AGENDA
IRVINE RANCH WATER DISTRICT
BOARD OF DIRECTORS
REGULAR MEETING

November 23, 2026

CALL TO ORDER 5:00 p.m.

PLEDGE OF ALLEGIANCE

ROLL CALL Directors Ferons, Miller, Reinhart, Swan, and President LaMar

PUBLIC COMMENT NOTICE

This meeting will be held in-person at the District's headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: **https://irwd.webex.com/irwd/j.php?MTID=mbe94be8bc37e280a1f3d6f6bbc12e7ce**
Meeting Number (Access Code): **2491 018 9667**
Meeting Password: **fxEtyWUw863**

PLEASE NOTE: *Webex observers of the meeting will be placed into the Webex lobby when the Board enters closed session. Participants who remain in the "lobby" will automatically be returned to the open session of the Board once the closed session has concluded. Observers joining the meeting while the Board is in closed session will receive a notice that the meeting has been locked. They will be able to observe the meeting once the closed session has concluded.*

Public comments are limited to three minutes per speaker on each subject. If you wish to address the Board of Directors orally on any item, you may attend the meeting in person and submit a "speaker slip" to the Secretary. Forms are provided outside of IRWD's Board Room. If you wish to submit written comments to the Board, please submit your public comment in advance of the meeting by emailing comments@irwd.com before 12:00 p.m. the day of the meeting, and your remarks will be added to the record at the meeting.

COMMUNICATIONS TO THE BOARD

1. Written:

2. Oral:

3. ITEMS RECEIVED TOO LATE TO BE AGENDIZED

   Recommendation: Determine the need to discuss and/or take immediate action on item(s).

PRESENTATIONS

4. FINDINGS OF 2026 CLIMATE ADAPTATION PLAN

   Recommendation: Receive and file.

5. MICHELSON WATER RECYCLING PLANT 2025 FLOWS AND LOADS – PHASE III EXPANSION RECOMMENDATION

   Recommendation: Receive and file.

CONSENT CALENDAR, Items 6 through 11

6. BOARD MEETING MINUTES

   Recommendation: That the minutes of the November 9, 2026 Regular Board meeting be approved as presented.

7. OCTOBER 2026 TREASURY REPORT

   Recommendation: That the Board receive and file the Treasurer's Investment Summary Report, the Summary of Fixed and Variable Rate Debt, and the Disclosure Report of Reimbursements to Board members and staff, approve the October 2026 Summary of Payroll ACH payments in the total amount of $4,920,296 and approve the October 2026 accounts payable disbursement summary of warrants 457280 through 457889, Workers' Compensation distributions, ACH payments, wire transfers, payroll withholding distributions, and voided checks in the net total amount of $68,271,620.

8. APPOINTMENT OF DISTRICT NON-BOARD OFFICERS

   Recommendation: That the Board appoint Eileen Lin as the Treasurer of the Irvine Ranch Water District and appoint Christine Thompson as an Assistant Treasurer of the Irvine Ranch Water District, effective immediately.

9. CHANGES TO GENERAL MANAGER'S COMPENSATION

   Recommendation: That the Board approve the 2026 amendment to the General Manager Employment Agreement, effective October 1, 2026.

10. SYPHON RESERVOIR IMPROVEMENT PROJECT CONSULTANT SELECTION FOR SYSTEM INTEGRATOR SERVICES

    Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with Prime Systems Industrial Automation, Inc. in the not-to-exceed amount of $415,840 for system integrator services for the Syphon Reservoir Improvement Project.

CONSENT CALENDAR, Items 6 through 11 (Continued)

11. SECURITY SERVICES AGREEMENT TWO-YEAR CONTRACT EXTENSION

Recommendation: That the Board authorize the General Manager to execute a two-year contract extension for security services with Securitas Services, Inc. for $2,128,651.

ACTION CALENDAR

12. SAND CANYON HEADQUARTERS AND OPERATIONS CENTER HVAC UPGRADES CONSTRUCTION AWARD

Recommendation: That the Board authorize budget increases for Project 12550 in the amount of $985,000, from $2,294,000 to $3,279,000, and for Project 12551 in the amount of $985,000, from $2,294,000 to $3,279,000, and authorize the General Manager to execute a construction contract with Anderson Air Conditioning LP, in the amount of $4,525,000 for the Sand Canyon Headquarters and Operations Center HVAC Upgrades Projects 12550 and 12551.

OTHER BUSINESS

Pursuant to Government Code Section 54954.2, members of the Board of Directors or staff may ask questions for clarification, make brief announcements, and make brief reports on his/her own activities. The Board or a Board member may provide a reference to staff or other resources for information, request staff to report back at a subsequent meeting concerning any matter, or direct staff to place a matter of business on a future agenda. Such matters may be brought up under the General Manager's Report or Directors' Comments. Pursuant to AB 1234 and Government Code Section 53232.3(d), a written draft report of the meetings that any Board member attended on behalf of IRWD since the last Board Meeting will be available at the table near the Board Room entrance, and will be amended verbally, if necessary, during Directors' Comments.

13. General Manager's Report

14. Receive oral update(s) from District liaison(s) regarding communities within IRWD's service area and interests.

15. Directors' Comments and Meeting Reports

16. Adjournment

****

Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Board in connection with a matter subject to discussion or consideration at an open meeting of the Board are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Board Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.

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November 23, 2026
Prepared by: R. Huang
Submitted by: F. Nye / P. Weghorst
Approved by: Paul A. Cook

PRESENTATION

FINDINGS OF 2026 CLIMATE ADAPTATION PLAN

SUMMARY:

With the assistance of staff, Rincon Consulting has prepared Irvine Ranch Water District's 2026 Climate Adaptation Plan (CAP). The purpose of the CAP is to help IRWD understand potential climate change risks, prepare for potential effects on IRWD facilities, and prioritize actions while maintaining reliable services. At the meeting, staff will present an overview of the findings of the CAP.

BACKGROUND:

On November 11, 2024, the Board authorized Rincon to develop a CAP for IRWD. The plan includes a Climate Vulnerability Assessment that evaluates climate hazards, operational thresholds, vulnerabilities, and asset-specific risks across IRWD systems. The CAP also includes an energy management study, greenhouse gas emission forecasts, facility benchmarking, as well as solar array and battery energy storage evaluations. The 2026 CAP is provided as Exhibit "A" and the complete plan, with all appendices, is available on IRWD's website. Preparation of the plan is included as an item in the District's Strategic Planning Goals and Target Activities.

Climate Vulnerability Assessment:

The Climate Vulnerability Assessment identifies and quantifies the risk of climate change to IRWD facilities. Development of the assessment involved a series of staff workshops that defined IRWD-specific climate thresholds. Using a model developed for California's Fifth Climate Change Assessment, climate change projections were applied to the IRWD service area. The projections were based on 129 model simulations of four global warming levels that represent increases in temperature compared to the pre-industrial years of 1850 to 1900. The four warming levels are 0.8°C for the historic baseline; 1.5°C for near-term conditions; 2.0°C for mid-century planning; and 3.0°C for the late century forecasts. The climate projections evaluated climate hazard indicators mapped across the IRWD service area for:

- Drought;
- Extreme storms;
- Groundwater rise;
- Wildfire / Public Safety Power Shutoffs;
- Extreme heat; and
- Landslides and debris flow.

The climate projections were overlaid on IRWD asset-location maps to better understand IRWD climate change vulnerabilities. Staff workshops were convened to examine preliminary vulnerability findings across the following IRWD operational aspects:

- Water treatment and quality;
- Recycled water treatment and quality;
- Sewer collection system;
- Monitoring and control;
- Fleet and facilities; and
- Natural Treatment Systems.

The CAP provides an adaptive management strategy for IRWD to consider in preparing for climate change. Adaption actions to mitigate operational vulnerabilities to climate change were developed and ranked for each of the above operational systems. At the meeting, staff will present an overview of the methodologies, climate hazard findings, vulnerabilities, adaption actions, energy management opportunities, and implementation framework contained in the 2026 CAP. Staff's draft presentation is provided as Exhibit "B".

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

This item was reviewed by the Engineering and Operations Committee on November 17, 2026.

RECOMMENDATION:

RECEIVE AND FILE.

LIST OF EXHIBITS:

Exhibit "A" – Climate Adaptation Plan, November 2026
Exhibit "B" – Draft Presentation on Findings of the 2026 Climate Adaptation Plan

Irvine Ranch Water District



Climate Adaptation Plan
Irvine Ranch Water District

November 2026

Rincon Consultants
2060 Knoll Drive
Ventura, California 93003

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Appendix C Energy Optimization Measure Report and Energy Measure Selection Criteria
Appendix D Solar PV and Battery Energy Storage System Feasibility Analysis and Report
Appendix E Climate Action Legislative Driver Summary Report
Appendix F MAST Tool Summary Memo
Appendix G Complete List of Adaptation Actions

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Glossary

Adaptive Capacity: The ability of a system, facility, organization, or workforce to prepare for, respond to, and recover from climate-related impacts. Higher adaptive capacity generally reduces overall vulnerability.

Adaptive Management: A flexible decision-making approach that allows strategies, priorities, and actions to be adjusted over time as climate conditions, operational needs, monitoring data, and scientific understanding evolve.

Area of Analysis (AOA): The geographic area evaluated in the Climate Change Vulnerability Assessment (CVA), including both IRWD's service area and critical facilities or operational dependencies located outside IRWD boundaries.

Asset Management: The process of planning, operating, maintaining, replacing, and upgrading infrastructure to ensure long-term reliability, performance, and resilience.

Backup Power: Emergency power resources, such as generators and battery systems, that allow critical facilities and equipment to continue operating during utility outages or PSPS events.

Climate Adaptation: Actions taken to reduce vulnerability and increase resilience to current and future climate-related hazards, including drought, flooding, wildfire, extreme heat, groundwater rise, and landslides.

Climate Adaptation Plan (CAP): IRWD's long-term roadmap for addressing climate change while improving operational resilience, resource efficiency, sustainability, energy management, and service reliability.

Climate Change Vulnerability Assessment (CVA): A technical assessment that evaluates climate hazards, operational thresholds, vulnerabilities, and asset-specific risks across IRWD systems and serves as the foundation for the CAP.

Climate Mitigation: Actions taken to reduce or prevent greenhouse gas emissions, or to increase the removal of greenhouse gases from the atmosphere, in order to limit the magnitude of future climate change.

CMIP6 (Coupled Model Intercomparison Project Phase 6): A collection of global climate model simulations used to evaluate future climate conditions. The CVA used downscaled CMIP6 projections developed for California's Fifth Climate Change Assessment.

CoSMoS (Coastal Storm Modeling System): A modeling framework used to evaluate future sea level rise and groundwater rise conditions, including scenarios of approximately 0.8, 1.6, and 2.5 feet of sea level rise.

Compound Hazards: Multiple climate hazards or events that occur simultaneously or in sequence and create greater impacts than any single hazard acting alone, such as wildfire followed by heavy precipitation or extreme heat combined with power outages.

Drought: A prolonged period of below-normal precipitation that can reduce water availability, increase water quality challenges, and create operational impacts across water, wastewater, and recycled water systems.

Exposure: The degree to which facilities, assets, or systems are expected to experience climate hazards such as flooding, wildfire, groundwater rise, heat, or drought.

Extreme Heat: Periods of elevated temperatures and heatwaves that can affect worker safety, treatment operations, equipment performance, and energy demands.

Facility Thresholds: Operational conditions at which climate hazards begin to affect infrastructure performance, system reliability, workforce safety, regulatory compliance, or maintenance requirements.

Frequency Threshold: The frequency with which a climate hazard must occur before adaptation actions become warranted or necessary.

Global Warming Level (GWL): A framework that evaluates climate conditions based on increases in global average temperature rather than a specific year or emissions scenario. The CVA evaluated warming increments of approximately 0.8°C, 1.5°C, 2.0°C, and 3.0°C above historical temperatures.

Greenhouse Gases (GHGs): Gases in the atmosphere that trap heat and contribute to the Earth's greenhouse effect, leading to climate change. Major greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases such as hydrofluorocarbons (HFCs).

Groundwater Rise: An increase in groundwater elevations associated with sea level rise that may affect buried infrastructure, increase infiltration, accelerate corrosion, and create operational challenges before direct coastal flooding occurs.

Heavy Precipitation and Flooding: Intense or prolonged rainfall events that can increase inflow and infiltration, flood facilities, damage infrastructure, mobilize debris, and create operational disruptions.

Inflow and Infiltration (I&I): The entry of stormwater and groundwater into wastewater collection systems through manholes, cracks, joints, or other openings, increasing hydraulic loading and treatment demands.

Landslide and Debris Flow: Movement of soil, rock, sediment, and debris down steep slopes, often triggered by wildfire and intense rainfall, that can damage infrastructure, block access routes, and reduce system reliability.

