCs PLC 5B RP-4
1299 Reservoir	• *See 1630 East Auxiliary System Summary Sheet.			
FMM Turnout	• Electrical System – The electrical energy to power the FMM Turnout is obtained from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position for both Hickory and Banana basins is fed back to the remote telemetry unit. The turnout has a 10dB Yagi antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access.	Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A N/A 1 unit N/A 1 unit 1 unit	
San Sevaine Channel Turnout	• Electrical System – The electrical energy to power the San Sevaine Turnout is obtained from the Hickory Basin Rubber Dam Control House, which receives power from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position is fed back to the local valve control panel, which then directs the information to a local control panel in the Hickory Basin Rubber Dam Control House. The Control House has a 10dB Yagi antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access.	Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 480 V 1 @ 480 V to 120 V N/A N/A N/A 1 unit 1 unit	

Table 7-103
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Turner Basin Turnout	• Electrical System – The electrical energy to power the Turner Basin Turnout is obtained from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position is fed back to a local control panel and PLC. The turnout has a 9dB Yagi antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access.	Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A N/A 1 unit 1 unit 1 unit 1 unit	
8th Street Basin Turnout	• Electrical System – The electrical energy to power the 8th Street Basin Turnout is obtained from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position is fed back to a local PLC. The turnout has a 9dB Yagi antenna that transmits control data to an additional local PLC panel for 8th Street Basin before being transmitted by radio to RP-1 to the GWR workstation server for control and remote access.	Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A 2 units N/A 2 units 1 unit 3 units	
Orchard Turnout	• Electrical System – The electrical energy to power the Orchard Turnout is obtained from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position as well as pressure are fed back to a local control panel and PLC. The data is transmitted by phone line to the GWR workstation server at RP-1 for control and remote access.	Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A 1 unit N/A 1 unit 1 unit N/A	

7.8.10.2 Asset Ratings – 1299 Pressure Zone Auxiliary Systems (RW)

Table 7-104
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-4 1299 Pump Station					
Electrical System	2	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	2	3	3	3	No issues requiring immediate attention.
FMM Turnout					
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
San Sevaine Turnout					
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
Turner Basin Turnout					
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
8th Street Basin Turnout					
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
Orchard Turnout					
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.8.10.3 Planned Projects – 1299 Pressure Zone Auxiliary Systems (RW)

There are no current or future projects for 1299 Pressure Zone Auxiliary Systems (RW).

7.8.11 1630 East Pressure Zone (RW/GWR)

Figure 7-34 1630 East Pressure Zone (RW/GWR)

7.8.11.1 Asset Summary– 1630 East Pressure Zone (RW/GWR)

Table 7-105
Asset Summary

System Sub System(s)	Asset Profile	Design Capacity (Dry Weather Average)	Notes
1630 East Pumps	The 1630 east pump station provides recycled water to the 1630 east pressure zone for direct use by CVWD and the City of Fontana and for groundwater recharge at Victoria and San Sevaine basins. The pump station is composed of five pumps: • Two 100 hp vertical-turbine, VFD-driven, 750 GPM pumps • One 200 hp vertical-turbine, constant speed, 1,500 GPM pump • Two 400 hp vertical-turbine, constant speed, 3,000 GPM pumps The 1630 east pump station is automatically controlled using a proportional-integral-derivative controller (PID) to maintain a discharge-pressure set point of 150 psi. In addition, the pump station has two 12-inch pressure-reducing valves (PRV) to transfer recycled water from the 1630 east pressure zone back to the 1299 pressure zone to be used with the future 1630 east reservoir.	2 @ 750 GPM 1 @ 1,500 GPM 2 @ 3,000 GPM	VFD Constant Constant
1630 East PRVs		2 @ 10,000 GPM	
Segment A Pipeline	11,300 LF of 36-inch pipeline from the 1630 East Pump Station to San Sevaine Turnout.	19,000 GPM	6.0 ft/s max velocity
Baseline Pipeline	1,650 LF of 24-inch and 30-inch pipeline along Baseline Ave. from Etiwanda Ave. to Heritage Circle.	13,000 GPM	6.0 ft/s max velocity
Church Street Lateral	2,350 LF of 12-inch pipeline along Etiwanda Ave. from Baseline Ave. to Church St.	2,000 GPM	6.0 ft/s max velocity
Victoria Basin Turnout	The turnout includes an 8-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to the groundwater recharge basin. The turnout is designed for flow rates ranging from 200 GPM to 3,000 GPM.	200 – 3,000 GPM	
San Sevaine Basin Turnout	The turnout includes a 12-inch Cla-Val flow control valve, a flow meter, and a pressure transmitter to provide recycled water to the groundwater recharge basin. The turnout is designed for flow rates ranging from 400 GPM to 6,700 GPM.	400 – 6,700 GPM	

7.8.11.2 Asset Ratings – 1630 East Pressure Zone (RW/GWR)

Table 7-106
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
1630 East Pumps	2	2	3	2	When both Victoria and San Sevaine basins are not receiving recycled water, the minimum 1630 east pressure zone flow is causing the small 100 hp pumps to operate continuously at minimum speed with zero measurable flow. Further investigation is needed to determine whether programming changes can resolve the issue or whether a small jockey pump may be required. A potential project is needed. Project EN23124 will install a new VFD and associated programming to integrate improved motor control.
1630 East PRVs	2	2	2	2	No issues requiring immediate attention
Segment A Pipeline	2	2	2	2	No issues requiring immediate attention
Baseline Pipeline	2	2	2	2	No issues requiring immediate attention
Church Street Lateral	2	2	2	2	No issues requiring immediate attention
Victoria Basin Turnout	2	2	2	2	No issues requiring immediate attention
San Sevaine Basin Turnout	2	2	2	2	No issues requiring immediate attention

* Ratings as defined in Appendix A; General System Assets

7.8.11.3 Planned Projects – 1630 East Pressure Zone (RW/GWR)

Table 7-107
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23124	1630 East Pump Station VFD Installation	Install a new VFD for a 200 HP pump, wiring, and programming to integrate improved motor control.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.8.12 Auxiliary Systems– 1630 East Pressure Zone

7.8.12.1 Asset Summary– 1630 East Pressure Zone Auxiliary Systems (RW/GWR)

Table 7-108
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
1630 East Pump Station and 1299 Reservoir	• Electrical System – The electrical energy to power the 1630 east pump station is obtained from the local electrical grid (SCE). The electrical feed from the grid is composed of a 12 kV feeder to the 1630 east pump station electrical room, where transformers and switchgear are located to distribute electrical energy throughout the pump station. The 1630 east pump station does not have emergency power generation in case of power failure; however, it does have a generator termination cabinet to allow for quick connection of a portable generator. • Instrumentation and Control System – An extensive array of instruments is used to monitor and control the processes for the 1630 east pump station and 1299 reservoir. All the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the 1630 east pump station electrical room. Radio is then used to connect the local PLC to the RP-4 server workstation for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 1 @ 12 kV to 480 V 1 @ 480 V 1 @ 480 V N/A 1 unit 1 unit 2 units 1 unit 1 unit	 MCCs
Victoria Basin Turnout	• Electrical System – The electrical energy to power the Victoria Basin Turnout is obtained from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position is fed back to a local control panel and PLC, which transmits control data to the Victoria Basin Main remote terminal unit (RTU). The Victoria Basin Main RTU has a radio that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access.	Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A 1 unit 1 unit 1 unit 2 units 3 units	
San Sevaine Basin Turnout	• Electrical System – The electrical energy to power the Victoria Basin Turnout is obtained from the local electrical grid (SCE). The turnout does not have emergency power generation in case of power failure. • Instrumentation and Control System – Local control wiring for flow and valve position is fed back to a remote I/O hub, which radios control data to the San Sevaine Basin No. 3 RTU. The San Sevaine Basin No. 3 RTU has a radio that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access. In addition, there is a San Sevaine Basin Turnout Main RTU that radios information back to RP-4.	San Sevaine Basin Turnout Electrical System Utility Voltage Transformers Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 120 V N/A 1 unit 2 units 2 units 3 units 4 units	

7.8.12.2 Asset Ratings – 1630 East Pressure Zone Auxiliary Systems (RW/GWR)

Table 7-109
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
1630 East Pump Station					
Electrical System	2	3	3	3	No issues require specific attention
Instrumentation and Control System	3	3	3	3	No issues require specific attention
Victoria Basin Turnout					
Electrical System	2	3	3	3	No issues require specific attention
Instrumentation and Control System	3	3	3	3	No issues require specific attention
San Sevaine Basin Turnout					
Electrical System	2	3	3	3	No issues require specific attention
Instrumentation and Control System	3	3	3	3	No issues require specific attention

* Ratings as defined in Appendix A; General System Assets

7.8.12.3 Planned Projects – 1630 East Pressure Zone Auxiliary Systems (RW/GWR)

There are no current or future projects for 1630 East Pressure Zone Auxiliary Systems (RW/GWR).

7.8.13 1630 West Pressure Zone (RW/GWR)

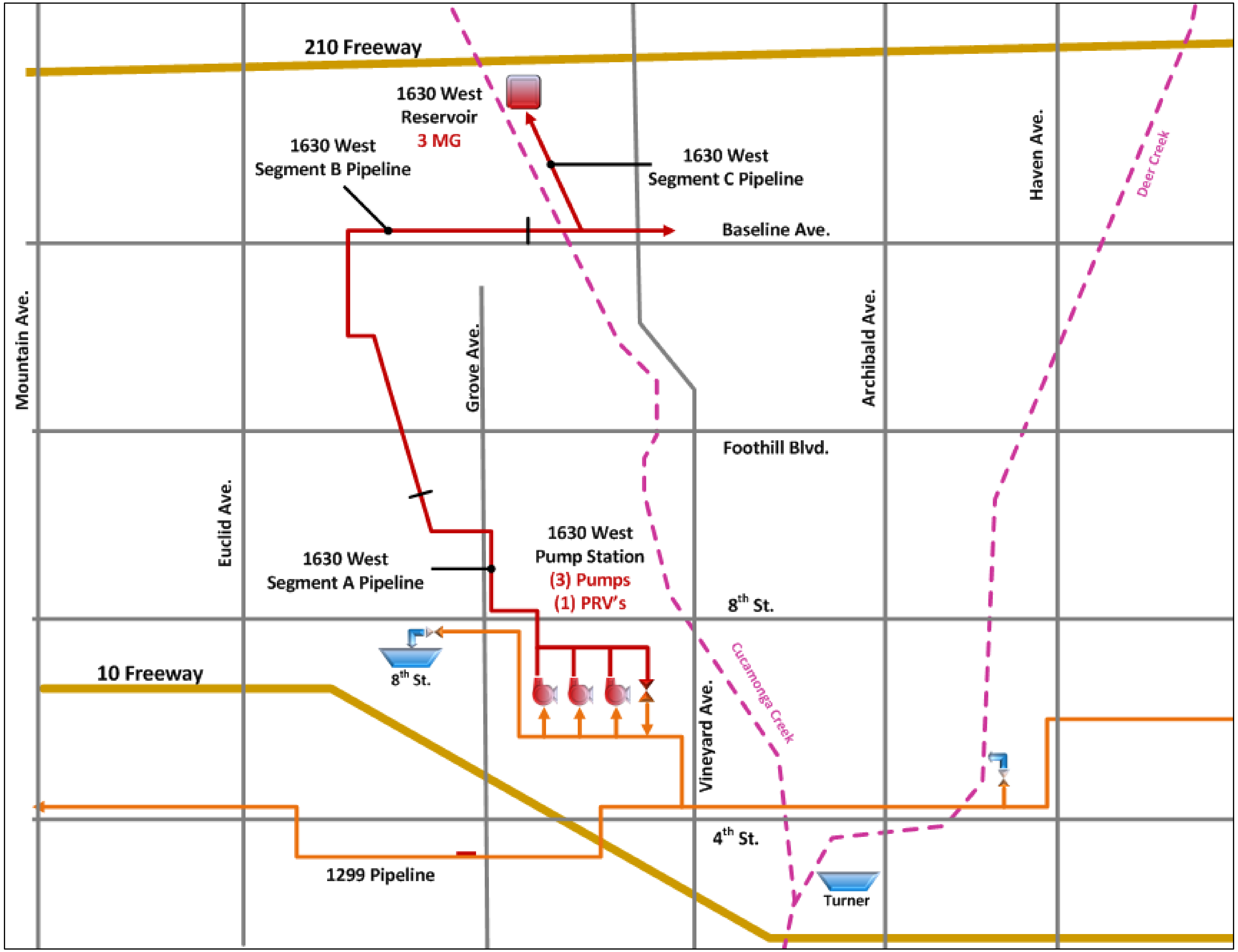

Figure 7-35 1630 West Pressure Zone (RW/GWR)

7.8.13.1 Asset Summary– 1630 West Pressure Zone (RW/GWR)

Table 7-110
Asset Summary

System Sub System(s)	Asset Profile	Design Capacity (Dry Weather Average)	Notes
1630 West Reservoir	The 1630 west reservoir provides recycled water storage for the 1630 west pressure zone. The 1630 west reservoir is located at the intersection of 19th St. and Cucamonga Creek in the City of Rancho Cucamonga on an existing Cucamonga Valley Water District (CVWD) pump station site. The 1630 east reservoir has a design capacity of 3 million gallons (MG), a diameter of 130 feet, and a maximum water surface level of 32 feet, and is equipped with a level transmitter. The 1630 west reservoir is normally operated between 4 feet and 28 feet, providing an operational capacity of 2.4 MG.	3 MG	2.4 MG (Op. Cap.)
1630 West Pumps	The 1630 west pump station provides recycled water to the 1630 west pressure zone for direct use by CVWD and the City of Upland. The pump station is composed of three 250 hp vertical-turbine, constant-speed, and 2,000 GPM pumps. The 1630 east pump station is automatically controlled to cycle pumps on and off to maintain a time-of-day level set point of the 1630 west reservoir. In addition, the pump station has one 10-inch pressure reducing valve (PRV) to transfer recycled water from the 1630 west pressure zone back to the 1299 pressure zone.	3 @ 2,000 GPM	Constant
1630 West PRV		300 – 3,000 GPM	
Segment A Pipeline	10,500 LF of 24-inch pipeline from the 1630 West Pump Station to Upland Memorial Park.	8,500 GPM	6.0 ft/s max velocity
Segment B Pipeline	13,000 LF of 24-inch pipeline from Upland Memorial Park to the intersection of 16th St. (Baseline Rd.) and Tanglewood Ave	8,500 GPM	6.0 ft/s max velocity
Segment C Pipeline	800 LF of 24-inch pipeline and 3,100 LF of 30-inch pipeline along Baseline Rd. from Tanglewood Ave. to Vineyard Ave. Segment C Pipeline includes an additional 4,400 LF of 30-inch pipeline along Cucamonga Creek from Baseline Rd. to the 1630 west reservoir.	24-inch – 8,500 GPM 30-inch – 13,200 GPM	6.0 ft/s max velocity

7.8.13.2 Asset Ratings – 1630 West Pressure Zone (RW/GWR)

Table 7-111
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
1630 West Reservoir	2	2	2	2	The 1630 West Reservoir site uses city water for irrigation purposes. Project EN24005 will rehabilitate the paint and coatings of the reservoir and perform small safety fixes.
1630 West Pumps	2	2	2	2	No issues requiring immediate attention.
1630 West PRV	2	3	3	2	No issues requiring immediate attention.
Segment A Pipeline	2	2	2	2	No issues requiring immediate attention.
Segment B Pipeline	2	2	2	2	No issues requiring immediate attention.
Segment C Pipeline	2	2	2	2	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.8.13.3 Planned Projects – 1630 West Pressure Zone (RW/GWR)

Table 7-112
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24005	1630 West Reservoir Paint/Coating Repair	Clean and recoat delaminated or corroded areas using SSPC-SP11 prep, apply epoxy/urethane, and perform small safety fixes.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.8.14Auxiliary Systems (RW/GWR) – 1630 West Pressure Zone

7.8.14.1 Asset Summary– 1630 West Pressure Zone Auxiliary Systems (RW/GWR)

Table 7-113
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
1630 West Pump Station	*Electrical System* – The electrical energy to power the 1630 west pump station is obtained from the local electrical grid (SCE). The electrical feed from the grid is composed of a 12 kV feeder to the 1630 east pump station electrical room, where transformers and switchgear are located to distribute electrical energy throughout the pump station. The 1630 west pump station does not have emergency power generation in case of power failure; however, it does have a generator termination location in the MCC to allow for quick connection of a portable generator. *Instrumentation and Control System* – An extensive array of instruments is used to monitor and control the processes for the 1630 west pump station. All of the processes of the pump station are observed and controlled by a local PLC system. Local control wiring is fed from the individual pieces of equipment to an I/O hub and PLC in the 1630 west pump station electrical room. Radio is then used to connect the local PLC to the RP-4 server workstation for remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 12 kV 1 @ 12 kV to 480 V 1 @ 12 kV to 120 V 1 @ 480 V 1 @ 480 V N/A 1 unit N/A 1 unit 1 unit 1 unit	MCCs
1630 West Reservoir	*Electrical System* – The electrical energy to power the 1630 west reservoir is obtained from the local electrical grid (SCE). The reservoir does not have emergency power generation in case of power failure. Instrumentation and Control System – Local control wiring for level and valve position are fed back to a local control panel and PLC. The RTU has a radio that transmits control data to RP-4, which routes the information to RP-1 for control and remote access.	Electrical System Utility Voltage Transformers Switchgear Distribution Generator Instrumentation and Control System HMI Workstation RTU PLC I/O Hub Radio Transmitter	 480 1 @ 480 V to 120 V N/A N/A N/A N/A 1 unit 1 unit 1 unit 1 unit	MCCs

7.8.14.2 Asset Ratings – 1630 West Pressure Zone Auxiliary Systems (RW/GWR)

Table 7-114
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
1630 West Pump Station					
Electrical System	2	3	3	3	No issues require specific attention.
Instrumentation and Control System	3	3	3	3	No issues require specific attention.
1630 West Reservoir					
Electrical System	2	3	3	3	No issues require specific attention.
Instrumentation and Control System	3	3	3	3	No issues require specific attention.

* Ratings as defined in Appendix A; General System Assets

7.8.14.3 Planned Projects – 1630 West Pressure Zone Auxiliary Systems (RW/GWR)

There are no current or future projects for 1630 West Pressure Zone Auxiliary Systems (RW/GWR).

End of System Summary

7.9 Groundwater Recharge System - Asset Management System Summary

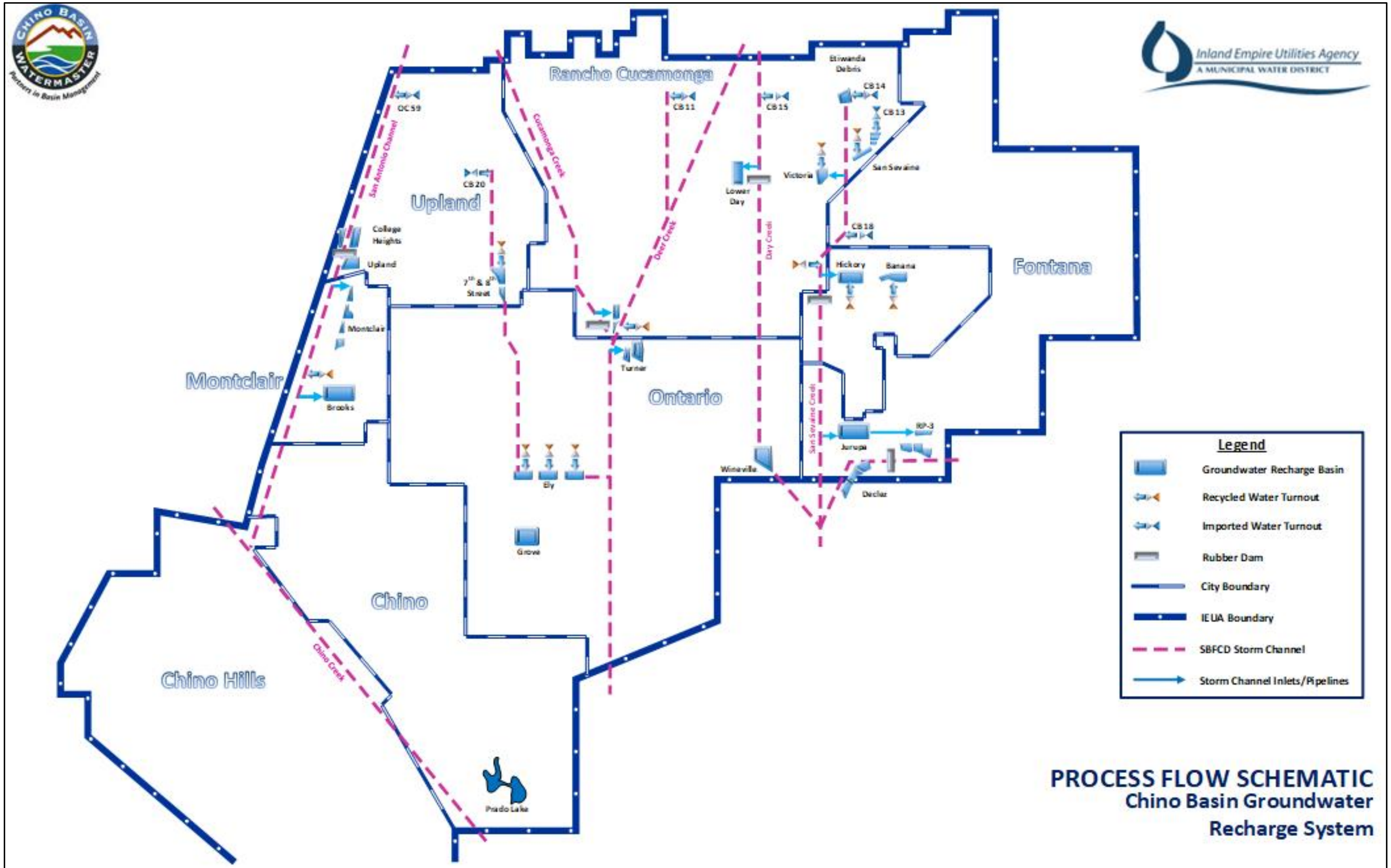

Figure 7-36 Groundwater Recharge Systems (GWR)

Table 7-115
Ground Water Recharge Systems – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN23067	Hickory Basin Replacement Monitoring Wel	Install a new well (estimated $200–$300K) to replace Reliant East for RW/GWR compliance after NRG closure.	WC	CC	$1,176,000										$1,176,000
2	RW15003	Recharge Master Plan Update	Advance RMPU projects at Wineville, Jurupa, Victoria, Montclair Basins, and associated force main improvements.	RW	CC	$2,832,266	$3,800,000									$6,632,266
3	PL18002	Basin Plan Amendment	Collaborate with Watermaster, consultants, and RWQCB to prepare a Basin Plan Amendment addressing water management needs.	WC	OM	$100,000	$30,000									$130,000
4	PL24001	Chino Creek Surface Water Monitoring Program	Develop a monitoring plan and QAP with Watermaster and RWQCB to maintain high-quality surface water data.	RO	OM	$60,000	$60,000	$113,000								$233,000
5	WR20029	Upper SAR HCP & Int Model-Recy Wtr Benef	Formulate habitat conservation measures supporting future water and recycled water projects.	WC	OM	$30,000	$30,000	$30,000								$90,000
6	EN18021	Prado Basin AMP Annual Monitoring	Share costs with CBWM to monitor and report habitat health under OBMP-Peace II SEIR requirements.	WC	OM	$115,000	$117,500	$120,000	$122,500	$125,000	$127,500	$13,857				$741,357
7	EN25039	Ground Water Recharge Condition Assessments	Solicit condition assessments for GWR assets to determine repairs, remaining life, and recommended rehabilitations.	RW	OM	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$500,000
8	EN22050	GWR Basin PLC Upgrades	The project will fund the costs to purchase the required replacement. IEUA staff will install five new terminals once a year for three years to address the 17 sites.	RW	CC		$500,000	$500,000								$1,000,000
9	EN22008	GWR Asset Management Project	Hire consultants/contractors for GWR condition assessments, repairs, and rehabilitation to meet AM program goals.	RW	CC						$1,000,000	$1,000,000	$1,000,000	$700,000	$1,000,000	$4,700,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.9.1 7th Street & 8th Street Basin (GWR)

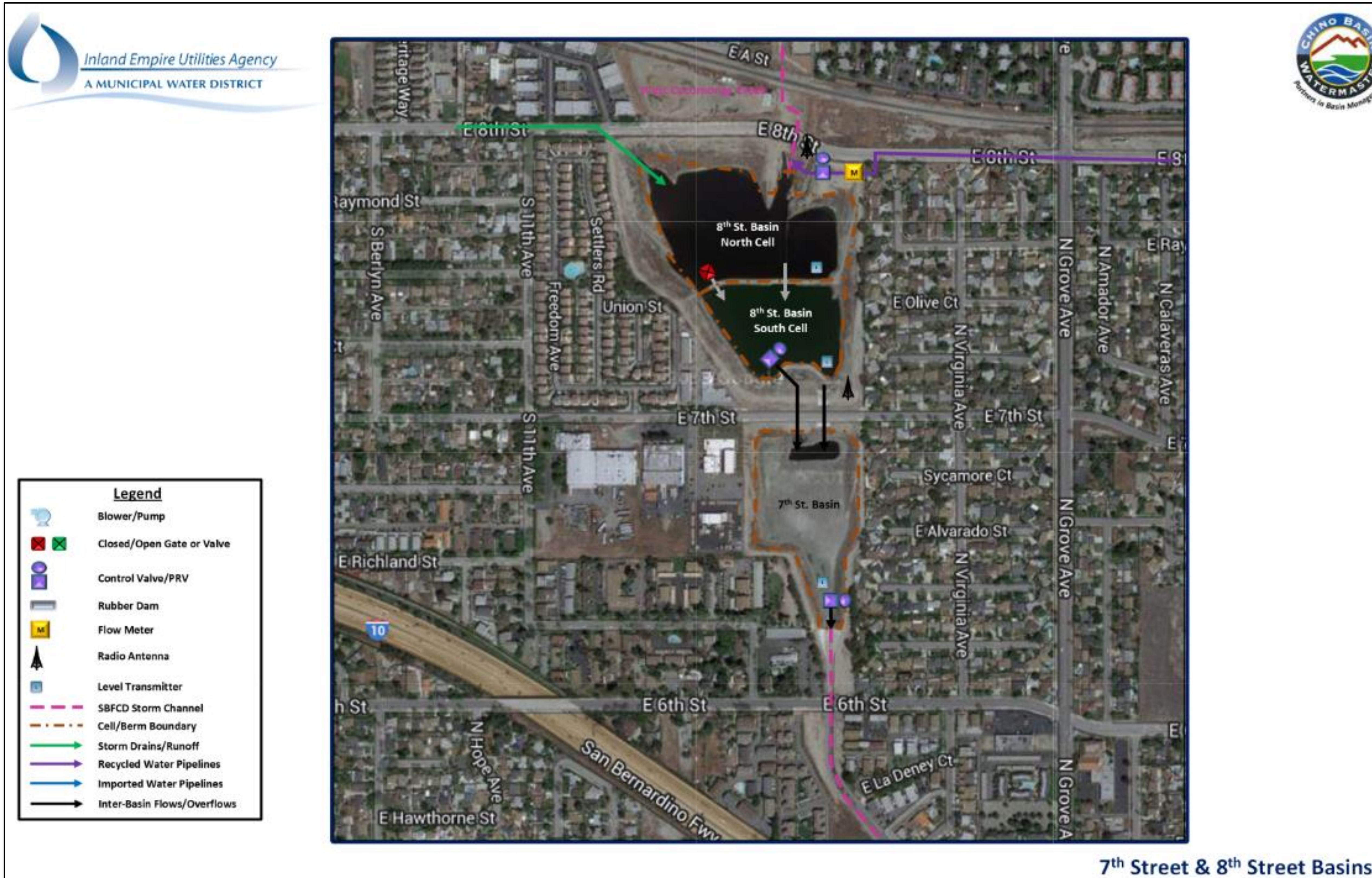

Figure 7-37 7th Street & 8th Street Basin (GWR) Process Flow

7.9.1.1 Asset Summary- 7th Street & 8th Street Basin (GWR)

Table 7-116
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
7th Street Basin	The 7th Street Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located on the border of the City of Ontario and the City of Upland, near the intersection of 7th Street and Grove Avenue. The 7th Street Basin receives flow from the 8th Street Basin and has the ability to discharge flow to the West Cucamonga Creek. The 7th Street Basin has an approximate size of 6.5 acres and an approximate sidewall depth of 11 feet from a floor elevation of 1123' to an outfall pipe invert elevation of 1134' equating to 54.6 AF of storage. The 7th Street Basin includes a 36" automated sluice gate for discharge to the West Cucamonga Creek and a level transmitter.	Basin Gates	Area: 6.5 acres Depth: 11 ft Volume: 54.6 AF 36" sluice gate	 Automated
8th Street Basin	The 8th Street Basin is owned by the SBCFCD and is located on the border of the City of Ontario and the City of Upland, near the intersection of 8th Street and Grove Avenue. The 8th Street Basin is comprised of two cells: the North Cell and the South Cell.			
8th Street Basin North Cell	The 8th Street Basin North Cell receives stormwater and imported water from the West Cucamonga Creek, stormwater from a local storm drain system, and recycled water from the 8th Street Basin Recycled Water Turnout. The 8th Street Basin North Cell has an approximate size of 8.3 acres and an approximate sidewall depth of 7 feet from a floor elevation of 1134' to an 8th Street Basin South Cell overflow structure at an elevation of 1141' equating to 52.6 AF of storage. The 8th Street Basin North Cell includes a 54" manual sluice gate for discharge to the 8th Street Basin South Cell and a level transmitter.	Basin Gates	Area: 8.3 acres Depth: 7 ft Volume: 52.6 AF 54" sluice gate	 Manual
8th Street Basin South Cell	The 8th Street Basin South Cell receives flow from the 8th Street Basin North Cell. The 8th Street Basin South Cell has an approximate size of 6.3 acres and an approximate sidewall depth of 8 feet from a floor elevation of 1133' to a 7th Street Basin overflow structure at an elevation of 1141' equating to 38.0 AF of storage. The 8th Street Basin South Cell includes a 48" automated sluice gate for discharge to the 7th Street Basin, staff gauges, and a level transmitter	Basin Gates	Area: 6.3 acres Depth: 8 ft Volume: 38.0 AF 48" sluice gate	 Automated
8th Street Basin Recycled Water Turnout	The 8th Street Basin Recycled Water Turnout is located to the north of the 8th Street Basin. The turnout includes a 12" Cla-Val flow control valve, flow meter, and pressure transmitter to provided recycled water to 8th St. Basin. The turnout is designed for flow rates ranging from 200 GPM to 3,000 GPM.	Flow Control Valve Valves	12" @ 200–3,000 GPM 12" Flow Meter 16" butterfly	Manual
CB 20 MWD Imported Water Turnout	The CB 20 MWD Imported Water Turnout is located near the intersection of Winston Street and 18th Street in the City of Upland. The turnout includes a 24" Cla-Val flow control valve with flow measurement and a pressure transmitter to provided imported water to a local storm drain system that connects to the West Cucamonga Creek. The turnout is designed for flow rates ranging from 1,000 GPM to 9,000 GPM.	Flow Control Valve	24" @ 1,000-9,000 GPM	
Electrical and Instrumentation Systems	**Electrical System** • Basin – The electrical energy to power the 7th Street Basin and the 8th Street Basin is obtained from the local electrical grid (SCE) through a meter on 7th Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Recycled Water Turnout – The electrical energy to power the 8th Street Basin Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on 8th Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Imported Water Turnout – The electrical energy to power the CB 20 MWD Imported Water Turnout is obtained from the local electrical grid (SCE) through a meter on 18th Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • Basin – Local control wiring for valve position and basin levels are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access. • Recycled Water Turnout – Local control wiring for flow and valve position are fed back to a local PLC. The turnout PLC has a 9dB yagi antenna that transmits control data the local PLC panel for the 8th Street Basin to be further transmitted to the GWR workstation. • Imported Water Turnout – Local control wiring for flow and valve position are fed back to a local PLC. The turnout PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 2 unit RTU: 1 unit PLC: 2 unit I/O Hub: 1 unit Radio: 3 unit	

7.9.1.2 Asset Ratings - 7th Street & 8th Street Basin (GWR)

Table 7-117
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
7th St. Basin					
Basin	2	NA	2	NA	No issues requiring immediate attention.
Gates	2	NA	2	NA	No issues requiring immediate attention.
8th St. Basin					
North Cell Basin	2	NA	2	NA	No issues requiring immediate attention.
North Cell Gates	4	NA	3	NA	The two gates were not installed with stainless steel hardware, so the hardware is failing prematurely and needs to be replaced. The bolts are imbedded in concrete. Maintenance will address this issue, and a potential project is not needed at this time.
South Cell Basin	2	NA	2	NA	No issues requiring immediate attention.
South Cell Gates	2	NA	2	NA	No issues requiring immediate attention.
Recycled Water Turnout Flow Control Valve	4	NA	4	NA	The 8th St. Basin Recycled Water Turnout discharges into an unlined portion of the West Cucamonga Creek causing erosion of the embankments, unwanted vegetation growth, and has provided a location for a homeless encampment. The discharge piping should be extended further into the 8th Street Basin North Cell to prevent these issues. A potential project will address these issues
Recycled Water Turnout Valves	3	NA	3	NA	The 8th St. Basin Recycled Water Turnout discharges into an unlined portion of the West Cucamonga Creek causing erosion of the embankments, unwanted vegetation growth, and has provided a location for a homeless encampment. The discharge piping should be extended further into the 8th Street Basin North Cell to prevent these issues. A potential project will address these issues
CB 20 MWD Imported Water Turnout Flow Control Valve	3	NA	4	NA	No issues requiring immediate attention.
Electrical & Instrumentation	4	NA	4	NA	The level transmitters for the 8th St. Basin North Cell, 8th St. Basin South Cell, and 7th St. Basin do not extend to the bottom of the basin floor; and therefore, do not provide an accurate measurement of the level. The wiring and conduit should be extended to allow for relocation of the pressure transmitter to the bottom of the basin floor. A potential project will address these issues.

* Ratings as defined in Appendix A; General System Assets

7.9.1.3 Planned Projects - 7th Street & 8th Street Basin (GWR)

There are no current or future projects for 7th Street & 8th Street Basin.