MWRP (Michelson Water Recycling Plant): One of IRWD's primary recycled water treatment facilities and a key asset evaluated for flooding and groundwater rise vulnerabilities.

Natural Treatment System (NTS): Engineered or semi-natural facilities that use wetlands, vegetation, soils, sedimentation basins, and biological processes to improve water quality and manage urban runoff.

PSPS (Public Safety Power Shutoff): A planned utility power outage implemented to reduce wildfire risk during high-fire-weather conditions. PSPS events can affect treatment, pumping, communications, monitoring, and fleet operations.

SCADA (Supervisory Control and Data Acquisition): The communications and control infrastructure that provides real-time operational monitoring, data collection, automation, and remote control capabilities across IRWD facilities.

Sea Level Rise (SLR): An increase in ocean water levels resulting from climate change. Within the IRWD service area, sea level rise primarily contributes to groundwater rise rather than widespread direct inundation.

Severity Threshold: The magnitude, duration, or intensity of a climate hazard that is likely to cause operational disruption, infrastructure impacts, or increased costs.

SGMA (Sustainable Groundwater Management Act): California legislation focused on achieving long-term groundwater sustainability through planning, monitoring, and management of groundwater resources.

Shared Socioeconomic Pathway (SSP): A standardized future scenario used in climate modeling that combines assumptions about population growth, economic development, technology, and policy to estimate future greenhouse gas emissions and climate conditions. SSPs help planners evaluate how different social and economic futures may influence climate change impacts.

SPI (Standardized Precipitation Index): A drought indicator used in the CVA to evaluate short-term and long-term drought conditions using 24-month and 60-month precipitation records.

Vulnerability: The degree to which a system is susceptible to harm from climate hazards, based on exposure, sensitivity, and adaptive capacity. Vulnerabilities in the CVA were categorized as Low, Moderate, Moderate-High, or High.

Wildfire: A climate hazard that can directly damage facilities and infrastructure while also causing secondary impacts such as smoke, ash deposition, sediment mobilization, degraded water quality, and power outages.

Water Resilience: The ability of water, recycled water, sewer, and urban runoff treatment systems to continue providing reliable service despite climate-related stresses, disruptions, and changing environmental conditions.

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Executive Summary

The Climate Adaptation Plan (CAP or Plan) presents a comprehensive strategy for helping the Irvine Ranch Water District (IRWD) prepare for climate change while maintaining reliable water, recycled water, wastewater, and urban runoff treatment services. The CAP combines climate adaptation and energy management into a single planning framework that supports infrastructure resilience, operational reliability, greenhouse gas (GHG) reduction, and long-term sustainability.

IRWD serves approximately 181 square miles of Orange County and operates a diverse portfolio of water, recycled water, wastewater, monitoring and control, and natural treatment assets. The CAP recognizes that climate change will affect not only water resources but also treatment processes, infrastructure performance, energy use, workforce safety, emergency response capabilities, and long-term capital planning. The Plan was developed using several technical analyses including a Climate Vulnerability Assessment (CVA), greenhouse gas forecasting analyses, energy optimization studies, and renewable energy evaluations. Additionally, the Plan was informed by IRWD internal expertise provided through three adaptation planning workshops involving operational, engineering, maintenance, safety and management staff.

181
Square miles of Orange County served

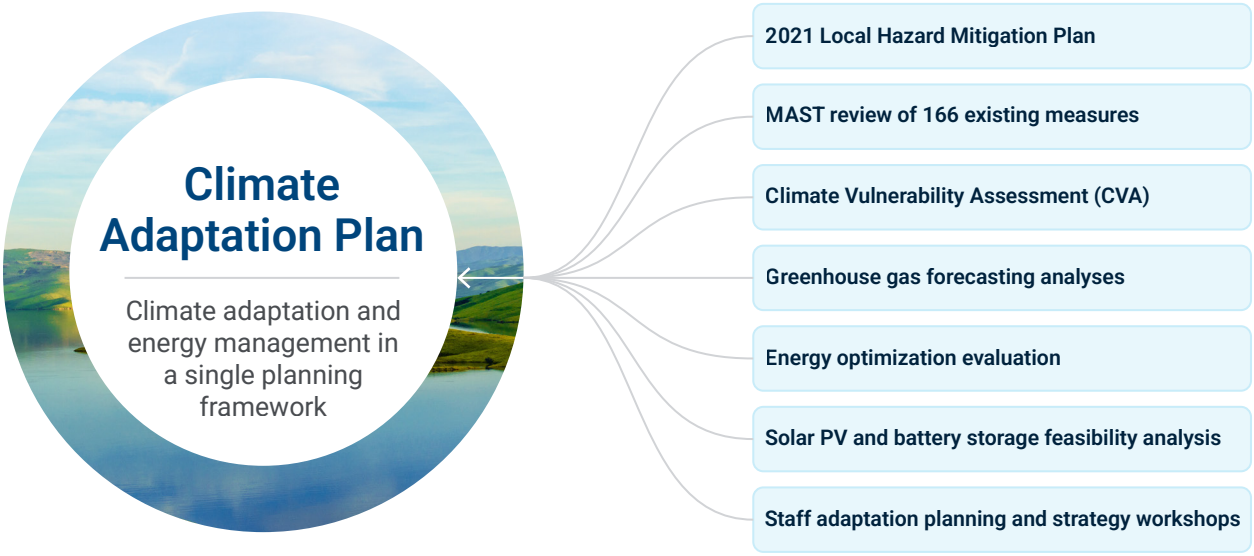
166
Measures, policies, and programs identified

6
Climate hazards evaluated

6
Interconnected operational systems

3
Staff adaptation planning workshops

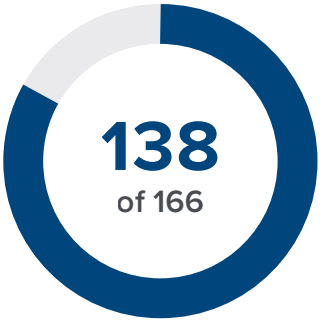
One Plan, Built From Several Inputs



Background and Measure Analysis and Success Tracking Tool

The CAP process began with a detailed analysis of IRWD's policies, programs, and actions related to existing climate adaptation, energy, and climate management strategies using input from IRWD staff collected via Rincon's Measure Analysis and Success Tracking (MAST) Tool. The MAST tool was used to evaluate IRWD's achievements and challenges in implementing adopted plans and identify lessons learned to incorporate into the CAP.

A total of 166 measures, policies, and programs were identified for assessment using the MAST tool, spanning topics such as water supply reliability, water quality, flood and drought management, seismic hazards, energy efficiency, battery storage, and greenhouse gas (GHG) reduction. The results of the analysis showed that a majority of IRWD's programs focused on operations, energy, and infrastructure, but relatively few policies focused on adaptation and climate hazards. Furthermore, IRWD has a strong history of implementation, with a majority (138 of 166) of projects having been completed or ongoing. The full MAST tool result can be found in Appendix F.



138 of 166 existing measures, policies and programs (83%) are completed or ongoing

IRWD has a strong implementation record. Most programs focus on operations, energy and infrastructure; relatively few address adaptation and climate hazards.

- Water supply reliability
- Water quality
- Flood & drought
- Seismic hazards
- Battery storage
- GHG reduction

Climate Hazards Facing IRWD

The CVA evaluated six primary climate hazards expected to affect IRWD operations during the coming decades. The hazards were identified by leveraging several existing documents including the 2021 Local Hazard Mitigation Plan. The primary hazards identified include:



Drought

More frequent short- and long-duration droughts

Lower reservoir inflows; more algae, thermal stratification, ammonia and BOD; concentrated wastewater flows.

MOST EXPOSED

Reservoirs, groundwater operations, treatment

Wildfire

Rising fire risk and power shutoffs, especially in the northeast

Ash, sediment and degraded source water; power outages and access limits that last long after the flames.

MOST EXPOSED

Irvine Lake, Syphon Reservoir

Heavy Precipitation & Flooding

Similar annual totals, more intense back-to-back storms

Flooding, treatment plant overloading, inflow and infiltration, erosion and infrastructure damage.

MOST EXPOSED

MWRP, low-lying sewers, reservoir systems

Extreme Heat

More heatwaves and warmer nights

Worker heat stress; strain on electronics, pumps and treatment processes; higher energy demand.

MOST EXPOSED

Baker Water Treatment Plant, Los Alisos WRP

Sea-Level & Groundwater Rise

Gradual but growing groundwater rise

Corrosion, infiltration, dewatering challenges and damage to buried utilities.

MOST EXPOSED

MWRP, Biosolids & Energy Recovery Facility, San Diego Creek

Landslides & Debris Flows

Fire plus heavy rain raises debris-flow risk

Threats to pipelines, reservoirs, natural treatment systems and access roads; post-fire sediment and debris.

MOST EXPOSED

Canyon and foothill areas

Combination Effects

Climate risks will increasingly occur as compound events, such as wildfire followed by intense rainfall or extreme heat occurring during power outages, creating operational challenges greater than the sum of individual hazards.



Drought

Climate projections indicate increasing frequencies of both short-duration and long-duration droughts throughout the watershed. Although IRWD benefits from a highly diversified water portfolio, prolonged droughts are expected to affect reservoir inflows, groundwater operations, water quality, and treatment processes. Drought conditions may increase algae growth, thermal stratification, ammonia concentrations, and biochemical oxygen demand (BOD), requiring additional monitoring and treatment. Droughts are also expected to affect wastewater systems through more concentrated flows, increased odors, corrosion, and operational complexity.



Wildfire

Wildfire conditions and Public Safety Power Shutoff (PSPS)-related outages are projected to increase, particularly in the northeastern portion of the IRWD service area. Beyond direct fire damage, wildfire creates risks through ash deposition, sediment loading, degraded source-water quality, power outages, and access limitations. Historical events, including the Santiago Fire, demonstrated how wildfire impacts can affect critical facilities such as Irvine Lake and Syphon Reservoir long after flames are extinguished.



Heavy Precipitation and Flooding

Although annual rainfall totals may remain similar, future storms are expected to become more intense and occur in larger clusters. Climate modeling indicates that back-to-back extreme storms will become increasingly common, increasing risks of flooding, treatment plant overloading, inflow and infiltration, erosion, and infrastructure damage. Facilities such as the Michelson Water Recycling Plant (MWRP), low-lying sewer infrastructure, and reservoir systems face elevated risks under these conditions.



Extreme Heat

The IRWD service area is projected to experience more frequent heatwaves, warmer nights, and increasing heat stress conditions. Elevated temperatures may affect worker safety, electronics, treatment processes, pumps, and energy demands. Some facilities, including Baker Water Treatment Plant and Los Alisos Water Recycling Plant, may experience more significant future temperature increases.



Sea-Level Rise and Groundwater Rise

Rising groundwater levels around MWRP, the Biosolids and Energy Recovery Facility, San Diego Creek, and adjacent infrastructure may increase corrosion, infiltration, dewatering challenges, and damage to buried utilities. These impacts are expected to occur gradually but become increasingly significant over time. Tidal inundation, coastal erosion and coastal flooding are not expected to directly impact IRWD's service area.



Landslides and Debris Flows

Wildfire and intense rainfall are expected to increase the likelihood of landslides and debris flows throughout canyon and foothill areas. These hazards could threaten pipelines, treatment facilities, reservoirs, natural treatment systems, and critical access roads. Post-fire sediment and debris accumulation also pose substantial water quality and maintenance challenges.

Where Climate Hazards Affect IRWD Service Areas and Facilities

The figure below summarizes where each climate hazard is expected to affect IRWD service areas and facilities, from the coastal plain and San Diego Creek corridor to the canyons and foothills in the northeast.



Drought

Reduced water availability, concentration of pollutants and increased treatment demands, odors, corrosion, and maintenance needs District-wide.

Wildfire

Damaged infrastructure, interrupted power and monitoring, restricted access, and ash in water supplies; highest exposure in the northeast, Silverado, Williams, and Modjeska Canyons, Irvine Lake, and Syphon Reservoir.

Heavy Precipitation & Flooding

Increased inflow, overwhelmed sewer and treatment capacity, restricted access, and overtopping, especially at MWRP, low-lying sewers and lift stations, Los Alisos WRP, and Sand Canyon and San Joaquin Reservoirs.

Extreme Heat

Reduced equipment efficiency, stress on pumps, electronics, and treatment processes, and unsafe working conditions, with the highest temperatures near Baker Water Treatment Plant and Los Alisos WRP.

Sea-Level Rise & Groundwater Rise

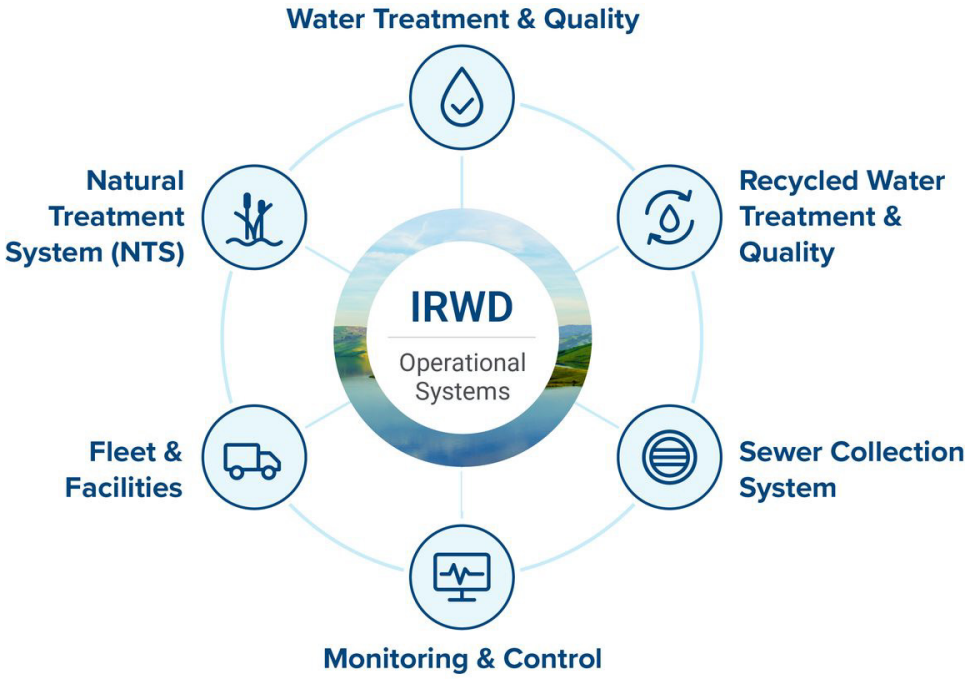
More infiltration, corrosion, and hydrostatic pressure on buried infrastructure, wells, pump stations, and pipelines, with the greatest exposure around MWRP and low-lying assets near San Diego Creek.

Landslides & Debris Flows

Restricted access or damage to pipelines, manholes, siphons, pump stations, natural treatment systems, and roads, especially in Silverado Canyon and other canyon and foothill areas.

Operational Structure and Climate Threshold Development

To evaluate climate impacts in a way that reflects daily operations, IRWD's assets were grouped into six interconnected systems:



For each operational system, IRWD reviewed operational procedures and infrastructure specifications to develop a set of thresholds beyond which a climate hazard would begin to have meaningful impacts on IRWD's ability to operate effectively. Thresholds were developed based on historical events and real-world data whenever possible.



Primary Operational Vulnerabilities

Using the identified climate thresholds as a reference point, IRWD utilized regionally-specific climate data from California's 5th Climate Assessment to identify when and how often thresholds would be crossed under future climate conditions. Across IRWD's operational systems, several recurring vulnerabilities emerged:

01 **Increasing treatment complexity associated with drought, wildfire, sediment, and degraded water quality.** More frequent droughts, wildfire impacts, and intense storm events are expected to degrade source water quality through increased algal activity, elevated ammonia and BOD, higher turbidity, sediment loading, nutrient inputs, and thermal stratification. These conditions can increase treatment complexity, chemical usage, operational costs, and reliance on monitoring and treatment infrastructure across both potable and recycled water systems.

02 **Greater exposure of wastewater and recycled water facilities to flooding, groundwater rise, and inflow and infiltration.** Extreme precipitation events are projected to increase hydraulic loading, inflow and infiltration, and flood risks across collection systems and treatment facilities, while sea-level rise-induced groundwater rise may increase corrosion, infiltration, dewatering demands, and maintenance requirements. Facilities such as the MWRP and infrastructure within the San Diego Creek corridor face particularly elevated risks from these conditions.

03 **Increased reliance on backup power, emergency communications, and operational redundancy during wildfireand PSPS events.** Climate projections indicate increasing wildfire potential and more frequent PSPS events, which could disrupt treatment processes, pumping operations, telemetry, Supervisory Control and Data Acquisition (SCADA) systems, and facility access. Maintaining reliable backup power, fuel supplies, communications systems, and operational flexibility will become increasingly important to ensure continuity of service during emergency conditions.

04 **Higher risks to workforce safety, facility operations, and equipment reliability from extreme heat.** More frequent heatwaves, warmer nighttime temperatures, and increasing heat index conditions are expected to affect employee safety, reduce opportunities for recovery during prolonged heat events, increase cooling demands, and place additional stress on pumps, electronics, communications equipment, and treatment infrastructure. Facilities without adequate climate control may experience reduced operational efficiency and increased maintenance requirements.

05 **Greater operational challenges posed by landslides, debris flows, erosion, and access disruptions.** Wildfire followed by intense precipitation increases the potential for landslides, debris flows, and sediment mobilization that can damage pipelines, reservoirs, the natural treatment system, and access roads. These hazards may reduce treatment performance, restrict access to critical facilities, delay emergency response, and increase maintenance and recovery costs, particularly in canyon, foothill, and burn-affected watersheds.

06 **Increasing maintenance demands associated with aging infrastructure exposed to climate stressors.** Climate-driven increases in flooding, groundwater rise, sediment accumulation, corrosion, heat exposure, and hydraulic loading are expected to accelerate wear on existing infrastructure and increase inspections, cleaning, rehabilitation, and replacement needs. Older sewer systems, lift stations, buried utilities, electrical systems, and facilities located in hazard-prone areas are expected to require additional investments to maintain long-term reliability and performance.

Adaptation Strategy Development

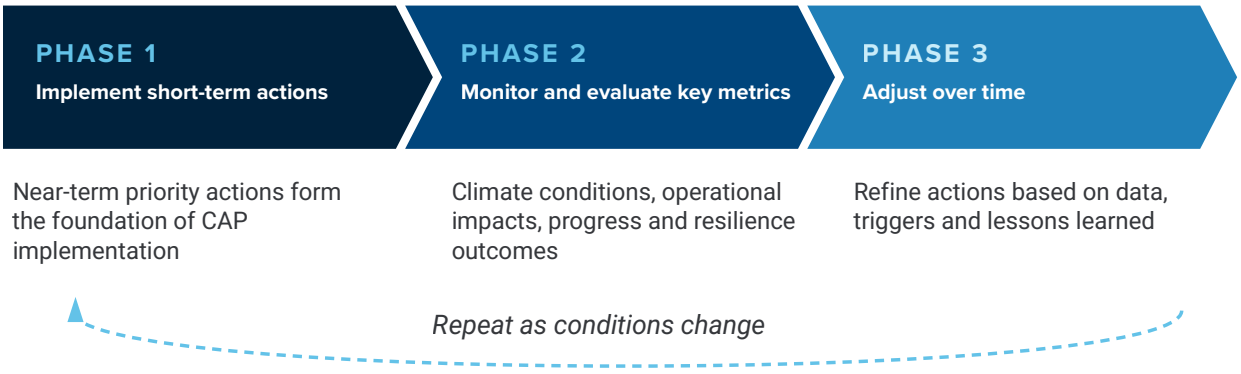
Once the primary vulnerabilities were identified, several workshops were held with IRWD staff to develop a suite of strategies that would allow IRWD to better adapt to climate change. IRWD staff utilized assessment criteria to rank actions based on key features including operational feasibility, cost and funding viability, resilience benefit, and others. Based on this overall score as well as other considerations such as overall project costs and whether the action was foundational to future high-priority actions, the phasing for project implementation was also identified. Project phasing was defined as:



Section 4 provides a summary of the actions developed for each operational system. A complete list of the actions developed for the CAP can be found in Appendix G. Section 6 of the CAP, however, provides a more focused short-term implementation plan organized around the concept of adaptive management.

While the CMIP6 data used for analyzing future climate hazards associated with IRWD's facilities is the best data set currently available, modeling climate impacts over decades remains a challenge. Uncertainty is introduced both through the climate data which has a wide range of potential outcomes driven by the efficacy of global mitigation efforts, positive feedback loops, and the overall complexity of climate patterns as well as changes in technology, and the actual, rather than perceived, adaptive capacity of existing infrastructure and operations.

To manage this uncertainty, this plan focuses on an adaptive management approach. Adaptive management acknowledges uncertainty is unavoidable, promotes transparency through ongoing data collection and analysis, establishes triggers to initiate deployment of appropriate adaptation strategies, and establishes a adjustment process based on outcomes and changing conditions. The CAP Implementation Framework (Section 6) highlights three phases which includes implementation of the short-term actions, monitoring and evaluation of key metrics, and adjustments made over time based on feedback from data collection and lessons learned. The near-term implementation program, an initial list of high-priority actions that will form the foundation of IRWD's implementation strategy for the CAP, is shown below by specific IRWD system (as well as District-Wide) and implementation phase.



Near-Term Implementation Program: High-Priority Actions

High-priority actions are listed below by IRWD system (and District-wide) with their implementation phase.

Water Treatment and Quality	Implementation Phase
Improve demand management and water use efficiency to improve source reliability during low-flow periods.	Ongoing
Develop climate-informed drought forecasting tools integrating imported supply reliability, groundwater availability, and recycled water demand projections.	Short Term
Enhance monitoring, forecasting, and operational response protocols for harmful algal blooms and cyanotoxins through monitoring, predictive tools, treatment optimization, and reservoir management strategies.	Short Term
Integrate climate change impacts into future urban water management plans.	Ongoing
Coordinate water banking and imported water reliability planning with Kern Fan groundwater storage partnerships to improve long-term drought supply resilience.	Short Term
Develop a post-fire sediment interception, watershed stabilization for Syphon Reservoir.	Short Term
Expand ongoing collaborations with fire fighting entities to understand and plan for wildfire fighting water needs in preparation for larger and more frequent wildfires in and around IRWD territory.	Ongoing
Continue to build or retrofit intake pretreatment systems, including the San Joaquin Reservoir Filtration Facility project to improve resilience to post-fire turbidity, nutrient loading, and degraded source water quality.	Ongoing
Evaluate the impacts of wildfire ash, sediment, turbidity, and nutrient loading on Irvine Lake, Syphon Reservoir, and treatment operations, and develop monitoring, operational, treatment, and infrastructure response measures.	Short Term
Coordinate with Edison to identify areas outside of the high wildfire zones that could be impacted by PSPS events.	Short Term
Continue to increase onsite fuel storage, portable generators, and mobile charging systems to maintain operations during PSPS events.	Ongoing
Develop a plan to conduct site walks periodically with firefighters at facilities located within the high fire zone and implement vegetation clearing and/or infrastructure hardening. Locations include pumps and reservoirs in and around Williams Canyon, Santiago Canyon, Orchard Hills, Manning Pump Station, and Los Trancos Canyon.	Short Term
Ensure each facility in and around high wildfire areas have backup power sufficient for 3 days.	Ongoing
Incorporate automated debris screening and sediment management infrastructure into Sand Canyon and San Joaquin Reservoir improvement projects and upland areas.	Ongoing
Formalize a regular spillway review and repair process prior to each winter season.	Ongoing
Evaluate reservoir projects for opportunities to increase capacity to capture additional precipitation while leaving capacity to limit releases.	Ongoing
Include extreme heat of temperatures over 105F as a design specification when designing new buildings or procuring new equipment.	Short Term

Water Treatment and Quality (continued)	Implementation Phase
Continue to track impacts of extreme heat to surface water reservoirs and evaluate cost/benefit of mitigation devices such as mechanical mixing, floating covers or solar.	Short Term
Work with regional land managers to develop and deploy post fire replanting and other stabilization approaches in landslide risk areas.	Short Term
Prepare for pipeline shutoff and repair in areas vulnerable to landslides, including but not limited to Silverado Canyon pipelines, by advancing landslide response plans.	Ongoing
Develop debris clearance protocols, contractor agreements, and emergency response procedures to rapidly restore facility access after landslides.	Short Term
Identify and establish alternative access routes, easements, and staging areas for facilities vulnerable to landslide-related road closures.	Short Term
Identify site stability models to utilize after wildfires in areas holding underground infrastructure like water pipes.	Short Term

Recycled Water Treatment and Quality	Implementation Phase
Develop protocols for discharging stormwater and bypassing treatment facilities with consideration for creeks already at full capacity.	Ongoing
Upgrade electrical and mechanical systems above flood levels, included in the EPA adaptation strategies.	Planned
Monitor floodwall performance and incorporate flood hardening, drainage upgrades, and wet-weather equalization improvements into planned Michelson Water Recycling Plant facility upgrades.	Short Term
Evaluate San Joaquin Marsh and San Diego Creek Pump Stations for sea-level induced groundwater rise impacts and capacity increase needs.	Short Term
Evaluate dewatering permitting constraints and discharge requirements as dewatering activities increase.	Short Term
Establish odor and corrosion trigger thresholds to initiate operational responses when low-flow conditions persist beyond defined limits.	Short Term
Implement formal condition assessments and monitoring programs to identify corrosion risks and establish proactive maintenance thresholds.	Short Term
Incorporate future climate conditions and operational stressors into design criteria for facility rehabilitation and upgrade projects.	Planned