7.9.2 Banana Basin (GWR)

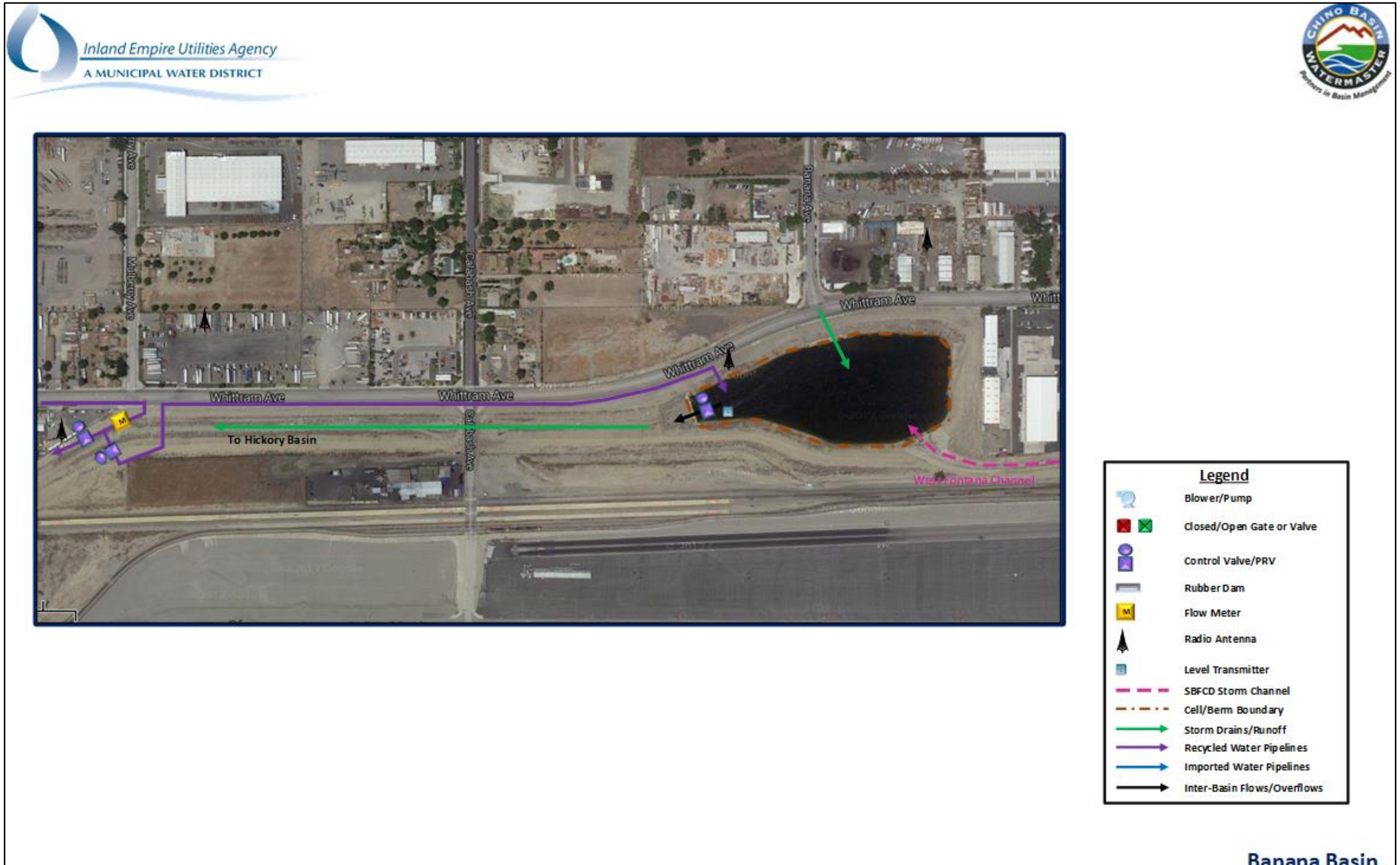

Figure 7-38 Banana Basin (GWR) Process Flow

7.9.2.1 Asset Summary– Banana Basin (GWR)

Table 7-118
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Banana Basin	Banana Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in unincorporated San Bernardino County, near the intersection of Whittram Avenue and Banana Avenue. Banana Basin receives stormwater from the West Fontana Channel, stormwater from a local storm drain system, and recycled water from the Force Main Manifold (FMM) Recycled Water Turnout. Banana Basin has an approximate size of 7.4 acres and an approximate sidewall depth of 7 feet from a floor elevation of 1136' to the West Fontana Channel overflow structure at an elevation of 1143' equating to 42.4 AF of storage. The Banana Basin has staff gauges, a level transmitter, and a 36" automated sluice gate for discharge to the West Fontana Channel, which feeds Hickory Basin.	Basin Gates	Area: 7.4 acres Depth: 7 ft Volume: 42.4 AF 36" sluice gate	 Automated
FMM Recycled Water Turnout	The FMM Recycled Water Turnout is located south of the intersection of Whittram Avenue and Mulberry Ave, approximately 0.5 miles west of Banana Basin. The turnout includes two 12" motor operated butterfly valves, flow meter, and pressure transmitter and provides recycled water to Hickory Basin and to Banana Basin. The turnout is designed for flow rates ranging from 200 GPM to 6,000 GPM.	Flow Control Valve Valves	12" @ 200–6,000 GPM 12" Flow Meter 10" gate 10" backflow preventer	 2 Valves 2 Manual
Electrical and Instrumentation Systems	**Electrical System** • Basin – The electrical energy to power Banana Basin is obtained from the local electrical grid (SCE) through a meter on Whittram Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Recycled Water Turnout – The electrical energy to power the FMM Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on Whittram Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • Basin – Local control wiring for valve position and basin level are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access. • Recycled Water Turnout – Local control wiring for flow and valve position for both Hickory and Banana Basins are fed back to the remote telemetry unit. The turnout has a 10dB Yagi antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 1 unit RTU: 1 unit PLC: 1 unit I/O Hub: 1 unit Radio: 2 unit	

7.9.2.2 Asset Ratings – Banana Basin (GWR)

Table 7-119
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Banana Basin					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
FMM Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Valves	4	NA	4	NA	No issues requiring immediate attention.
Electrical & Instrumentation	4	NA	4	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.2.3 Planned Projects – Banana Basin (GWR)

There are no current or future projects for Banana Basin.

7.9.3 Brooks Basin (GWR)

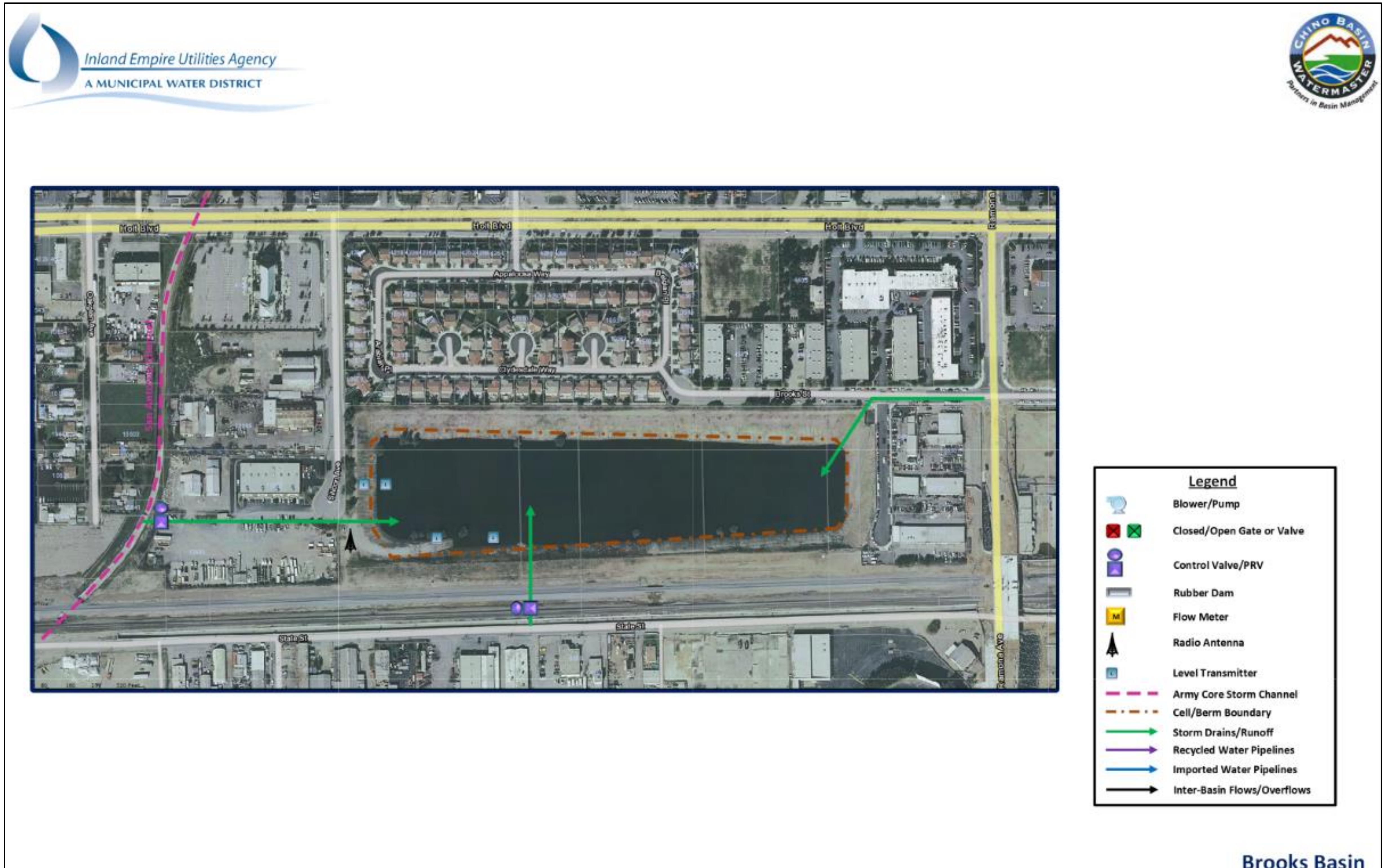

Figure 7-39 Brooks Basin (GWR) Process Flow

7.9.3.1 Asset Summary– Brooks Basin (GWR)

Table 7-120
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Brooks Basin	Brooks Basin is owned by the Chino Basin Water Conservation District (CBWCD) and is located in the City of Montclair, near the intersection of Ramona Ave and Brooks Street. Brooks Basin receives stormwater and imported water from the San Antonio Channel, stormwater from a local storm drain system, and recycled water from the Orchard Recycled Water Turnout. Brooks Basin has an approximate size of 9.9 acres and an approximate sidewall depth of 33 feet from a floor elevation of 860' to a State Street Storm Drain inlet pipe invert elevation of 893' equating to 192.0 AF of storage. Brooks Basin includes a 48" automated sluice gate and pipeline for inlet flow from the San Antonio Channel, a 42" automated sluice gate and pipeline for flow from the State Street storm drain inlet, and a basin level transmitter. Several level transmitters occur in monitoring wells but are no longer needed.	Basin Gates	Area: 9.9 acres Depth: 33 ft Volume: 192.0 AF 48" sluice gate 42" sluice gate	 Automated Automated
Orchard Recycled Water Turnout	The Orchard Recycled Water Turnout is located at the intersection of the San Antonio Channel and Orchard Street approximately 0.5 miles north of Brooks Basin. The turnout includes a 16" Cla-Val flow control valve, flow meter, and pressure transmitter to provided recycled water to San Antonio Channel. Recycled Water discharged in the channel can then be conveyed to Brooks Basin for groundwater recharge. The turnout is designed for flow rates ranging from 1,000 GPM to 10,000 GPM	Flow Control Valve	16" @ 1,000–10,000 16" Flow Meter	GPM
Electrical and Instrumentation Systems	**Electrical System** • *Basin* – The electrical energy to power Brooks Basin is obtained from the local electrical grid (SCE) through a meter on Silicon Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • *Recycled Water Turnout* – The electrical energy to power the Orchard Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on Orchard Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • *Basin* – Local control wiring for valve position and basin levels are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access. • *Recycled Water Turnout* – Local control wiring for flow and valve position, and pressure are fed back to a local control panel and PLC. The data is transmitted by phone line to the GWR workstation server at RP-1 for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 2 unit RTU: N/A PLC: 2 unit I/O Hub: 2 unit Radio: 1 unit	

7.9.3.2 Asset Ratings – Brooks Basin (GWR)

Table 7-121
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Brooks Basin					
Basin	3	NA	3	NA	The eastern access road to the basin floor was never completed when the basin was filled in to allow for the construction of commercial property on the eastern side of the basin. Currently, access to the eastern side of Brooks Basin cannot be obtained from the western access road. The eastern access road should be extended to the basin floor. A maintenance project will address this issue. No project needed at this time
Gates	2	NA	2	NA	No issues requiring immediate attention.
Orchard Recycled Water Turnout					
Flow Control Valve	4	NA	4	NA	The discharge pipe of the Orchard Recycled Water Turnout does not penetrate completely through the sidewall of the San Antonio Channel and has begun leaking between the soil and sidewall of the channel causing possible erosion. The penetration should be appropriately sealed to prevent the leak behind the sidewall of the channel. In addition, the pipe discharges at the top of the sidewall of the San Antonio Channel allowing for water to cascade to the bottom of the channel creating a load noise issue. The discharge into the channel should be redesigned to eliminate the noise issue. A potential project is needed to address this issue.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.3.3 Planned Projects - Brooks Basin (GWR)

There are no current or future projects for Brooks Basin.

7.9.4 College Heights Basin (GWR)

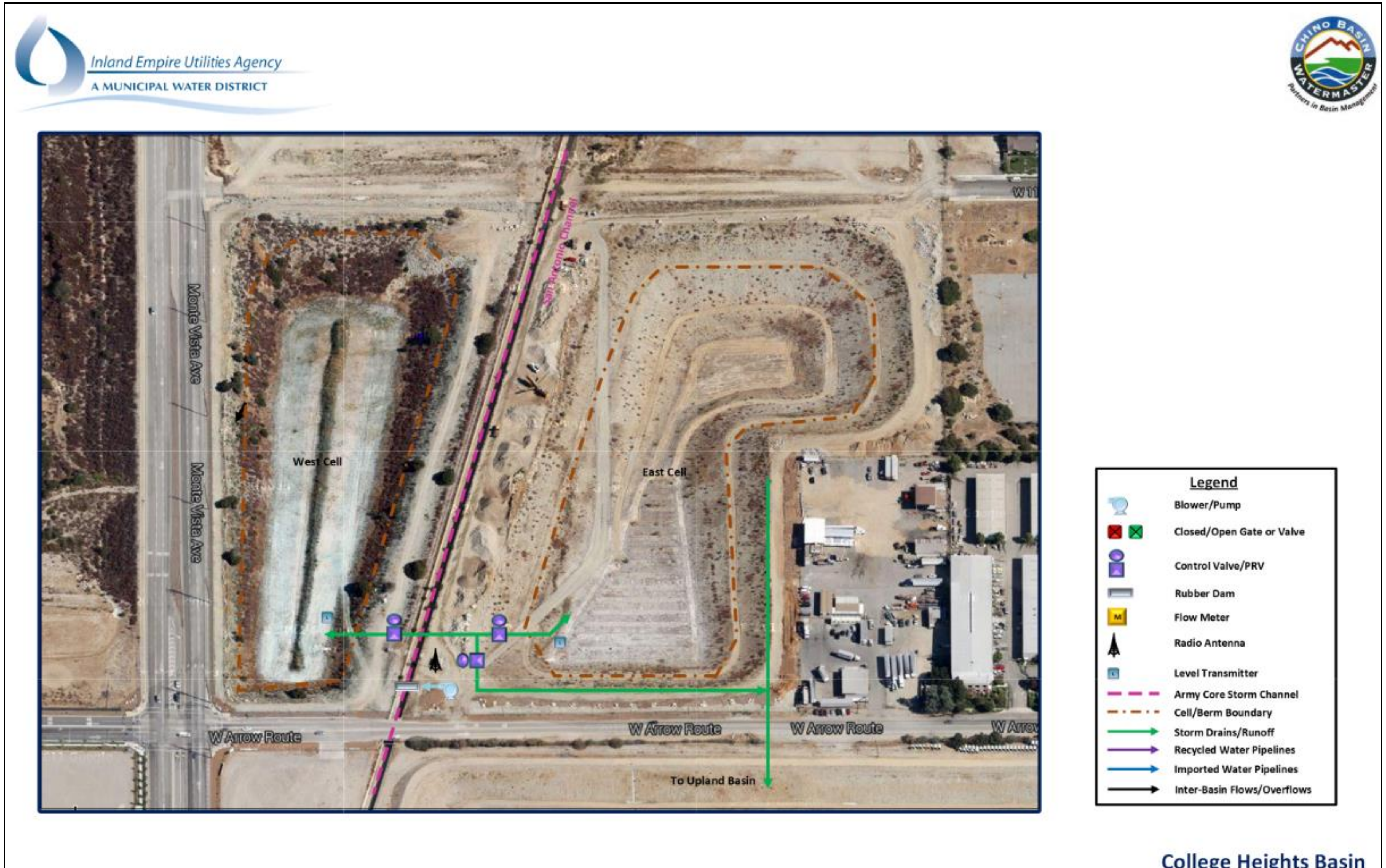

Figure 7-40 College Heights Basin (GWR) Process Flow

7.9.4.1 Asset Summary- College Heights Basin (GWR)

Table 7-122
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
College Heights Basin	College Heights Basin is owned by the Chino Basin Water Conservation District (CBWCD) and is located the City of Upland, near the intersection of Monte Vista Avenue and Arrow Route. College Height Basin is comprised of two cells: the West Cell and the East Cell.			
College Heights Basin West Cell	*College Heights Basin West Cell* – College Heights Basin West Cell receives stormwater and imported water from the San Antonio Channel. The West Cell has an approximate size of 6.0 acres and an approximate sidewall depth of 21 feet from a floor elevation of 1223' to the San Antonio Rubber Dam inflated elevation 1244' equating to 93.8 AF of storage. The College Heights Basin West Cell includes a 48" automated sluice gate for inlet flow from the San Antonio Channel, staff gauges, and a level transmitter.	Basin Gates	Area: 6.0 acres Depth: 21 ft Volume: 93.8 AF 48" sluice gate	 Automated
College Heights Basin East Cell	*College Heights Basin East Cell* – College Heights Basin East Cell receives stormwater and imported water from the San Antonio Channel. The East Cell has an approximate size of 7.0 acres and an approximate sidewall depth of 21 feet from a floor elevation of 1223' to the San Antonio Rubber Dam inflated elevation 1244' equating to 89.8 AF of storage. The College Heights Basin East Cell includes a 48" automated sluice gate for inlet flow from the San Antonio Channel staff gauges, and a level transmitter	Basin Gates	Area: 7.0 acres Depth: 21 ft Volume: 89.8 AF 48" sluice gate	 Automated
San Antonio Channel Rubber Dam	A 4' tall rubber dam has been installed into the San Antonio Channel to divert stormwater and imported water into the College Heights and Upland Basins. The San Antonio Channel Rubber Dam includes a control house with a stilling well, 2.5 hp/154scfm air blower, and a 2" motor controlled vent valve.	Rubber Dam Blower Vent Valve	4 ft tall rubber dam 2.5 hp 154 scfm 2" ball valve	
Electrical and Instrumentation Systems	The College Heights Basin, Upland Basin, and the San Antonio Channel Rubber Dam share a common instrumentation and control system housed in the San Antonio Channel Rubber Dam control house. Local control wiring for gate positions, basin levels, flows, rubber dam pressures, stilling well levels, and vent valve position are fed back to a local PLC. The PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 2 units Radio: 1 unit	

7.9.4.2 Asset Ratings - College Heights Basin (GWR)

Table 7-123
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
College Heights Basin West Cell					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
College Heights Basin East Cell					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
San Antonio Channel Rubber Dam					
Rubber Dam	3		3		The rubber dams were inspected in January 2015 and were determined to have a remaining lifespan of 5 years remaining. A potential project is needed within the next 5 years to replace the rubber dams.
Blower	3	NA	3	NA	No issues requiring immediate attention.
Vent Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	4	NA	4	NA	The level transmitters for College Heights Basin West Cell and East Cell do not extend to the bottom of the basin floor; and therefore, do not provide an accurate measurement of the level. The wiring and conduit should be extended to allow for relocation of the pressure transmitter to the bottom of the basin floor.

* Ratings as defined in Appendix A; General System Assets

7.9.4.3 Planned Projects - College Heights Basin (GWR)

There are no current or future projects for College Heights Basin.

7.9.5 Declez Basin (GWR)

Figure 7-41 Declez Basin (GWR) Process Flow

7.9.5.1 Asset Summary- Declez Basin (GWR)

Table 7-124
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Declez Basin	Declez Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in an unincorporated area of Riverside County, near the intersection of Philadelphia Avenue and Mulberry Avenue Declez Basin is comprised of three cells: Cell 1, Cell 2, and Cell 3.			
Declez Basin Cell 1	Declez Basin Cell 1 receives stormwater from the Declez Channel and stormwater from a local storm drain system. Cell 1 has an approximate size of 6.7 acres and an approximate sidewall depth of 7 feet from a floor elevation of 825' to the Declez Basin Cell 1 overflow structure at an elevation 832' equating to 42.7 AF of storage. Declez Basin Cell 1 includes a 36" automated sluice gate to discharge flow to Declez Basin Cell 2, staff gauges, and a level transmitter.	Basin Gates	Area: 6.7 acres Depth: 7 ft Volume: 42.7 AF 36" sluice gate	 Automated
Declez Basin Cell 2	Declez Basin Cell 2 receives flow from Declez Basin Cell 1. Cell 2 has an approximate size of 4.6 acres and an approximate sidewall depth of 7 feet from a floor elevation of 823' to the Declez Basin Cell 3 overflow structure at an elevation 830' equating to 29.1 AF of storage. Declez Basin Cell 2 includes a dual 36" automated sluice gate system (one motor actuator, two gates, and two pipelines) to discharge flow to Declez Basin Cell 3, staff gauges, and a level transmitter.	Basin Gates	Area: 4.6 acres Depth: 7 ft Volume: 29.1 AF 2 - 36" sluice gates	 Automated
Declez Basin Cell 3	Basin Cell 2. Cell 3 has an approximate size of 4.2 acres and an approximate sidewall depth of 8 feet from a floor elevation of 821' to the Declez 3 soil-cement overflow structure at an elevation 829' equating to 30.0 AF of storage. Declez Basin Cell 3 includes a dual 36" automated sluice gate system (one motor actuator, two gates, and two pipelines) to discharge flow to Declez Channel, staff gauges, and a level transmitter.	Basin Gates	Area: 4.2 acres Depth: 8 ft Volume: 30.0 AF 2 - 36" sluice gates	 Automated
Electrical and Instrumentation Systems	**Electrical System** • The electrical energy to power Declez Basin is obtained from the local electrical grid (SCE) through a meter on Philadelphia Avenue. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • Local control wiring for valve position and basin levels are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 240 v Transformers: 1 HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 1 unit Radio: 1 unit	 240v/120v

7.9.5.2 Asset Ratings - Declez Basin (GWR)

Table 7-125
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Declez Basin Cell 1					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
Declez Basin Cell 2					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	The Declez Basin Cell 2 & 3 discharge gates have control feedback and electrical issues that result in them not functioning. The gates only have power when the PLC calls the gate to operate. When there is no power, feedback is not sent back to SCADA. Entering a SCADA enhancement request to address this issue.
Declez Basin Cell 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	The Declez Basin Cell 2 & 3 discharge gates have control feedback and electrical issues that result in them not functioning. The gates only have power when the PLC calls the gate to operate. When there is no power, feedback is not sent back to SCADA. Entering a SCADA enhancement request to address this issue.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.5.3 Planned Projects - Declez Basin (GWR)

There are no current or future projects for Declez Basin.

7.9.6 Ely Basin (GWR)

Figure 7-42 Ely Basin (GRW) Process Flow

7.9.6.1 Asset Summary– Ely Basin (GWR)

Table 7-126
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Ely Basins	Ely Basin is comprised of three basins: Basin 1, Basin 2, and Basin 3. Ely Basin 1 and Ely Basin 2 are owned by the San Bernardino County Flood Control District (SBCFCD) and Ely Basin 3 is owned by the Chino Basin Water Conservation District (CBWCD). Ely Basin is located in City of Ontario, near the intersection of Philadelphia Avenue and Vineyard Avenue			
Ely Basin 1	Ely Basin 1 receives stormwater from the West Cucamonga Creek and recycled water from the Ely Basin 1 Recycled Water Turnout. Ely Basin 1 has an approximate size of 9.9 acres and an approximate sidewall depth of 12 feet from a floor elevation of 823' to the Ely Basin 2 overflow structure at an elevation 835' equating to 85.2 AF of storage. Ely Basin 1 includes four 24" manual sluice gates to route flows within the basin, staff gauges, and a level transmitter. A soil cement berm created a forebay on the west side of Ely 1 for collecting debris.	Basin Gates	Area: 9.9 acres Depth: 12 ft Volume: 85.2 AF 4 - 24" sluice gate	 Manual
Ely Basin 2	Ely Basin 2 receives flows from Ely Basin 1, stormwater from a local storm drain system, and recycled water from the Ely Basin 2 Recycled Water Turnout. Ely Basin 2 has an approximate size of 11.1 acres and an approximate sidewall depth of 10 feet from a floor elevation of 825' to the Ely Basin 3 overflow structure at an elevation 835' equating to 95.6 AF of storage. Ely Basin 2 includes two 24" manual sluice gates to route flows within the basin, staff gauges, and a level transmitter.	Basin Gates	Area: 11.1 acres Depth: 10 ft Volume: 95.6 AF 2 - 24" sluice gate	 Manual
Ely Basin 3	Ely Basin 3 receives flows from Ely Basin 2, stormwater from a local storm drain system, and recycled water from the Ely Basin 3 Recycled Water Turnout. Ely Basin 3 has an approximate size of 11.1 acres and an approximate sidewall depth of 15 feet from a floor elevation of 820' to the West Cucamonga Creek overflow structure at an elevation 835' equating to 135.8 AF of storage. Ely Basin 3 includes three 24" manual sluice gates to route flows within the basin, a 24" automated gate to discharge flows to the West Cucamonga Creek, staff gauges, and a level transmitter.	Basin Gates	Area: 11.1 acres Depth: 15 ft Volume: 135.8 AF 3 - 24" sluice gate 1 – 24" sluice gate	 Manual Automated
Ely Basin Recycled Water Turnout	This system is comprised of three separate turnouts each including a 12" Cla-Val flow control valve, flow meter, and pressure transmitter to provided recycled water to Ely Basin Nos. 1, 2, & 3. Each turnout is designed for flow rates ranging from 700 GPM to 3,100 GPM.	Flow Control Valve	3 - 12" @ 700–3,100 GPM	
Electrical and Instrumentation Systems	**Electrical System** • Basin – The electrical energy to power Ely Basin is obtained from the local electrical grid (SCE) through a meter on Philadelphia Avenue near Ely Basin 3. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Recycled Water Turnout – The electrical energy to power the three Ely Basin Recycled Water Turnouts is provided by three independent solar panels. The system utilizes 24v DC power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • Basin – Local control wiring for gate position and basin levels are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to RP-1 to the GWR workstation server for control and remote access. • Recycled Water Turnout – Local control wiring for flow and valve position, and pressure are fed back to an I/O hub. Each of the three Ely Basin recycled water turnouts has a 10dB Yagi antenna that transmits control data to a PLC located at Ely Basin 3. The PLC at Ely Basin 3 then transmits control data back to the GWR workstation server located at RP-1 for remote access.	Electrical Instrumentation	Utility Voltage: 120v 24v DC Transformers: N/A HMI: N/A RTU: 1 unit PLC: 1 unit I/O Hub: 4 units Radio: 4 units	

7.9.6.2 Asset Ratings – Ely Basin (GWR)

Table 7-127
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Ely Basin 1					
Basin	4	NA	3	NA	The Ely Basin 1 Forebay berm has cracks in the concrete structure, which allows water to leak from the forebay area into Ely Basin 1. The cracks in the berm structure should be sealed to eliminate the water leaks between the fore-bay and the basin. The basin 1 outlet berm needs a hardened pour over to prevent its annual erosion.
Gates	4	NA	4	NA	The Ely Basin manual gates are designed to be submerged when the basins are full of water. The Basin 1 and Basin 2 outlet gates (four total) are constructed of aluminum; and therefore, have begun to degrade. The gates should be replaced for regular submersion. Hand wheels are broken off and are non-operational. Typically, these gates are not needed, so further evaluation is needed to determine if this system needs to be rehabbed or removed. There would be a benefit of having a control structure to transfer flows between basins, rather than overflowing from basin to basin, which requires an upgrade to the transfer pipes. The manual aluminum control gates in Basin 3 berms and are not needed and can be removed.
Ely Basin 2					
Basin	3	NA	3	NA	The Ely Basin 2 Bypass channel is too shallow and cannot maintain the required flow. Under high flow conditions, water spills over the berm into Ely Basin 2 causing erosion to the berm. Further evaluation is needed before a project is recommended; these are low priority issues. The basin 2 outlet berm needs a hardened pour over to prevent its annual erosion.
Gates	4	NA	3	NA	No issues requiring immediate attention.
Ely Basin 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	4	NA	3	NA	No issues requiring immediate attention.
Ely Basin Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.6.3 Planned Projects - Ely Basin (GWR)

There are no current or future projects for Ely Basin.

7.9.7 Etiwanda Basin (GWR)

Figure 7-43 Etiwanda Basin (GWR) Process Flow

7.9.7.1 Asset Summary- Etiwanda Basin (GWR)

Table 7-128
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Etiwanda Debris Basin	The Etiwanda Debris Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in an unincorporated area of San Bernardino County, near the intersection of Wilson Avenue and East Avenue. The Etiwanda Debris Basin receives stormwater from the San Gabriel Mountains, stormwater from a local storm drain system, and imported water from the CB 14 MWD Imported Water Turnout. The Etiwanda Debris Basin has an approximate size of 15.5 acres and an approximate sidewall depth of 6 feet from a floor elevation of 1599' to the conservation berm elevation of 1605' equating to 72.7 AF of storage. The Etiwanda Debris Basin includes a 24" manual sluice gate for discharge to the East Etiwanda Creek.	Basin Gates	Area: 15.5 acres Depth: 6 ft Volume: 72.7 AF 24" sluice gate	 Manual
CB 14 MWD Imported Water Turnout	The CB 14 MWD Imported Water Turnout is located south of the Etiwanda Debris Basin. The turnout includes a 24" Cla-Val flow control valve with an 18" mag-meter to discharge flow to the Etiwanda Debris Basin, another 24" Cla-Val flow control valve to discharge flow to the East Etiwanda Creek, a force main manifold 18" mag-meter, and a pressure transmitter. The turnout is designed for flow rates ranging from 1,000 GPM to 18,000 GPM which can be shared with delivery to Etiwanda Creek and Victoria Basin.	Flow Control Valve	24" @ 500-9,000 GPM	2 valves
Electrical and Instrumentation Systems	**Electrical System** The Etiwanda Debris Basin has no electrical service. The electrical energy to power the CB 14 MWD Imported Water Turnout is obtained from the local electrical grid (SCE) through a meter on East Avenue. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** The Etiwanda Debris Basin has no instrumentation or controls. The CB 14 MWD Imported Water Turnout has local control wiring for valve position and flows that are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access	Electrical Instrumentation	Utility Voltage: 120V Transformers: N/A HMI: N/A RTU: 1 unit PLC: 1 unit I/O Hub: N/A Radio: 1 unit	

7.9.7.2 Asset Ratings - Etiwanda Basin (GWR)

Table 7-129
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Etiwanda Debris Basin					
Basin	3	NA	3	NA	The conservation berm pour over needs to be repaired with further hardened surface to prevent lost capacity in the Etiwanda Debris Basin.
Gates	3	NA	3	NA	No issues requiring immediate attention.
CB 14 MWD Imported Water Turnout					
Flow Control Valve	3	NA	3	NA	CB 14 MWD Imported Water Turnout has a similar design to the CB 20 MWD Imported Water Turnout, which creates high noise when in operation. Residential home construction is occurring around the turnout and it is probable that sound proofing will be required in the future. The facility is in a remote location, so no project is needed at this time to address this issue. MWD requires the MWD meter not to be used for operations as it can lead to overflow conditions. Programming should be done such that lost communication with the meter (0 cfs flow feedback) will not change the valve opening for obtain increased flow.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.7.3 Planned Projects - Etiwanda Basin (GWR)

There are no current or future projects for Etiwanda Basin.

7.9.8 Grove Basin (GWR)

Figure 7-44 Grove Basin (GWR) Process Flow

7.9.8.1 Asset Summary- Grove Basin (GWR)

Table 7-130
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Grove Basin	Grove Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in the City of Ontario, near the intersection of Riverside Avenue and Grove Avenue. Grove Basin receives stormwater from a local storm drain system. Grove Basin has an approximate size of 13.8 acres and an approximate sidewall depth of 25 feet from a floor elevation of 743' to a storm drain exit elevation of 768' equating to 305.5 AF of storage. Grove Basin includes a 42" automated sluice gate for discharge to the storm drain, a 66" automated sluice gate operated by SBFCD, staff gauges, and two-level transmitters.	Basin Gates	Area: 13.8 acres Depth: 25 ft Volume: 305.5 AF 42" sluice gate 66" sluice gate	 Automated SBFCD
Electrical and Instrumentation Systems	**Electrical System** The electrical energy to power Grove Basin is obtained from the local electrical grid (SCE) through a meter on Grove Avenue. The system utilizes 480v power and has one 480v to 120v transformer. In addition, Grove Basin has an onsite 50kW, 480v generator. **Instrumentation and Control System** Local control wiring for gate position and basin levels are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 480v Transformers: 1 unit Generator: 480v HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 1 unit Radio: 1 unit	 480v/120v

7.9.8.2 Asset Ratings - Grove Basin (GWR)

Table 7-131
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
Electrical and Instrumentation	4	NA	4	NA	Grove Basin is an old station. A generator powers the gates. A potential project is needed to upgrade the station and provide line power to the electrical equipment. The station is operated in winter only and has an emergency pour over structure so priority is low to address this issue. South Berm Seepage Concern Limits Stormwater Depth. SBCFCD has a concern for seepage and failure of the south berm. A seepage evaluation and geophysical study could allow increased stormwater capture and alleviate concerns for the south berm.

* Ratings as defined in Appendix A; General System Assets

7.9.8.3 Planned Projects - Grove Basin (GWR)

There are no current or future projects for Grove Basin.