Sewer Collection System	Implementation Phase
Audit sewer system to identify leaks which occur during large storms and flooding. Install sewer/stormwater monitoring equipment in key areas as a pilot project to identify potential leaks.	Planned
Coordinate conservation-related flow reduction planning to minimize impacts on conveyance operations.	Short Term
Expand inspection and monitoring of aging, corroding sewer lines vulnerable to cracking and releasing odors under dry soil conditions.	Ongoing

Sewer Collection System (continued)	Implementation Phase
Adjust sewer cleaning and flushing schedules in low-flow areas vulnerable to sediment buildup during drought.	Short Term
Utilize pump station cycling optimization and wet-well redesign to maintain turnover during low flow.	Short Term
Collaborate with partners (firefighters) to establish defensible space/fire safe practices at University and Bayview Lift Stations to maintain operational visibility during outages.	Short Term
Develop flooding continuity plans for University Lift Station and Bayview Lift Station including mobile generators, fuel staging, and emergency staffing assignments.	Ongoing
Incorporate creek crossing stabilization and scour protection into future sewer capital replacement projects. Raise or seal manholes in flood-prone areas.	Ongoing
Expand upon proposed lift station replacement projects to include climate-adjusted hydraulic capacity and flood protection standards.	Ongoing
Replace manhole covers and small leaks before they create infiltration challenges.	Short Term
Include system design specifications associated with 105F degree days in future equipment procurement guidelines.	Short Term
Increase inspection frequency of motor and other overheating equipment during heat events.	Short Term
Expand shaded staging and cooling areas for sewer maintenance crews.	Short Term
Upgrade pump motors, electrical systems, and telemetry equipment to operate reliably during sustained high temperatures by incorporating ventilation and cooling.	Ongoing
Work with regional land managers to develop and deploy post fire replanting and other stabilization approaches in landslide risk areas.	Short Term

Monitoring and Control	Implementation Phase
Expand systems already in place to manage smoke and ash monitoring.	Ongoing
Continue to develop procedures and operational triggers tied to PSPS notifications, wildfire proximity, and reservoir water quality degradation.	Ongoing
Consider expanding battery backup systems for key control systems.	Short Term
Expand proposed Radio Tower Improvements to support hardened emergency communications, redundant telemetry, and backup power during PSPS and wildfire conditions.	Ongoing
Maintain and enforce procurement specifications requiring equipment to passively withstand temperatures up to 50°C without performance degradation or additional cooling requirements.	Ongoing

Fleet and Facilities	Implementation Phase
Expand vegetation management and emergency access maintenance around facilities in very high wildfire hazard severity zones to improve emergency vehicle access.	Ongoing
Determine protocols for evacuation from remote facilities during wildfire events. Define when vehicles can re-enter areas post wildfire.	Short Term
Implement heat-health protocols that provide scheduled cooling breaks and designated air-conditioned refuge locations for field crews.	Short Term
Pre-position debris removal equipment and emergency repair materials ahead of major storm events.	Short Term
Identify alternative emergency access routes to facilities vulnerable to slope failure and debris blockage.	Short Term
Develop standing emergency contractor agreements and streamlined procurement processes to reduce permitting and contracting delays during emergency response.	Short Term
Complete expansion of Charge-ready program at IRWD headquarters and MWRP.	Ongoing
Ensure EV charging infrastructure is located in areas not affected by flooding/groundwater rise.	Short Term

Natural Treatment System (NTS)	Implementation Phase
Establish facility-specific post-wildfire response protocols, including rapid sediment removal, revegetation, intake protection, and first-flush storm preparedness measures to reduce erosion and protect treatment infrastructure.	Short Term
Develop operational and infrastructure measures to temporarily divert high-flow floodwaters and manage extreme runoff conditions, reducing damage to NTS facilities and preserving treatment performance during major storm events.	Ongoing
Implement well-specific salinity monitoring and threshold-based management protocols to protect dewatering systems from saltwater intrusion impacts.	Short Term
Establish streamlined permitting pathways and pre-approved environmental compliance procedures to accelerate NTS maintenance and emergency response.	Short Term

District-Wide	Implementation Phase
Establish a standardized “After Action Report” program following wildfire, flood, PSPS, drought, and water quality emergencies to document operational lessons learned, effective response measures, resource limitations, and infrastructure gaps.	Short Term
Formalize cross-training and staffing surge plans for treatment plants, lift stations, and operations centers to maintain coverage when access, commuting, or staffing availability is constrained by PSPS, wildfire, flooding, or extreme heat.	Short Term
Develop a project-level climate resilience screening checklist requiring evaluation of future flood risk, wildfire exposure, groundwater/sea level rise, extreme heat, and backup power needs for all major CIP projects and facility upgrades.	Short Term
Conduct multi-hazard emergency exercises simulating compound events such as wildfire followed by debris flows, or PSPS outages occurring during extreme heat events.	Ongoing

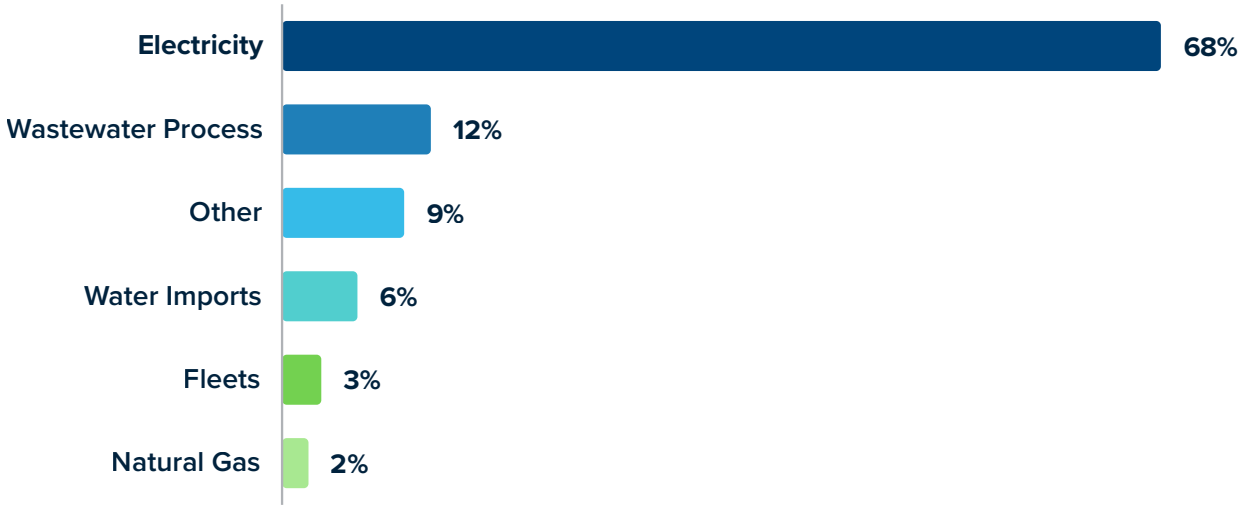
District-Wide (continued)	Implementation Phase
Establish emergency procurement agreements and pre-positioned contracts for fuel delivery, generators, debris removal, treatment chemicals, and emergency repair services during regional hazard events and PSPS outages.	Short Term
Coordinate with Metropolitan and MWDOC on drought planning and water resources management.	Ongoing
Expand coordination with local jurisdictions to increase the amount of stormwater infiltration projects in the IRWD watershed to reduce the impacts of heavy precipitation on infrastructure.	Short Term
Coordinate with firefighters/calFire to audit facilities/equipment in high wildfire risk zones to increase resilience through vegetation management and building hardening.	Short Term
Maintain partnership with local and regional agencies to develop mutual aid agreements for standby power (e.g., Regional Standby Generator Fleet through Emergency Response Network of the Inland Empire (ERNIE)).	Ongoing
Consolidate and share temperature, groundwater pumping, and drought-related operational data across departments to identify trends, evaluate climate impacts, and inform adaptive management strategies across IRWD systems.	Planned
Specify fire resistant design and materials for all facilities located in high wildfire zones.	Short Term
Expand redundant communications and power systems to maintain operational coordination during PSPS events, flooding, and wildfire emergencies.	Ongoing



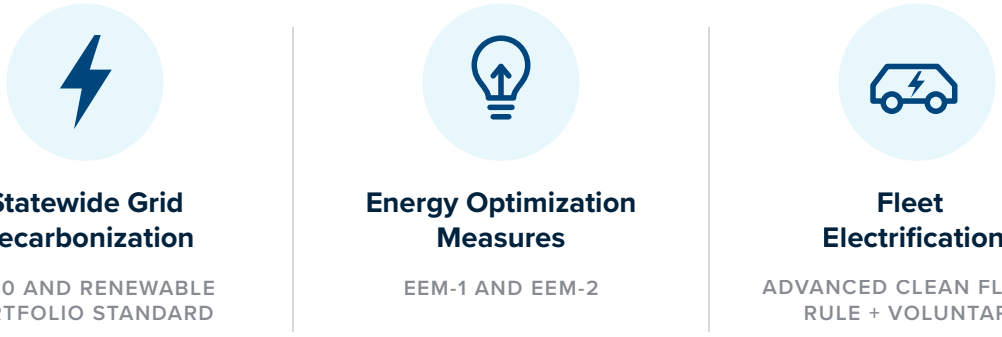
Greenhouse Gas Emissions and Energy Management

The adaptation and resilience strategies are complemented by an energy management strategy focused on reducing operational emissions while maintaining system reliability and cost effectiveness. Historical inventories show that electricity consumption associated with pumping and treatment represents IRWD's largest source of greenhouse gas emissions as shown in Figure 1. Additional emissions result from wastewater treatment processes, imported water, vehicle fleets, natural gas use, and biosolids management. Under a Business-as-Usual (BAU) scenario, emissions are projected to increase from approximately 41,100 metric tons of carbon dioxide equivalent (MT CO_2e) in 2023 to approximately 55,900 MT CO_2e by 2045 due to population growth, increasing water demands, and facility expansions.

Figure 1 2023 IRWD GHG Emissions by Source



To better understand the opportunities available to IRWD to reduce energy consumption, improve cost effectiveness, and ultimately decrease GHG emissions several detailed analyses were conducted. These analyses include a complete facility benchmarking process, development of several energy optimization studies, and a distributed energy resources (solar PV and battery energy storage system or BESS) analysis.



Energy Optimization Measure Evaluation Summary

Recognizing that electricity consumption is the largest source of greenhouse gas emissions across IRWD operations, Willdan completed a comprehensive energy optimization evaluation to identify opportunities to reduce energy use, lower emissions, improve cost effectiveness, and enhance operational resilience. The evaluation included facility benchmarking, site visits to major energy users, and analyses of solar photovoltaic (PV) and battery energy storage system (BESS) opportunities.

Facility Benchmarking. Energy benchmarking was conducted across IRWD's major treatment, pumping, and groundwater facilities by comparing facility energy intensity (kWh per million gallons treated, produced, or conveyed) against industry benchmarks developed from literature, prior studies, and engineering calculations. Results showed that a large share of IRWD's electricity consumption is concentrated at a relatively small number of facilities, particularly the Michelson Water Recycling Plant, Baker Water Treatment Plant, Deep Aquifer Treatment System (DATS), and Los Alisos Water Reclamation Plant. While these facilities account for substantial energy use, benchmarking found that many are already operating near the most efficient end of expected performance ranges. This suggests that significant emissions reductions through traditional operational efficiency improvements may be limited.

Site Assessments. Detailed site visits were conducted at several of IRWD's highest energy-consuming facilities, including Michelson Water Recycling Plant, DATS, Wells 21/22 Treatment Facility, Baker Water Treatment Plant, Rattlesnake Reservoir, and Zone A Pump Station. Findings from these visits informed the development of energy Rattlesnake Reservoir, and Zone A Pump Station. Findings from these visits informed the development of energy optimization projects to support energy savings and GHG reductions.

Energy Optimization Measures. Based on data from the facility benchmarking and site assessments, several energy optimization measures were developed. These measures were analyzed against several criteria includingfeasibility, cost effectiveness, resilience, and GHG reduction benefits. Three projects including hydro turbines at Baker Water Treatment Plant, a Mainspring linear Generator at Michelson Water Treatment Plant, and battery energy storage to slowly shut down well pumps during sudden power outages were identified as high scoring projects.

Hydro Turbines
Baker Water Treatment Plant

Mainspring Linear Generator
Michelson Water Recycling Plant

Battery Storage
Controlled well-pump shutdown during sudden power outages



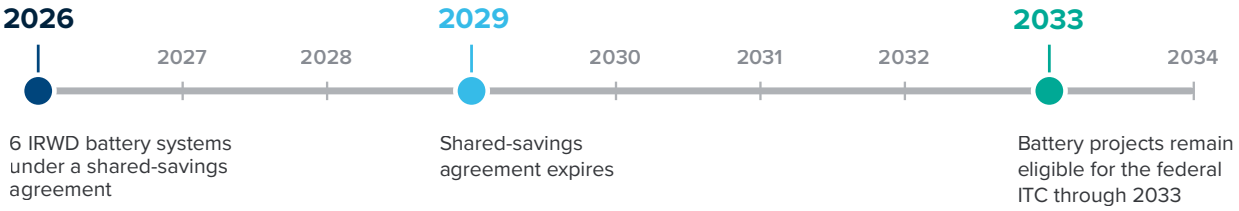
Solar PV and BESS Feasibility Analysis

Existing Battery Storage Systems. IRWD currently hosts six battery energy storage systems under a shared-savings agreement that expires in 2029. Four potential post-contract scenarios were evaluated, including system retirement, agreement extension, system buyout, and replacement with new battery systems. The analysis concluded that replacing the existing systems while leveraging the existing electrical infrastructure represents the most practical long-term strategy. This approach would allow IRWD to update system sizing and controls, avoid demolition costs, capitalize on new technologies, and maintain flexibility in selecting future service providers.

Future Solar and Battery Opportunities. Additional analyses evaluated new PV and BESS installations at Rattlesnake Reservoir, Michelson Water Recycling Plant, Zone A North Reservoir 3, and Baker Water Treatment Plant. Modeling demonstrated that solar and battery systems can help reduce utility costs by offsetting energy demand during periods of peak pricing while also providing resilience benefits during power outages and Public Safety Power Shutoff events. However, recent federal policy changes eliminated the 30% Investment Tax Credit (ITC) for most new solar projects not already underway, reducing overall project cost effectiveness. Battery storage projects remain eligible for the ITC through 2033, creating a more favorable incentive landscape for future BESS investments.

Battery storage projects may provide additional operational and resilience benefits but should be pursued strategically based on site-specific operational needs, load profiles, and available incentives. While current project economics generally did not meet IRWD's typical payback expectations, future changes in incentive programs, utility rate structures, or demand-response opportunities could improve project viability and justify phased implementation of distributed energy resources across the IRWD system.

BATTERY STORAGE OUTLOOK



SITES EVALUATED FOR NEW SOLAR + BATTERY STORAGE

Rattlesnake Reservoir | Michelson WRP | Zone A North Reservoir 3 | Baker WTP



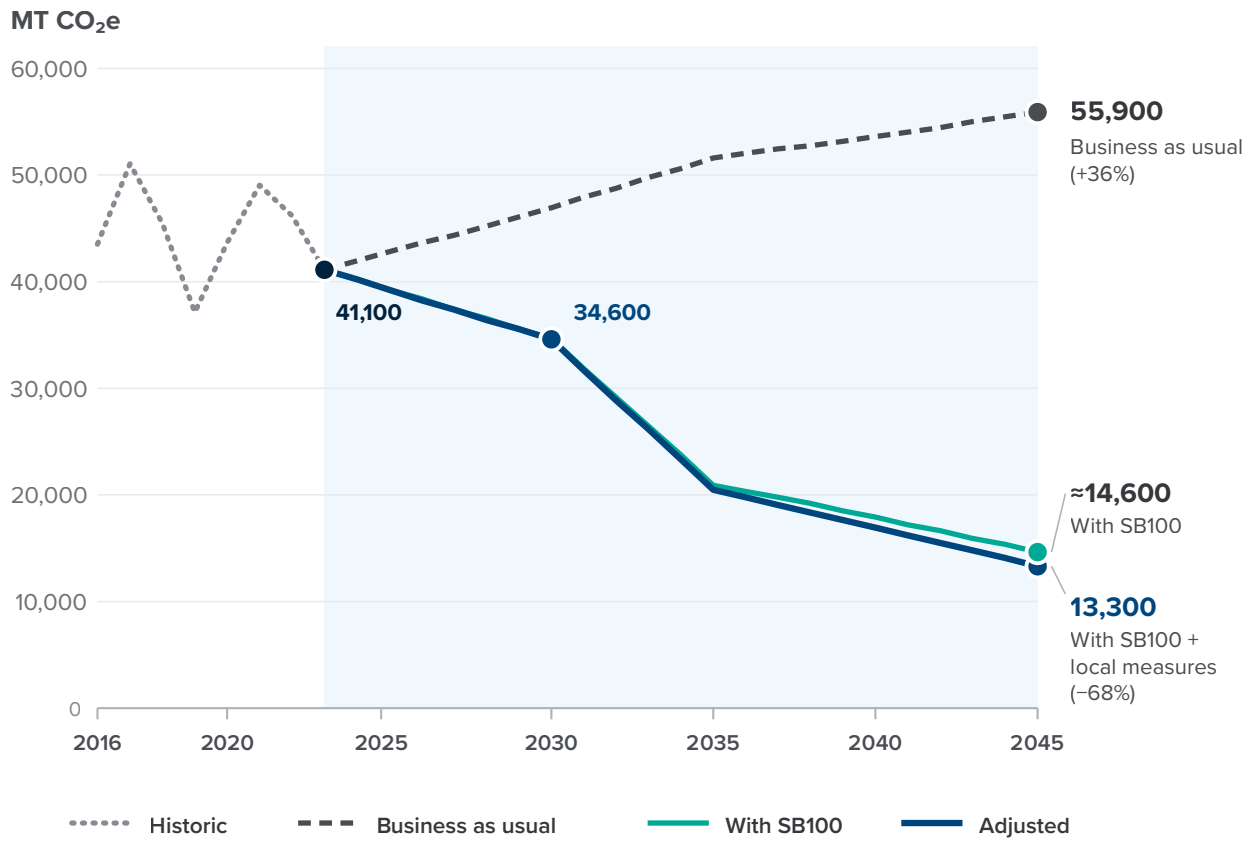
Adjusted GHG Emissions Forecast

While the BAU forecast shows emissions increasing over time as IRWD serves new homes and businesses, several factors could contribute to lowering future emissions. Primarily, existing State legislation is expected to reduce GHG emissions associated with IRWD's operations. California's Renewable Portfolio Standard and statewide grid decarbonization (SB100) will have a meaningful effect on IRWD's emissions profile since a majority of IRWD operations are powered by electricity. After accounting for SB100, IRWD emissions are expected to decrease by 61% by 2045 compared to 2023 levels.

Additional GHG emissions reductions from Energy Optimization Measures EEM-1 and EEM-2 and ongoing fleet electrification (due to the Advanced Clean Fleets rule and voluntary electrification) will further reduce IRWD emissions.

When incorporating these actions into a legislative-adjusted forecast, emissions are projected to decline from approximately 41,100 MT CO_2e in 2023 to approximately 34,600 MT CO_2e by 2030 and approximately 13,300 MT CO_2e by 2045, representing a 68 percent reduction relative to current conditions as shown in Figure 2. These reductions are driven primarily by California's transition toward carbon-free electricity, supplemented by local energy projects and fleet modernization efforts.

Figure 2 Legislative Adjusted Greenhouse Gas Emissions Forecast



Next Steps for Implementation

The CAP demonstrates that climate change presents both near-term and long-term challenges for IRWD's infrastructure, operations, workforce, and energy management programs. While IRWD already benefits from strong adaptive capacity, diversified water supplies, operational redundancy, and robust emergency response capabilities, future conditions are expected to place increasing pressure on many critical systems. Recognizing the uncertainty inherent in future climate conditions, the CAP emphasizes a flexible, data-driven implementation approach that integrates climate resilience into existing planning processes, asset management, capital improvement, operations, and equipment replacement processes. Through ongoing monitoring of climate indicators, infrastructure performance, operational impacts, and workforce considerations, IRWD can adaptively refine priorities, identify emerging risks, and make informed investment decisions as conditions evolve.

Key next steps include:

1. Develop an Implementation Program that identifies responsible departments, implementation schedules, and funding needs for the identified priority actions, while tracking both new and ongoing adaptation efforts.
2. Advance near-term resilience actions that can be incorporated into existing maintenance activities, equipment replacement cycles, capital projects, and operational procedures to provide immediate benefits.
3. Incorporate climate projections into future planning and design decisions, ensuring new infrastructure, facilities, and equipment are evaluated against projected climate conditions over their expected service life.
4. Conduct targeted analyses of high-risk facilities and systems to refine longer term adaptation strategies, evaluate costs and benefits, and identify investments needed to address IRWD's most vulnerable assets.
5. Implement the identified Monitoring Program to track climate conditions, operational impacts, implementation progress, and resilience outcomes using measurable indicators and performance metrics.
6. Use trigger-based decision making to guide future investments, allowing adaptation actions to be implemented when predefined climate, operational, or asset-performance thresholds are reached.
7. Pursue funding and financing opportunities and align future grant applications, capital investments, and partnership opportunities with identified adaptation priorities.
8. Update and maintain facility energy benchmarking to track energy performance over time and identify emerging opportunities for operational improvements as facilities, equipment, and treatment demands evolve.
9. Integrate selected energy optimization into capital planning and asset replacement programs, ensuring energy efficiency, demand management, and GHG reduction opportunities are considered during major equipment upgrades and facility improvements.
10. Develop a distributed energy resource roadmap that identifies priority solar PV and battery energy storage projects, implementation timing, funding needs, and decision points based on changing economics and utility programs.
11. Prepare for replacement of IRWD's existing battery energy storage systems following expiration of the current agreement in 2029, including evaluation of ownership structures, operational models, and available incentive programs.
12. Monitor changes in utility rates, demand response programs, and federal and state incentives that could significantly improve the cost-effectiveness of future solar PV and battery storage investments.

This adaptive management framework provides IRWD with a structured process for implementing priority actions today while maintaining the flexibility to respond to evolving climate risks and future uncertainties.

1 Introduction

1.1 Purpose

The purpose of the Climate Adaptation Plan (CAP) is to provide Irvine Ranch Water District (IRWD) with a comprehensive roadmap for responding to climate change while advancing operational resilience, resource efficiency, cost-effective energy efficiency and renewable energy initiatives, emissions reductions, and long-term service reliability. Building upon IRWD's longstanding commitment to innovation in water resource management, the CAP evaluates how climate change may affect IRWD's infrastructure, operations, workforce, and planning processes and identifies practical strategies to reduce risk, improve adaptive capacity, and support informed decision-making over time.

California is already experiencing significant climate change impacts that are affecting public health, water resources, infrastructure, ecosystems, and the economy. Rising temperatures are increasing the frequency and severity of extreme heat events, while more intense droughts, wildfires, flooding, and sea level rise are placing growing stress on communities, transportation networks, agricultural systems, and critical water infrastructure across the state. California's climate assessments project continued increases in heat, more variable precipitation patterns, declining snowpack, and worsening wildfire conditions, all of which threaten long-term water supply reliability and infrastructure resilience. These impacts are also imposing substantial economic costs. Recent analyses estimate that California is already incurring billions of dollars in losses from climate-related disasters, including approximately $117 billion in average annual economic losses associated with major wildfires between 2017 and 2021, $3 billion in agricultural losses during the 2020-2022 drought, and roughly $1.7 billion in annual flood damages. Extreme heat events between 2013 and 2022 alone resulted in an estimated $7.7 billion in damages, and future costs are expected to increase significantly without continued investment in climate adaptation and resilience actions (UC San Diego School of Global Policy and Strategy, 2025).

The CAP addresses climate-related hazards that are expected to affect IRWD facilities and operations, including drought, wildfire, extreme heat, heavy precipitation and flooding, sea-level rise, groundwater rise, and landslides or debris flows. These hazards have the potential to disrupt treatment and conveyance operations, degrade water quality, restrict access to critical facilities, increase energy demands, damage infrastructure, and create regulatory and compliance challenges. While impacts relating specifically to water supply availability are addressed through separate planning efforts, including the Water Supply Reliability Study Update, Urban Water Management Plan, and Water Shortage Contingency Plan, the CAP focuses on operational vulnerabilities and resilience across IRWD's water, recycled water, sewer, urban runoff treatment, monitoring, and support systems.

The CAP is informed in part by the findings of a Climate Change Vulnerability Assessment (CVA), which evaluated how future climate hazards may affect IRWD facilities, infrastructure, operations, and workforce activities. The CVA identified key climate vulnerabilities, operational thresholds, and asset-specific risks across IRWD's major systems and serves as the technical foundation for the adaptation strategies presented in this Plan. The full CVA is included in Appendix B.