7.9.9 Hickory Basin (GWR)

Figure 7-45 Hickory Basin (GWR) Process Flow

7.9.9.1 Asset Summary- Hickory Basin (GWR)

Table 7-132
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Hickory Basin West Cell	Hickory Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in an unincorporated area of San Bernardino County, immediately northwest of the California Speedway. Hickory Basin is comprised of two cells: the West Cell and the East Cell. *Hickory Basin West Cell* – The Hickory Basin West Cell receives stormwater, imported water, and recycled water from the San Sevaine Channel and flows from the Hickory Basin East Cell. The Hickory Basin West Cell has an approximate size of 6.8 acres and an approximate sidewall depth of 14 feet from a floor elevation of 1101' to the San Sevaine Channel drain outlet pipe at an elevation of 1115' equating to 43.3 AF of storage. The Hickory Basin West Cell includes two 36" manual sluice gates for discharge to San Sevaine Channel, a 3,000 GPM pump to move flows either to Hickory Basin East Cell or Banana Basin, staff gauges and a level transmitter	Basin Gates Pumps	Area: 6.8 acres Depth: 14 ft Volume: 43.3 AF 2 - 36" sluice gate 8" @ 1,800 GPM	 Manual
Hickory Basin East Cell	The Hickory Basin East Cell receives flows from Banana Basin by way of the West Fontana Channel, pumped flows from the Hickory Basin West Cell, and recycled water from the Force Main Manifold (FMM) Recycled Water Turnout. The Hickory Basin East Cell has an approximate size of 4.2 acres and an approximate sidewall depth of 5 feet from a floor elevation of 1110' to the San Sevaine Channel drain outlet pipe at an elevation of 1115' equating to 18.0 AF of storage. The Hickory Basin East Cell includes a 36" automated sluice gate for discharge to the Hickory Basin West Cell, staff gauges, and a level transmitter.	Basin Gates	Area: 4.2 acres Depth: 5 ft Volume: 18.0 AF 36" sluice gate	 Automated
FMM Recycled Water Turnout	The FMM Recycled Water Turnout is located south of the intersection of Whittram Avenue and Mulberry Ave, approximately 0.5 miles west of Banana Basin. The turnout includes two 12" motor operated butterfly valves, flow meter, and pressure transmitter to provided recycled water to Hickory Basin East Cell and/or Banana Basin. The turnout is designed for flow rates ranging from 200 GPM to 6,000 GPM. The FMM can be used to route water to Banana basin that is pumped from the Hickory Basin Pump Station. Two additional 12-inch diameter motor operated butterfly valves are located at Hickory Basin in a control vault on the north perimeter road.	Flow Control Valve Valves	12" @ 200–6,000 GPM 12" Flow Meter 10" gate 10" backflow preventer	2 Valves 2 Manual
San Sevaine Channel Recycled Water Turnout	The turnout is located south of Whittram Avenue at the San Sevaine Channel. The turnout includes a 10" Cla-Val flow control valve, flow meter, and pressure transmitter to provided recycled water to San Sevaine Channel. Recycled Water discharged in the channel can then be conveyed to Hickory Basin West Cell for groundwater recharge or to Jurupa Basin for pumping to RP-3 Basin. The turnout is designed for flow rates ranging from 200 GPM to 2,200 GPM.	Flow Control Valve	10" @ 200–2,200 GPM	w/ FM
CB 18 MWD Imported Water Turnout	The CB 18 MWD Imported Water Turnout is located along the SCE and MWD right of way near the intersection of West Liberty Street and the San Sevaine Channel in the City of Fontana. The turnout includes a 24" vertical sleeve type, motor operated control valve, an 18" mag-meter, and a pressure transmitter to provide imported water to San Sevaine Channel. The turnout is designed for flow rates ranging from 1,500 GPM to 13,500 GPM.	Flow Control Valve	24" @ 1,500-13,500GPM	
San Sevaine Channel	Flow in San Sevaine Channel such as those released from the CB 18 MWD Imported Water Turnout or the San Sevaine Channel Recycled Water Turnout can be diverted to Hickory Basin using an inflatable rubber dam located on San Sevaine Creek 430 feet south of Whittram Avenue. If the rubber dam is not inflated, flow continues south down the San Sevaine Channel towards Jurupa Basin. The San Sevaine Channel Rubber Dam includes a control house with a stilling well, level transmitter, 2.5 hp/154scfm air blower, and a 2" motor-controlled vent valve.	Rubber Dam Blower Vent Valve	4 ft tall rubber dam 2.5 hp 54 scfm 2" ball valve	
Electrical and Instrumentation Systems	**Electrical System** • *Basin, San Sevaine Channel Recycled Water Turnout, and Rubber Dam* – Hickory Basin, the San Sevaine Channel Recycled Water Turnout, and the San Sevaine Channel Rubber Dam share a common electrical system housed in the San Sevaine Channel Rubber Dam control house. The electrical energy to power these systems is obtained from the local electrical grid (SCE) through a meter on Whittram Avenue. The system utilizes 480v power, has one 480v to 120v transformer, and does not have emergency power generation. • *FMM Recycled Water Turnout* – The electrical energy to power the FMM Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on Whittram Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • *Imported Water Turnout* – The electrical energy to power the CB 18 MWD Imported Water Turnout is obtained from the local electrical grid (SCE) through a meter on East Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • *Basin, San Sevaine Channel Recycled Water Turnout, and Rubber Dam* – Hickory Basin, the San Sevaine Channel Recycled Water Turnout, and the San Sevaine Channel Rubber Dam share a common instrumentation system housed in the San Sevaine Channel Rubber Dam control house. Local control wiring for gate positions, basin levels, flows, rubber dam pressures, stilling well levels, and vent valve position are fed back to a local PLC. This PLC has a radio antenna that transmits control data to RP-4 and then to RP-1 to the GWR workstation server for control and remote access. • *FMM Recycled Water Turnout* – Local control wiring for flow and valve position for both Hickory and Banana Basins are fed back to the remote telemetry unit. The turnout has a 10dB Yagi antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access. • *Imported Water Turnout* – Local control wiring for flow and valve position are fed back to a local PLC. The turnout PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120v & 480 v Transformers: 1 unit MI: 1 unit RTU: 1 unit PLC: 2 unit I/O Hub: 3 units Radio: 3 unit	 480v/120v

7.9.9.2 Asset Ratings - Hickory Basin (GWR)

Table 7-133
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Hickory Basin					
West Cell Basin	3	NA	3	NA	No issues requiring immediate attention.
West Cell Gates	4	NA	4	NA	One of the manual gates is missing a lift stem and cannot be operated. The gate is used to drain back to the San Sevaine Channel; this can only be done when the operating level is below the conservation berm. This issue will be addressed as a maintenance item, and a new project is not needed at this time. The manual outlet manual valve operator wheel requires the operator to enter water to turn, A small cinderblock platform was constructed by GWR operations, but should be made permanent such that it does not require water entry to use. An extended lift stem will be required such that the wheel can be turned at an ergonomic height. Currently it's only about 1-2 feet above ground level.
West Cell Pump	3	NA	3	NA	No issues requiring immediate attention.
East Cell Basin	3	NA	3	NA	No issues requiring immediate attention. Project EN23067 will install a new well to replace Reliant East for RW/ GWR compliance due to NRG closure.
East Cell Gates	3	NA	3	NA	No issues requiring immediate attention.
FMM Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Valves	5	NA	5	NA	No issues requiring immediate attention.
San Sevaine Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
CB 18 MWD Imported Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
San Sevaine Channel Rubber Dam					
Rubber Dam	3	NA	3	NA	The rubber dam was inspected in April 2022 and was determined to be in imminent need of replacement. IEUA currently has one replacement dam on hand but should procure an additional replacement so that the Agency is prepared to replace the Hickory and Turner rubber dams when needed.
Blower	3	NA	3	NA	No issues requiring immediate attention.
Vent Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	3	NA	4	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.9.3 Planned Projects – Hickory Basin (GWR)

Table 7-134
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23067	Hickory Basin Replacement Monitoring Wel	Install a new well (estimated $200–$300K) to replace Reliant East for RW/GWR compliance after NRG closure.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.9.10Jurupa Basin (GWR)

Figure 7-46 Jurupa Basin (GWR) Process Flow

7.9.10.1 Asset Summary- Jurupa Basin (GWR)

Table 7-135
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Jurupa Basin	Jurupa Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in the City of Fontana, at the intersection of Mulberry Avenue and Jurupa Avenue. Jurupa Basin receives stormwater, imported water, and recycled water from the San Sevaine Channel and stormwater from a local storm drain system. Jurupa Basin is used for flood control purposes; however, it is not used for groundwater recharge. Jurupa Basin has an approximate size of 55.9 acres and an approximate sidewall depth of 42 feet from a floor elevation of 885' to the San Sevaine Channel overflow structure at an elevation of 927' equating to 1,538.7 AF of flood storage. Water for recharge can be stored for pumping behind an approximate 6-foot tall soil conservation berm with a crude hardened pour over. Jurupa Basin includes a 48" automated sluice gate at its inlet from the San Sevaine Channel, a 72" manual sluice gate for the inlet to the Jurupa Pump Station Wet Well, a 36" manual sluice gates in the conservation berm for drainage discharge back to San Sevaine Channel, one 300 hp 9,000 GPM VFD driven pumps to send flow to RP-3 Basin, flow meter, pressure transmitters, backflow preventer, sump pump, staff gauges and one level transmitter. Pump station Building houses the PLC, VFD, exhaust fans and other appurtenances.	Basin Gates Pumps	Area: 55.9 acres Depth: 42 ft Volume: 1,538.7 AF 48" sluice gate 72" sluice gate 2 - 36" sluice gate 2- 300 hp & 3,000 GPM Sump Pump	 Automated Manual Manual VFD
Electrical and Instrumentation Systems	**Electrical System** The electrical energy to power these systems is obtained from the local electrical grid (SCE) through a meter on Jurupa Avenue The system utilizes 480v power, has one 480v to 120v transformer, and does not have emergency power generation. **Instrumentation and Control System** Local control wiring for gate positions, basin levels, and flows are fed back to a local PLC. This PLC has a radio antenna that transmits control data to the Almond repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 480 v Transformers: 1 unit HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 1 unit Radio: 1 unit	 480v/120v

7.9.10.2 Asset Ratings - Jurupa Basin (GWR)

Table 7-136
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Basin	3	NA	4	NA	The Jurupa Basin berm is not a permanent structure and overflows during large storm events. This has led to the erosion of the berm. The berm should be improved, an overflow structure constructed, and a flow through gate provided. A project is needed to convert the basin from a stormwater only to a multipurpose basin that can recharge recycled water and stormwater. Recycled water can be provided from the turnout on Whittram Avenue. Such a project will require a change to the recharge permit.
Gates	3	NA	4	NA	The Jurupa Basin inlet structure from San Sevaine Channel does not have capacity to receive large storm flows or imported water flows. The capacity of the structure should be increased to allow more flow into the basin. This is being addressed under an existing project Wineville/Jurupa/Force Main Improvements project
Pumps	3	NA	4	NA	Storm debris can be pushed toward the inlet of the Jurupa Pump Station and clog the inlet of the pumps. An inlet screening structure should be installed to maintain proper functionality of the pump station. Project underway to install trash boom system.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.10.3 Planned Projects - Jurupa Basin (GWR)

There are no current or future projects for Jurupa Basin.

7.9.11Lower Day Basin (GWR)

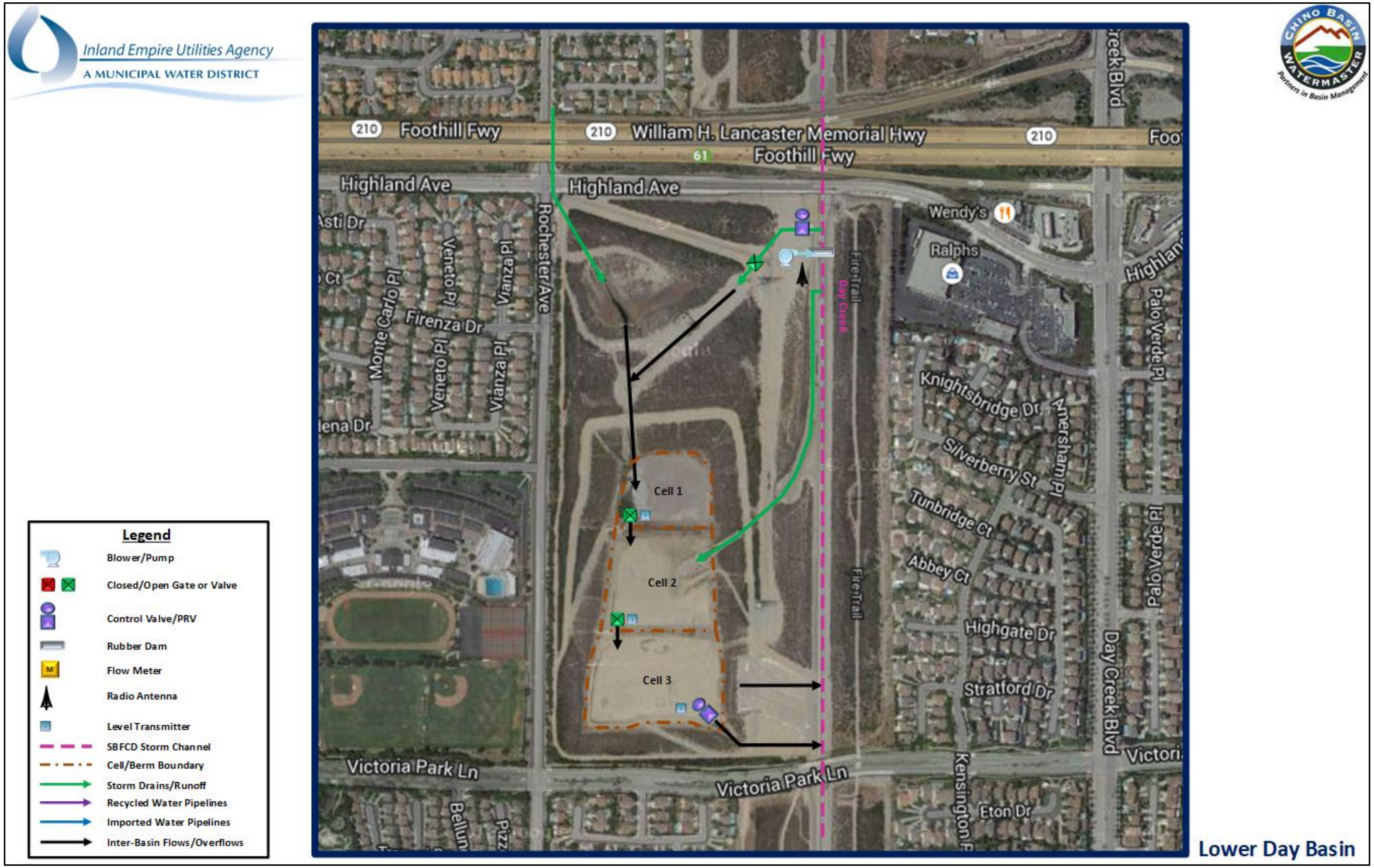

Figure 7-47 Lower Day Basin (GWR) Process Flow

7.9.11.1 Asset Summary- Lower Day Basin (GWR)

Table 7-137
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Lower Day Basin Cell 1	Lower Day Basin Cell 1 receives stormwater and imported water from Day Creek and stormwater from a local storm drain system. Lower Day Basin Cell 1 has an approximate size of 3.7 acres and an approximate sidewall depth of 8 feet from a floor elevation of 1370' to the Lower Day Basin Cell 2 overflow structure at an elevation of 1378' equating to 26.2 AF of storage. Lower Day Basin Cell 1 includes a 36" automated sluice gate on the inlet to Lower Day Basin Cell 1 from Day Creek, a 36" manual sluice gate for discharge to Lower Day Basin Cell 2, and a level transmitter.	Basin Gates	Area: 3.7 acres Depth: 8 ft Volume: 26.2 AF 36" sluice gate 36" sluice gate	 Automated Manual
Lower Day Basin Cell 2	Lower Day Basin Cell 2 receives stormwater and imported water from Day Creek and flows from Lower Day Basin Cell 1. Cell 2 has an approximate size of 5.1 acres and an approximate sidewall depth of 8 feet from a floor elevation of 1365' to the Lower Day Basin Cell 3 overflow structure at an elevation of 1373' equating to 31.4 AF of storage. Lower Day Basin Cell 2 includes a 36" manual sluice gate for outflow discharge to l 3, staff gauges, and a level transmitter.	Basin Gates	Area: 5.1 acres Depth: 8 ft Volume: 31.4 AF 36" sluice gate	 Manual
Lower Day Basin Cell 3	Lower Day Basin Cell 3 receives flows from Cell 2. Lower Day Basin Cell 3 has an approximate size of 6.3 acres and an approximate sidewall depth of 10 feet from a floor elevation of 1363' to the Day Creek overflow structure at an elevation of 1373' equating to 55.4 AF of storage. Lower Day Basin Cell 3 includes a 72" automated sluice gate for outflow discharge to Day Creek, staff gauges, and a level transmitter.	Basin Gates	Area: 6.3 acres Depth: 10 ft Volume: 55.4 AF 72" sluice gate	 Automated
CB 15 MWD Imported Water Turnout	The CB 15 MWD Imported Water Turnout is located near the intersection of Banyan Street and Day Creek in the City of Rancho Cucamonga. The turnout includes a 20" horizontal sleeve type, motor operated control valve, a 20" mag-meter, and a pressure transmitter to provided imported water to Day Creek. The turnout is designed for flow rates ranging from 1,500 GPM to 13,500 GPM.	Flow Control Valve	20" @ 1,500-13,500 20" mag-meter	GPM
Day Creek Rubber Dam	Flow released from the CB 15 MWD Imported Water Turnout can be diverted to Lower Day Basin using an inflatable rubber dam located on Day Creek below Highland Avenue. The Day Creek Rubber Dam includes a control house with a stilling well, 2.5 hp/154scfm air blower, and a 2" motor-controlled vent valve.	Rubber Dam Blower Vent Valve	4 ft tall rubber dam 2.5 hp 154 scfm 2" ball valve	
Electrical and Instrumentation Systems	**Electrical System** • Basin and Rubber Dam – Lower Day Basin and the Day Creek Rubber Dam share a common electrical system housed in the Day Creek Rubber Dam control house. The electrical energy to power these systems is obtained from the local electrical grid (SCE) through a meter on Whittram Avenue. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Imported Water Turnout – The electrical energy to power the CB 15 MWD Imported Water Turnout is obtained from the local electrical grid (SCE) through a meter on East Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • Basin and Rubber Dam – – Lower Day Basin and the Day Creek Rubber Dam share a common instrumentation system housed in the Day Creek Rubber Dam control house. Local control wiring for gate positions, basin levels, flows, rubber dam pressures, stilling well levels, and vent valve position are fed back to a local PLC. This PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access. • Imported Water Turnout – Local control wiring for flow and valve position are fed back to a local PLC. The turnout PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 1 unit RTU: 1 unit PLC: 2 unit I/O Hub: 2 units Radio: 2 unit	

7.9.11.2 Asset Ratings - Lower Day Basin (GWR)

Table 7-138
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Lower Day Basin Cell 1					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	The Lower Day Basin inlet gate from Day Creek cannot open to 100 % due to an incorrectly positioned stem coupling. The stem coupling cannot move through the opening in the gate structure vault; and therefore, the gate can only be opened to a maximum of 75%. The stem should be replaced to allow for full motion of the gate. The gate should be repaired under the reoccurring GWR Asset Management project. Further investigation is needed prior to recommending a project to address this issue.
Lower Day Basin Cell 2					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	The Lower Day Basin inlet gate from Day Creek cannot open to 100 % due to an incorrectly positioned stem coupling. The stem coupling cannot move through the opening in the gate structure vault; and therefore, the gate can only be opened to a maximum of 75%. The stem should be replaced to allow for full motion of the gate. The gate should be repaired under the reoccurring GWR Asset Management project. Further investigation is needed prior to recommending a project to address this issue.
Lower Day Basin Cell 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	4	NA	4	NA	The Lower Day Basin inlet gate from Day Creek cannot open to 100 % due to an incorrectly positioned stem coupling. The stem coupling cannot move through the opening in the gate structure vault; and therefore, the gate can only be opened to a maximum of 75%. The stem should be replaced to allow for full motion of the gate. The gate should be repaired under the reoccurring GWR Asset Management project. Further investigation is needed prior to recommending a project to address this issue.
CB 15 MWD Imported Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Day Creek Rubber Dam					
Rubber Dam	3	NA	3	NA	The rubber dams were inspected in January 2015 and were determined to have a remaining lifespan of 5 years remaining. A potential project is needed within the next 5 years to replace the rubber dams.
Blower	3	NA	3	NA	No issues requiring immediate attention.
Vent Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical and Instrumentation	4	NA	4	NA	Wires have been stolen from Lower Basin Cell 3. The gate is not operational, lost control and level transmitter feedback. A potential project is needed to address this issue.

* Ratings as defined in Appendix A; General System Assets

7.9.11.3 Planned Projects - Lower Day Basin (GWR)

There are no current or future projects for Lower Day Basin.

7.9.12Montclair Basin (GWR)

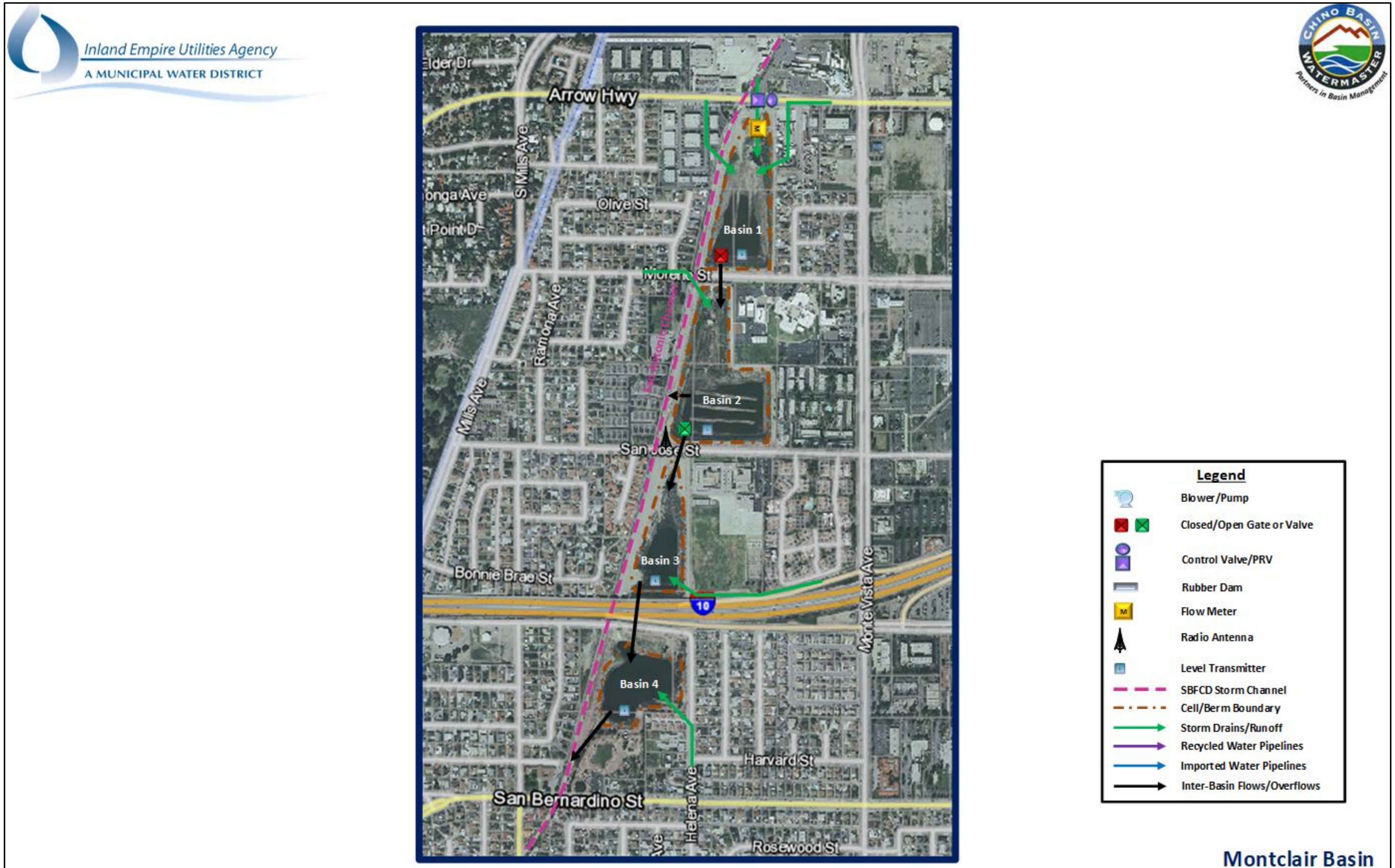

Figure 7-48 Montclair Basin (GWR) Process Flow

7.9.12.1 Asset Summary- Montclair Basin (GWR)

Table 7-139
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Montclair Basins	Montclair Basins are owned by the Chino Basin Water Conservation District (CBWCD) and are located in City of Montclair along San Antonio Creek. Montclair Basins consist of four basins: Basin 1, Basin 2, Basin 3, and Basin 4.			
Montclair Basin 1	Montclair Basin 1 is located at the intersection of Arrow Hwy. and the San Antonio Channel. Montclair Basin 1 receives stormwater and imported water from the San Antonio Channel and stormwater from a local storm drain system. Montclair Basin 1 has an approximate size of 8.3 acres and an approximate sidewall depth of 30 feet from a floor elevation of 1099’ to the Montclair Basin 2 overflow structure at an elevation 1129’ equating to 150.0 AF of storage. Montclair Basin 1 includes a 36” locally controlled motor-operate sluice gate for diversion of water from San Antonio Channel followed by locally read Parshall flume flow monitoring station. The basin has a midlevel outlet is controlled with a 24” manual sluice gate to discharge flows to Montclair Basin 2, staff gauges, and a level transmitter.	Basin 1 Gates	Area: 8.3 acres Depth: 30 ft Volume: 150.0 AF 36” sluice gate 24” sluice gate	 Motorized Manual
Montclair Basin 2	Montclair Basin 2 is located at the intersection of Moreno Street and the San Antonio Channel. Montclair Basin 2 receives flow from Montclair Basin 1 and stormwater from a local storm drains. Montclair Basin 2 has an approximate size of 12.6 acres and an approximate sidewall depth of 36 feet from a floor elevation of 1065’ to the San Antonio Channel overflow structure at an elevation 1101’ equating to 295.4 AF of storage. Outflow from Montclair Basin 2 to Montclair Basin 3 is through abandoned 24-inch diameter pipes at a depth of approximately 30 feet. The basin has staff gauges, and a level transmitter.	Basin 2 Gates	Area: 12.6 acres Depth: 36 ft Volume: 295.4 AF 2 - 24” sluice gate	 Abandoned
Montclair Basin 3	Montclair Basin 3 is located at the intersection of San Jose Street and the San Antonio Channel. Montclair Basin 3 receives flow from Montclair Basin 2 and local storm drains. Montclair Basin 3 has an approximate size of 4.6 acres and an approximate sidewall depth of 23 feet from a floor elevation of 1034’ to the Montclair Basin 4 overflow structure at an elevation 1057’ equating to 63.8 AF of storage. Montclair Basin 3 has staff gauges and a level transmitter	Basin 3	Area: 4.6 acres Depth: 23 ft Volume: 63.8 AF	
Montclair Basin 4	Montclair Basin 4 is located at the intersection of the 10 Freeway and the San Antonio Channel. Montclair Basin 4 receives flow from Montclair Basin 3 and stormwater from a local storm drain system. Montclair Basin 4 has an approximate size of 6.2 acres and an approximate sidewall depth of 27 feet from a floor elevation of 1010’ to the San Antonio Channel overflow structure at an elevation 1037’ equating to 111.0 AF of storage. Montclair Basin 4 has staff gauges and.	Basin 4	Area: 6.2 acres Depth: 27 ft Volume: 111.0 AF	
Electrical and Instrumentation Systems	**Electrical System** The electrical energy to power Montclair Basins is obtained from the local electrical grid (SCE) through a meter on San Jose Street near Montclair Basin 2. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** Local control wiring for gate position, flows, and basin levels are fed back to a local PLC. The basin PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120v Transformers: N/A HMI: N/A RTU: N/A PLC: 1 unit I/O Hub: 1 unit Radio: 1 unit	

7.9.12.2 Asset Ratings - Montclair Basin (GWR)

Table 7-140
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Montclair Basin 1					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	5	NA	5	NA	The Montclair Basin 1 motor operated gate is over 30 years old and is not connected to SCADA. The gate should be replaced and connected to SCADA, a future project will address this issue. Replacement of the gate is the responsibility of Chino Basin Conversation District.
Montclair Basin 2					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	5	NA	5	NA	The Montclair Basin 2 discharge gates abandoned in the open position. Conduits have been run through the open gates and piping, a future project will address this issue.
Montclair Basin 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Montclair Basin 4					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Electrical and Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.12.3 Planned Projects - Montclair Basin (GWR)

There are no current or future projects for Montclair Basin.

7.9.13RP-3 Basin (GWR)

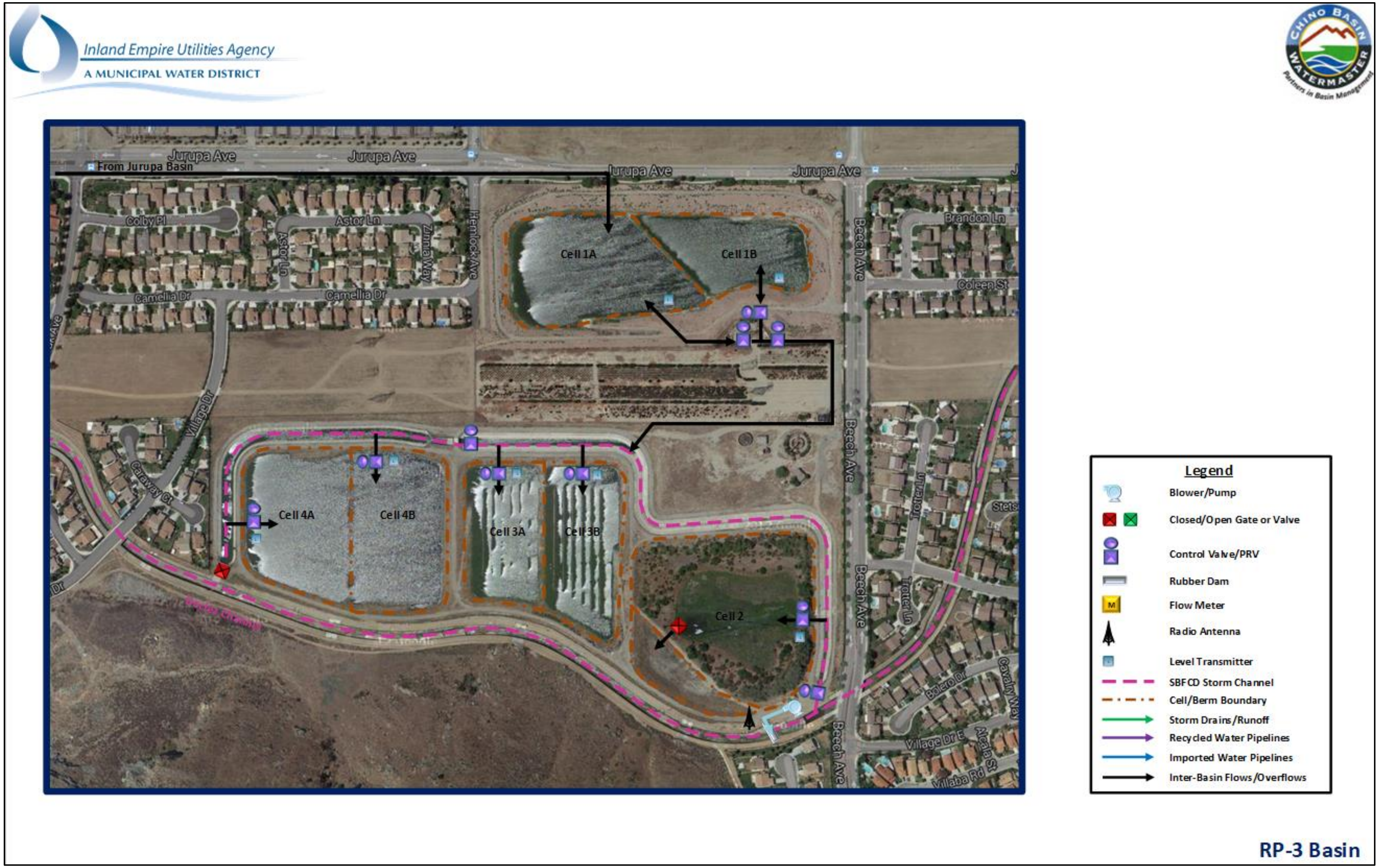

Figure 7-49 RP-3 Basin (GWR) Process Flow

7.9.13.1 Asset Summary- RP-3 Basin (GWR)

Table 7-141
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-3 Basin	RP-3 Basin is owned by Inland Empire Utilities Agency (IEUA) and is located in the City of Fontana, north of Declez Creek near the intersection of Jurupa Avenue and Beech Avenue RP-3 Basin is comprised of four cells: Cell1, Cell2, Cell 3, and Cell 4.			
RP-3 Basin Cell 1	RP-3 Basin Cell 1 receives pumped flows from the Jurupa Basin. RP-3 Basin Cell 1 has an approximate size of 9.0 acres and an approximate sidewall depth of 12 feet from a floor elevation of 947' to the Declez Channel Rubber Dam at an inflated elevation of 952' equating to 117 AF of storage. RP-3 Basin Cell 1 includes a 36" automated sluice gate, two 30" automated sluice gates, staff gauges, and two-level transmitters.	Basin Cell 1 Gates	Area: 9.0 acres Depth: 5 ft Volume: 37.7 AF 36" sluice gate 2 - 30" sluice gate	 Automated Automated
RP-3 Basin Cell 2	RP-3 Basin Cell 2 M serves largely as a mitigation habitat but does provide recharge. Cell 2M receives stormwater from the Declez Channel and flows from RP-3 Basin 1. RP-3 Basin Cell 2 has an approximate size of 8.4 acres and an approximate sidewall depth of 8 feet from a floor elevation of 944' to the Declez Channel Rubber Dam at an inflated elevation of 952' equating to 44.3 AF of storage. RP-3 Basin Cell 2 includes a 30" automated sluice gate, a 24" manual sluice gate to the after bay, and a level transmitter.	Basin Cell 2 Gates	Area: 8.4 acres Depth: 8 ft Volume: 44.3 AF 30" sluice gate 24" sluice gate	 Motorized Manual
RP-3 Basin Cell 3	RP-3 Basin Cell 3 receives stormwater from the Declez Channel and flows from RP-3 Basin 1. RP-3 Basin Cell 3 has an approximate size of 7.6 acres and an approximate sidewall depth of 12 feet from a floor elevation of 940' to the Declez Channel Rubber Dam at an inflated elevation of 952' equating to 76.4 AF of storage. RP-3 Basin Cell 3 includes two 30" automated sluice gates, staff gauges, and two-level transmitters.	Basin Cell 3 Gates	Area: 7.6 acres Depth: 12 ft Volume: 76.4 AF 2 - 30" sluice gates	 Motorized
RP-3 Basin Cell 4	RP-3 Basin Cell 4 receives stormwater from the Declez Channel and flows from RP-3 Basin 1. RP-3 Basin Cell 4 has an approximate size of 8.9 acres and an approximate sidewall depth of 14 feet from a floor elevation of 938' to the Declez Channel Rubber Dam at an inflated elevation of 952' equating to 91.7 AF of storage. RP-3 Basin Cell 4 includes two 30" automated sluice gates, staff gauges, and two-level transmitters	Basin Cell 4 Gates	Area: 8.9 acres Depth: 14 ft Volume: 91.7 AF 2 - 30" sluice gates	 Motorized
Declez Channel Rubber Dam	A 4' tall rubber dam has been installed into Declez Channel divert water from Declez Creek to the RP-3 Basin. The Declez Channel Rubber Dam includes a control house with a stilling well, 2.5 hp/154scfm air blower, and a 2" motor-controlled vent valve. The Declez Channel Rubber Dam diverts flow into the RP-3 Distribution Channel, which routes water to the RP-3 Basins. The RP-3 Distribution Channel includes three 30" automated inlet sluice gates, an 18" automated sluice gate, and a manual outlet. Other sluice gates occur on the channel for each of the RP-3 Cells and are discussed for those cells.	Rubber Dam Blowers Vent Valve RP-3 Channel Gates	4 ft tall rubber dam 2.5 hp 154 scfm 2" ball valve 3 – 30" sluice gates 24" sluice gate 18" sluice gate 2-flume flow meters	 Automated Motorized Manual Abandoned
Electrical and Instrumentation Systems	**Electrical System** The electrical energy to power these systems is obtained from the local electrical grid (SCE) through a meter on Beech Avenue. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** Local control wiring for gate positions, basin levels, flows, rubber dam pressures, stilling well levels, and vent valve position are fed back to a local PLC. This PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120v Transformers: N/A HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 1 unit Radio: 1 unit	

7.9.13.2 Asset Ratings - RP-3 Basin (GWR)

Table 7-142
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
RP-3 Basin Cell 1					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	No issues requiring immediate attention.
RP-3 Basin Cell 2					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	No issues requiring immediate attention.
RP-3 Basin Cell 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	No issues requiring immediate attention.
RP-3 Basin Cell 4					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	4	NA	No issues requiring immediate attention.
Declez Channel Rubber Dam					
Rubber Dam	3	NA	3	NA	The rubber dams were inspected in January 2015 and were determined to have a remaining lifespan of 5 years remaining. A potential project is needed within the next 5 years to replace the rubber dams.
Blower	3	NA	3	NA	No issues requiring immediate attention.
Vent Valve	3	NA	3	NA	No issues requiring immediate attention.
RP-3 Channel Gates	3	NA	3	NA	No issues requiring immediate attention.
Electrical and Instrumentation	3	NA	4	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.13.3 Planned Projects - RP-3 Basin (GWR)

There are no current or future projects for RP-3 Basin.

7.9.14 San Sevaine Basin MZ-2 (GWR)

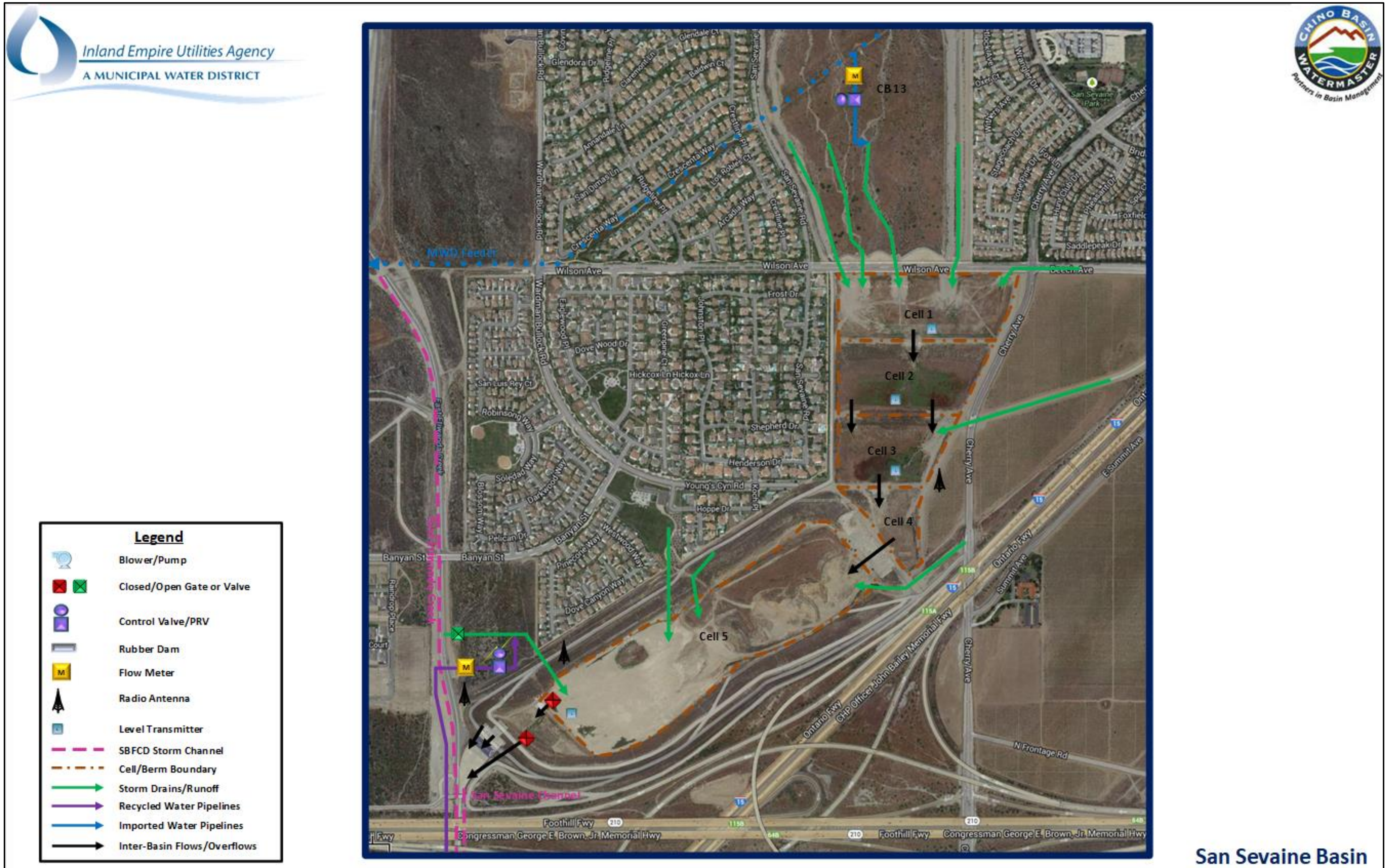

Figure 7-50 San Sevaine Basin MZ-2 (GWR) Process Flow

7.9.14.1 Asset Summary- San Sevaine Basin MZ-2 (GWR)

Table 7-143
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
San Sevaine Basin	San Sevaine Basin is owned by the San Bernardino County Flood Control San Sevaine Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in the City of Rancho Cucamonga, near the intersection of Wilson Avenue and Cherry Avenue San Sevaine Basin is comprised of five basins: Basin 1, Basin 2, Basin 3, Basin 4, and Basin 5.			
San Sevaine Basin Cell 1	San Sevaine Basin 1 receives stormwater and imported water from the San Sevaine flood plain and stormwater from a local storm drain system. San Sevaine Basin 1 also receives recycled water from a 30” pipe, which discharges on the basin floor near the basin’s southwestern corner. San Sevaine Basin 1 has an approximate size of 15.9 acres and an approximate sidewall depth of 9 feet from a floor elevation of 1484’ to the San Sevaine Basin 2 overflow structure at an elevation of 1493’ equating to 76.7 AF of storage. San Sevaine Basin 1 has a level transmitter	San Sevaine Basin Cell 1	Area: 15.9 acres Depth: 9 ft Volume: 76.7 AF	
San Sevaine Basin Cell 2	San Sevaine Basin 2 receives flow from San Sevaine Basin 1. San Sevaine Basin 2 also receives recycled water from a 30” pipe, which discharges on the basin floor near the basin’s southwestern corner. San Sevaine Basin 2 has an approximate size of 11.8 acres and an approximate sidewall depth of 9 feet from a floor elevation of 1467’ to the San Sevaine Basin 3 overflow structure at an elevation of 1476’ equating to 58.5 AF of storage. San Sevaine Basin 2 has a level transmitter.	San Sevaine Basin Cell 2	Area: 11.8 acres Depth: 9 ft Volume: 58.5 AF	
San Sevaine Basin Cell 3	San Sevaine Basin 3 receives flow from San Sevaine Basin 2 and stormwater from a local storm drain system. San Sevaine Basin 3 also receives recycled water from a 30” pipe, which discharges on the basin floor near the basin’s southwestern corner. San Sevaine Basin 3 has an approximate size of 9.9 acres and an approximate sidewall depth of 8 feet from a floor elevation of 1453’ to the San Sevaine Basin 4 overflow structure at an elevation of 1461’ equating to 34.5 AF of storage. San Sevaine Basin 3 has a level transmitter.	San Sevaine Basin Cell 3	Area: 9.9 acres Depth: 8 ft Volume: 34.5 AF	
San Sevaine Basin Cell 4	*San Sevaine Basin 4* – San Sevaine Basin 4 receives flow from San Sevaine Basin 3, has very little storage and passes flows on to San Sevaine 5. At capacity, Basin 4 holds 6.4 AF over 3.6 acres			
San Sevaine Basin Cell 5	San Sevaine Basin 5 receives storm water and imported water (from CB 14 discussed earlier for Etiwanda Basin) from the East Etiwanda Creek, flows from San Sevaine Basin 4, and stormwater from a local storm drain system. San Sevaine Basin 5 has an approximate size of 73.5 acres and an approximate sidewall depth of 17 feet from a floor elevation of 1382’ to the San Sevaine Channel overflow structure at an elevation of 1399’ equating to 798.7 AF of storage. San Sevaine Basin 5, 48” sluice gate inlet from the East Etiwanda Creek, 96” manual sluice gates for discharge to the San Sevaine Channel, a 42” manual sluice gate, and a basin level transmitter.	San Sevaine Basin Cell 5 Gates	Area: 73.5 acres Depth: 17 ft Volume: 798.7 AF 48” sluice gate 96” sluice gate 42” sluice gate	 Manual Manual Manual
San Sevaine Basin Recycled Water Turnout Flow Control Valve	The turnout includes a 20” Cla-Val flow control valve, 20” electromagnetic flowmeter, pressure transmitter, and three 20” flanged gate valves to provide recycled water to the groundwater recharge basin. The turnout is designed for flow rates ranging from 400 GPM to 6,700 GPM	San Sevaine Basin Recycled Water Turnout Flow Control Valve	20” Cla-Val @ 400–6,700 GPM 20” Electromagnetic flowmeter	
San Sevaine Basin 5 Pump Station	The pump station includes two 10 cfs submersible pumps installed in a 24’ wet well, wet well level transmitter, two 12” flanged gate valves, two 12” anti slam check valves, sump pump installed in the valve vault	San Sevaine Basin 5 Pump Station	Two 10 cfs submersible pumps	
CB 13 MWD Imported Water Turnout	The CB 13 MWD Imported Water Turnout is located north of San Sevaine Basin in the San Sevaine flood plain. The turnout is owned by Metropolitan Water District of Southern California. CB 13 includes a 24” vertical sleeve type, motor operated control valve, a 24” mag-meter, and a pressure transmitter to provided imported water to San Sevaine Channel. The turnout is designed for flow rates ranging from 500 GPM to 9,000 GPM. Deliveries from the turnout recharge enroute in the creek and in basin 1 and 2. Flows from CB13 do not generally reach San Sevaine 3			

Table 7-143
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Electrical and Instrumentation Systems	**Electrical System** • *Basins* – The electrical energy to power the basin is provided by independent solar panels. The system utilizes 24v DC power, does not have any transformers, and does not have emergency power generation. • *San Sevaine 5 Pump Station* – Owned and operated by MWD. • *Recycled Water Turnout* – The electrical energy to power the San Sevaine Basin Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on Cherry Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • *Imported Water Turnout* – The turnout is not operated by IEUA. **Instrumentation and Control System** • *Basins* – Local control wiring for basin levels are fed back to a local PLC. This PLC has a radio antenna that transmits control data to RP-4 and then to RP-1 to the GWR workstation server for control and remote access. • *San Sevaine 5 Pump Station* – Owned and operated by MWD. • *Recycled Water Turnout* – Local control wiring for flow and valve position are fed back to a remote I/O hub, which radios control data to the San Sevaine Basin 3 RTU. The San Sevaine Basin 3 RTU has a radio that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access. In addition, there is a San Sevaine Basin Turnout Main RTU that radios information back to RP-4. • *Imported Water Turnout* – Owned and operated by MWD.	Electrical Instrumentation	Utility Voltage: 120v 24v DC Transformers: N/A HMI: 1 unit RTU: 2 unit PLC: 2 unit I/O Hub: 2 unit Radio: 3 unit	

7.9.14.2 Asset Ratings - San Sevaine Basin MZ-2 (GWR)

Table 7-144
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
San Sevaine Basin Cell 1					
Basin	3	NA	3	NA	No issues requiring immediate attention.
San Sevaine Basin Cell 2					
Basin	3	NA	3	NA	No issues requiring immediate attention.
San Sevaine Basin Cell 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
San Sevaine Basin Cell 4					
Basin	3	NA	3	NA	No issues requiring immediate attention.
San Sevaine Basin Cell 5					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
San Sevaine Basin Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.14.3 Planned Projects - San Sevaine Basin MZ-2 (GWR)

There are no current or future projects for San Sevaine Basin MZ-2.

7.9.15 Turner Basin 1 & 2 (GWR)

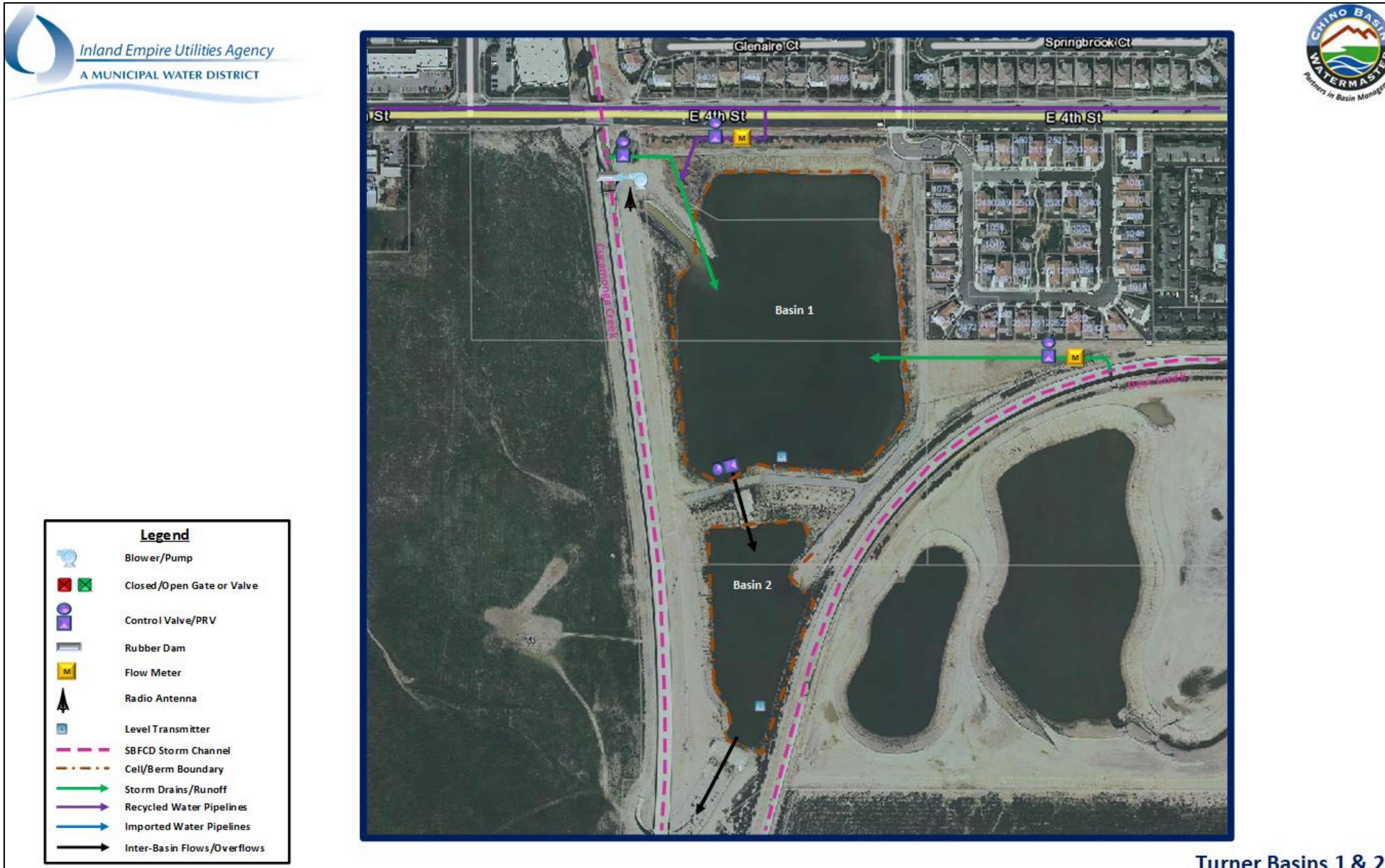

Figure 7-51 Turner Basin 1 & 2 (GWR) Process Flow

7.9.15.1 Asset Summary- Turner Basin 1 & 2 (GWR)

Table 7-145
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Turner Basin	Tuner Basin consists of multiple basins, numbered Basins 1 through 8. The north 350' of Turner Basin 1 is owned by the Chino Basin Water Conservation District, while the remaining portions of Turner Basin 1&2 and Turner 3&4 and 8 are owned by the San Bernardino County Flood Control District (SBCFCD). Turner 5, 6, and 7 are owned by the San Bernardino County Parks Department. Turner 1&2 are located in the City of Ontario, south of 4th Street and east of Cucamonga Creek.			
Turner Basin 1	Turner Basin 1 receives stormwater from Cucamonga creek, stormwater, imported water, and recycled water via Deer Creek, and recycled water from either the Turner Basin 1 Recycled Water Turnout or the Deer Creek Recycled Water Turnout. Imported water for Turner 1 comes from CB-11 discussed in detail for Turner 3&4. Turner 1 has an approximate size of 13.9 acres and an approximate sidewall depth of 38 feet from a floor elevation of 965' to the Turner 2 overflow structure at an elevation of 1003' equating to 314.0 AF of storage. Turner 1 includes a 48-inch tall by 96inch wide automated sluice gate for the basin inlet from Cucamonga Creek, a 48" automated sluice gate for the Turner 1 inlet from Deer Creek, a 42" automated sluice gate for discharge to Turner 2. The basin has a staff gauge and a level transmitter.	Basin 1 Gates	Area: 13.9 acres Depth: 38 ft Volume: 314.0 AF 96" sluice gate 48" sluice gate 42" sluice gate	 Automated Automated Automated
Turner Basin 2	Turner 2 receives flows from Turner 1. Turner 2 has an approximate size of 4.0 acres and an approximate sidewall depth of 22 feet from a floor elevation of 968' to the Cucamonga Creek overflow structure at an elevation of 990' equating to 51.7 AF of storage. Turner 2 has staff gauges and a level transmitter.	Basin 2	Area: 4.0 acres Depth: 22 ft Volume: 51.7 AF	
Turner Basin 1 Recycled Water Turnout	The Turner 1 Recycled Water Turnout is located on the northwest side of Turner 1. The turnout includes a 12" flow control valve, a 12" mag-meter, and pressure transmitter to provided recycled water to Turner 1. The turnout is designed for flow rates ranging from 500 GPM to 6,000 GPM.	Flow Control Valve	10" @ 500–6,000 GPM 12" mag-meter	
Cucamonga Creek Rubber Dam	Stormwater can be diverted to Turner Basin 1 using an inflatable rubber dam located in Cucamonga Creek just south of 4th Street. The Cucamonga Creek Rubber Dam includes a control house with a stilling well, 2.5 hp/154scfm air blower, and a 2" motor-controlled vent valve.	Rubber Dam Blower Vent Valve	4 ft tall rubber dam 2.5 hp 154 scfm 2" ball valve	
Electrical and Instrumentation Systems	**Electrical System** Turner 1&2, the Turner 1 Recycled Water Turnout, and the Cucamonga Creek Rubber Dam share a common electrical system housed in the Cucamonga Creek Rubber Dam control house. The electrical energy to power these systems is obtained from the local electrical grid (SCE) through a meter on 4th Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** Turner Basins 1&2, the Turner Basin 1 Recycled Water Turnout, and the Cucamonga Creek Rubber Dam share a common instrumentation system housed in the Cucamonga Creek Rubber Dam control house. Local control wiring for gate positions, basin levels, flows, rubber dam pressures, stilling well levels, and vent valve position are fed back to a local PLC. This PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 3 units Radio: 1 unit	

7.9.15.2 Asset Ratings - Turner Basin 1 & 2 (GWR)

Table 7-146
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Turner Basin 1					
Basin	2	NA	2	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
Turner Basin 2					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Turner Basin Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Cucamonga Creek Rubber Dam					
Rubber Dam	3	NA	3	NA	The rubber dams were inspected in January 2015 and were determined to have a remaining lifespan of 5 years remaining. A potential project is needed within the next 5 years to replace the rubber dams.
Blower	3	NA	3	NA	No issues requiring immediate attention.
Vent Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.15.3 Planned Projects - Turner Basin 1 & 2 (GWR)

There are no current or future projects for Turner Basin 1 & 2.

7.9.16 Turner Basin 3 & 4C (GWR)

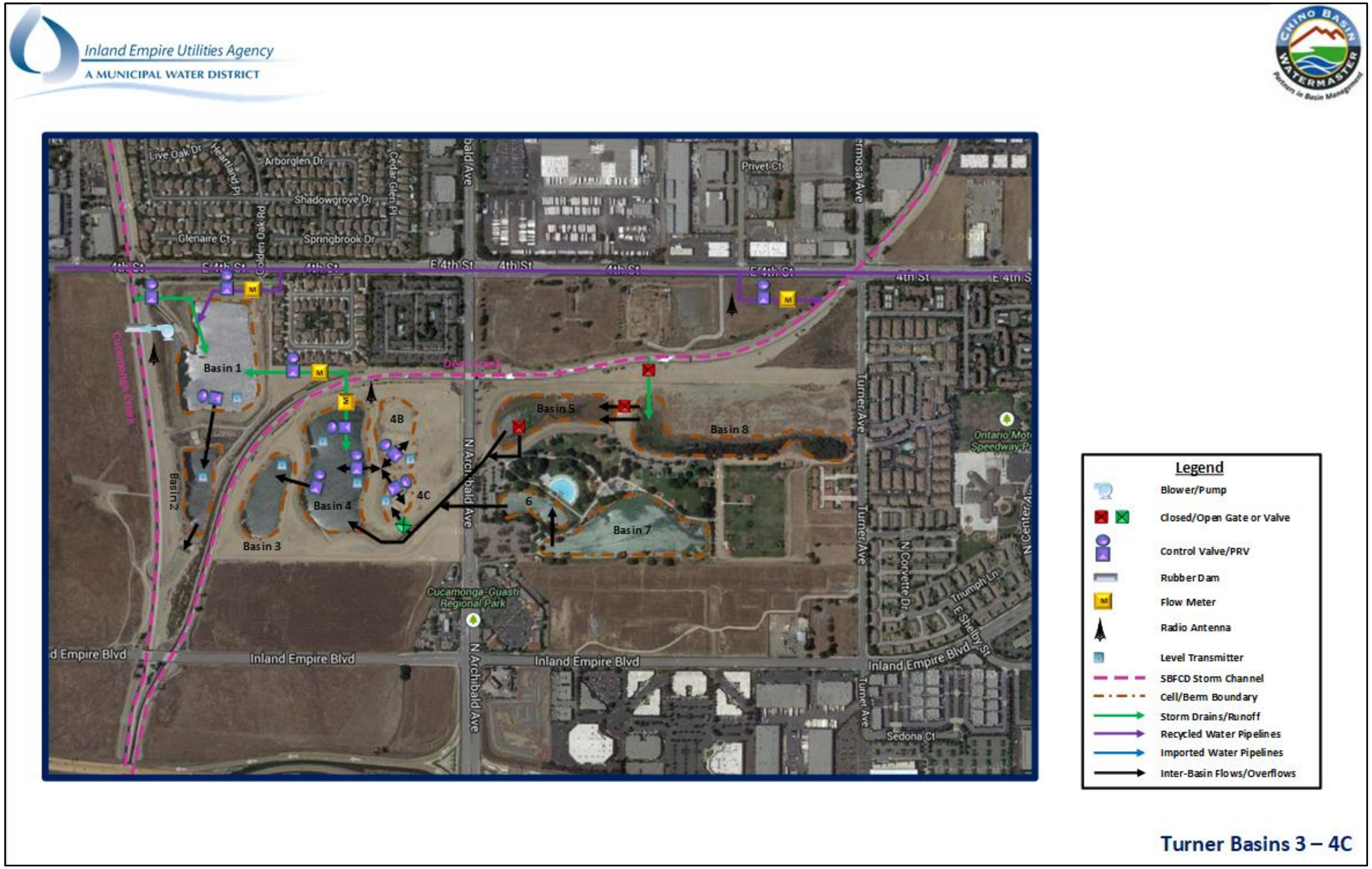

Figure 7-52 Turner Basin 3 & 4C (GWR) Process Flow

7.9.16.1 Asset Summary- Turner Basin 3 & 4C (GWR)

Table 7-147
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Turner Basins 3 – 4C	Tuner Basin consists of multiple basins, Basins 1 through 8. The north 350' of Turner Basin 1 is owned by the Chino Basin Water Conservation District, while the remaining portions of Turner Basin 1&2 and Turner 3&4 and 8 are owned by the San Bernardino County Flood Control District (SBCFCD). Turner 5, 6, and 7 are owned by the San Bernardino County Parks Department. Turner 3&4 are located in the City of Ontario, south of 4th Street and west of Archibald Avenue. Turner 4 consists of three basins namely 4A, 4B, and 4C.			
Turner Basin 3	Turner Basin 3 receives flows from Turner Basin 4. Turner Basin 3 has an approximate size of 3.6 acres and an approximate sidewall depth of 25 feet from a floor elevation of 961' to the Deer Creek overflow structure at an elevation of 986' equating to 50.3 AF of storage. Turner Basin 3 has a level transmitter	Basin 3	Area: 3.6 acres Depth: 25 ft Volume: 50.3 AF	
Turner Basin 4	Turner Basin 4A receives stormwater, imported water, and recycled water from Deer Creek and flows from Turner Basins 5 and 8. Turner Basin 4A has an approximate size of 8.9 acres and an approximate sidewall depth of 28 feet from a floor elevation of 962' to the Turner Basin 3 overflow structure at an elevation of 990' equating to 154.4 AF of storage. Turner Basin 4A includes a 30" automated sluice gate for the basin inlet from Deer Creek, a 30" automated sluice gate for discharge to Turner Basin 3, a 30" automated sluice gate for discharge to Turner Basin 4B & 4C, staff gauges, and a level transmitter.	Basin 4 Gates	Area: 8.9 acres Depth: 28 ft Volume: 154.4 AF 3 - 30" sluice gates	 Automated
Turner Basin 4B&C	Turner Basins 4B & 4C receive flows from Turner Basin 4A. Turner Basins 4B & 4C. Turner Basins 4B & 4C include a 30" automated sluice gate for the basin inlet from Turner Basin 4 and a level transmitter. Turner Basin 4C also has a 24" manual gate for inlet from an unlined channel from Turner Basin 5.	Gates	2 - 30" sluice gates 24" sluice gate	Automated Manual
Deer Creek Recycled Water Turnout	The Deer Creek Recycled Water Turnout is located at the intersection of 4th Street and Turner Avenue. The turnout includes a 10" Cla-Val flow control valve, flow meter, and pressure transmitter to provided recycled water to Deer Creek. Recycled Water discharged in the lined creek can then be conveyed to Turner 1 and/or Turner 3&4 for groundwater recharge. The turnout is designed for flow rates ranging from 300 GPM to 3,500 GPM.	Flow Control Valve	10" @ 300–3,500 GPM	w/ flow meter
CB 11 MWD Imported Water Turnout	The CB 11 MWD Imported Water Turnout is located near the intersection of Banyan Street and Haven Avenue in the City of Rancho Cucamonga. The turnout includes a 24" vertical sleeve type, motor operated control valve, a 24" Venturi meter, and a pressure transmitter to provided imported water to the Haven Avenue storm drain, which leads to Deer Creek. The turnout is designed for flow rates ranging from 1,500 GPM to 18,000 GPM	Flow Control Valve	24" @ 1,500-18,000 24" Venturi Flow Meter	GPM
Electrical and Instrumentation Systems	**Electrical System** • Turner Basins 3&4 – The electrical energy to Turner Basins 3&4 is obtained from the local electrical grid (SCE) through a meter on Archibald Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Deer Creek Recycled Water Turnout – The electrical energy to power the Deer Creek Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on Turner Avenue The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. • Imported Water Turnout – The electrical energy to power the CB 11 MWD Imported Water Turnout is obtained from the local electrical grid (SCE) through a meter on Banyan Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** • Turner Basins 3&4 – Local control wiring for flow, valve position, and basin levels for Turner Basins 3&4 are fed back local PLC. The local PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access. • Deer Creek Recycled Water Turnout – Local control wiring for flow and valve position are fed back to a local control panel and PLC. The turnout has a 9dB yagi antenna that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access. • Imported Water Turnout – Local control wiring for flow and valve position are fed back to a local PLC. The turnout PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: N/A RTU: 2 unit PLC: 2 unit I/O Hub: 2 unit Radio: 2 unit	

7.9.16.2 Asset Ratings - Turner Basin 3 & 4C (GWR)

Table 7-148
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Turner Basin 3					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Turner Basin 4					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
Turner Basin 4 B & C					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
Deer Creek Recycled Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
CB 11 MWD Imported Water Turnout					
Flow Control Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.16.3 Planned Projects - Turner Basin 3 & 4C (GWR)

There are no current or future projects for Turner Basin 3 & 4C.

7.9.17 Upland Basin (GWR)

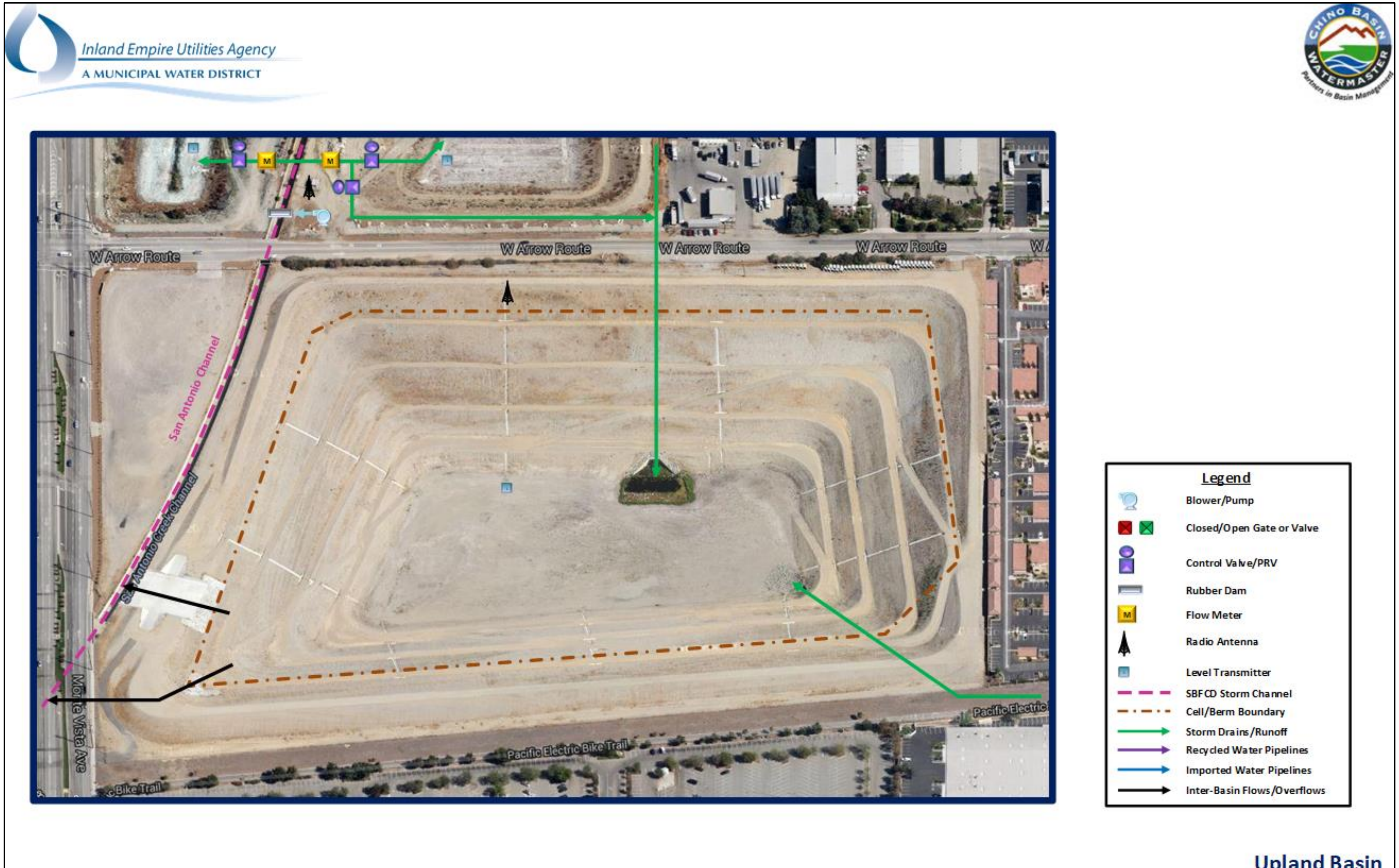

Figure 7-53 Upland Basin (GWR) Process Flow

7.9.17.1 Asset Summary- Upland Basin (GWR)

Table 7-149
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Upland Basin	Upland Basin is owned by the City of Upland and is located near the intersection of Monte Vista Avenue and Arrow Route. Upland Basin receives stormwater and imports water from the San Antonio Channel and stormwater from a local storm drain system. Upland Basin has an approximate size of 24.8 acres and an approximate sidewall depth of 65 feet from a floor elevation of 1145' to the San Antonio Channel overflow structure elevation of 1210' equating to 847.5 AF of storage. Upland Basin includes a 48" automated sluice gate with associated flow meter for inlet flow from the San Antonio Channel and a level transmitter. IEUA contributed to construction and has an agreement for use of 200 AF storage in Upland Basin	Upland Basin Gates	Area: 24.8 acres Depth: 59 ft Volume: 694.9 AF 48" sluice gate	 Automated
San Antonio Channel Rubber Dam	A 4' tall rubber dam has been installed into the San Antonio Channel to divert stormwater and imported water to Upland and College Heights Basins from 1240' to 1244'. The San Antonio Channel Rubber Dam includes a control house with a stilling well, 2.5 hp/154scfm air blower, and a 2" motor-controlled vent valve.	Rubber Dam Blower Vent Valve	4 ft tall rubber dam 2.5 hp 154 scfm 2" ball valve	
Electrical and Instrumentation Systems	**Electrical System** The College Heights Basin, Upland Basin, and the San Antonio Channel Rubber Dam share a common electrical system housed in the San Antonio Channel Rubber Dam control house. The electrical energy to power College Heights Basin, Upland Basin, and the San Antonio Channel Rubber Dam is obtained from the local electrical grid (SCE) through a meter on Arrow Route. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** The College Heights Basin, Upland Basin, and the San Antonio Channel Rubber Dam share a common instrumentation and control system housed in the San Antonio Channel Rubber Dam control house. Local control wiring for gate positions, basin levels, flows, rubber dam pressures, stilling well levels, and vent valve position are fed back to a local PLC. The PLC has a radio antenna that transmits control data to the Almond Repeater and then to RP-1 to the	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 1 unit RTU: N/A PLC: 1 unit I/O Hub: 2 units Radio: 1 unit	

7.9.17.2 Asset Ratings - Upland Basin (GWR)

Table 7-150
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Upland Basin					
Basin	3	NA	3	NA	No issues requiring immediate attention.
Gates	3	NA	3	NA	No issues requiring immediate attention.
San Antonio Channel Rubber Dam					
Rubber Dam	3	NA	3	NA	The rubber dams were inspected in January 2015 and were determined to have a remaining lifespan of 5 years remaining. A potential project is needed within the next 5 years to replace the rubber dams.
Blower	3	NA	3	NA	No issues requiring immediate attention.
Vent Valve	3	NA	3	NA	No issues requiring immediate attention.
Electrical & Instrumentation	3	NA	3	NA	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.17.3 Planned Projects - Upland Basin (GWR)

There are no current or future projects for Upland Basin.

7.9.18 Victoria Basin (GWR)

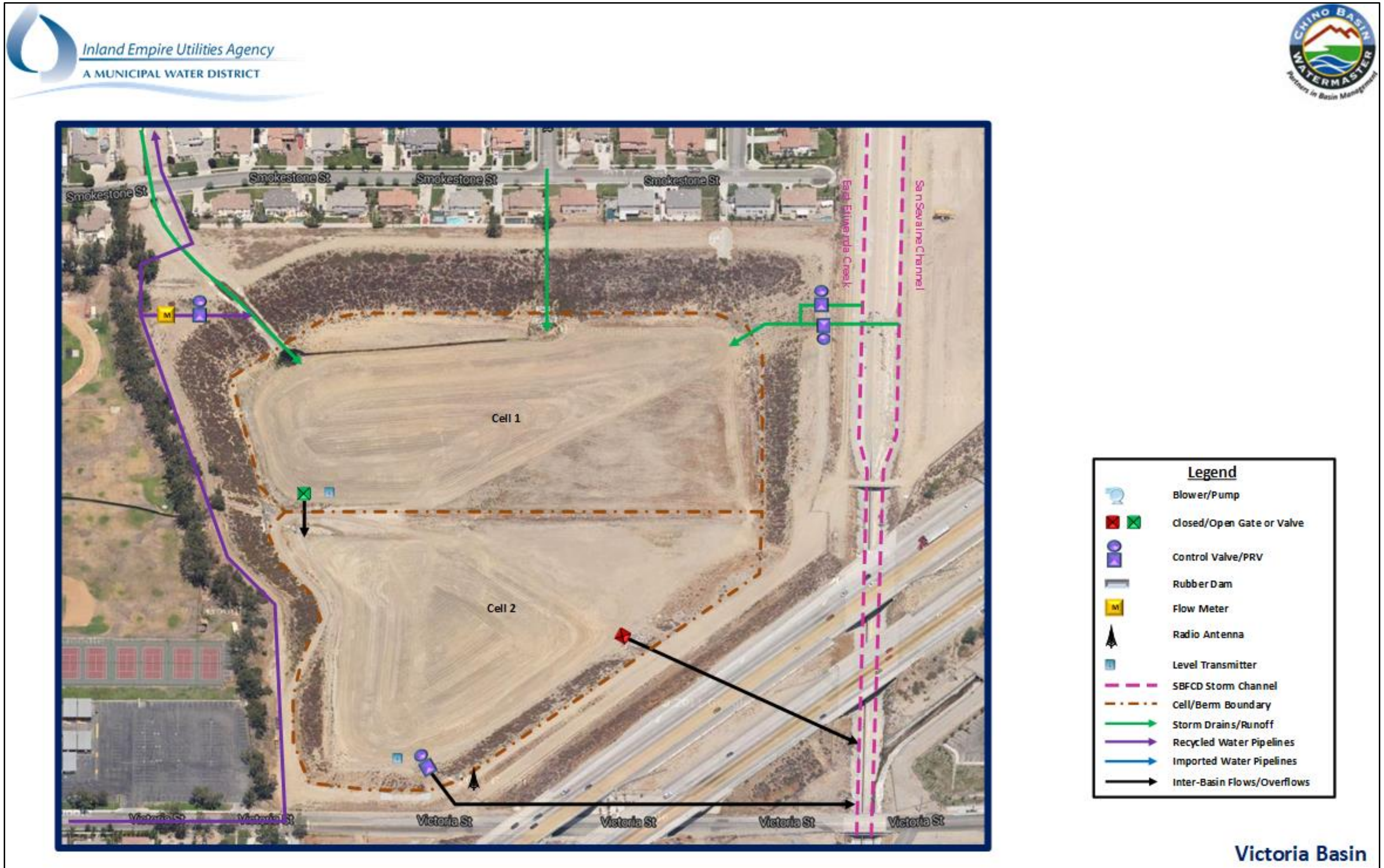

Figure 7-54 Victoria Basin (GWR) Process Flow

7.9.18.1 Asset Summary- Victoria Basin (GWR)

Table 7-151
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Victoria Basin	Victoria Basin is owned by the San Bernardino County Flood Control District (SBCFCD) and is located in the City of Rancho Cucamonga, near the intersection of Victoria Avenue and the 15 Freeway. Victoria Basin is comprised of two cells, North Cell and South Cell.			
Victoria Basin Cell 1	Victoria Basin North Cell receives stormwater and imported water from the San Sevaine Channel and Etiwanda Creek, recycled water from the Victoria Basin Recycled Water Turnout, and stormwater from a local storm drain system. Victoria North Cell has an approximate size of 9.6 acres and an approximate sidewall depth of 4 feet from a floor elevation of 1314’ to the Victoria Basin South Cell overflow structure at an elevation of 1318’ equating to 28.5 AF of storage. Victoria Basin North Cell includes two 48” automated sluice gates for inlet into the basin from the San Sevaine Channel and East Etiwanda Creek, a 36” automated sluice gate for discharge to Victoria Basin South Cell, and a level transmitter.	Basin Cell 1 Gates	Area: 9.6 acres Depth: 4 ft Volume: 28.5 AF 2 - 48” sluice gate 36” sluice gate	 Automated Automated
Victoria Basin Cell 2	Victoria Basin South Cell receives flow from Victoria Basin North Cell. Victoria Basin South Cell has an approximate size of 7.8 acres and an approximate sidewall depth of 9 feet from a floor elevation of 1309’ to the San Sevaine Channel overflow structure at an elevation of 1318’ equating to 47.1 AF of storage. Victoria Basin South Cell includes a 36” automated sluice gate for discharge to the San Sevaine Channel and a level transmitter.	Basin Cell 2 Gates	Area: 7.8 acres Depth: 9 ft Volume: 47.1 AF 36” sluice gate	 Automated
Victoria Basin Recycled Water Turnout	The Victoria Basin Recycled Water Turnout is located on the west side of Victoria Basin North Cell. The turnout includes an 8” Cla-Val flow control valve, flow meter, and pressure transmitter to provided recycled water to the groundwater recharge basin. The turnout is designed for flow rates ranging from 200 GPM to 3,000 GPM	Flow Control Valve	8” @ 200–3,000 GPM 8” mag-meter	
Electrical and Instrumentation Systems	**Electrical System** The electrical energy to power Victoria Basin and the Victoria Basin Recycled Water Turnout is obtained from the local electrical grid (SCE) through a meter on Victoria Street. The system utilizes 120v power, does not have any transformers, and does not have emergency power generation. **Instrumentation and Control System** Local control wiring for flow, valve position, gate positions, and basin levels are fed back to a local control panel and PLC, which transmits control data to the Victoria Basin Main RTU. The Victoria Basin Main RTU has a radio that transmits control data to RP-4, which routes the information to RP-1 to the GWR workstation server for control and remote access.	Electrical Instrumentation	Utility Voltage: 120 v Transformers: N/A HMI: 1 unit RTU: 1 unit PLC: 1 unit I/O Hub: 2 units Radio: 3 units	

7.9.18.2 Asset Ratings - Victoria Basin (GWR)

Table 7-152
Asset Rating

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Victoria Basin Cell 1					
Basin	3		3		No issues that require immediate attention.
Gates	3		3		No issues that require immediate attention.
Victoria Basin Cell 2					
Basin	3		3		No issues that require immediate attention.
Gates	3		3		No issues that require immediate attention.
Victoria Basin Recycled Water Turnout					
Flow Control Valve	3		3		No issues that require immediate attention.
Electrical & Instrumentation	3		3		No issues that require immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.9.18.3 Planned Projects - Victoria Basin (GWR)

There are no current or future projects for Victoria Basin.