Beyond evaluating vulnerabilities, the CAP is intended to provide an actionable framework for implementation. The Plan identifies opportunities to enhance climate resilience, improve energy performance, support greenhouse gas reduction efforts and protect critical infrastructure investments. Consistent with California's evolving climate policies and IRWD's leadership in sustainable water management, the CAP integrates climate adaptation and energy management into a single planning framework that supports efficient operations, regulatory readiness, fiscal responsibility, and long-term environmental stewardship.

A key principle of the CAP is adaptive management. Because future climate conditions cannot be predicted with complete certainty, the Plan is designed to support flexible decision-making based on evolving climate science, operational experience, and monitoring data. The CAP establishes resilience goals, adaptation strategies, implementation priorities, and future decision triggers that can be adjusted as conditions change. See Section 3.2 in Appendix B for detailed descriptions of thresholds and future decision triggers. This approach enables IRWD to proactively manage climate risks and continue providing reliable water, recycled water, wastewater, and urban runoff treatment services to its customers.

1.2 Legislative and Regulatory Framework

The CAP was developed within a rapidly evolving policy and regulatory landscape that increasingly emphasizes climate resilience, infrastructure reliability, and long-term resource sustainability. California continues to advance statewide guidance encouraging public agencies to integrate climate adaptation into planning, asset management, and capital investment decisions. The California Adaptation Planning Guide, which is being updated to reflect the latest climate science and adaptation best practices, promotes the use of vulnerability assessments, adaptive management, and implementation-focused resilience planning to prepare public infrastructure for future climate conditions. Consistent with this approach, the CAP provides a framework for understanding climate risks, integrating resilience into IRWD planning efforts, and identifying adaptation actions that can be implemented as conditions evolve over time. A Climate Action Legislative Driver Summary Report was developed to document these drivers and can be found in Appendix E.

State water policy also increasingly recognizes climate resilience as a critical component of sustainable water management. The Sustainable Groundwater Management Act (SGMA) has accelerated investment in groundwater sustainability, water reuse, groundwater recharge, storage, and regional water management throughout California. While SGMA primarily focuses on groundwater resources, its emphasis on long-term reliability, adaptive management, and resilience to hydrologic variability closely aligns with the objectives of the CAP. In parallel, major state investments, including funding made available through Proposition 4, are creating new opportunities for water agencies to implement projects related to watershed-wide resilience, flood protection, ecosystem restoration, wildfire resilience, and groundwater management. The CAP helps position IRWD to competitively pursue future funding opportunities by identifying priority adaptation actions and implementation pathways that support both resilience and operational reliability.

The CAP is also informed by regional and statewide regulatory requirements governing water quality, wastewater treatment, flood management, energy use, and greenhouse gas reduction. Climate change has the potential to affect compliance with National Pollutant Discharge Elimination System (NPDES) permits, recycled water regulations, Regional Water Quality Control Board requirements, and other water quality objectives as flooding, groundwater rise, and

extreme weather events place greater stress on treatment and conveyance systems. At the same time, California continues to advance ambitious energy and climate policies aimed at achieving carbon neutrality by 2045 through initiatives such as renewable energy deployment (SB100), electric fleet requirements (Advanced Clean Fleets), and energy efficiency programs. As a result, the CAP was intentionally developed as an integrated climate adaptation and energy management framework that recognizes the strong relationship between resilience, operational reliability, energy management, regulatory readiness, and long-term sustainability.

1.3 Technical Foundations for the CAP

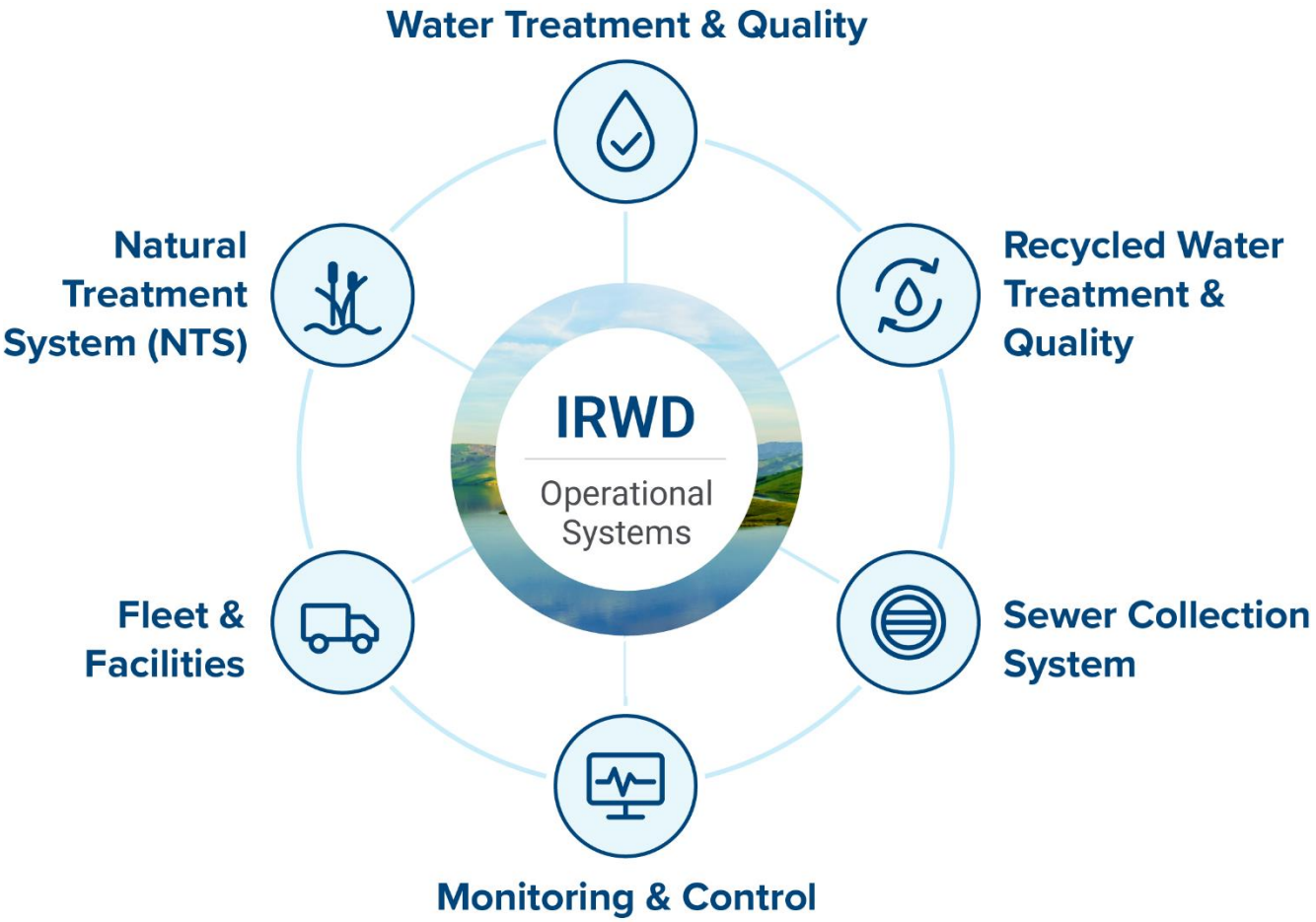
The CAP was developed through a series of interconnected assessments, analyses, and planning tools designed to provide IRWD with a comprehensive understanding of climate risks, energy use, GHG emissions, and opportunities to improve long-term operational resilience. These efforts established the technical foundation for identifying priority vulnerabilities, developing adaptation and energy management actions, and an implementation roadmap:

- **Greenhouse Gas Emissions and Energy Forecasting:** Creation of long-term forecasts of energy use and greenhouse gas emissions under business-as-usual and policy-adjusted future conditions. (Appendix A)
- **Climate Vulnerability Assessment**: Analysis of how current and future climate hazards may affect IRWD's infrastructure, operations, water supplies, water quality, and overall service reliability. (Appendix B)
- **Energy Optimization Measure Report and Energy Measure Selection Criteria**: Identification and evaluation of facility, equipment, and operational improvements that could reduce energy consumption, emissions, and operating costs. (Appendix C)
- **Renewable Energy and Battery Storage Evaluation**: Assessment of solar energy and energy storage opportunities, including decision-support tools to guide future renewable energy investments. (Appendix D)
- **Climate Action Legislative Driver Summary Report:** Review of current and emerging state and federal regulations, policies, and legislative initiatives that may influence IRWD's climate adaptation, greenhouse gas reduction, and energy management. (Appendix E)
- **MAST Tool:** an evaluation of existing IRWD efforts used to evaluate, compare, and prioritize adaptation, greenhouse gas reduction, and energy management measures to understand implementation status and determine hurdles to implementation of existing IRWD programs. (Appendix F)
- **Complete List of Adaptation Actions**: Development and evaluation of a comprehensive portfolio of potential climate adaptation strategies and actions designed to address identified vulnerabilities, increase infrastructure and operational resilience, reduce climate-related risks, and support long-term implementation planning. (Appendix G)

1.4 Summary of IRWD Infrastructure, Operations, and Assets

IRWD provides potable water, sewer, recycled water, and urban runoff treatment services across approximately 181 square miles in Orange County. The service area encompasses a diverse mix of urbanized communities, open space areas, coastal environments, foothill terrain, and major transportation corridors, creating a wide range of operational conditions and climate-related exposures. IRWD manages an integrated water system that includes potable water treatment and distribution facilities, sewer collection and treatment infrastructure, recycled water production and distribution systems, groundwater management facilities, monitoring and control systems, and fleet and operational support facilities. These assets support IRWD's ability to provide reliable water and wastewater services under changing environmental conditions. Figure 3 demonstrates the interconnected IRWD systems.

Figure 3 IRWD Asset Systems



For purposes of the CAP, IRWD's infrastructure and operations were organized into six primary operational systems:

1. Water Treatment and Quality[1]
2. Recycled Water Treatment and Quality
3. Sewer System
4. Monitoring and Control
5. Fleet and Facilities
6. Natural Treatment System (NTS)

IRWD's potable water system includes treatment plants, reservoirs, wells, pump stations, and distribution infrastructure that work together to maintain water quality and system reliability. IRWD benefits from a diversified water portfolio that includes local groundwater, local surface water, imported water, and recycled water. This diversified approach provides important water reliability and operational flexibility.

The recycled water system includes treatment facilities, storage facilities, pump stations, distribution infrastructure, and non-potable water delivery systems that support landscape irrigation, agricultural irrigation, and industrial uses. Key recycled water facilities include the Michelson Water Recycling Plant (MWRP) and the Los Alisos Water Recycling Plant (LAWRP), both of which are critical components of IRWD's water recycling program.

The sewer collection system consists of gravity pipelines, force mains, manholes, siphons, lift stations, and associated conveyance infrastructure. These assets transport wastewater throughout the service area and ultimately convey flows to treatment facilities. Many components of this system are located in low-lying areas, canyons, and drainage corridors where exposure to flooding, groundwater rise, landslides, and debris flows may increase over time.