End of System Summary

7.10 Inland Empire Regional Composting Facility – Asset Management System Summary

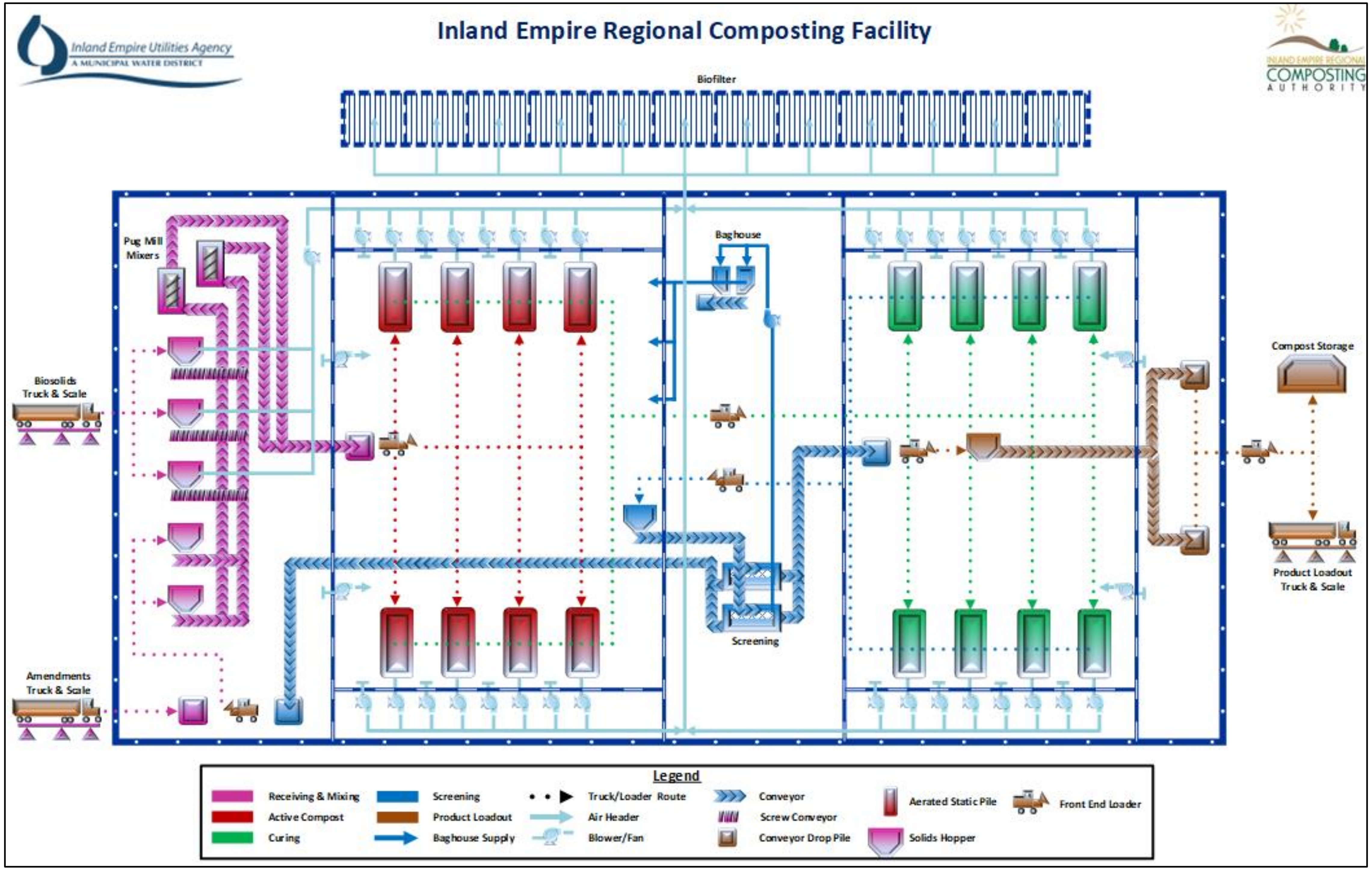

Figure 7-55 Inland Empire Regional Composting Facility (IERCF)

Table 7-153
Inland Empire Regional Composting Facility – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)				
						2025	2026	2027	2028	2029
1	RA23003	IERCF Active Hopper Replacement	IERCF Active Hopper has reached the end of its useful life and needs to be fully replaced	20200	CC	$300,000				
2	RA25003	IERCF Server Replacement	IERCF Servers have reached the end of its useful life and need to be replaced	20200	CC	$200,000				
3	RA25004	VFD Replacement	Replace current IERCF VFDs as they reach the end of useful life and are no longer supported	20200	CC	$125,000				
4	RA25005	Fire System PIV Replacement	Post Indicator Valves (PIVs) are no longer functioning and consequently do not pass annual fire inspection requirements. Requires replacing the old PIV system with a new PIV and alarm system	20200	CC	$150,000				
5	RA25006	Roof Fan Replacement	Replace IERCF supply fans that assist with ventilation since they are corroded and inefficient. Stainless steel impellors are recommended to ensure longer useful life	20200	CC	$150,000				
6	RA24006	CURG Row 9 Failure	IERCF Roof truss repair to prevent further fire suppression pipe failure on Post Indicator Valve 8 in Curing Room row 9.	20200	OM	$100,000				
7	RA25008	Ventilation Pipe Jetting Repair	IERCF floor ventilation system maintenance to conform to Process to Further Reduced Pathogens regulations (PFRP)	20200	OM	$175,000				
8	RA25007	Biofilter Replacement	Replace IERCF Biofilter (Wood chips, Bac-Tee Plates) as it has come to its end of useful life and to maintain compliance with operating permits (SCAQMD rule 1133.2)	20200	CC	$1,500,000	$1,500,000			
9	RA25002	RCA Capital Replacement	Funding to replace small auxiliary support equipment and stationary equipment capital replacement	20200	CC	$500,000	$500,000	$500,000	$500,000	$500,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.10.1 Facility IERCF

7.10.1.1 Asset Summary– Facility Processes IERCF

Table 7-154
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Facility		Biosolids Amendment	600 wet tons per day 160 wet tons per day	
Biosolids Hoppers	Biosolids from Los Angeles County Sanitation District (LACSD), Inland Empire Utilities Agency, and third-party sources are transported by trucks to the Inland Empire Regional Composting Facility (IERCF). After weighing, the trucks offload the biosolids into three biosolids hoppers. Each biosolids hopper has a capacity of 55 cubic yards, five 3 hp live-bottom screws, and one 25 hp screw conveyor	Biosolids Hoppers	3 @ 55 cy 5 @ 3 hp live bottom 1 @ 25 hp sc. conv.	 ea. hop. ea. hop.
Amendment Hoppers	Amendments from outside sources are transported to IERCF by truck and stored along the western wall of the active compost process area. These amendments are mixed with recycled screening material (overs) to produce specific amendment blends. Front end loaders mix the material and load it into two amendment hoppers. Each amendment hopper has a 200-ton capacity, five 3 hp live-bottom screws, and one 33-foot, 110-ton-per-hour belt conveyor powered by a 15 hp motor	Amendment Hoppers	2 @ 200 tons 5 @ 3 hp live bottom 1 @ 15 hp belt conv.	 ea. hop. ea. hop.
Pug Mill Mixers	Material from the biosolids hoppers and the amendment hoppers is conveyed by belt conveyors to two redundant pug mill mixers. The pug mill mixers blend the biosolids and amendments together to create an appropriate blend of material to begin the active compost process. Each pug mill mixer has a capacity of 225 tons per hour and is powered by a 75 hp motor.	Pug Mill Mixers	2 @ 75 hp, 225 tph	
Belt Conveyors	Belt conveyors are used to move material throughout IERCF. Nine belt conveyors allow material to be moved from receiving and mixing to active compost. Seven belt conveyors allow material to be moved from active compost through screening to curing. An additional four belt conveyors return the overs from screening to receiving and mixing. Two belt conveyors allow material to be moved from curing to product loadout	Receiving & Mixing Belt Conveyors Belt Conveyors Screening Product Loadout	1 @ 20 hp, 162 ft 1 @ 20 hp, 144 ft 1 @ 25 hp, 70 ft 1 @ 25 hp, 91 ft 1 @ 25 hp, 80 ft 1 @ 25 hp, 75 ft 1 @ 30 hp, 215 ft 1 @ 30 hp, 219 ft 1 @ 30 hp, 258 ft 2 @ 20 hp, 91', 150tph 1 @ 15 hp, 133', 150tph 2 @ 15 hp, 27', 150tph 1 @ 25 hp,157', 190tph 1 @ 25 hp, 136', 190tph 1 @ 15 hp, 32', 110tph 1 @ 15 hp, 77', 110tph 1 @ 20 hp, 172', 110tph 1 @ 30 hp, 537', 110tph 1 @ 20 hp, 135', 145tph 1 @ 15 hp, 113', 145tph	All units are 225 tons per hour (tph)
Active Compost HVAC	Supply air into the active compost process area is provided by seven 20 hp fans dedicated to receiving and mixing, nine 20 hp roof fans, and five 75 hp dedicated to the screening/baghouse. Air is exhausted from the active compost area to the biofilter by four 125 hp exhaust fans, twelve 125 hp exhaust fans, and twenty-two 30 hp process fans.	Active Compost HVAC	7 @ 20 hp, 18,250cfm 9 @ 20 hp, 23,000cfm 5 @ 75 hp, 25,650cfm 4 @ 125 hp, 35,500cfm 12 @ 125 hp, 28400cfm 22 @ 30 hp, 4,500 cfm	R&M Fan Roof Fan BH Fan Ex. Fan Ex. Fan Pr. Fan

Table 7-154
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Curing HVAC	Supply air into the curing process area is provided by four 25 hp fans pulling from product loadout, five 10 hp roof fans, and fourteen 20 hp process fans. Air is exhausted from the active compost area to the biofilter by four 150 hp exhaust fans and two 125 hp exhaust fans	Curing HVAC	4 @ 25 hp, 20,500 cfm 5 @ 10 hp, 18,000 cfm 14 @ 20 hp, 2,850 cfm 4 @ 150 hp, 42,250 cfm 2 @ 125 hp, 35,000 cfm	PL Fan Roof Fan Pr. Fan Ex. Fan Ex. Fan
Trommel Screens	After the material has been treated in the active compost and curing processes, it is placed into a hopper and conveyed to two Trommel screens to remove the overs. The fine material is conveyed to product loadout as the final compost product and the overs are conveyed back to receiving and mixing to be recycled back into the amendments. Each Trommel screen has 3/8-inch spacing and a 400-cubic-yard-per-hour production capacity and is powered by a 150 hp motor.	Trommel Screens	2 @ 3/8-inch, 150 hp, 400 cyh	
Baghouse	The Baghouse filters the air from the Trommel screens and the screenings process area and returns filtered air back to the active compost process area. The Baghouse is supplied by five 75 hp, 25,650 cfm fans and removes particulate matter from the air and conveys it to a storage area located in the screenings process area.	Baghouse	2 @ 65,000 cfm 5 @ 75 hp, 25,650 cfm	Filters Fans
Biofilter	The biofilter is required to treat all air leaving IERCF to remove ammonia and VOCs. The biofilter is sized to treat 813,200 cfm of air, consists of twelve 135’ x 87’ cells, an irrigation system, and an inlet air humidification system. Full replacement of the biofilter media in all 12 cells, recurring every 5 years. Turnover of existing biofilter media and replenishment of material as necessary, annually (not done on years of a full media replacement).	Biofilter Humidification System	813,200 cfm 1,000 nozzles	
Rolling Rock and Tent Storage	Front end loaders move material to the amendment hoppers and then are used as the primary equipment to transfer material throughout the composting process: active composting, curing, screening, product loadout, cleanup, and for biofilter media turnover and replacement activity. Product compost is stored in a 30,000 cubic yard storage tent	Rolling Stock Composting Loader Product Loader Storage Tent	 4 @ Model 744 3 @ Model 644 30,000 cu.yd.	 John Deere John Deere Capacity

7.10.1.2 Asset Ratings – Facility Processes IERCF

Table 7-155
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Biosolids Hoppers	2	3	2	2	No issues requiring immediate attention. Project RA23003 will fully replace the IERCF Active Hopper as it has reached the end of its useful life.
Amendment Hoppers	3	3	2	2	Modified the hardened steel floor so material does not bridge, but wearing frequently. No project needed at this time.
Pug Mill Mixers	4	3	2	3	Only one redundant paddle mixer and has been operating since ~2007. A replacement may be needed in the near future. The floor of the trough is repaired frequently. Installing ceramic coating on floor to reduce repair frequency. No project needed at this time.
Receiving & Mixing Belt Conveyors	2	3	2	3	Belt #11 has no redundancy. Spare parts are stored onsite to make repairs when needed. No project needed at this time.
Screening Belt Conveyors	2	3	2	3	Spare parts are stored onsite to make repairs when needed. Impractical to build a fully redundant system. No project needed at this time
Active Compost HVAC	4	4	3	3	Roof supply fans (4) have poor access and the supports are corroded. A potential project is needed to address this issue. In addition, the process fans (4) have no redundancy. Spare parts are stored onsite for Maintenance to make repairs when needed. Impractical to build a fully redundant system. No project needed at this time. Project RA25006 will replace IERCF supply fans that are inefficient and have corroded with stainless steel impellors.
Curing HVAC	4	4	3	3	A temporary fix in place for leaks along the screening's air duct. Loadout axial fans are in poor condition, and in-house repairs are being made to improve reliability. Project RA17001 has modified the foul-air-rectangular-transition air duct running north/south through screenings. Project RA25008 will install a floor ventilation system maintenance to conform to Process to Further Reduced Pathogens regulations (PFRP).
Trommel Screens	4	3	3	4	Converted both screens to move the same size product. Redundancy will be lost if the process is returned to two different sized products. Screen No.1 was rebuilt in 2014/15, but there is uncertainty about the cost in a future rebuild. No project needed at this time.
Baghouse	3	2	2	2	North of the building's centerline was retrofitted in 2014/15. The southern portion needs to be modified from rectangular duct to round duct. A project has been approved to upgrade this section of duct but is not in the TYCIP.
Biofilter	2	2	2	2	No issues requiring immediate attention. Project RA25007 will replace biofilters as they have come to the end of life and to maintain compliance with operating permits.
Rolling Stock & Storage Tent	4	3	3	3	Two of the Model 744 units have 13,000 hours of operation. Replacement is recommended after 15,000 hours. In addition, the tent was installed in 2010 and has a ten-year warranty. A potential project is needed to replace the front end loaders, but a project is not needed at this time for tent replacement

* Ratings as defined in Appendix A; General System Assets

7.10.1.3 Planned Projects – Facility Processes IERCF

Table 7-156
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29
RA23003	IERCF Active Hopper Replacement	IERCF Active Hopper has reached the end of its useful life and needs to be fully replaced					
RA25005	Fire System PIV Replacement	Post Indicator Valves (PIVs) are no longer functioning and consequently do not pass annual fire inspection requirements. Requires replacing the old PIV system with a new PIV and alarm system					
RA25006	Roof Fan Replacement	Replace IERCF supply fans that assist with ventilation since they are corroded and inefficient. Stainless steel impellors are recommended to ensure longer useful life					
RA24006	CURG Row 9 Failure	IERCF Roof truss repair to prevent further fire suppression pipe failure on Post Indicator Valve 8 in Curing Room row 9.					
RA25008	Ventilation Pipe Jetting Repair	IERCF floor ventilation system maintenance to conform to Process to Further Reduced Pathogens regulations (PFRP)					
RA25007	Biofilter Replacement	Replace IERCF Biofilter (Wood chips, Bac-Tee Plates) as it has come to the end of life and to maintain compliance with operating permits (SCAQMD rule 1133.2)					
RA25002	RCA Capital Replacement	Funding to replace small auxiliary support equipment and stationary equipment capital replacement					

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.10.2 Auxiliary Systems IERCF

7.10.2.1 Asset Summary– Auxiliary Systems IERCF

Table 7-157
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Plant Drain	The plant drain collects sewer from the truck scale house and administration building, wash-down water from the truck cleaning area and process areas, and excess irrigation and condensate from the biofilter system. The plant drain system consists of five submersible pump stations: north process area, south process area, biofilter west, biofilter east, and center aisle duct. These five pump stations pump to the plant drain pump station. The plant drain pump station pumps to either the inlet of RP-4 or to the Non-Reclaimable Waste System (NRWS). Currently, the system is being pumped to the NRWS		3 @ 620 GPM 20 hp	VFD
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE) and from onsite energy generation (solar and an emergency generator). The solar assets are owned and operated by private firms as part of power purchase agreements. The electrical feed from the grid is composed of dual 12 kV feeders from RP-4 to the IERCF north and south electrical rooms, where transformers and switchgear are located to distribute electrical energy throughout the facility. A diesel emergency generator is used in the event of a power failure. A 2.0 MW generator is located on the southeast corner of the IERCF property and can supply power to meet maximum daytime production of the facility. An extensive lighting system is needed to illuminate the indoor facility. Lighting units are located in each of the process areas, on equipment walls, and on the building support columns.	Utility Voltage Transformers Switchgear Distribution Generator Mounted Lighting	12 kV 4 @ 12 kV to 480 V 5 @ 480 V to 120 V 4 @ 12 kV 2 @ 12 kV 8 @ 480 V 1 @ 2,000 kW 2,937 Bhp 345 units	 MCCs Process
Utility Water System	Utility water is used throughout the facility for irrigation, biofilter irrigation and humidification, truck wash-down, and general cleaning purposes. The system is supplied by the 1299 pressure zone from a connection on 6th Street. The piping consists of several isolation valves and point-of-use connections.	Pipelines Valves	8-inch PVC @ 3,750 GPM 6-inch PVC @ 2,100 GPM 5 units	 Main Line
Potable Water System	Potable water is used throughout the plant for restrooms, cooling, and more. The system is supplied from two service connections on 6th Street from the City of Rancho Cucamonga. IERCF also has an independent fire suppression system with two connections on 6th Street.	Pipelines	2 @ 2.5-inch DI @ 350 GPM 10-inch DI @ 5,800 GPM	Potable Fire
Instrumentation and Control System	An extensive array of instruments is used to monitor and control the processes at IERCF. Nearly all the processes at the plant are observed and controlled from a centralized SCADA system. Control wiring and local panels are provided at individual pieces of equipment, and control wiring transmits data to a redundant PLC system located in the main control building. Fiber optic cable is then run to RP-4 for remote access.	HMI Workstation RTU PLC I/O Hub Radio Transmitter	4 units N/A 4 units 6 units 1 unit	 RP-4
Yard Piping	A substantial network of pipes exists mainly for the auxiliary systems. The material, sizes, and service conditions of these pipes vary widely.	Structure Administration Warehouse Operations	 30.0 ft X 62.5 ft 67.7 ft X 60.0 ft 52.9 ft X 59.6 ft	

7.10.2.2 Asset Ratings - Auxiliary Systems IERCF

Table 7-158
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Plant Drain	3	2	2	2	No issues requiring immediate attention.
Electrical System	2	2	3	3	No issues requiring immediate attention.
Utility Water System	3	3	3	3	No issues requiring immediate attention.
Potable Water System	4	3	3	3	A potential project will retrofit the fire sprinkler system pipelines and Victaulic fittings.
Instrumentation and Control System	3	2	3	3	No issues requiring immediate attention.
Yard Piping	3	3	3	3	No issues requiring immediate attention.
Structure	4	4	3	3	Additional warehouse storage space for critical equipment, office space is needed, and the conference room needs to be retrofitted and expanded to service large meetings. 3,000 sq ft of additional space is needed for the warehouse and office space, but an estimate has not been established for the conference room. A potential project is needed to address these issues. In addition, the process building's protective coating for the inner roof lining is deteriorating; the epoxy has failed, and the foam barrier is retaining moisture. The coating protects the infrastructure in the drop ceiling. A potential project is needed to address this issue.

* Ratings as defined in Appendix A; General System Assets

7.10.2.3 Planned Projects – Auxiliary Systems IERCF

Table 7-159
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29
RA25003	IERCF Server Replacement	IERCF Servers have reached the end of its useful life and need to be replaced					
RA25004	VFD Replacement	Replace current IERCF VFDs as they reach the end of useful life and are no longer supported					

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

End of System Summary

7.11 Agency Lift Stations - Asset Management System Summary

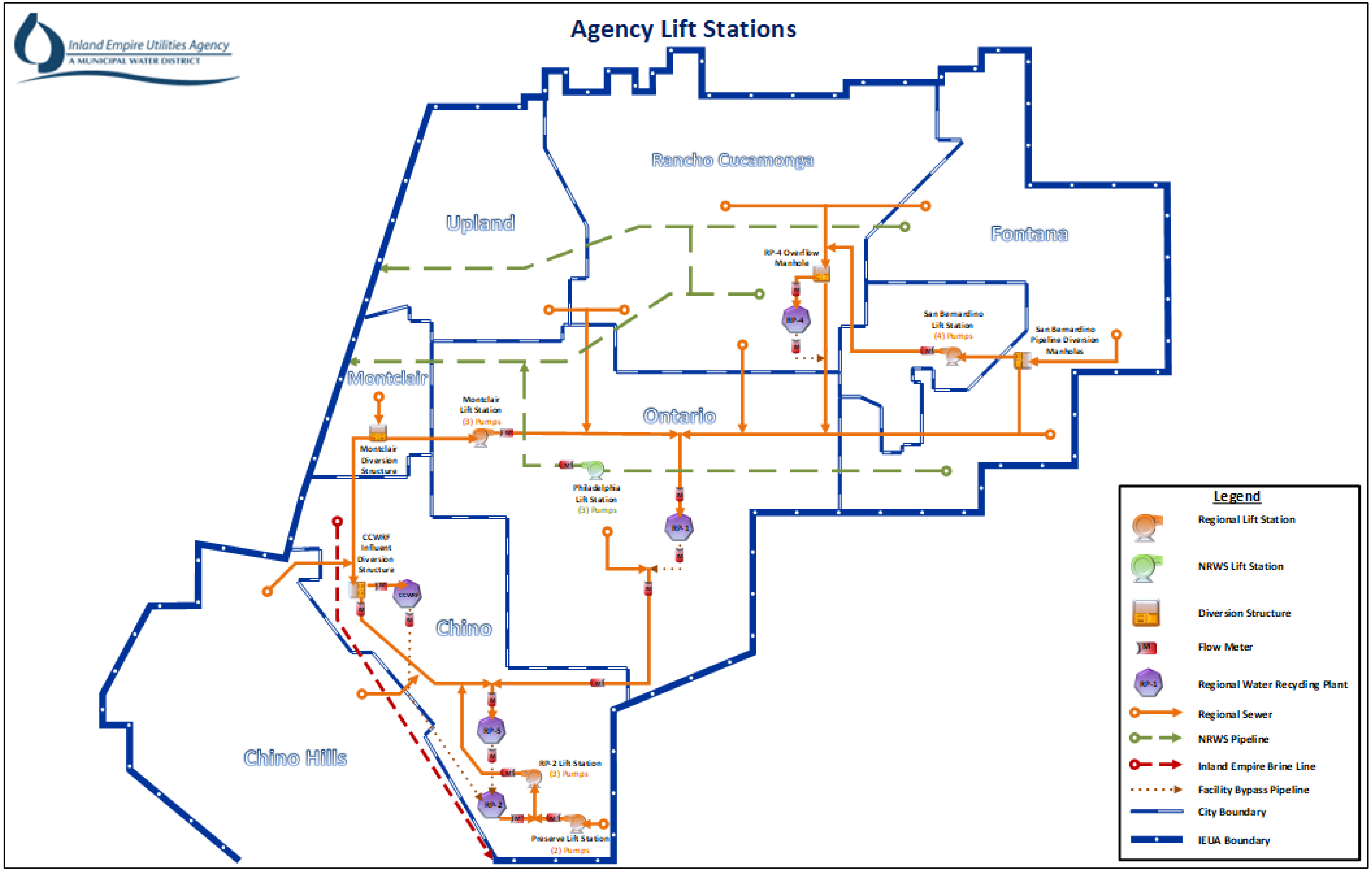

Figure 7-56 Agency Lift Stations (LS)

Table 7-160
Agency Lift Stations – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN23066	Preserve Lift Station Improvements	Relocate non-clog pump #1, install a new chopper pump at pump #1's location, add VFD and electrical upgrades, supported by consultant-led design and IEUA internal resources.	RO	OM	$717,000										$717,000
2	EN19025	Regional Force Main Improvements	Build new clean-out vaults every 500 feet on San Bernardino Avenue Lift Station's force main; Montclair scope deferred for a future force main project.	RC	CC	$500,000										$500,000
3	EN25071	San Bernardino Lift Station Containment	Evaluate site for containment or diversion strategies during backups, spills, or failures at the San Bernardino Lift Station.	RC	CC	$150,000	$250,000									$400,000
4	EN23036	San Bernardino Ave LS Reliability Improv	Install chopper pumps, wet well hatch, manway, pave around pumps, add a 20-foot apron, and hire a consultant for design/construction, improving O&M reliability.	RO	CC	$500,000	$2,300,000									$2,800,000
5	EN23002	Philadelphia Lift Station Force Main Imp	Construct two NRW force mains from Philadelphia Lift Station to the Northern NRWS trunk, including manholes every 500 feet; overflow reservoir lining removed from scope.	NC	CC	$750,000	$13,300,000	$6,950,000								$21,000,000
6	EN22020	Philadelphia Lift Station Pump Upgrades	Replace existing pumps with higher-efficiency, non-clog dry pit submersibles, upgrading VFDs and matching Montclair's design for easier maintenance and improved performance.	NC	CC	$500,000	$3,000,000	$2,500,000								$6,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.11.1 Montclair Lift Station (LS) – Asset Management System Summary

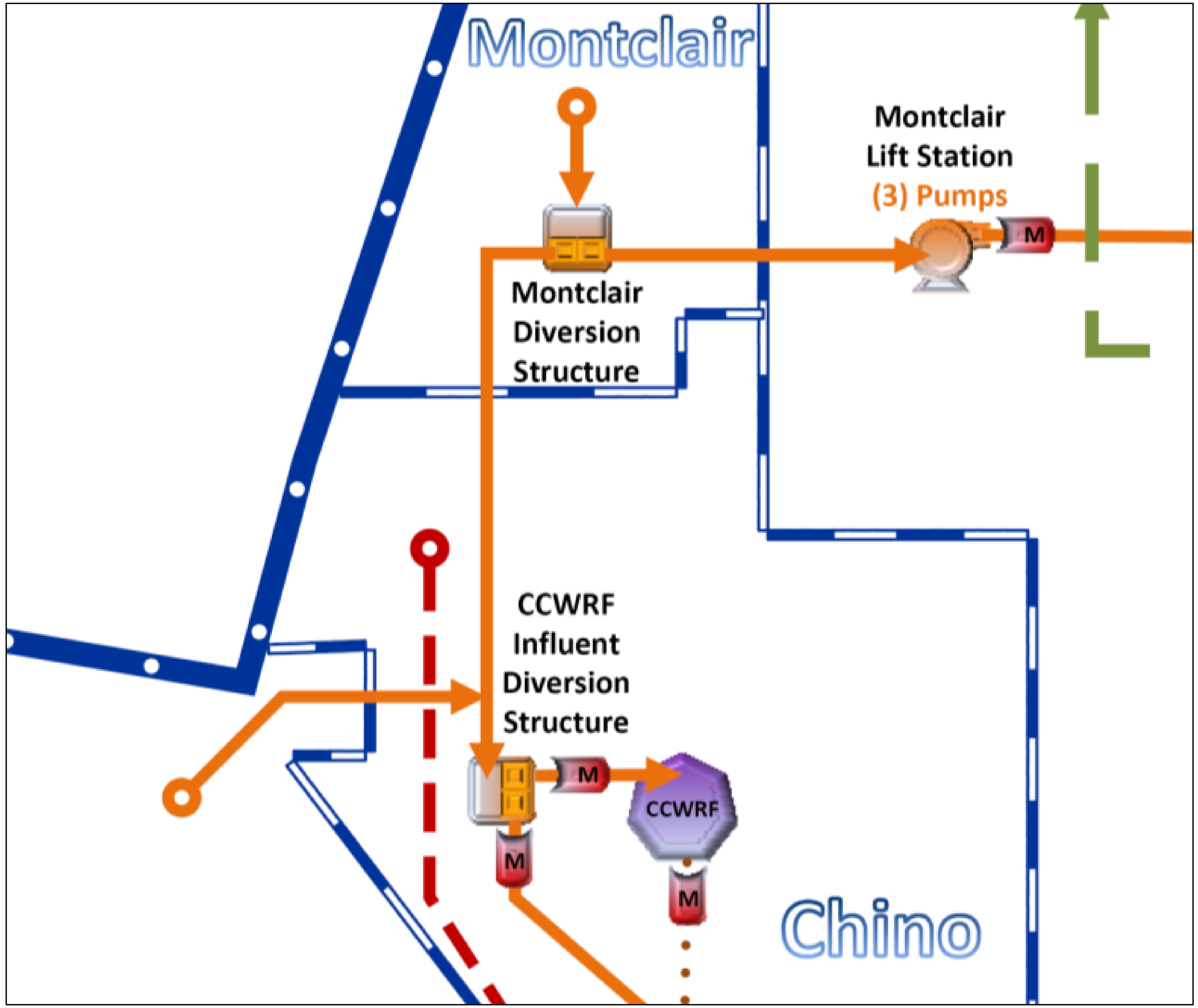

Figure 7-57 Montclair Lift Station (LS) Process Flow

7.11.1.1 Asset Summary– Montclair Lift Station (LS)

Table 7-161
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Montclair Lift Station			5.69 MGD	
Pump System	The Montclair lift station conveys flows collected from the Montclair service area as well as a portion of Ontario. The pump station consists of a small circular wet well and three lift pumps.	Pipelines Pump Station Valves	18-inch 3,950 GPM 3 @ 2,990 GPM 85 hp 7 units	
Electrical System	The electrical energy to power the lift station is obtained from the local electrical grid (SCE). The electrical feed from the grid is composed of a 12 kV feeder to the transformer and switch gear. A diesel emergency generator is used in the event of a power failure. One generator is located inside the pump station and supplies power to the facility in the event of a utility outage.	Utility Voltage Transformers Switchgear Distribution Generator Mounted Lighting	12 kV 12 kV to 480 V 480 V 480 V 1 @ 250 kW 398 Bhp 17 units	
Potable Water System	Potable water is supplied to the station for supply at several hose bibs. The water system formerly supplied seal water to the old pumps.	Backflow Devices Valves	1 units 2 units @ 2-inch	
Instrumentation and Control System	All aspects of the pump station operations are monitored and controlled by the instrumentation and control system. The control system includes redundant PLC and communication modules for maximum reliability.	HMI Workstation PLC I/O Hub Radio Transmitter	1 Ea. 2 Ea. (Redundant Pair) 1 Ea. 1 Ea.	

7.11.1.2 Asset Ratings – Montclair Lift Station (LS)

Table 7-162
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Pump System	2	2	2	2	No issues requiring immediate attention.
Electrical System	3	3	3	4	Very short power blips have caused issues with the VFDs with properly restarting backup generator automatically, a future project will address this issue.
Potable Water System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	2	2	2	2	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.11.1.3 Planned Projects – Montclair Lift Station (LS)

There are no current or future projects for Montclair Lift Station.