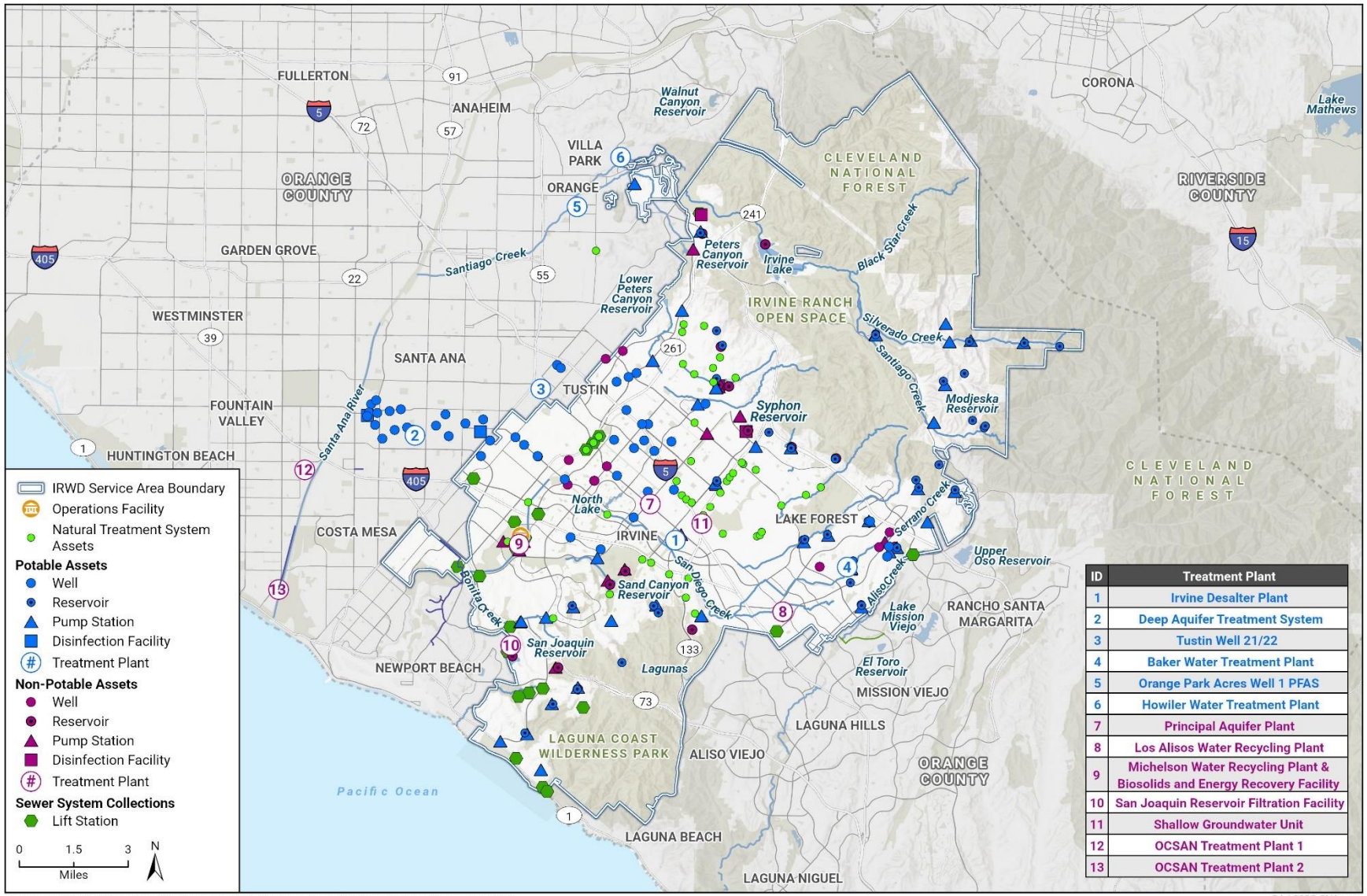
The Monitoring and Control system includes Supervisory Control and Data Acquisition (SCADA) infrastructure, telemetry systems, communications networks, sensors, antennas, repeaters, and automated controls that enable real-time operation of water and wastewater facilities. These systems provide critical operational visibility and support rapid response during emergency conditions.

Fleet and Facilities encompass administrative buildings, maintenance yards, emergency response facilities, vehicles, generators, energy systems, and other support infrastructure required to sustain operations. This system also includes resources needed to maintain continuity of operations during climate-related emergencies, including backup power and facility support functions.

The Natural Treatment System (NTS) uses natural physical, chemical, and biological processes to provide urban runoff treatment, water quality improvement, and flow attenuation. NTS assets include treatment wetlands, sedimentation features, vegetated treatment areas, and other nature-based infrastructure that support water quality and environmental objectives. See Figure 4 for a map of IRWD's key assets and locations.

[1] Recycled water reservoirs are an integral component of IRWD's overall water supply portfolio because they provide operational storage, demand balancing, and reliability for recycled water deliveries, reducing reliance on imported and potable water supplies during drought and other climate-related disruptions. As a result, some reservoirs that provide storage for recycled water are included in the Water Treatment and Quality system for the purposes of the CAP.

Figure 4 IRWD Assets and Infrastructure



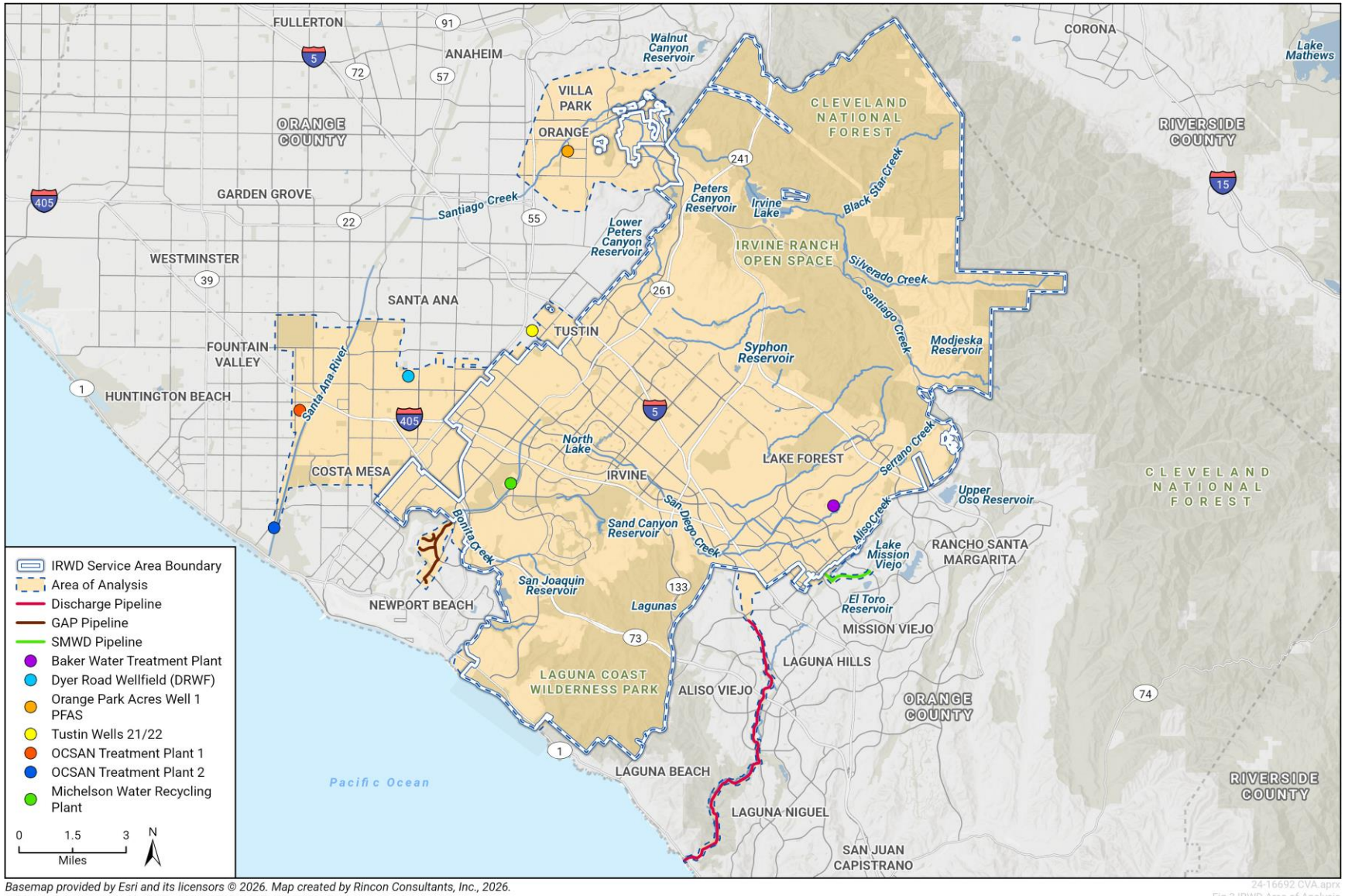
Basemap provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026.
Additional data provided by NHD, 2024; CPAD, 2025; IRWD, 2025.

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Fig 2 IRWD Assets

Area of Analysis

IRWD also owns, operates, or depends on several pieces of infrastructure outside of the service area boundary. To cover this additional infrastructure, a larger Area of Analysis (AOA) was established. The AOA extends beyond IRWD's formal service area boundary and is shown in Figure 5. The AOA includes facilities such as the Dyer Road Wellfield, Tustin Wells 21/22 Treatment Plant, portions of the Orange Park Acres well system, regional recycled water infrastructure connected to the Green Acres Project, wastewater conveyance infrastructure associated with the South Orange County Wastewater Authority (SOCWA), and sewer infrastructure connected to neighboring agencies. These facilities contribute to water supply reliability, wastewater management, recycled water delivery, and operational redundancy. This broader perspective recognizes that climate-related impacts occurring outside IRWD's service boundary could affect service delivery, regulatory compliance, operational flexibility, and long-term infrastructure planning within IRWD's service area. Groundwater banking programs are an important element of IRWD's regional water supply portfolio, but are located in Kern County outside the IRWD service area and the larger AOA.

Figure 5 IRWD Area of Analysis



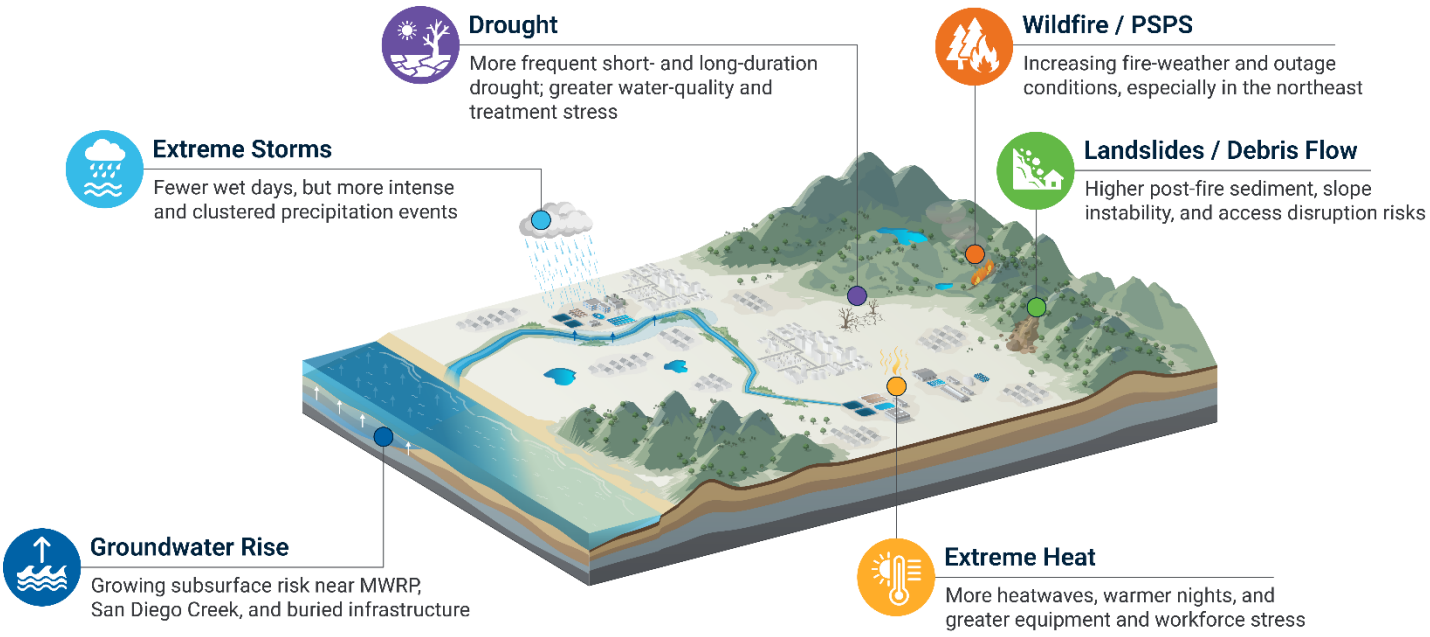
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Additional data provided by NHD, 2024; CPAD, 2025; IRWD, 2025.

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Fig 3 IRWD Area of Analysis

1.5 Identified Climate Hazards

The CVA evaluated six primary climate hazards that could affect IRWD facilities, infrastructure, operations, and workforce. Previous climate hazard planning was advanced through the 2021 Irvine Ranch Water District Local Hazard Mitigation Plan, which identified broad climate-related hazards and emergency preparedness considerations affecting IRWD. However, that effort relied on earlier generations of climate data and did not evaluate the vulnerability of specific IRWD facilities, infrastructure systems, operational thresholds, or climate-sensitive assets. The CVA developed for the CAP builds upon that foundation by utilizing updated 2026 climate projections, facility-specific analyses, and direct input from staff to evaluate how future climate conditions may affect IRWD's infrastructure, operations, workforce, and critical services. See Section 3.1 in Appendix B for detailed description of individual climate hazards. Figure 6 demonstrates the climate hazards relevant to the IRWD service area and related vulnerabilities to IRWD operations.

Figure 6 Climate Hazards in the IRWD Service Area



2 Methodology

2.1 Climate Hazard Methodology

The climate hazard analysis was designed to evaluate how future climate conditions may affect IRWD's infrastructure, facilities, and operations. The methodology follows a state-aligned approach consistent with the California Adaptation Planning Guide and integrates climate science, facility mapping, operational knowledge, and vulnerability assessment techniques.