7.11.2Philadelphia Lift Station (LS)

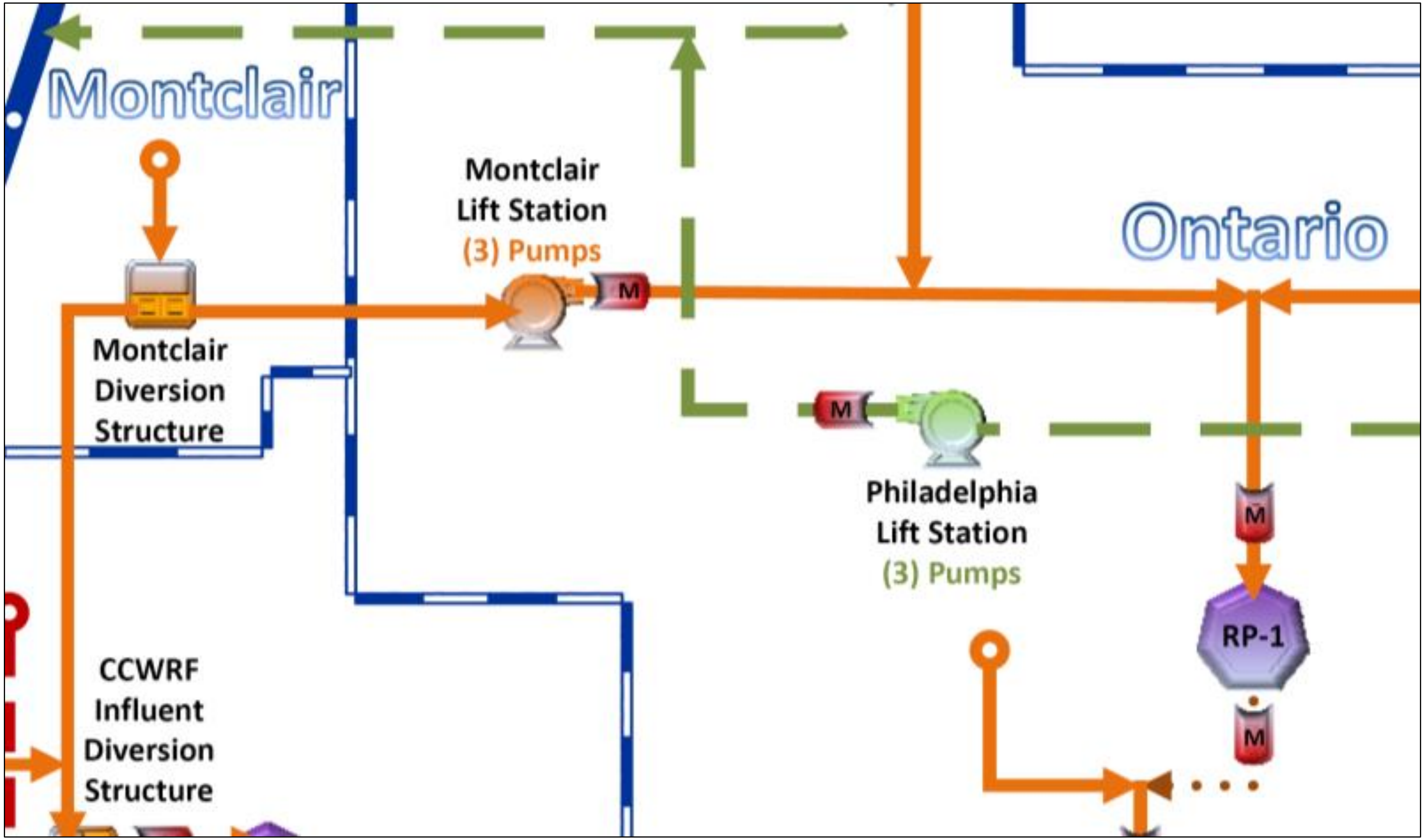

Figure 7-58 Philadelphia Lift Station (LS) Process Flow

7.11.2.1 Asset Summary– Philadelphia Lift Station (LS)

Table 7-163
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Philadelphia Lift Station			5.2 MGD	
Pump System	The Philadelphia lift station conveys non-reclaimable waste (NRW) That is collected from the northern half of the Agency service area to Los Angeles County. The lift station includes three pumps: two of which are variable speed and one that is constant speed. Flows are conveyed through two parallel force mains that are about 2.6 miles long, with a total head increase of about 110 feet. In case of emergency and to accommodate maintenance and construction activity, an engine-driven pump is also available. The pump connections are located outdoors, and the pump can be trailered away off-site when it is not needed.	Pipelines Pump Station Wet Well Emergency Lagoon Valves	12-inch 1,150 GPM 18-inch 2,800 GPM 3 @ 1,800 GPM 100 hp 80,000 Gallons 1 @ 5 MG unlined 13 units	
Electrical System	The electrical energy to power the treatment facility is obtained from the local electrical grid (SCE). The electrical feed from the grid is 480 V. A diesel emergency generator is used in a power failure. The generator is located in the pump station and supplies power to all the pump station systems.	Utility Voltage Switchgear Distribution Generator Mounted Lighting	480 V 480 V 480 V 1 @ 250 kW 335 Bhp 19 units	
Utility Water	Utility water is used for pump seal water. The water is delivered by the 1050 zone recycled water pipeline in Philadelphia Avenue.	Pipelines Valves	< 2 in. diameter 1 units	
Potable Water System	Potable water is supplied to the lift station for the restroom. Potable water can also be used as a backup for pump seal water in a recycled-water outage. The potable and recycled water is isolated by use of a removable pipe spool to prevent cross connections.	Backflow Devices Valves	1 units 3 units	
Instrumentation and Control System	The lift station is fully automated and monitored. Wet well level, force main discharge pressures, force main flows, and pump speeds are all controlled and monitored by a PLC. The lift station can also be monitored and controlled remotely.	HMI Workstation PLC I/O Hub Radio Transmitter	1 units 1 units 1 units 1 units	
Chemical Injection System	The lift station includes storage and injection systems for ferric chloride. The chemical can be injected to both force mains. Ferric chloride is used to control sulfides in the sewer system, reducing the effects of corrosion and odors. The injection pumps are started and stopped automatically.	Chemical Pumps Storage Tank	2 units 1 @ 13,000 Gallons	Diaphragm

7.11.2.2 Asset Ratings – Philadelphia Lift Station (LS)

Table 7-164
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Pump System	4	4	4	4	Pumps are old and noisy. Request for non-clog pump similar to ones at Montclair Lift Station. Pump #2 every few years the motor bearings have issues and require replacement. Project EN22020 Philadelphia Lift Station Pump Upgrades will address this issue.
Force Mains	4	4	4	4	The condition of the 12-inch and 18-inch force mains has not been inspected for the entire length of pipe. Both force mains are approaching 50 years in age and approaching the end of its service life. Project EN23002 will address the force main issues, as well as provide inspection manholes for future condition assessment.
Electrical System	3	3	3	3	No issues requiring immediate attention.
Utility Water System	3	3	3	3	No issues requiring immediate attention.
Potable Water System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.
Chemical Injection	4	4	4	4	Issues with insufficient discharge pressure from chemical injection pump. Line pressure is 60+ psi but discharge pressure from chemical injection pump can drop to 50 psi.

* Ratings as defined in Appendix A; General System Assets

7.11.2.3 Planned Projects – Philadelphia Lift Station (LS)

Table 7-165
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23002	Philadelphia Lift Station Force Main Imp	Design and construct 2 new non-reclaimable waste force main pipelines (18") from the Philadelphia Lift station to a new junction structure on the Norther NRWS Center Trunk at Campus Avenue with clean out manholes at 500 ft intervals										
EN22020	Philadelphia Lift Station Pump Upgrades	Replace pumps with newer style non-clog dry pit submersible pumps similar to Montclair LS. This would provide higher efficiency and make it easier to service and maintain. VFD's will need to be upgraded as well.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.11.3San Bernardino Avenue Lift Station (LS)

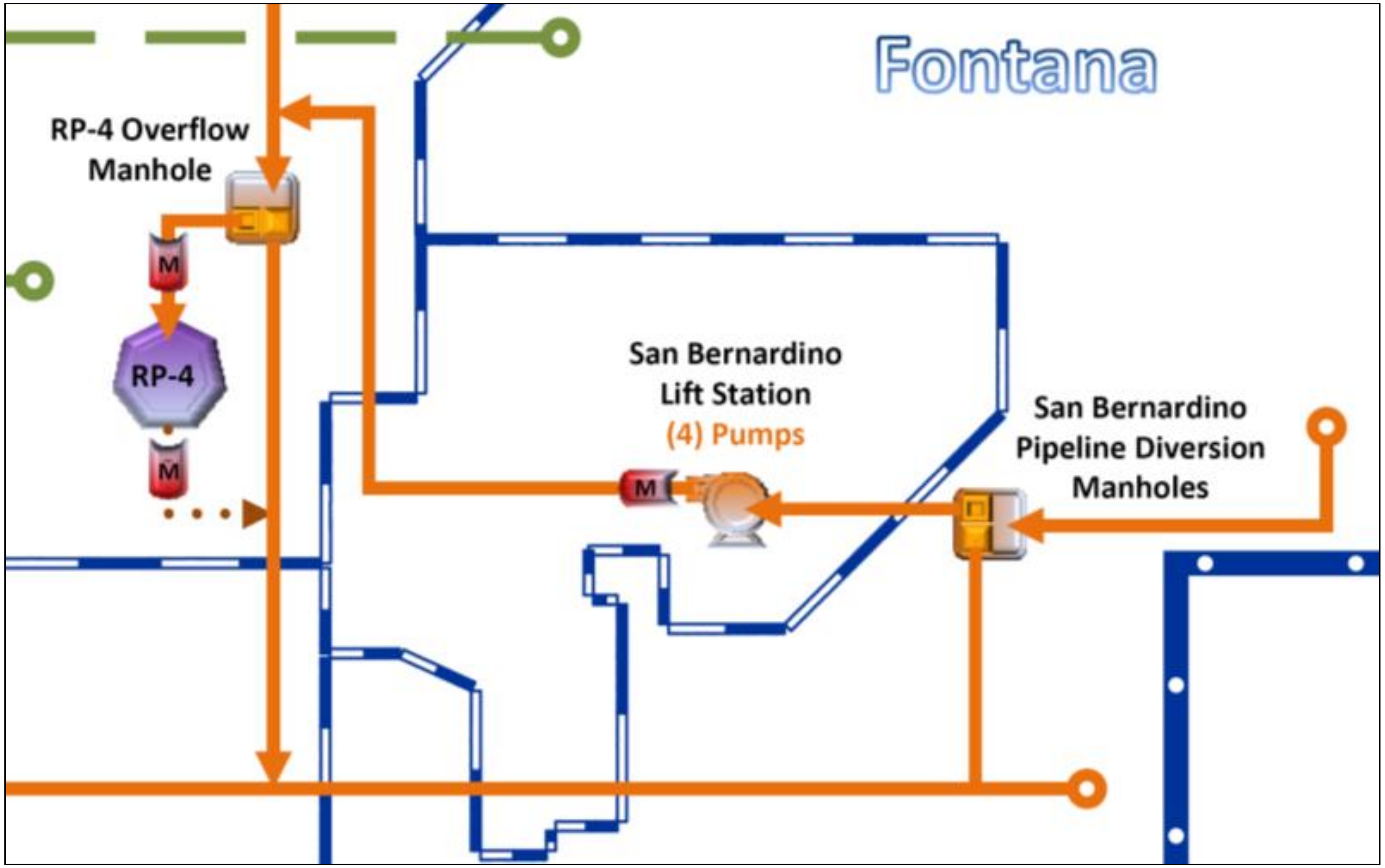

Figure 7-59 San Bernardino Avenue Lift Station (LS) Process Flow

7.11.3.1 Asset Summary– San Bernardino Avenue Lift Station (LS)

Table 7-166
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
San Bernardino Lift Station			7 MGD	
Pump System	The San Bernardino Avenue lift station conveys flows from the Fontana area to Regional Plant No. 4. The flows are lifted about 60 feet through about 1.4 miles of force main. To maintain acceptable flow velocities, two force mains of different diameters were provided. Four vertical-turbine pumps are provided with provisions for a future pump to be added to the wet well.	Pipelines Pump Station Valves Seal Water Tank Seal Water Pumps	30-inch 5,902 GPM 24-inch 13,890 GPM 2 @ 3,300 GPM 50 hp 2 @ 6,945 GPM 125 hp 7 units 1 @ 2,900 Gal. 1 @ 50 Gal. 2 Ea.	 Secondary Primary
Electrical System	The electrical energy to power the lift station is obtained from the local electrical grid (SCE) and from onsite energy generation (emergency generator). The electrical feed from the grid is composed of a 12 kV feeder to a transformer and switch gear to distribute electrical energy throughout the facility. A diesel emergency generator is used during an event of a power failure. The generator is located adjacent to the electrical room for the lift station.	Utility Voltage Transformers Switchgear Distribution Generator Mounted Lighting	12 kV 12 kV to 480 V 480 V 480 V 1 @ 500 kW 757 Bhp 19 units	
Potable Water System	Potable water is supplied to the site to be used as seal water for the lift pumps. The water is supplied to a storage tank by an air gap, and the tank in turn supplies the seal-water pump system.	Backflow Devices Valves	1 units 2 units	
Instrumentation and Control System	The lift station includes enough instrumentation and a PLC to allow for full control of the lift station remotely. The PLC and I/O include full redundancy for added reliability.	HMI Workstation RTU PLC I/O Hub	1 Ea. 2 Ea. 2 Ea. 2 Ea.	

7.11.3.2 Asset Ratings – San Bernardino Avenue Lift Station (LS)

Table 7-167
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Pump System	4	3	4	4	OPS is experiencing persistent ragging issues. EN23036 would address this issue by replacing all 4 non-clog vertical turbine to chopper pumps. However, OPS is seeking an immediate and short-term fix by replacing at least one of the four pumps to Chopper. Project EN25071 Assess the San Bernardino Lift Station site for containment and/or diversion options in the event of a backup, spill, or failure.
Electrical System	3	3	3	3	No issues requiring immediate attention.
Potable Water System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.11.3.3 Planned Projects – San Bernardino Avenue Lift Station (LS)

Table 7-168
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN25071	San Bernardino Lift Station Containment	Assess the San Bernardino Lift Station site for containment and/or diversion options in the event of a backup, spill, or failure.										
EN23036	San Bernardino Ave LS Reliability Improv	Installation of chopper pumps and access hatch plus manway access at the lift station wet well near the low point. Retain a consulting engineering firm for design and construction services. Pave the existing gravel area around pumps and install a 20-ft wide apron at the entry, which will remove part of the existing fence.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.11.4 Regional Plant No.2 (RP-2) Lift Station (LS)

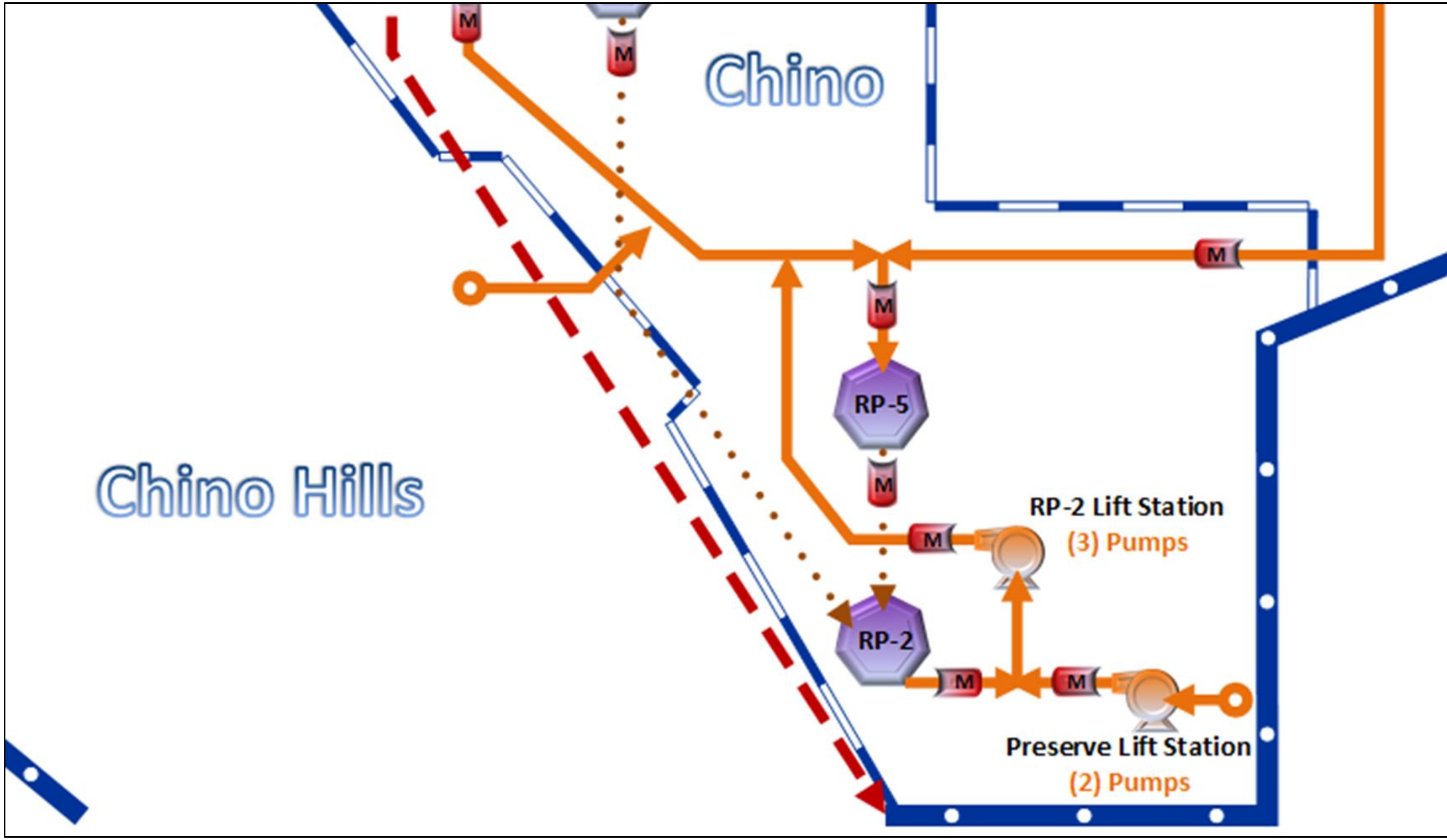

Figure 7-60 Regional Plant No.2 (RP-2) Lift Station (LS) Process Flow

7.11.4.1 Asset Summary– Regional Plant No.2 (RP-2) Lift Station (LS)

Table 7-169
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
RP-2 Lift Station			9.5 MGD	
Pump System	The RP-2 lift station collects raw sewage from the Mountain Avenue interceptor, CIW sewer, Butterfield force main, and the recycle flows from the solids treatment facilities at RP-2, and discharges through a 24-inch pipeline to the RP-5 headworks. The lift station is located on the RP-2 treatment plant site.	Pipelines Pump Station Valves	24-inch 6,600 GPM 3 @ 3,300 GPM 100 hp 6 units	
Electrical System	The electrical energy to power the lift station is fed from the RP-2 treatment plant distribution system. A separate backup generator for the lift station has been provided if utility power or the RP-2 distribution systems fail.	Utility Voltage Transformers Switchgear Distribution Generator Mounted Lighting	12 kV 12 kV to 480 V 480 V 480 V 1 @ 300 kW 443 Bhp > 2 units	
Instrumentation and Control System	The lift station includes instrumentation and automation to allow full remote control of the facility.	HMI Workstation RTU PLC I/O Hub	1 Ea. 1 Ea. 1 Ea. 1 Ea.	

7.11.4.2 Asset Ratings – Regional Plant No.2 (RP-2) Lift Station (LS)

Table 7-170
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Pump System	3	3	3	3	Due to the location and elevation of the RP-2 Lift Station, it will need to be relocated when the RP-5 Solids Treatment Facility is constructed to replace the RP-2 Solids Treatment Facility. The new lift station will be addressed by project EN19006
Electrical System	3	3	3	3	No issues requiring immediate attention.
Instrumentation and Control System	3	3	3	3	No issues requiring immediate attention.

* Ratings as defined in Appendix A; General System Assets

7.11.4.3 Planned Projects – Regional Plant No.2 (RP-2) Lift Station (LS)

There are no current or future projects for Regional Plant No.2 (RP-2) Lift Station.

7.11.5 Preserve Lift Station (LS)

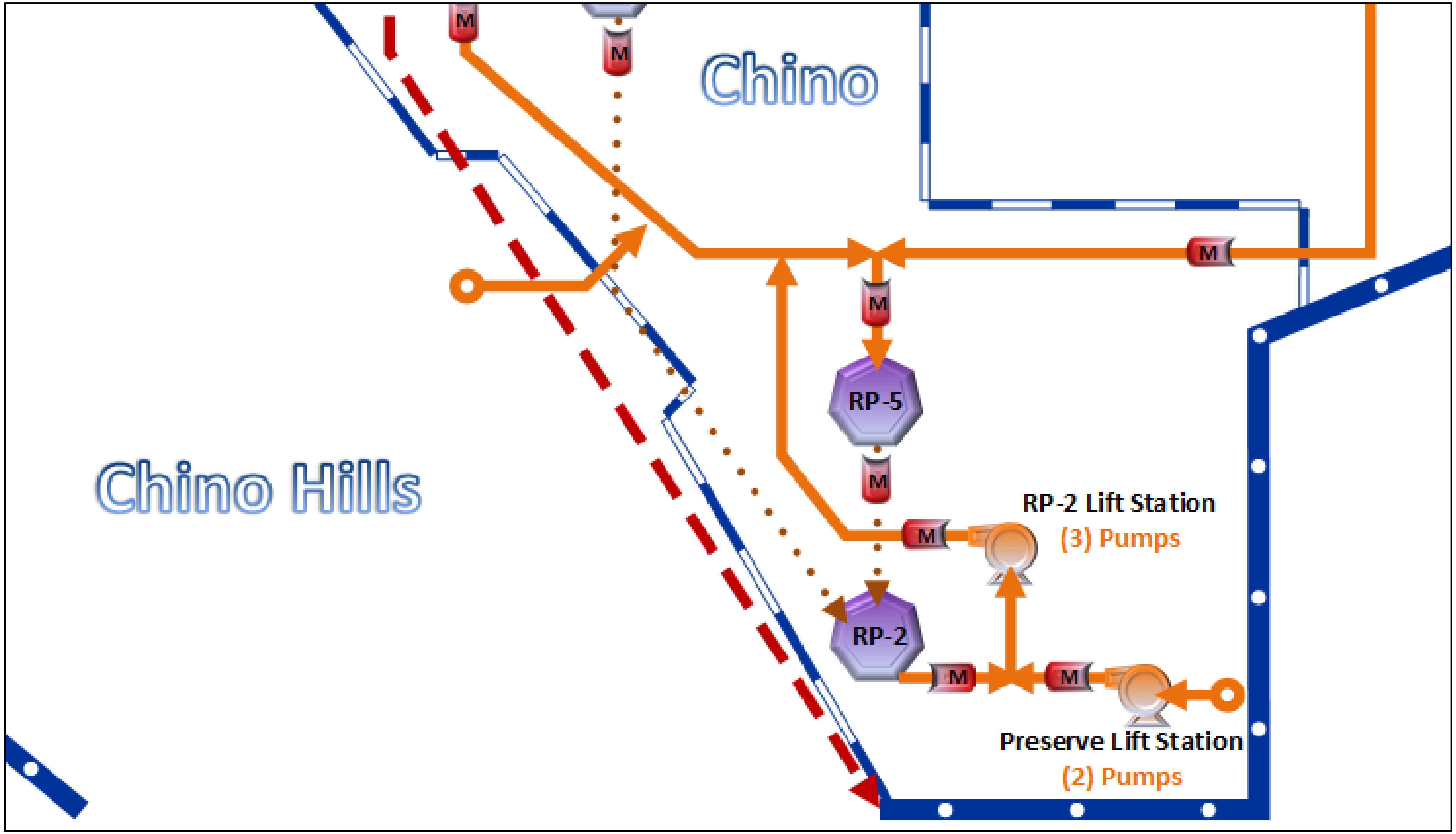

Figure 7-61 Preserve Lift Station (LS) Process Flow

7.11.5.1 Asset Summary– Preserve Lift Station (LS)

Table 7-171
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Preserve Lift Station	The Preserve Lift Stations handles flows from the Preserve residential and commercial development as well as the discharge flows from the California Institution for Women (CIW). This pump station is designed to pump raw unscreened wastewater to the existing Chino Interceptor Sewer at Kimball Ave. and Mill Creek Avenue. The pump station has two different sized parallel force mains a 16-inch and an 18-inch force main. This pump station is owned by the City of Chino but operated by IEUA. The pump station is operated at constant speed in a fill and draw mode based on the water levels in the wet well. When the water reaches a certain level, a single pump will start and draw the water level down to the pump shut-off level. If the water level continues to rise with one pump operating, a second pump will start up.		1 MGD	
Pump System		Pipelines Pump Station	16-inch 2 @ 1890 GPM 85 hp	
Electrical System		Utility Voltage Transformers Distribution	12 kV 12 kV to 480 V 480 V	
Instrumentation and Control System		Control Panel	1 Ea.	

7.11.5.2 Asset Ratings – Preserve Lift Station (LS)

Table 7-172
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Pump System	3	2	4	4	The system had issues with properly removing the rags and debris built up in the wet well. Project EN23066 installed a chopper pump in pump location no. 1 along with a new VFD which will be used as part of a cleaning cycle to draw down the wet well and remove most of the rags and debris from the wet well.
Electrical System	2	2	2	2	No issues requiring immediate attention.
Instrumentation and Control System	2	2	4	2	The control system allows for only local control and has no alarm capabilities. A cleaning cycle will need to be programmed once the new chopper pump is installed in pump no.1's location through project EN23066.

* Ratings as defined in Appendix A; General System Assets

7.11.5.3 Planned Projects – Preserve Lift Station (LS)

Table 7-173
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN23066	Preserve Lift Station Improvements	Installation of a chopper pump recommended for redundancy to support current MGD and support mechanical accessories plus electrical and control equipment needed to operate third pump										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

<u>End of System Summary</u>

7.12 Regional Sewer System – Asset Management System Summary

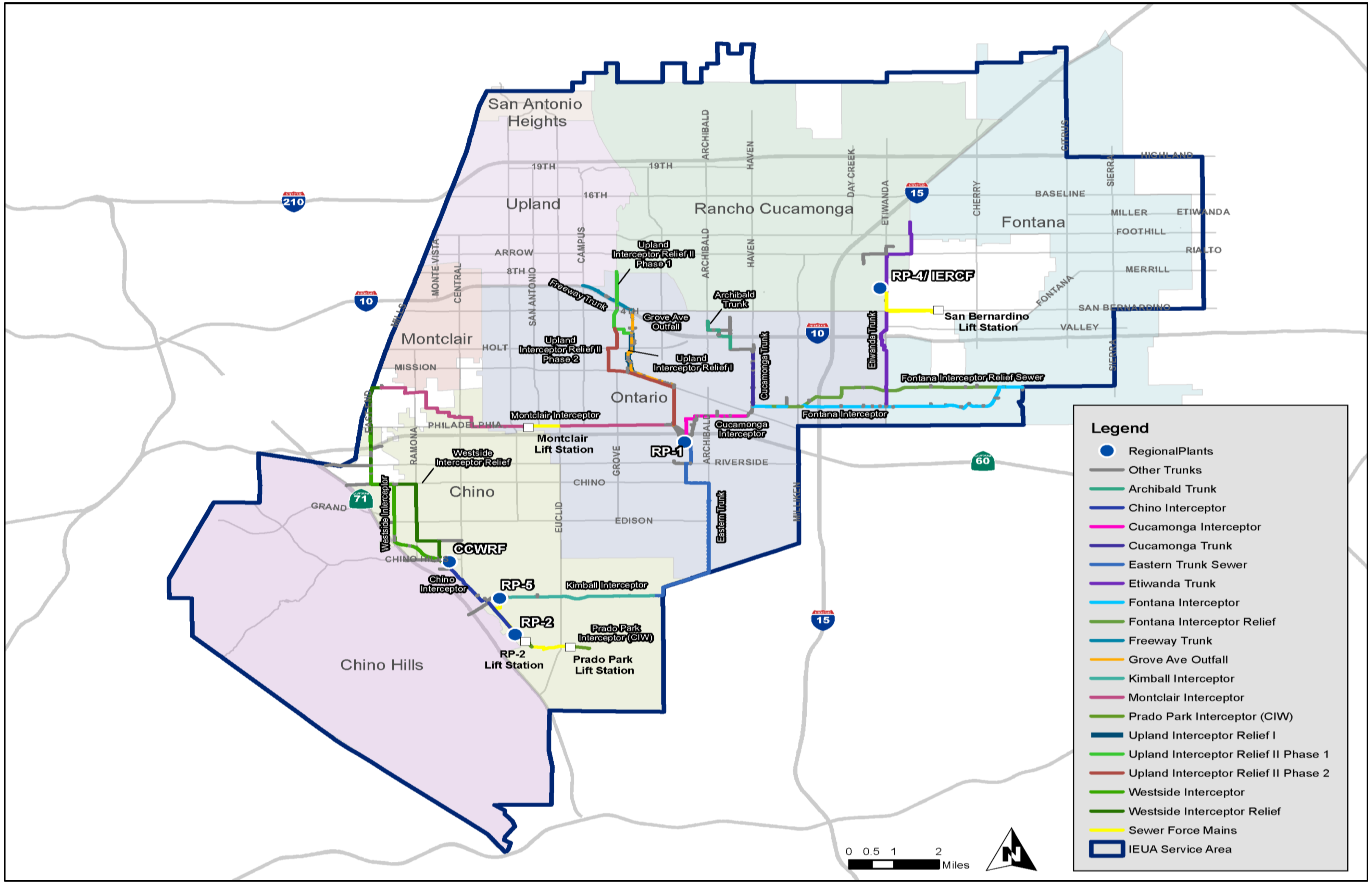

Figure 7-62 Regional Sewer System (RSS)

Table 7-174
Regional Sewer System – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN24023	RP-3 Regional Sewer Diversion Structure Rehab	Full rehabilitation of RP-3 diversion structure due to H2S corrosion. Scope includes new gate valves, composite manhole covers, replacement of existing lining, sandblasting concrete, and repairing of structural damage	RO	CC	$635,000										$635,000
2	EN25065	Caltrans IEUA Collections Pad Construction	Provides access to IEUA collection facilities, which have been impacted as part of Caltrans I-10 Improvements Project.	RO	OM	$140,000										$140,000
3	EN21045	Montclair Force Main Improvements	Design and construct 4,000 LF of new pipeline, requiring about one year of design, 1.5 years of construction, and likely Caltrans permitting.	RC	CC	$4,903,000	$4,800,000									$9,703,000
4	EN24059	Chino Hills Trunk-014 Sewer Siphon CIPP Repair	Perform flow monitoring and CIPP repair of Chino Hills Trunk Sewer Siphon at manhole CHT-014.	RO	CC	$1,000,000	$150,000									$1,150,000
5	EN24052	Sewer Improvements at Union Pacific Crossings	Evaluation, design, permitting and construction of a slip liner for structural support at the Upland Interceptor, Grove Ave Interceptor, Etiwanda Ave, and additionally two other RR crossing sites.	RC	CC	$3,885,000	$15,000									$3,900,000
6	EN25067	Caltrans IEUA Collections Sewer I-10 Relocation	Perform planning and capacity stud to relocate sewer access from the I-10 freeway to University Blvd.	RC	CC	$75,000	$130,000	$1,580,000	$200,000							$1,985,000
7	EN25041	Collection System Upgrades FY 24/25	Repair and replacement of manhole frames and covers with composite frames and cover.	RC	CC	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$5,000,000
8	EN25042	Regional Capital PDR FY 24/25	Preliminary Design Reports for new project requests from O&M	RC	CC	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$3,000,000
9	EN25047	Regional Capital Connections	Master project to create subproject for Regional capital connection costs, consultant fees, and service charges.	RC	OM	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$160,000	$1,600,000
10	EN25055	Regional Sewer Hydraulic Modeling FY 24/25	Updating the Regional Sewer flow model to determine impacts of future connections.	RO	OM	$80,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$440,000
11	FM25011	Recurring Regional Sewer Manhole Procurement	Purchase of composite manhole frames and covers on an annual basis as overhead for emergency repairs, replacement stock, and for contractors	RO	OM	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,000,000

Table 7-174
Regional Sewer System – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
12	EN26003	Regional System Siphon Barrel Gate Improvements	Replacement of siphon stop gates and seals for stop logs at various siphons along the Regional Sewer System.	RC	CC		$325,000	$610,000								$935,000
13	EN27007	Montclair Diversion Structure Enhancements	Enhancement project to replace gates and upgrade the communication equipment, HMI screen at the MOVs for RP-1 and CCWRF	RC	CC			$250,000	$250,000							$500,000
14	EN27006	Chino Interceptor Diversion Pipe Repair	Rehabilitation of deteriorated pipelines both upstream and downstream of RP-5	RC	CC			$500,000	$2,100,000	$500,000						$3,100,000
15	EN28005	Cucamonga Interceptor Pipe Repair	CIPP rehabilitation of deteriorated pipe located upstream of RP-1	RC	CC				$400,000	$750,000						$1,150,000
16	EN25010	RSS - Collection System Pipe Rehabilitation and Lining	Cure in Place Pipe (CIPP) rehabilitation of both the Regional Sewer System (RSS) and Brine Sewer System (BSS).	RO	CC					$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$6,000,000
17	EN31002	Riverside Drive Trunk Pipe Repair	CIPP rehabilitation of 2651 feet of deteriorated sewer pipe.	RC	CC							$1,000,000	$1,850,000	$1,400,000		$4,250,000
18	EN31001	Freeway Trunk Pipe Repair	CIPP rehabilitation of 3719 feet of deteriorated sewer pipe.	RC	CC							$1,000,000	$4,000,000	$4,000,000	$4,000,000	$13,000,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:
CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.12.1 Northern Regional Sewer System (RSS)

7.12.1.1 Asset Summary– Northern Regional Sewer System (RSS)

System	Process Summary	Design Capacity (Dry Weather Average)	Notes
Archibald Trunk	18,776 LF of pipeline from Archibald Ave. and Inland Empire Blvd. to Haven Ave. and Francis St, consisting of 742 LF of 54-inch piping, 2,549 LF of 36-inch piping, 5,000 LF of 30-inch piping, 1,707 LF of 24-inch piping, 917 LF of 20-inch piping, and 7,860 LF of 18-inch piping.	54-inch – 62 MGD 36-inch – 18.1 MGD 30-inch – 21.5 MGD 24-inch – 11.9 MGD 20-inch – 8.3 MGD 18-inch – 7.4 MGD	3.1 ft/s 2.9 ft/s 2.0 ft/s 2.3 ft/s 6.0 ft/s 6.0 ft/s
Cucamonga Interceptor Relief	10,043 LF of RCP pipeline from Haven Ave. to RP-1 on Cedar Ave, consisting of 786 LF of 81-inch piping, 7,203 LF of 72-inch piping, 843 LF of 60-inch piping, and 1,210 LF of 54-inch piping.	81-inch – 254 MGD 72-inch – 105 MGD 60-inch – 214 MGD 54-inch – 71.8 MGD	6.2 ft/s 4.0 ft/s 6.0 ft/s 5.6 ft/s
Cucamonga Interceptor	11,382 LF of RCP pipeline from Haven Ave. to RP-1 on Cedar Ave, consisting of 208 LF of 84-inch piping, 1,310 LF of 72-inch piping, 8,255 LF of 42-inch piping, and 1,609 LF of 27-inch piping.	84-inch – 238 MGD 72-inch – 158 MGD 42-inch – 21.2 MGD 27-inch – 15.3 MGD	6.0 ft/s 5.6 ft/s 2.0 ft/s 6.0 ft/s
Cucamonga Trunk Relief	12,398 LF of RCP pipeline from 10 Fwy. to Francis St. on Hermosa Ave and Haven Ave.	39-inch – 29.5 MGD 36-inch – 34.6 MGD 33-inch – 34.0 MGD 30-inch – 29.9 MGD 27-inch – 30.4 MGD 24-inch – 23.4 MGD	4.4 ft/s 5.8 ft/s 6.0 ft/s 5.6 ft/s 6.0 ft/s 5.2 ft/s
Etiwanda Trunk	29,542 LF of VCP pipeline from Eastend Ave. to Jurupa Ave. on Etiwanda Ave, consisting of 3,596 LF of 42-inch piping, 4,882 LF of 36-inch piping, 2,056 LF of 30-inch piping, 3,049 LF of 27-inch piping, 12,157 LF of 24-inch piping, 1,761 LF of 21-inch piping, 968 LF of 15-inch piping, and 2042 LF of 12-inch piping.	42-inch – 41 MGD 36-inch – 45 MGD 30-inch – 28 MGD 27-inch – 14 MGD 24-inch – 18 MGD 21-inch – 14 MGD 18-inch – 6 MGD	3.0 ft/s 7.0 ft/s 5.0 ft/s 5.0 ft/s 7.0 ft/s 6.0 ft/s 6.0 ft/s
Fontana Interceptor	40,691 LF: 33,128 LF of pipeline from Live Oak Ave. to Haven Ave. on Marlay St. and Francis St., consisting of 5,396 LF of 39-inch piping, 7,657 LF of 36-inch piping, 13,138 LF of 33-inch piping, 4,915 LF of 21-inch piping, and 393 LF of 18-inch piping.	39-inch – 15.9 MGD 36-inch – 19.4 MGD 33-inch – 11.1 MGD 21-inch – 10.8 MGD 18-inch – 12.7 MGD	1.7 ft/s 2.1 ft/s
Fontana Interceptor Relief	36,119 LF of pipeline from Beech Ave. to Milliken Ave on Jurupa Ave, consisting of 5,187 LF of 78-inch piping, 508 LF of 72-inch piping, 12,105 LF of 66-inch piping, 3,925 LF of 54-inch piping, 1,804 LF of 48-inch piping, 977 LF of 42-inch piping, 260 LF of 36-inch piping, 5,595 LF of 30-inch piping, 2,415 LF of 27-inch piping, 260 LF of 24-inch piping, and 3,080 LF of 21-inch piping.	78-inch – 98.4 MGD 72-inch – 79.8 MGD 66-inch – 83.5 MGD 54-inch – 67.4 MGD 48-inch – 79.5 MGD	

System	Process Summary	Design Capacity (Dry Weather Average)	Notes
		42-inch – 18.6 MGD 36-inch – 17.6 MGD 30-inch – 18.3 MGD 27-inch – 23.2 MGD 21-inch – 12.3 MGD	
Freeway Trunk	6,076 LF of VCP pipeline along 10 Fwy. from 6th St. to 4th St., consisting of 74 LF of 39-inch piping, 208 LF of 33-inch piping, 2,219 LF of 27-inch piping, 3,169 LF of 18-inch piping, 166 LF of 15-inch piping, and 166 LF of 12-inch piping.	39-inch – 20.6 MGD 33-inch – 18.4 MGD 27-inch – 23.6 MGD 18-inch – 8.0 MGD 15-inch – 14.7 MGD 12-inch – 8 MGD	
Grove Avenue Outfall	22,888 LF of VCP piping from Grove Ave. and 8th St. to Cucamonga Ave. and Mission Ave. to Carlos Ave., consisting of 270 LF of 42-inch piping, 8,917 LF of 36-inch piping, 8,060 LF of 30-inch piping, 1,395 LF of 27-inch piping, 236 LF of 24-inch, 689 LF of 21-inch, and 3,318 LF of 18-inch piping.	42-inch – 21 MGD 36-inch – 34 MGD 30-inch – 31.8 MGD 27-inch – 29 MGD 24-inch – 23.6 MGD 21-inch – 9.7 MGD 18-inch – 10.4 MGD	
Grove Interceptor	4,042 LF: 3,964 LF of VCP pipeline from 8th St. to 5th St. on Grove Ave, consisting of 465 LF of 36-inch piping and 3,508 LF of 30-inch piping.	36-inch – 36.9 MGD 30-inch – 42.1 MGD	
Montclair Interceptor	41,197 LF: 37,432 LF of VCP pipeline from Roswell Ave. and Grand Ave. to RP-1 on Philadelphia St., consisting of 720 LF of 67-inch piping, 1,510 LF of 60-inch piping, 31,349 LF of 30-inch piping, 494 LF of 27-inch, 392 LF of 24-inch, 2,658 LF of 21-inch and 308 LF of 12-inch piping.	67-inch – 149 MGD 60-inch – 58 MGD 30-inch – 7 MGD 27-inch – 6.7 MGD 24-inch – 9 MGD 21-inch – 8.5 MGD	5.8 ft/s 3.6 ft/s 1.2 ft/s 1.2 ft/s 2.0 ft/s 2.5 ft/s
Turner Trunk	2,562 LF of 24-inch VCP pipeline from 4th St. to 10 Fwy. on Turner St.	24-inch – 16 MGD	6 ft/s
Upland Interceptor	10,870 LF of 30-inch VCP pipeline from Imperial Ave. and Mission Ave. to Carlos Ave. and Philadelphia Ave.	30-inch – 25.9 MGD	5.5 ft/s
Upland Interceptor Relief	19,623 LF of VCP pipeline from 4th St. to Mission Ave. on Imperial St, consisting of 2,525 Lf of 36-inch piping, 2,325 LF of 30-inch, 1,205 LF of 27-inch, 749 LF of 24-inch, 7,422 LF of 21-inch, 3,295 LF of 18-inch, and 2,044 LF of 15-inch piping.	36-inch – 31.6 MGD 30-inch – 31.5 MGD 27-inch – 16.1 MGD 24-inch – 13.1 MGD 21-inch – 15.9 MGD 18-inch – 7.4 MGD 15-inch – 5.2 MGD	5.4 ft/s 7.8 ft/s 5.9 ft/s 5.7 ft/s 7.0 ft/s 3.6 ft/s 4.3 ft/s
Montclair Lift Force Main	4,366 LF of ductile iron pipeline from Montclair Lift Station to Euclid Ave.	18-inch	
San Bern. And Etiw. Sewer Force Main			

7.12.1.2 Asset Ratings – Northern Regional Sewer System (RSS)

Table 7-175
Asset Ratings

System	Total Assets GIS		Rating Scale* 1 = Excellent; 5 = Poor	Key Issues
Archibald Trunk	Pipeline Segments (PS)	52	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. EN25067 will perform a planning and capacity study to relocate sewer access from the I-10 freeway to Inland Empire Blvd.
	Manhole (MH)	49	1	Manhole(s) were found to be in excellent condition and will need to be reinspected in 5 or more years.
Cucamonga Int. Relief	Pipeline Segments (PS)	74	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. EN24052 will evaluate, design, permit, and construct a slip liner for structural support of RSS piping at multiple railroad crossing sites.
	Manhole (MH)	83	5	At least 1 manhole was found to be failing and needs immediate attention.
Cucamonga Interceptor	Pipeline Segments (PS)	39	5	At least 1 pipeline segment was found to be failing and needs immediate attention. EN28005 will rehabilitate deteriorated pipe upstream of RP-1 with CIPP lining.
	Manhole (MH)	39	5	At least 1 manhole was found to be failing and needs immediate attention.
Cucamonga Trunk	Pipeline Segments (PS)	19	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years.
	Manhole (MH)	19	1	Manhole(s) were found to be in excellent condition and will need to be reinspected in 5 or more years.
Etiwanda Trunk	Pipeline Segments (PS)	93	2	Pipeline Segment(s) were found to be in good condition and will need to be reinspected within 3 to 5 years. EN24052 will evaluate, design, permit, and construct a slip liner for structural support of RSS piping at multiple railroad crossing sites.
	Manhole (MH)	91	4	At least 1 manhole was found to be in poor condition and will need rehabilitation in 1 to 2 years.
Fontana Interceptor	Pipeline Segments (PS)	97	2	Pipeline Segment(s) were found to be in good condition and will need to be reinspected within 3 to 5 years.
	Manhole (MH)	100	4	At least 1 manhole was found to be in poor condition and will need rehabilitation in 1 to 2 years.
Fontana Int. Relief	Pipeline Segments (PS)	89	2	Pipeline Segment(s) were found to be in good condition and will need to be reinspected within 3 to 5 years.
	Manhole (MH)	92	4	At least 1 manhole was found to be in poor condition and will need rehabilitation in 1 to 2 years.
Freeway Trunk	Pipeline Segments (PS)	32	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. EN31001 will rehabilitate 3,179 ft of pipeline with CIPP lining.
	Manhole (MH)	35	5	At least 1 manhole was found to be failing and needs immediate attention.
Grove Avenue Outfall	Pipeline Segments (PS)	66	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years.
	Manhole (MH)	68	4	At least 1 manhole was found to be in poor condition and will need rehabilitation in 1 to 2 years.
Montclair Interceptor	Pipeline Segments (PS)	88	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. EN27007 will replace gates and upgrade communication equipment including HMI screen at the MOVs for RP-1 and CCWRF.
	Manhole (MH)	90	5	At least 1 manhole was found to be failing and needs immediate attention.
Turner Trunk	Pipeline Segments (PS)	12	4	At least 1 pipeline segment was found to be in poor condition and will need rehabilitation in 1 to 2 years.
	Manhole (MH)	11	5	At least 1 manhole was found to be failing and needs immediate attention.
Upland Int. Relief I	Pipeline Segments (PS)	19	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years.

Table 7-175
Asset Ratings

System	Total Assets GIS		Rating Scale* 1 = Excellent; 5 = Poor	Key Issues
	Manhole (MH)	20	2	Manhole(s) were found to be in good condition and will need to be reinspected within 3 to 5 years.
Upland Int. Relief II Phase 1	Pipeline Segments (PS)	45	1	Pipeline Segment(s) were found to be in excellent condition and will need to be reinspected in 5 or more years. EN24052 will evaluate, design, permit, and construct a slip liner for structural support of RSS piping at multiple railroad crossing sites.
	Manhole (MH)	45	5	At least 1 manhole was found to be failing and needs immediate attention.
Upland Int. Relief II Phase 2	Pipeline Segments (PS)	55	4	At least 1 pipeline segment was found to be in poor condition and will need rehabilitation in 1 to 2 years. EN24052 will evaluate, design, permit, and construct a slip liner for structural support of RSS piping at multiple railroad crossing sites.
	Manhole (MH)	57	5	At least 1 manhole was found to be failing and needs immediate attention.
Montclair Lift Force Main	Pipeline Segments (PS)	29	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years.
	Manhole (MH)	7	5	At least 1 manhole was found to be failing and needs immediate attention.
San Bern. And Etiw. Sewer Force Main	Pipeline Segments (PS)	39	1	Pipeline Segment(s) were found to be in excellent condition and will need to be reinspected in 5 or more years.
	Manhole (MH)	N/A	1	Manhole(s) were found to be in excellent condition and will need to be reinspected in 5 or more years.

* Ratings as defined in Appendix A; Collection Systems Assets

7.12.1.3 Planned Projects – Northern Regional Sewer System (RSS)

Table 7-176
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24052	Sewer Improvements at Union Pacific Crossings	Evaluation, design, permitting and construction of a slip liner for structural support at the Upland Interceptor, Grove Ave Interceptor, Etiwanda Ave, and additionally two other RR crossing sites.										
EN21045	Montclair Force Main Improvements	The project will include the design and construction of a new pipeline of approximately 4,000 LF. The preliminary design report and the final design is expected to take one year for completion; construction is expected to take 1.5 years as Caltrans permitting will likely be required										
EN25067	Caltrans IEUA Collections Sewer I-10 Relocation	Perform planning and capacity study to relocate sewer access from the I-10 freeway to University Blvd.										
EN27007	Montclair Diversion Structure Enhancements	Enhancement project to replace gates and upgrade communication equipment, HMI screen at the MOVs for RP-1 and CCWRF										
EN28005	Cucamonga Interceptor Pipe Repair	CIPP rehabilitation of deteriorated pipe located upstream of RP-1										
EN31001	Freeway Trunk Pipe Repair	CIPP rehabilitation of 3719 feet of deteriorated sewer pipe.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.12.2 Southern Regional Sewer System (RSS)

7.12.2.1 Asset Summary– Southern Regional Sewer System (RSS)

System	Process Summary	Design Capacity (Dry Weather Average)	Notes
Chino Interceptor	16,059 LF of pipeline from CCWRF to RP-5 and RP-2, consisting of 150 LF of 54-inch piping, 1,933 LF of 42-inch piping, 6,212 LF of 30-inch piping, 1,645 LF of 27-inch piping, and 6,118 LF of 24 piping.	54” – 67.0 MGD 42” – 21.0 MGD 30” – 13.0 MGD 27” – 14.3 MGD 24” – 12.0 MGD	6.0 ft/s 1.8 ft/s 2.3 ft/s 3.3 ft/s 4.0 ft/s
Eastern Trunk Sewer	29,321 LF of pipeline from RP-1 connecting to the Kimball Interceptor at Hellman Ave., consisting of 41 LF of 81-inch piping, 30 LF of 67-inch piping, 4,964 LF of 48-inch piping, 10,766 LF of 42-inch piping, 2,246 LF of 39-inch piping, 6,387 LF of 36-inch piping, 4,783 LF of 33-inch piping, and 100 LF of 27-inch piping.	81” – 194 MGD 67” – X MGD 48” – 47 MGD 42” – 60.3 MGD 39” – 18.4 MGD 36” – 61.7 MGD 33” – 28.8 MGD 27” – 78.4 MGD	6.0 ft/s 6.3 ft/s 6.0 ft/s 6.0 ft/s 6.0 ft/s 6.0 ft/s 6.0 ft/s 6.0 ft/s
Kimball Interceptor	18,923 LF of pipeline from RP-5 east to Hellman Ave., consisting of 2,137 LF of 66-inch piping, 4,809 LF of 60-inch piping, 10,889 of 54-inch piping, and 1,087 LF of 48” piping.	66” – 70.5 MGD 60” – 83.8 MGD 54” – 52.1 MGD 48” – 39.7 MGD	4.7 ft/s 6.3 ft/s 5.2 ft/s 5.6 ft/s
Los Serranos Trunk	2,807 LF of pipeline from Pomona Rincon Rd. to El Prado Rd. There are 52 LF of 36” piping and 2,755 LF of 30” piping.	36” – 17.9 MGD 30” – 28 MGD	
Westside Interceptor	23,806 LF of pipeline from Walnut Ave. and Eastend Ave. to Chino Ave. along Pipeline and ending in CCWRF, consisting of 1,297 LF of 24” piping, 10,473 LF of 21” piping, 7,391 LF of 18” piping, 2,719 LF of 15” piping, 1358 LF of 12” piping, and 565 LF of 10” piping.	24” – 7.2 MGD 21” – 7.7 MGD 18” – 5.8 MGD 15” – 4.9 MGD 12” – 1.8 MGD 10” – 2.0 MGD	2.3 ft/s 3.1 ft/s 3.8 ft/s
Westside Interceptor Relief Sewer	40,715 LF of pipeline from Montclair diversion structure along Eastend Ave. to Chino Ave, Ramona Ave., Eucalyptus Ave., and Monte Vista Ave. to CCWRF, consisting of 2,575 LF of 54” piping, 4,948 LF of 42” piping, 1,623 LF of 36” piping, 8,803 LF of 33” piping, 1,358 LF of 30” piping, 18,300 of 27” piping, 866 LF of 24” piping, 1,773 LF of 21” piping, and 445 LF of 15” piping.	54” – 31.9 MGD 42” – 21.7 MGD 36” – 26.6 MGD 33” – 30.2 MGD 30” – 13.6 MGD 27” – 21.0 MGD 24” – 28.2 MGD 21” – 31.6 MGD	2.3 ft/s 2.4 ft/s 3.2 ft/s 4.8 ft/s 2.0 ft/s 3.5 ft/s 6.2 ft/s 2.2 ft/s

7.12.2.2 Asset Ratings – Southern Regional Sewer System (RSS)

Table 7-177
Asset Ratings

System	Total Assets (GIS)		Rating Scale* 1 = Excellent; 5 = Poor	Key Issues
Chino Interceptor	Pipeline Segments (PS)	46	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. EN24059 will perform flow monitoring and CIPP repair on the Chino Hills Trunk Sewer Siphon at manhole CHT-014, North-West of CCWRF. EN27006 will rehabilitate deteriorated piping both upstream and downstream of RP-5.
	Manhole (MH)	45	5	At least 1 manhole was found to be failing and needs immediate attention.
Eastern Trunk Sewer	Pipeline Segments (PS)	91	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. EN31002 will perform CIPP rehabilitation of deteriorated sewer piping.
	Manhole (MH)	88	5	At least 1 manhole was found to be failing and needs immediate attention.
Kimball Interceptor	Pipeline Segments (PS)	58	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years.
	Manhole (MH)	56	5	At least 1 manhole was found to be failing and needs immediate attention.
Los Serranos Trunk	Pipeline Segments (PS)	11	2	Pipeline Segment(s) were found to be in good condition and will need to be reinspected within 3 to 5 years.
	Manhole (MH)	11	5	At least 1 manhole was found to be failing and needs immediate attention.
Westside Interceptor	Pipeline Segments (PS)	76	4	At least 1 pipeline segment was found to be in poor condition and will need rehabilitation in 1 to 2 years.
	Manhole (MH)	75	5	At least 1 manhole was found to be failing and needs immediate attention.
Westside Inter. Relief Sewer	Pipeline Segments (PS)	95	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years.
	Manhole (MH)	93	5	At least 1 manhole was found to be failing and needs immediate attention.

* Ratings as defined in Appendix A; Collection Systems Assets

7.12.2.3 Planned Projects – Southern Regional Sewer System (RSS)

Table 7-178
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24059	Chino Hills Trunk-014 Sewer Siphon CIPP Repair	Perform flow monitoring and CIPP repair of Chino Hills Trunk Sewer Siphon at manhole CHT-014.										
EN27006	Chino Interceptor Diversion Pipe Repair	Rehabilitation of deteriorated pipelines both upstream and downstream of RP-5										
EN31002	Riverside Drive Trunk Pipe Repair	CIPP rehabilitation of 2651 feet of deteriorated sewer pipe.										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

<u>End of System Summary</u>

7.13 Non-Reclaimable Wastewater (NRW) System – Asset Management System Summary

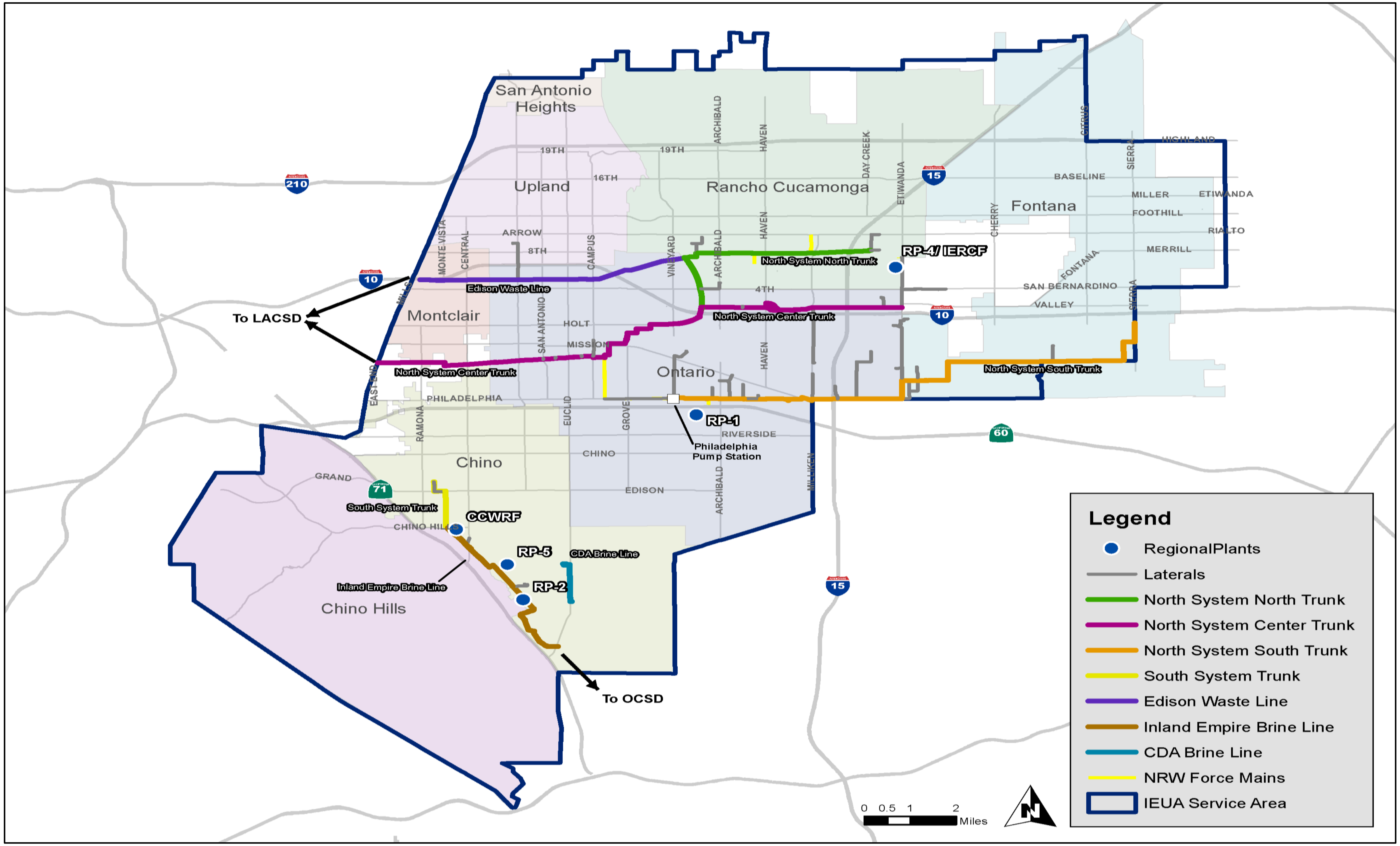

Figure 7-63 Non-Reclaimable Wastewater System (NRW)

Table 7-179
Non-Reclaimable Wastewater System – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN25016	NRWS Emergency O&M Projects FY 24/25	Emergency fund for engineering O&M projects on the NRW system for FY 24/25	NC	OM	$50,000										$50,000
2	PL21002	NRWS Rate Study	Consultant to perform an evaluation on the rate structure for the Non-Reclaimable Wastewater Systems (NRWS).	NC	OM	$50,000										$50,000
3	EN25037	Non-Reclaimable Waste Modeling	Sewer modeling for the NRWS to assess capacity and future improvements with updated infrastructure	NC	OM	$53,000										$53,000
4	EN25073	4th Street / North System North Trunk Pipe Repair (BSS)	Rehabilitation of 129 feet of pipe along East 4th St.	NC	CC	$130,000	$240,000									$370,000
5	EN25066	Non-Reclaimable Waste Collection System Pipe Rehabilitation	CIPP Rehabilitation of critical NRW pipelines to LA County Sanitation District and OC Sanitation District.	NC	CC	$1,000,000	$1,000,000			$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$8,000,000
6	EN25024	New Non-Reclaimable Waste Project PDR's FY 24/25	PDR Budget for new project requests from O&M for FY 24/25	NC	CC	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$500,000
7	EN25026	Non-Reclaimable Waste Manhole FY 24/25	Repair and replacement of NRW manhole frames and covers with composite frames and cover.	NC	CC	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$1,800,000
8	EN25035	Non-Reclaimable Waste Condition Assessments	Master Service Contracting fund for Condition Assessment of the NRW system.	NC	OM	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$500,000
9	EN25036	Non-Reclaimable Waste Connections	Subproject for consultant and service charges relating to NRW system.	NC	OM	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000	$1,300,000
10	EN25038	Non-Reclaimable Waste On Call Small Projects FY 24/25	Emergency fund for engineering O&M projects on the NRW system for FY 24/25	NC	OM	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$500,000
11	EN26002	Vineyard Pipe Repair	CIPP rehabilitation of 899 feet of pipe along the Vineyard Ave Lateral.	NC	CC		$230,000	$430,000								$660,000
12	EN26015	EWL Abandonment Project	Full dismantling, removal, and backfilling of pipes and manholes of the Etiwanda Wastewater Line located on private property.	NC	OM		$500,000	$1,500,000	$500,000							$2,500,000

Table 7-179
Non-Reclaimable Wastewater System – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
13	EN26016	NRWS Emergency O&M Projects FY 25/26	Emergency fund for engineering O&M projects on the NRW system for FY 25/26	NC	OM		$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$450,000
14	EN28003	Brine System Siphon Barrel Gate Improvement	Replace stop plates and repair the stop plate guides at the siphon between manholes NSST-148 and NSST-149, VNTL-010 and VNTL-011, evaluate to confirm warped plates and that a new plate is required	NC	CC				$180,000	$330,000						$510,000
15	EN22007	NRW Asset Management Projects	Solicit for qualified firms to provide consulting services to meet the goal of the AM program and seek contractors to implement condition assessment activities or needed repairs or rehab. The activities will be specific to the NRW Collection System	NC	CC						$600,000	$600,000	$600,000	$600,000	$699,000	$3,099,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.13.1 North and South Non-Reclaimable Wastewater System (NRW)

7.13.1.1 Asset Summary– NRW

Table 7-180
Asset Summary

System	Process Summary	Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Northern Non-Reclaimable Wastewater System				
North System North Trunk	22,887 LF of VCP pipeline in Rancho Cucamonga from Day Creek St. and Arrow St. along 8th St. to Hellman Ave.			
North System Center Trunk	71,343 LF of VCP pipeline starting on Etiwanda Ave. and RP-4 in the City of Ontario running south to Ontario Mills Pkwy., west to Hellman Ave., southwest to Phillips Ave., and west to LACSD.			
North System South Trunk	65,720 LF of VCP pipeline from Sierra Ave. and Slover Ave. in the City of Fontana to Jurupa Ave., west to Mulberry Ave, south on to Francis St., south on to Etiwanda Ave., and west to Philadelphia Ave to the Philadelphia pump station, where it is connected to the North System Center Trunk by the Philadelphia lift station force main.		24-inch VCP 8-inch VCP	
Edison Waste Line	33,757 LF VCP of pipeline starting from Helms Ave. and 9th St. in Rancho Cucamonga, running south on Hellman Ave., and turning southwest to 5th Ave. in the City of Ontario, and running west along 5th St. to LACSD pipelines.			
Cucamonga Creek Trunk	8,659 LF VCP of pipeline connecting the Edison Waste Line to the North System Center Trunk along Hellman Ave.			
Philadelphia Lift Force Main	26,452 LF of two parallel force mains 12-inch and 18-inch VCP pipeline from the Philadelphia Pump Station west on Philadelphia Ave. and north on Bon View Ave. to the North System Center Trunk.		18-inch 12-inch	
Southern Non-Reclaimable Wastewater System				
Inland Empire Brine Line	25,948 LF VCP and RCP of pipeline from Yorba Ave. and Edison Ave. to Monte Vista Ave., with a connection at CCWRF along Chino Creek to El Prado Rd. at Kimball Ave., extending southeast to Euclid Ave. and ultimately to OCSD. There are 15-inch VCP pipelines on Edison Ave., 15-inch VCP on Yorba Ave., 12-inch VCP on Monte Vista St., 27-inch RCP Central Ave/Easement, and 27-inch RCP along El Prado Rd.			

7.13.1.2 Asset Ratings – Non-Reclaimable Wastewater System (NRW)

Table 7-181
Asset Ratings

System	Total Assets (GIS)		Rating Scale* 1 = Excellent; 5 = Poor	Key Issues
North System North Trunk	Pipeline Segments (PS)	96	5	At least 1 pipeline segment was found to be failing and needs immediate attention. EN26015 will fully dismantle, remove, and backfill pipes and manholes along the Etiwanda Wastewater Line (EWL) located on private property between manholes EWL-001 and EWL-008.
	Manhole (MH)	92	5	At least 1 manhole was found to be failing and needs immediate attention.
North System Center Trunk	Pipeline Segments (PS)	184	5	At least 1 pipeline segment was found to be failing and needs immediate attention. EN25073 will rehabilitate piping along 4th street on the 4th street lateral.
	Manhole (MH)	179	5	At least 1 manhole was found to be failing and needs immediate attention.
North System South Trunk	Pipeline Segments (PS)	166	4	At least 1 pipeline segment was found to be in poor condition and will need rehabilitation in 1 to 2 years. EN26002 will CIPP rehabilitate piping along Vineyard Ave Lateral. EN28003 will evaluate and confirm warped stop plates exist and plan to replace stop plates and repair the stop plate guides at the siphon between manholes NSST-148 and NSST-149 near RP-1, and manholes VNTL-010 and VNTL-011 on the Vintage Ave Lateral.
	Manhole (MH)	167	5	At least 1 manhole was found to be failing and needs immediate attention.
Edison Waste Line	Pipeline Segments (PS)	58	4	At least 1 pipeline segment was found to be in poor condition and will need rehabilitation in 1 to 2 years.
	Manhole (MH)	40	5	At least 1 manhole was found to be failing and needs immediate attention.
Cucamonga Creek Trunk	Pipeline Segments (PS)	-	3	Pipeline Segment(s) were found to be in moderate condition and will need to be reinspected within 3 years. Total asset count data is not available at this time.
	Manhole (MH)	-	5	At least 1 manhole was found to be failing and needs immediate attention. Total asset count data is not available at this time.
Philadelphia Lift Force Main	Pipeline Segments (PS)	44	No Rating	A rating has not been assigned at this time.
	Manhole (MH)	N/A	No Rating	A rating has not been assigned at this time.
Inland Empire Brine Line	Pipeline Segments (PS)	80	4	At least 1 pipeline segment was found to be in poor condition and will need rehabilitation in 1 to 2 years.
	Manhole (MH)	82	5	At least 1 manhole was found to be failing and needs immediate attention.

* Ratings as defined in Appendix A; Collection Systems Assets

7.13.1.3 Planned Projects – Non-Reclaimable Wastewater System (NRW)

Table 7-182
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN25016	NRWS Emergency O&M Projects FY 24/25	Emergency fund for engineering O&M projects on the NRW system for FY 24/25										
PL21002	NRWS Rate Study	Consultant to perform an evaluation on the rate structure for the Non-Reclaimable Wastewater Systems (NRWS).										
EN25037	Non-Reclaimable Waste Modeling	Sewer modeling for the NRWS to assess capacity and future improvements with updated infrastructure										
EN25073	4th Street / North System North Trunk Pipe Repair (BSS)	Rehabilitation of 129 feet of pipe along East 4th St.										
EN25066	Non-Reclaimable Waste Collection System Pipe Rehabilitation	CIPP Rehabilitation of critical NRW pipelines to LA County Sanitation District and OC Sanitation District.										
EN25024	New Non-Reclaimable Waste Project PDR's FY 24/25	PDR Budget for new project requests from O&M for FY 24/25										
EN25026	Non-Reclaimable Waste Manhole FY 24/25	Repair and replacement of NRW manhole frames and covers with composite frames and cover.										
EN25035	Non-Reclaimable Waste Condition Assessments	Master Service Contracting fund for Condition Assessment of the NRW system.										
EN25036	Non-Reclaimable Waste Connections	Subproject for consultant and service charges relating to NRW system.										
EN25038	Non-Reclaimable Waste On-Call Small Projects FY 24/25	Emergency fund for engineering O&M projects on the NRW system for FY 24/25										
EN26002	Vineyard Pipe Repair	CIPP rehabilitation of 899 feet of pipe along the Vineyard Ave Lateral.										
EN26015	EWL Abandonment Project	Full dismantling, removal, and backfilling of pipes and manholes of the Etiwanda Wastewater Line located on private property.										
EN26016	NRWS Emergency O&M Projects FY 25/26	Emergency fund for engineering O&M projects on the NRW system for FY 25/26										
EN28003	Brine System Siphon Barrel Gate Improvement	Replace stop plates and repair the stop plate guides at the siphon between manholes NSST-148 and NSST-149, VNTL-010 and VNTL-011, evaluate to confirm warped plates and that a new plate is required										
EN22007	NRW Asset Management Projects	Solicit for qualified firms to provide consulting services to meet the goal of the AM program and seek contractors to implement condition assessment activities or needed repairs or rehab. The activities will be specific to the NRW Collection System										

*Note: Types of Projects:

CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

7.14 Agency Laboratory – Asset Management System Summary

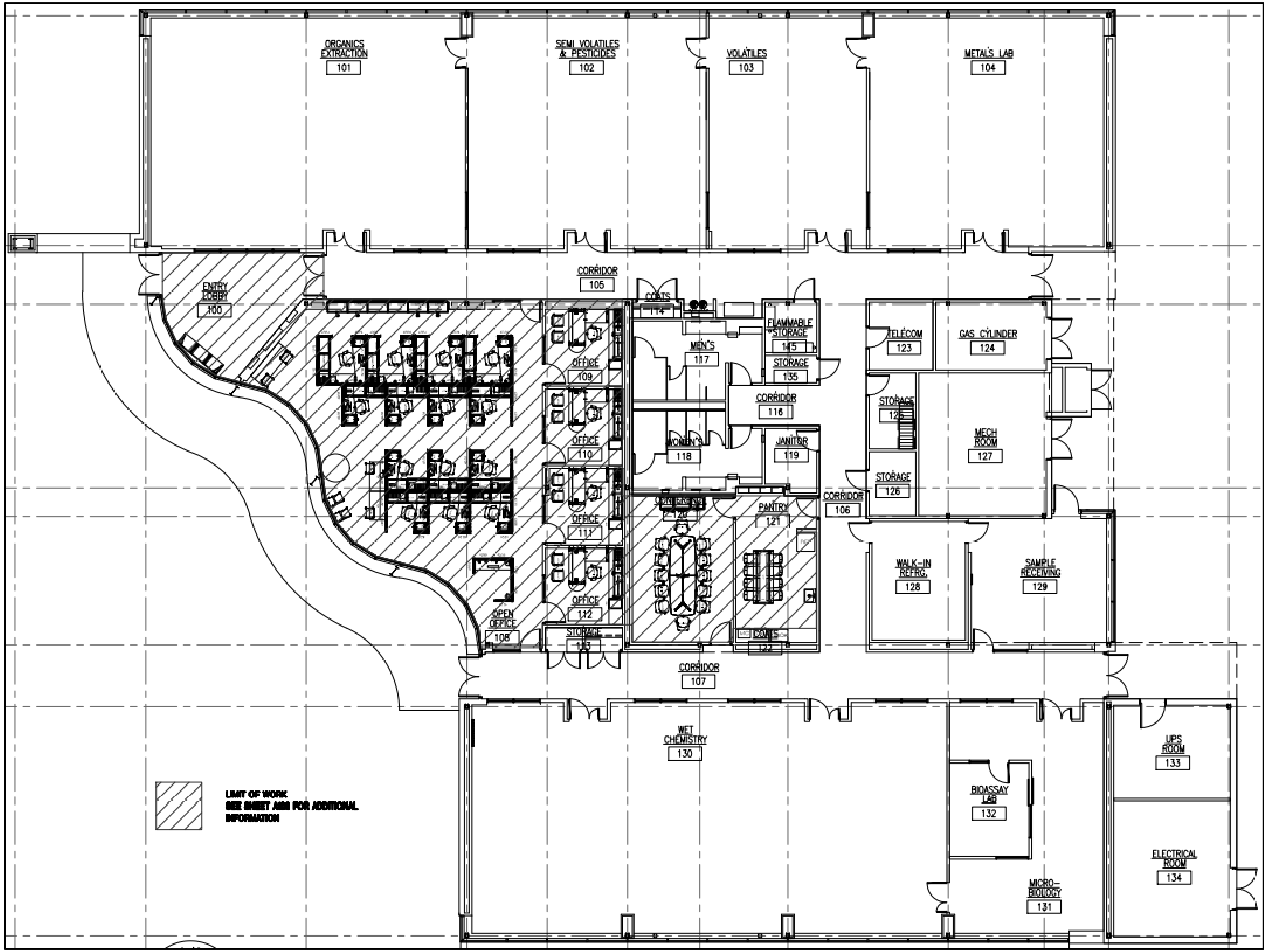

Figure 7-64 Agency Laboratory (Lab)

Table 7-183
Agency Laboratory – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	LB23001	Oil and Grease Extractor 2	Purchase and Installation of Oil and Grease Extractor	GG	CC	$100,000	$100,000									$200,000
2	LB21001	LCMSMS for PFAS and CEC Testing	Purchase and installation of new equipment to maintain sample turnaround time and high-quality data for all IEUA samples.	GG	CC	$72,885	$72,885									$145,770

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.14.1 Agency Laboratory (LAB)

7.14.1.1 Asset Summary–LAB

Table 7-184
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Inorganic & Wet Chemistry	The Inorganic and Wet Chemistry section is located in the South Side of the building. This type of chemistry includes analyses performed in a liquid phase with beakers, test tubes and solvents. Some common analyses include TOC, BOC, COD, solids (total, dissolved, suspended, and volatile), ammonia, alkalinity, cyanide, and anions.	Fume Hood	7 @ 100 fpm	
		Oven	3 @ 180°C	
			2 @ 104°C	
		Furnace	1 @ 550°C	
		Incubator	1 @ 20°C	Min
		TOC Analyzer	3 units	
		Ion Chromatograph	2 @ 49 sample batch	
		Colorimeter	1 @ 120 sample batch	
		Auto Colorimeter	2 unit	Max
		Auto Sampler	5 @ 120 sample batch	Max
		Auto Titrator	1 @ 36 sample batch	Max
		Nano Pure Filter	1 unit	Max
		Dishwasher	1 units	
		Digestion Block	2 units	Max
		Flow Segmented Analyzer	2 units	Max
		Cyanide Analyzer	2 units	
		Cyanide Auto Sampler	1 units	
		Refrigerator	1 units	
		Gas System:		
		Helium	2 @ 200 ft^3	
			2 @ 300 ft^3	
		Nitrogen	2 @ 300 ft^3	
		DI Purification	1 unit	
		Refrigerator	1 @ 960 ft^3	
			13 to 41°F	
Microbiology	Microbiology is located in the South Side just east of Wet Chemistry. Microbiology is the study of microscopic organisms. Some common analyses include total and fecal coliform and bioassay. Bioassay is a specific scientific experiment that measures the effects of a substance on a living organism (Ceriodaphnia dubia; specie of water flea).	Autoclave	1 @ 35°C	
		Incubator	2 @ 35°C	
		Water Bath	1 @ 44.5°C	
		Oven	2 @ 180°C	
		Bioassay Incubator	1 unit	
		Quantitry Sealer	2 unit	
		Refrigerator	1 unit	

Table 7-184
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Agency Laboratory (Lab) & Metals & Organic Chemistry	The Agency Laboratory (Lab) is located at Regional Water Recycling Plant No.5 in Chino. The Lab is certified by the California Department of Public Health Environmental Laboratory Accreditation Program (ELAP) to perform 12 fields of testing and 35 specific approved methods. The lab was constructed in 2018 and is approximately 17,166 square feet. The Lab performs more than 80,000 analyses annually and sends out another 5,000 samples for analysis by a contracted laboratory. The Lab is broken into the following groups: Metals & Organic Chemistry, Inorganic & Wet Chemistry and Microbiology. The Lab analyzes samples from the Agency's wastewater plants, pretreatment and source control programs, desalination facility, and ground water recharge basins. The Metals & Organic Chemistry section is located in North Side of the Building. This type of chemistry uses specialized equipment to analyze a sample extract's makeup. Organic Chemistry specifically analyzes substances containing a carbon molecule. Metals/Inorganic Chemistry specifically analyzes substances that don't contain a carbon molecule. Some common analyses include mercury, metal salts, heavy metals, pesticides, and volatile and semi-volatile organics. Key pieces of equipment used are the Inductively Coupled Plasma Spectrometer (ICP), the ICP Mass Spectrometer (ICP MS), the Gas Chromatograph (GC), and GC Mass Spectrometer (GC MS).	Metals:		
		Fume Hood	2 @ 100 fpm	
		ICP	1 @ 157 sample batch	
		ICP MS	1 unit	
		Mercury Analyzer	1 @ 62 sample batch	
		Auto Block Digester	1 @ 54 sample batch	
		Peristaltic Pump	2 units	
		Chiller (ICPs)	3 units	
		Purelab water system	1 units	
		Dishwasher	2 units	Min
		Auto Sampler	2 units	Max
		Organics Preparation:		
		Fume Hood	8 @ 100 fpm	
		Extractor System	2 units	
		Kiln	1 @ 450°C	
		Oven	1 @ 300°C	Max
		Evaporator	3 @ 300 ml 2 @ 50 or 200 ml	Max
		Dishwasher	2 units	
		Chiller	2 unit	Min
		Refrigerator	1 unit	
		Nanopure	1 unit	
		Semi-Volatile Organics:		
		Fume Hood	1 @ 100 fpm	
		GC	3 @ 25 min per sample	
		GC MS	2 @ 25 min per sample	Min
		LC MS	1 unit	Max
		Auto Sampler	4 unit	Max
		Hydrogen Generator	1 unit	
		Lab bench refrigerator	2 units	Min
		Nitrogen Generator	1 unit	Max
		Volatile Organics:		
		Fume Hood	1 @ 100 fpm	
		GC MS	2 units	
		Concentrator	2 @ 51 sample batch	
		Auto Sampler	2 units	
		Refrigerator	1 unit	
		Freezer	1 unit	
		Purge & Tap Concentrator	2 units	
		Oven	1 unit	
		Gas System:		
		Argon	160 liters	
		Helium	300 ft^3	
		Nitrogen	200 ft^3	
		DI Purification	1 unit	
		Refrigerator	1 @ 960 ft^3 13 to 41°F	

7.14.1.2 Asset Ratings – Agency Laboratory (LAB)

Table 7-185
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Inorganic & Wet Chemistry	4	4	3	4	The building has a lack of storage space and problems with roof leaks, and a portion is inadequately protected from weather elements. In addition, there is concern about the effectiveness of the fume hoods. The outdoor refrigerator requires routine spare parts, but the structure is sound (same equipment as above). Because of constant upgrades of equipment, spare parts become unavailable through the manufacturers. The Lab Department will budget for routine replacement of equipment. The current Ion Chromatograph machine has fulfilled its needs and is at the end of its useful life. A potential project will replace this machine and provide analysis for additional constituents. Project LB23001 will purchase and install an oil and grease extractor.
Microbiology	4	4	3	4	Please refer to the Metals & Organic Chemistry discussion under Key Issues related to the building, as Microbiology shares the same building. The autoclave should be replaced every five to ten years; spare parts are used between replacements to ensure continuous operation. The Lab Department will budget for routine replacement of equipment. Project EN15008 has replace the existing operation laboratory at RP-1.
Metals & Organic Chemistry	4	4	3	4	The building has ventilation problems and roof leaks. A black dusty and gritty substance covers the counters and expensive lab equipment through all areas. The temperature controls for the building, which are crucial for sensitive lab equipment, fail regularly. The outdoor refrigerator requires routine spare parts, but the structure is sound. Because of constant upgrades of equipment, spare parts become unavailable through the manufacturers. The GC is currently being operated until failure. The Lab Department will budget for routine replacement of equipment. Project EN15008 has replace the existing laboratory at RP-1 and replace new lab equipment once the new lab is constructed. Project LB21001 will purchase and install LC-MS/MS equipment to perform PFAS and CEC testing of IEUA samples.

* Ratings as defined in Appendix A; General System Assets

7.14.1.3 Planned Projects – Agency Laboratory (LAB)

Table 7-186
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
LB23001	Oil and Grease Extractor 2	Purchase and Installation of Oil and Grease Extractor										
LB21001	LCMSMS for PFAS and CEC Testing	Purchase and installation of new equipment to maintain sample turnaround time and high-quality data for all IEUA samples.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

End of System Summary

7.15 Agency Headquarters (HQ) – Asset Management System Summary

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Agency Headquarters

Figure 7-65 Agency Headquarters (HQ)

Table 7-187
Agency Headquarters – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN24030	Headquarter B additional Office Space	Convert the existing storage room into office space with 7 cubicles, with a new ceiling skyline and double door installation	RC	CC	$90,000										$90,000
2	EN25058	HQ Electric Chargers	Install 10 New EV Chargers that support 40 Amp charging at HQ-A Pool Lot and Public Parking Area	GG	CC	$250,000										$250,000
3	FM25008	HQ Workspace Improvements	Replace and upgrade workspace layout and furniture in both HQ-A and HQ-B with a general contractor	GG	CC	$2,700,000										$2,700,000
4	IS25005	Audio/Video Replacement for Conference Rooms	Replace and upgrade AV equipment in HQ-B Anza, Hasbrouck, and Koopman meeting rooms with all wall-mounted meeting panels displaying status of conference room being replaced across HQ-A and HQ-B	GG	CC	$150,000										$150,000
5	IS25006	Board Room Upgrades	Replace AV equipment within the Board Room with upgraded technology, install new projection screen, AV system hardware and software, microphones, production desk for technical staff, and increase Wi-Fi access.	GG	CC	$250,000										$250,000
6	EN25060	Headquarters Roof Reconfiguration	Redesign of atrium structure to prevent further water damage of HQ-A and HQ-B during rainstorms with a redesign of the overhangs and louvers	GG	OM	$400,000										$400,000
7	EN25061	HQ Interior Rehabilitation	Replace carpet and refurbish walls within HQ-A and HQ-B	GG	OM	$300,000										$300,000
8	EN26032	HQ Electric Cart Canopy Project	Replacement of existing electric cart canopy at HQ-B back parking area with a larger metal carport	GG	CC		$100,000	$150,000								$250,000
9	PL17002	HQ Solar Photovoltaic Power Plants Ph. 2	Alternate proposal of photovoltaic products, designs, and mounting methodologies to install solar power at the HQ roof top and parking lots	RC	CC			$300,000	$1,100,000							$1,400,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.15.1 Agency Headquarters (HQ)

7.15.1.1 Asset Summary– HQ

Table 7-188
Asset Summary

System	Process Summary	Design Capacity (Dry Weather Average)	Notes
Headquarters		14 acres	
Structures	Two 33,000-square-foot tilt-up-construction single stores contain office space, conference rooms, a board room, and key information system equipment used for agency business functions. Most of the non-wastewater treatment staff use these two buildings for day-to-day business. The buildings were built to LEED Platinum 2004 certifications by incorporating several eco-friendly sustainable components.	2 at 33,000 sq ft ea. 194 Office spaces 11 Conference Rooms 7 kitchens	
HVAC	The Central Energy Plant serves headquarters buildings A, B, and the RP-5 REEP control room. Each building is air conditioned with a single variable air volume (VAV) air handler with chilled and heated water coils. VAV and VAV with reheat (VAV/R) terminals are pressure independent. Heating is provided by hot water preheat coils in the air handlers and hot water reheat coils in the VAV/R terminals. The REEP control and electrical rooms are air conditioned with constant-volume chilled-water fan coils. There are a total of four chilled water nodes with a connected cooling load of 144.5 tons cooling. Space heating connected load is 590,000 btuh. Hot water is also used for radiant floor heating in the main entrances and locker rooms.	144.5 cooling tons 590,000 btuh space heating	
Plumbing	The headquarters facility has traditional plumbing to bathroom fixtures including sinks, showers, toilets, and flush less urinals. Other fixtures include custodian closets and various outdoor hose bibs. Main lines feed hot water from the central plant to the building, where the hot water is used in various heating and cooling aspects of the building. The building is also equipped with a fire suppression system.	35 toilets 12 urinals 33 sinks 9 showers	
Chino Creek Park	The 22-acre park was designed to restore native habitat and natural drainage that feeds into Chino Creek Reach I, showcasing the environmental values of this ecologically rich region of Southern California.	22 acres	
Water Ponds	An aesthetic water feature receives flow from a recycled water service. The ponds hold water and can recirculate for a waterfall feature between the two ponds. The overflow of the ponds flows down a stream to the extended detention basin.	2 pumps @ 350 GPM	
Extended Detention Basin	The detention pond provides initial storage and detention for storm flows. It also serves as a preliminary settling pond for sediments, potentially reducing total suspended solids, and provides the primary storage pool, where flows are conveyed to one of three flow paths: the Surface Flow Wetlands and the Subsurface Flow Wetlands via two stop-log structures. A concrete/rip rap spillway is provided for the 100-year-storm event that would overflow the stop-log structures. The spillway feeds the surface bioswale system.	3.1 acre-ft	Volume
Surface Wetlands	The Surface Wetlands is a series of several deep-water ponds that provide traditional natural system nutrient removal. A combination of emergent vegetation bands and deep and shallow zones provides higher retention time and less hydraulic short-circuiting and supports the microbial processes that result in water quality improvement. The final pond/habitat lake includes dense patches of emergent marsh and open water to provide suitable foraging habitat for water birds. Flows from the habitat lake exits a stop-log structure and flows to the effluent structure.	7.3 acre-ft	Volume
Subsurface Wetlands Pea Gravel	Flow from the detention basin stop-log structure enters three engineered wetland cells. Each cell has a loose pea-gravel soil mixture that supports the root structure of nutrient-removal plant species. The configuration provides a high surface area of water flows to the plant root structure for nutrient removal, low potential for hydraulic short-circuiting, and the most potential for highly efficient nutrient removal. Each cell controls the water level via a stop-log structure.	3 cells Approx. 170 ft by 40 ft 2.5 ft depth	Each
Bioswale	The bioswale system receives overflow from the extended detention basin and directs flow to the effluent structure. The bioswale has several energy-dissipation and soil-stabilization components, including planted willows, mule fat, geotextile soil fabric, rip rap, and a large stabilized tree root bole.	700 LF	
Intermittent Stream	The intermittent stream on the west side of the site conveys infrequent storm flows, providing preliminary water quality treatment, and consists of drier riparian habitats. Upland woodland and grassland areas provide aesthetically pleasing areas for visitors to walk through and picnic, while demonstrating upland habitats historically common in many hillsides and valleys. The effluent flow from this system flows into the effluent structure.	1300LF	
Effluent Structure	The concrete effluent structure receives surface flow from the intermittent-stream and swale system and bioswale system and receives piped flow from the Habitat Lake. The combined flow then flows south to the RP-5 Santa Ana River Outfall, where it follows the existing waterways.	20 ft x 8 ft x 6 ft	Vault
Education	The purposes of the wetlands are to demonstrate natural-water treatment and upland habitats. The Agency encourages educational awareness through interactive trails with informational signage throughout the park, an information center, scheduled tours, the distribution of educational pamphlets and materials, and presentations to local/regional schools. The education and informational stations focus on different water and wetlands themes. Station examples include water testing, microscopic pond life viewing, and bird watching. Some stations consist of large obsolete wastewater treatment plant equipment that has been modified and placed in the park to serve as an elevated lookout platform; visual volume references; and shade structure. There is appropriate signage for each station. The Park also has a small portable building used for storage and office space to facility educational opportunities in the Park.	11 stations 1.7 miles	

7.15.1.2 Asset Ratings – HQ

Table 7-189
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
Headquarters					
Structures	4	3	3	3	Cracks have been observed on the walls and parking spaces, indicating differential settling of the ground under the headquarters complex. A potential project will evaluate the extent of the settling to address its impacts. Roofing leaks have been observed during wet weather periods. A potential project will repair/replace the roof diaphragm. Project EN24030 will add additional office space in HQB by converting an existing storage room into office space. Project FM25008 will replace and upgrade the workplace layout and furniture in both HQA and HQB. Project IS25005 will replace all wall mount meeting panels with HQB's Anza, Hasbrouck, and Koopman conference rooms getting an AV upgrade replacement. Project IS25006 replaces AV equipment within the boardroom at HQA. Project EN25060 will redesign the atrium roof structure to prevent further water damage during heavy rainstorms at HQA and HQB. Project EN25061 will replace the carpet and refurbish walls in HQA and HQB.
HVAC	4	3	3	4	The Central Energy Plant has limited backup equipment and is undersized for future expected uses, specifically the future Central Lab project. Since the recent rehab, Central Plant is still having issues, so a condition assessment is needed to identify potential solutions. A potential project is needed to upgrade controls, add backup equipment and expand the process required for future uses.
Plumbing	2	3	2	3	Last year the fire-suppression-system piping broke, flooding a large portion of the headquarters office space. The failure was caused by excessive corrosion. Maintenance has a project to evaluate the condition of all the piping at the headquarters complex. Recent vandalism and theft has resulted in equipment being stolen from the Agency property
Chino Creek Park					
Water Ponds	3	3	3	3	No issues requiring immediate attention.
Extended Detention Basin	4	3	3	4	Soil erosion has been observed on several slopes of the extended detention basin from storm water runoff. Engineering is working on projects to protect the slopes from further erosion.
Surface Wetlands	3	3	3	3	No issues requiring immediate attention.
Subsurface Wetlands	4	3	3	3	No issues requiring immediate attention.
Bioswale	2	3	3	3	No issues requiring immediate attention.
Intermittent Stream	3	3	3	3	No issues requiring immediate attention.
Effluent Structure	2	3	3	3	No issues requiring immediate attention.
Education	3	3	4	3	The park currently has limited use for school field trips and outreach because of the lack of shaded areas and permanent restroom facilities

* Ratings as defined in Appendix A; General System Assets

7.15.1.3 Planned Projects – HQ

Table 7-190
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24030	Headquarter B additional Office Space	Convert the existing storage room into office space with 7 cubicles, with a new ceiling skyline and double door installation										
EN25058	HQ Electric Chargers	Install 10 New EV Chargers that support 40 Amp charging at HQ-A Pool Lot and Public Parking Area										
FM25008	HQ Workspace Improvements	Replace and upgrade workspace layout and furniture in both HQ-A and HQ-B with a general contractor										
IS25005	Audio/Video Replacement for Conference Rooms	Replace and upgrade AV equipment in HQ-B Anza, Hasbrouck, and Koopman meeting rooms with all wall-mounted meeting panels displaying status of conference room being replaced across HQ-A and HQ-B										
IS25006	Board Room Upgrades	Replace AV equipment within the Board Room with upgraded technology, install new projection screen, AV system hardware and software, microphones, production desk for technical staff, and increase Wi-Fi access.										
EN25060	Headquarters Roof Reconfiguration	Redesign of atrium structure to prevent further water damage of HQ-A and HQ-B during rainstorms with a redesign of the overhangs and louvers										
EN25061	HQ Interior Rehabilitation	Replace carpet and refurbish walls within HQ-A and HQ-B										
EN26032	HQ Electric Cart Canopy Project	Replacement of existing electric cart canopy at HQ-B back parking area with a larger metal carport										
PL17002	HQ Solar Photovoltaic Power Plants Ph. 2	Alternate proposal of photovoltaic products, designs, and mounting methodologies to install solar power at the HQ roof top and parking lots										

*Note: Types of Projects:
CIP/O&M-Planning | CIP-Design | CIP- Construction | Maintenance Project

End of System Summary

7.16 Business and Process Automation Control Networks – Asset Management System Summary

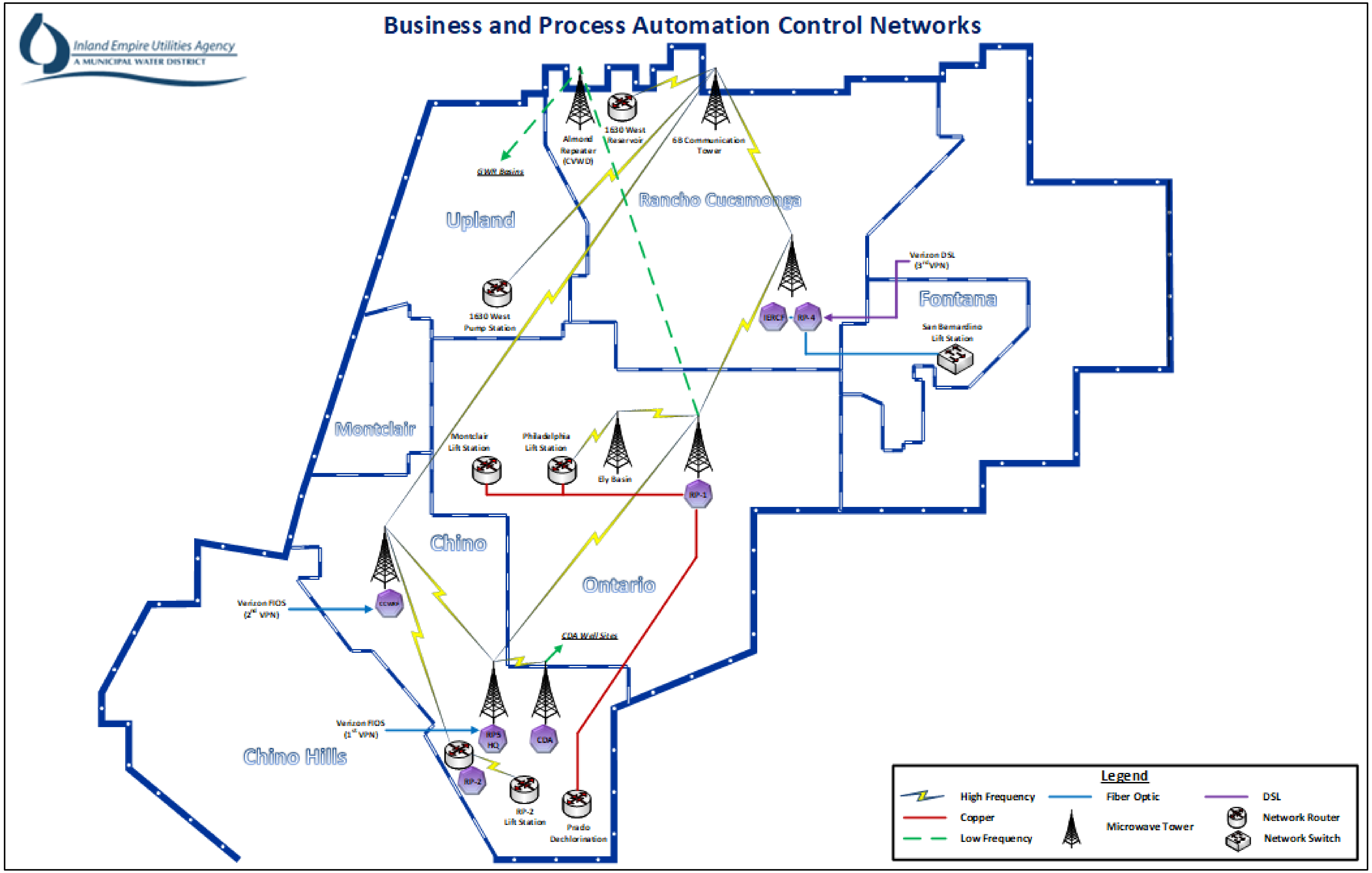

Figure 7-66 Business (BIZ) & Process Automation Control (PAC) Networks

Table 7-191
Business Network and Process Automation Control Network – Project Summary

#	Project Number[1]	Project Name	Project Description	Fund[2]	Project Type[3]	Fiscal Year Budget (Dollars)										
						2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ten-Year Total
1	EN24022	IEUA SCADA Master Plan	A 10-year Scada Master Plan to identify projects necessary to maintain newly installed PlantPAx SCADA system.	RC	CC	$750,000										$750,000
2	IS20007	Control System Ent Historian Enhancement	Purchase and installation of the PI System Access tool to connect to SCADA with SAP.	RO	CC	$741,725										$741,725
3	IS24003	ERP Replacement Phase 1	Replacement of SAP Human Resources functions with a modern, clouds-based solution, that will meet all requirements of Human Resources.	GG	CC	$1,000,00	$550,000									$1,550,000
4	EN13016	SCADA Enterprise System	Scope includes the design, procurement, and installation and programing of a new SCADA system.	RO	CC	$6,295,000	$6,000,000									$12,295,000
5	IS25004	ERP Implementation	Purchase and implementation of a new Enterprise Resource Planning system which will replace SAP.	GG	CC	$1,000,000	$4,000,000	$5,000,000								$10,000,000
6	IS25007	Operational Technology Infrastructure Asset Replacement	Purchase and replacement of servers and other network switch infrastructure that have reached the end of its life cycle	GG	CC	$250,000	$262,500	$275,000	$315,000	$340,000	$370,000	$400,000	$430,000	$460,000	$475,000	$3,577,500
7	IS25009	Wide Area Microwave Radio Replacement	Purchase and install new microwave radio equipment for various facilities.	GG	CC	$550,000	$590,000	$640,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$4,580,000
8	IS25011	SCADA Infrastructure Asset Replacement	Purchase and replacement of servers and other network switch infrastructure that have reached the end of its life cycle.	RC	CC	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$4,500,000
9	IS22006	SCADA Network Infrastructure Replacement	Purchase and replacement of servers and other network switch infrastructure that have reached the end of its life cycle.	RC	CC	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$3,000,000
10	IS26001	Recycled Water SCADA Infrastructure Replacement	Purchase and replacement of recycled water servers and other network switch infrastructure that have reached the end of its life cycle	WC	CC		$42,000	$42,000	$42,000							$126,000
11	IS28001	Operational AI and Machine Learning	Improve operational efficiency and standardization, improving water quality and reducing operational cost.	RO	CC					$300,000	$300,000					$600,000

(1) Project Number – from Ten-Year Capital Improvement Project; Final Capital Project List June 2024
(2) Project Fund – Administrative Services (GG), Non-Reclaimed Water (NC), Regional Composting Authority (RM), Ground Water Recharge (RW), Recycled Water (WC), Regional Capital (RC), Regional O&M (RO), or Water Fund (WW)
(3) Project Type – Capital Construction Project (CC), Capital Major Equipment Project (EQ), Operations & Maintenance Project (O&M), Reimbursable Project (RE), or Capital Replacement Project (RP)
(4) Note that project numbers and budget information may have been updated; for the most current information, please refer to the latest TYCIP available here : FY2026-FY2035-TYCIP_Final.pdf

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

7.16.1 Business Networks (BIZ)

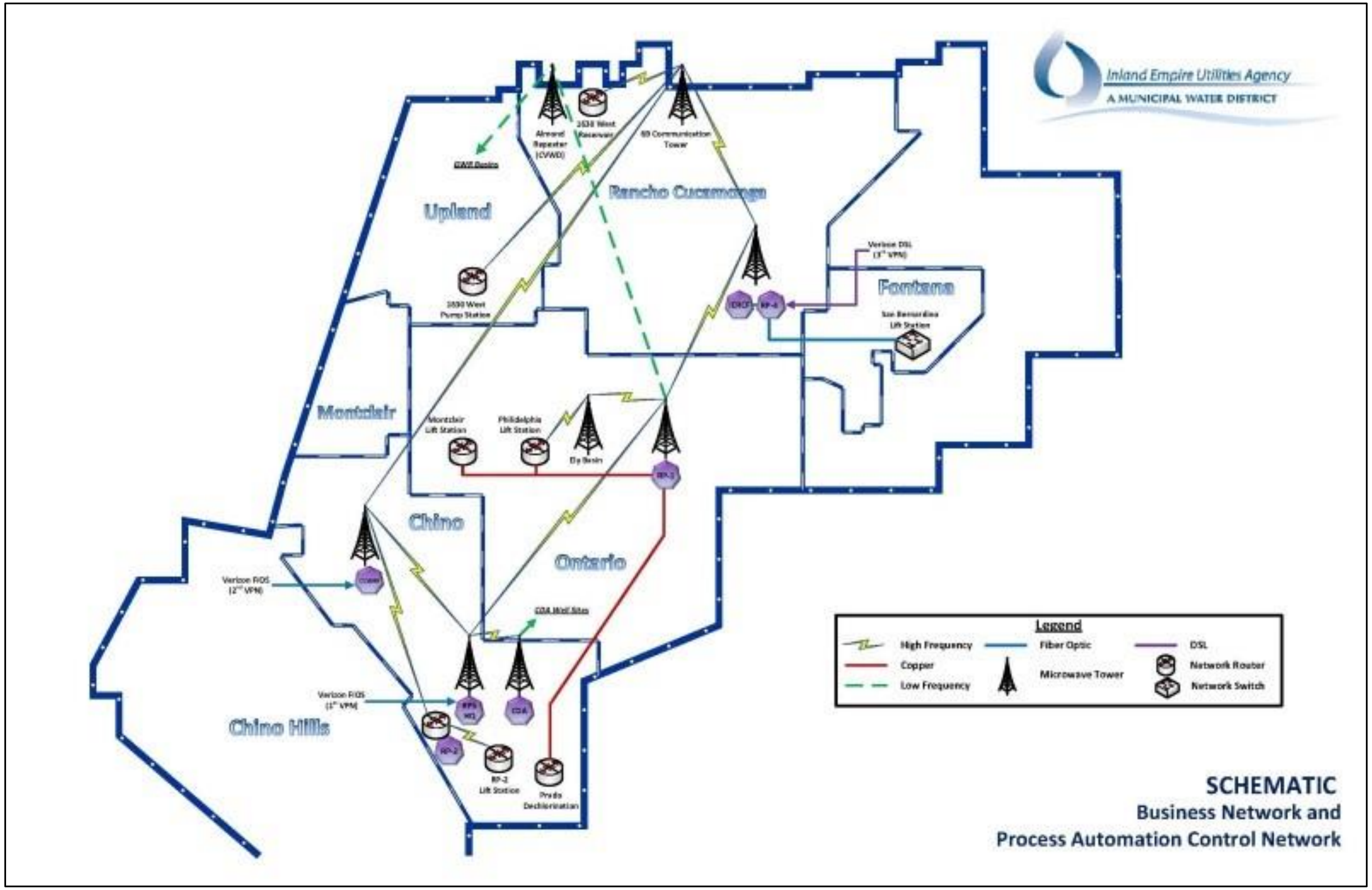

Figure 7-67 Business Networks (BIZ/PAC) Process Flow

7.16.1.1 Asset Summary– Business Networks (BIZ)

Table 7-192
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Business Network	The Business Network (BIZ) is an Agency network that connects local area business networks throughout the Agency together through the use of a wireless Wide Area Network (WAN) and provides access to the internet. Communication within the network is transmitted through cable media and wireless media. The wireless media communication supports the BIZ and Process Automation & Control (PAC) systems. BIZ provides the shared use of business-related resources, such as storage servers, printers, email, and interpersonal communications. The BIZ is composed of servers located at the Headquarters Buildings, RP-1, and RP-5. Network switches connect each networked asset to the BIZ network. There are two sets of assets included in the BIZ: productivity tools and fixed assets.	BIZ – Productivity Tools A/V Equipment Cell Phone Camera Mobile Hot Spot Monitor Printer Scanner Tablet Workstation	 14 units 76 units 18 units 55 units 660 units 125 units 21 units 23 units 300 units	
Business Network	The Business Network (BIZ) is an Agency network that connects local area business networks throughout the Agency together through the use of a wireless Wide Area Network (WAN) and provides access to the internet. Communication within the network is transmitted through cable media and wireless media. The wireless media communication supports the BIZ and Process Automation & Control (PAC) systems. BIZ provides the shared use of business-related resources, such as storage servers, printers, email, and interpersonal communications. The BIZ is composed of servers located at the Headquarters Buildings, RP-1, and RP-5. Network switches connect each networked asset to the BIZ network. There are two sets of assets included in the BIZ: productivity tools and fixed assets.	BIZ – Fixed Assets Server HyperV Server VMware UPS Network Switch	 12 units 50 units 11 units 4 units 90 units	

7.16.1.2 Asset Ratings – Business Networks (BIZ)

Table 7-193
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
BIZ – Productivity Tools	3	3	3	3	Equipment replacement lifecycle: PLC (12 years), UPS (10 years), Workstation (4 years), OIT (10 years), server (5 years), I/O (15 years), Printer (10 years), network switches (10 years), and software licenses are typically renewed annually. Maintenance projects related to equipment replacement based on the product's lifecycle will be budgeted in the Department's budget for routine replacement and rehab of assets. Project IS24003 will replace SAP HR functions with a cloud-based system. Following this, Project IS25004 will purchase and implement a new ERP system that will replace SAP. IS28001 will explore the option of AI and machine learning to improve operational efficiency and standardization.
BIZ – Fixed Assets	3	3	3	3	Maintenance projects related to equipment replacement based on the product's lifecycle will be budgeted in the Department's budget for routine replacement and rehab of assets.

* Ratings as defined in Appendix A; General System Assets

7.16.1.3 Planned Projects – Business Networks (BIZ)

Table 7-194
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
IS24003	ERP Replacement Phase 1	Replacement of SAP Human Resources functions with a modern, clouds-based solution, that will meet all requirements of Human Resources.										
IS25004	ERP Implementation	Purchase and implementation of a new Enterprise Resource Planning system which will replace SAP.										
IS28001	Operational AI and Machine Learning	Improve operational efficiency and standardization, improving water quality and reducing operational cost.										

*Note: Types of Projects:

	CIP/O&M-Planning		CIP-Design		CIP- Construction		Maintenance Project

7.16.2 Process Automation Control Networks (PAC)

7.16.2.1 Asset Summary– Process Automation Control Networks (PAC)

Table 7-195
Asset Summary

System	Process Summary	System Subsystem(s)	Design Capacity (Dry Weather Average)	Notes
Process Automation & Control (PAC)	The Process Automation & Control System (PAC) is an Agency network that connects local area process automation networks together through a wireless Wide Area Network (WAN). Communications within the networks are transmitted through cable media and wireless media. A series of microwave transmitting towers creates a loop of wireless communication linking all the facilities. The primary communication towers are located at RP-1, CCWRF, RP-4, RP-5, and the Northwest 6B Tower. Cucamonga Valley Water District's Almond Street Repeater provides communication and control of the ground water recharge basins. Network switches connect PLCs, operator workstations, and other network devices connected to the PAC network. An operator is able to log on the PAC network to control and monitor a facility using the Supervisory Control and Data Acquisition (SCADA) system or Distributed Control System (DCS) system. The SCADA systems are composed of Rockwell Automation software and Allen Bradley PLCs. The DCS systems use the Foxboro DCS system from Invensys and a combination of Invensys Control Processors and Allen Bradley PLCs. Field output data is transmitted to either a PLC or a centralized control processor, and the SCADA/DCS systems provide a single platform to monitor all the field data, make set point changes, establish/monitor alarm conditions, and control equipment within an entire facility. Field data is also transmitted to a historian, that is, a storage server, to allow trending or analytical analysis in the future. There are two sets of assets included in the PAC: productivity tools and other fixed assets.	Productivity Tools Tablet Workstation	 25 units 50 units	
Process Automation & Control (PAC)	The Process Automation & Control System (PAC) is an Agency network that connects local area process automation networks together through a wireless Wide Area Network (WAN). Communications within the networks are transmitted through cable media and wireless media. A series of microwave transmitting towers creates a loop of wireless communication linking all the facilities. The primary communication towers are located at RP-1, CCWRF, RP-4, RP-5, and the Northwest 6B Tower. Cucamonga Valley Water District's Almond Street Repeater provides communication and control of the ground water recharge basins. Network switches connect PLCs, operator workstations, and other network devices connected to the PAC network. An operator is able to log on the PAC network to control and monitor a facility using the Supervisory Control and Data Acquisition (SCADA) system or Distributed Control System (DCS) system. The SCADA systems are composed of Rockwell Automation software and Allen Bradley PLCs. The DCS systems use the Foxboro DCS system from Invensys and a combination of Invensys Control Processors and Allen Bradley PLCs. Field output data is transmitted to either a PLC or a centralized control processor, and the SCADA/DCS systems provide a single platform to monitor all the field data, make set point changes, establish/monitor alarm conditions, and control equipment within an entire facility. Field data is also transmitted to a historian, that is, a storage server, to allow trending or analytical analysis in the future. There are two sets of assets included in the PAC: productivity tools and other fixed assets.	Fixed Assets Server HyperV Server VMware UPS Network Switch	 3 units 49 units 15 units 88 units 120 units	

7.16.2.2 Asset Ratings – Process Automation Control Networks (PAC)

Table 7-196
Asset Ratings

System	Rating Scale* 1 = Excellent; 5 = Poor				Key Issues for Further Investigation
	Condition	Redundancy	Function	Reliability	
PAC – Productivity Tools	3	3	3	3	Maintenance will be budgeted in the Department's budget for routine replacement and rehab of assets
PAC – Fixed Assets	4	4	3	4	Maintenance projects related to equipment replacement based on the product's lifecycle will be budgeted in the Department's budget for routine replacement and rehab of assets. Project IS25007, IS22006, IS25011, and IS26001 will replace the network infrastructure that has reached the end of its life cycle. To improve communication new monopoles, radios, and microwaves are being installed under Project IS25009. DCS software and associated hardware need to be updated. Currently the Agency operates two different SCADA systems; it is the Agency's goal to transition to Allen Bradley PLC driven control. Project EN13016 will replace the current DCS system.

* Ratings as defined in Appendix A; Collection Systems Assets

7.16.2.3 Planned Projects – Process Automation Control Networks (PAC)

Table 7-197
Planned Projects

Project Number	Project Name	Description of Work	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34
EN24022	IEUA SCADA Master Plan	A 10-year Scada Master Plan to identify projects necessary to maintain newly installed PlantPAx SCADA system.										
IS20007	Control System Ent Historian Enhancement	Purchase and installation of the PI System Access tool to connect to SCADA with SAP.										
EN13016	SCADA Enterprise System	Scope includes the design, procurement, and installation and programing of a new SCADA system.										
IS25007	Operational Technology Infrastructure Asset Replacement	Purchase and replacement of servers and other network switch infrastructure that have reached the end of its life cycle										
IS25009	Wide Area Microwave Radio Replacement	Purchase and install new microwave radio equipment for various facilities.										
IS25011	SCADA Infrastructure Asset Replacement	Purchase and replacement of servers and other network switch infrastructure that have reached the end of its life cycle.										
IS22006	SCADA Network Infrastructure Replacement	Purchase and replacement of servers and other network switch infrastructure that have reached the end of its life cycle.										
IS26001	Recycled Water SCADA Infrastructure Replacement	Purchase and replacement of recycled water servers and other network switch infrastructure that have reached the end of its life cycle.										

*Note: Types of Projects:

CIP/O&M-Planning	CIP-Design	CIP- Construction	Maintenance Project

End of System Summary

8 Appendix A: Asset Rating Definitions

Definitions of the ratings for each of the Failure Modes

8.1 General System Assets:

**Table 8-1
Condition Rating**

Rating	Definition
1	New or Excellent Condition
2	Minor Defects Only
3	Moderate Deterioration (Does not require immediate action)
4	Significant Deterioration
5	Virtually Unserviceable

The rating is intended to show the degree of deterioration to structures and equipment.

**Table 8-2
Redundancy Rating**

Rating	Definition
1	High level of redundancy – treatment process is not impacted by multiple units being out of service
2	Significant level of redundancy – treatment process is not impacted by one unit being out of service for an extended period of time
3	Adequate level of redundancy – treatment process is not impacted by one unit being out of service for a minimal period of time
4	Inadequate level of redundancy – treatment process is negatively impacted by one unit being out of service
5	No redundancy – intended process function cannot be achieved when asset is out of service

The rating is intended to show the impact to the treatment process when the asset in question is out of service.

**Table 8-3
Function Rating**

Rating	Definition
1	Exceeds all Functional Requirements
2	Exceeds some Functional Requirements
3	Meets all Functional Requirements
4	Fails some Functional Requirements
5	Fails all Functional Requirements

The rating is the ability for the asset to meet the functional requirements that allow performance targets to be met.

**Table 8-4
Reliability Rating**

Rating	Definition
1	Frequency of failure is significantly lower than expected
2	Frequency of failure is lower than expected
3	Frequency of failure is consistent with design expectations
4	Frequency of failure is higher than expected
5	Frequency of failure is significantly higher than expected

The rating is intended to show the tendency for the asset to experience a failure.

8.2 Collection System Assets

Table 8-5
Condition Rating

Rating	Definition
1	New Condition (Excellent)
2	Minor Defects Only (Good)
3	Moderate Deterioration (Does not require immediate action)
4	Significant Deterioration (Poor)
5	Virtually Unserviceable (Failing)

- If the inspector feels that corrective measures are needed within 6 months, then the rating would be 5 (immediate/emergency work to be done).
- If the inspector feels that corrective measures are needed within 2 years, then the rating would be 4 (request rehab/repair work to be designed and executed by Engineering).
- If the inspector feels that corrective measures are not needed but the asset should be re-inspected within 3 years, then the rating would be 3.
- If the inspector feels that corrective measures are not needed and the asset can be re-inspected in 5 years, then the rating would be 2.
- If the inspector feels that corrective measures are not needed and the asset can be considered for re-inspection beyond 5 years, then the rating would be 1.