The CVA utilized downscaled Coupled Model Intercomparison Project Phase 6 (CMIP6) climate projections developed for California's Fifth Climate Change Assessment. See Section 1.3 in Appendix B for additional information on methodology. Rather than relying on a subset of climate models, the CVA incorporated outputs from 129 climate model simulations to capture a broad range of future climate conditions and reduce uncertainty associated with any individual model. A Global Warming Level (GWL) framework was used to evaluate future climate conditions. Climate projections were organized around warming increments of approximately 0.8°C (historic baseline), 1.5°C (2024-2041), 2.0°C (2034-2054), and 3.0°C (2053-2083) above historical temperatures. The estimated years associated with each Global Warming Level represent model-based projections under Shared Socioeconomic Pathway 3-7.0 (recommended as the primary high-emissions scenario used by California's Fifth Climate Change Assessment) and may shift earlier or later depending on future greenhouse gas emissions, socioeconomic development patterns, technological advancements, and the extent of global climate mitigation efforts.[2]. This approach allows climate risks to be evaluated based on physical climate outcomes rather than assumptions about future greenhouse gas emissions pathways.

Operationally meaningful metrics based on projected future conditions were evaluated for each corresponding climate hazard. For drought, the CVA used 24-month and 60-month Standardized Precipitation Index (SPI) metrics to evaluate both short-duration and long-duration drought conditions. Wildfire analysis evaluated conditions associated with fire weather, including the occurrence of extended dry periods combined with sustained wind speeds exceeding 15 miles per hour. Conditions that typically result in Public Safety Power Shutoffs (PSPS) were also evaluated as a proxy for wildfire-related operational disruptions and power outages. Extreme heat analyses evaluated the frequency of heatwaves, days exceeding 105°F, elevated nighttime temperatures, and heat index conditions relevant to workforce safety and equipment performance. The CVA considered both daytime and nighttime temperatures because prolonged thermal stress and reduced overnight cooling were identified as operational concerns by IRWD staff.

[2] The assessment uses a Global Warming Level (GWL) framework, with 0.8°C representing the historical baseline and future climate conditions evaluated at approximately 1.5°C, 2.0°C, and 3.0°C of global warming. Under CMIP6 SSP3-7.0 projections, these warming levels are expected to occur around 2031, 2042, and 2065, respectively, although individual climate models produce a range of crossing dates. These timeline estimates are based on the use of Shared Socioeconomic Pathway 3-7.0 (SSP3-7.0). SSP 3-7.0 is a greenhouse gas emissions scenario developed as part of the Coupled Model Intercomparison Project Phase 6 (CMIP6). SSP3-7.0 represents a future characterized by regional rivalry, uneven economic development, limited international cooperation, and relatively slow progress in reducing greenhouse gas emissions. California's Fifth Climate Change Assessment identifies SSP3-7.0 as an appropriate scenario for long-term planning because it aligns with current emissions trends and captures a range of significant future climate risks relevant to infrastructure, water resources, ecosystems, and communities. https://climatedata.ca/resource/understanding-shared-socio-economic-pathways-ssps/

Heavy precipitation and flooding hazards were assessed using a series of precipitation metrics that included annual rainfall totals, extreme single-day rainfall events, prolonged multi-day rainfall events, and compound storms occurring in quick succession. These metrics were selected to capture the conditions most relevant to hydraulic overloading, flooding, inflow and infiltration, storage exceedance, and compliance challenges at treatment facilities. Sea level rise and groundwater rise were evaluated using Coastal Storm Modeling System (CoSMoS) data. Future conditions were assessed at 0.8-foot, 1.6-foot, and 2.5-foot sea level rise increments. Landslide and debris flow risks were evaluated qualitatively by examining the interaction of wildfire exposure, intense precipitation, steep terrain, and mapped landslide susceptibility zones. Although landslide occurrence itself was not directly modeled, the climate conditions that drive these hazards were assessed to identify areas where risk is likely to increase under future climate scenarios.

Proposed adaptation actions build on existing IRWD programs and planned capital improvements and are organized by implementation timeframe to support near-, medium-, and long-term planning. These actions are intended to improve source water reliability, maintain treatment performance, enhance emergency preparedness, and increase the ability of the system to respond to a range of future climate conditions.

2.2 Threshold Methodology

A central feature of the CVA was the development of climate impact thresholds based directly on IRWD operational experience. Threshold development occurred through a series of Climate Impact Threshold Workshops conducted with IRWD staff. Five workshops to establish thresholds were held, representing each major operational system: Water Treatment and Quality, Recycled Water Treatment and Quality, Sewer System, Monitoring and Control, and Fleet and Facilities. NTS facilities were included in the Water Treatment and Quality workshop. Staff provided insight regarding historical operational challenges, equipment limitations, process sensitivities, and climate conditions requiring operational response.

Two types of thresholds were developed: severity thresholds and frequency thresholds. A complete listing of thresholds is provided in Section 3.2 of Appendix B.

Severity Thresholds

Severity thresholds identify the magnitude, duration, or intensity of a climate hazard that is likely to cause operational disruption. Examples include:

- Multi-year drought conditions lasting longer than five years.
- Public Safety Power Shutoff events lasting more than two days.
- Multi-day heatwaves creating equipment or workforce challenges.
- Flooding conditions that exceed treatment, storage, or bypass capacities.
- Groundwater elevations that interfere with buried infrastructure or facility operations.

These thresholds represent conditions where normal operations become difficult, costly, or potentially unsustainable.

Frequency Thresholds

Frequency thresholds identify how often a climate hazard must occur before adaptation actions become warranted. Staff emphasized that recurring events often create greater operational burdens than isolated incidents. For example:

- Successive droughts occurring with limited recovery between events.
- Multiple storms occurring within the same week.
- Repeated PSPS events affecting operations year after year.
- Increasing occurrences of heatwaves that strain staff and equipment.

By evaluating both severity and frequency, the CVA was able to identify whether future climate conditions would exceed operational limits and whether those exceedances would occur often enough to justify adaptation investments.

2.3 Workshops and Engagement

Staff engagement was a foundational component of the CAP. Engagement occurred through three phases: climate impact threshold workshops, vulnerability assessment workshops, and adaptation strategy workshops.

Climate Threshold Workshops (Summer 2025)

Threshold workshops were organized by operational system and included staff representing Water Treatment and Quality, Recycled Water Treatment and Quality, Sewer System, Monitoring and Control, NTS, Fleet and Facilities and Safety. Participants identified climate sensitivities, operational stressors, and facility-specific concerns associated with drought, wildfire, flooding, extreme heat, sea level rise, groundwater rise, and landslides or debris flows. A key outcome of these workshops was the development of severity and frequency thresholds that define when climate hazards begin to disrupt normal operations or warrant adaptation investment.

Vulnerability Workshops (Winter 2025/2026)

During this phase, staff reviewed climate projections, exposure mapping, and preliminary vulnerability findings. Participants helped validate projected impacts, identify critical assets, refine vulnerability ratings, and provide context regarding existing adaptive capacity, operational redundancies, emergency response capabilities, and regulatory considerations. This collaborative review process ensured that vulnerability ratings reflected actual operating and planned for conditions rather than climate projections alone.

Adaptation Strategy Workshops (Summer 2026)

These workshops were organized by operational system and focused on transforming identified vulnerabilities into actionable adaptation actions. Staff evaluated operational, capital, planning, and policy-based strategies to improve resilience, maintain regulatory compliance, protect critical infrastructure, and ensure continuity of service under future climate conditions. Workshop outcomes included a system-specific portfolio of adaptation actions that informed the CAP and helped prioritize future resilience investments.

Across all phases, engagement included staff from operations, maintenance, engineering, treatment, collection system, monitoring and control, facilities, planning, and safety.

2.4 Vulnerability Scoring Methodology

The CVA evaluated each hazard and operational system by considering three primary components: exposure, sensitivity, and adaptive capacity. This framework is consistent with established climate adaptation planning approaches provided by the 2020 California Adaptation Planning Guide and provides a structured way to understand climate risk. See Tables 11-17 in Section 3.4 of Appendix B for the breakdown of vulnerability ratings by IRWD system and climate hazard.

Exposure

Exposure describes the degree to which a facility, asset, or system is expected to experience future climate hazards. Exposure was evaluated using geospatial analysis, climate modeling results, floodplain mapping, landslide susceptibility mapping, groundwater rise projections, and wildfire hazard information. Facilities located within projected hazard zones were considered more exposed than facilities outside those areas.

Sensitivity

Sensitivity evaluates how strongly a system responds when exposed to climate hazards. Some systems can tolerate substantial environmental change with little disruption, while others may experience performance degradation, operational limitations, regulatory challenges, or infrastructure damage. Sensitivity was informed heavily by staff workshops and operational experience.

Adaptive Capacity

Adaptive capacity reflects IRWD's ability to prepare for, respond to, and recover from climate impacts. Systems with greater redundancy and operational flexibility generally received lower vulnerability ratings than systems with fewer options for adaptation.

Factors contributing to adaptive capacity include:

- Infrastructure redundancy
- Backup power systems
- Treatment flexibility
- Monitoring and SCADA capabilities
- Emergency response procedures
- Asset management practices
- Institutional knowledge and operational experience

Vulnerability Determination

Vulnerability ratings were assigned by comparing projected climate conditions against the operational thresholds identified by staff and evaluating expected consequences when thresholds are exceeded. The assessment categorized vulnerabilities as Low, Moderate, Moderate-High, or High based on the severity, likelihood, and operational consequences of impacts. See Tables 11-17 in Section 3.4 of Appendix B for the breakdown of vulnerability ratings by IRWD system and climate hazard.

2.5 Adaptation Strategy Methodology

To identify the most effective and implementable resilience actions, adaptation actions were evaluated for each of the six systems using a weighted multi-criteria framework. The framework was designed to balance risk reduction benefits with practical implementation considerations, ensuring that recommended actions not only address climate vulnerabilities but can also be realistically integrated into IRWD's ongoing planning, operations, and capital improvement programs. Each action was scored on a scale of 1 to 3 against six evaluation criteria and assigned a weighted "Priority Score" between 1 and 3. Criteria related to feasibility and funding received the greatest emphasis, reflecting the importance of identifying actions that are both impactful and achievable in the near and long term. To reflect IRWD priorities, each criterion was assigned a weighting factor. The following criteria were used to evaluate and prioritize implementation actions:

- **Operational Feasibility (25%)**: Evaluates technical feasibility, implementation complexity, organizational readiness, permitting requirements, and overall ease of implementation.
- **Cost and Funding Viability (25%)**: Assesses the relationship between anticipated benefits, implementation costs, and availability of funding sources.
- **Resilience Benefit (15%)**: Evaluates the degree to which an action reduces climate-related risks to infrastructure, operations, ecosystems, and service reliability.
- **Hazard Occurrence Chance (15%)**: Considers the likelihood that the climate hazard being addressed will occur based on findings from the Climate Vulnerability Assessment.
- **Multiple Benefits (10%):** Evaluates the extent to which an action supports additional IRWD objectives beyond its primary purpose, including improvements to water supply reliability, water quality and operational efficiency.
- **Adaptability and Long-Term Effectiveness (10%)**: Assesses flexibility, scalability, and the ability of an action to remain effective under a range of future climate conditions.

Based on the overall scoring as well as other considerations such as overall project cost and whether the action was foundational to future high-priority actions, IRWD developed project implementation phases consisting of four categories:

- **Short Term (Year 1-3):** Short-term actions should be implemented over the course of the first three years of CAP implementation.
- **Medium Term (Year 4-6):** Medium term actions need additional data or information before being implemented.
- **Long Term (>6 Years):** Long term actions have high costs, operational impacts, or high degrees of uncertainty. These actions may become cost effective in the future, but long-term trends and a need to take action would need to be identified before implementation takes place.
- **Ongoing:** Actions that IRWD is already implementing through existing operational practices, capital improvement projects, monitoring programs, maintenance activities, policies, or management initiatives. These actions contribute to climate resilience today and may continue to be expanded or refined over time.
- **Planned:** Actions that IRWD has already identified, scoped, or incorporated into future planning documents, capital programs, operational strategies, or other agency initiatives but

that have not yet been fully implemented. These actions represent activities already under consideration and expected to advance as resources and opportunities become available.

The resulting prioritization framework provides a consistent approach for comparing adaptation actions and developing the implementation roadmap provided in Section 6. By considering climate risk reduction alongside feasibility, funding, co-benefits, and long-term performance, the framework helps IRWD focus resources on actions that are most likely to enhance resilience and deliver lasting value to IRWD. Section 6 provides a list of the ongoing and short-term actions and a full list of all adaption actions developed as part of the CAP is provided in Appendix G.

2.6 Greenhouse Gas Inventory Methodology

The GHG inventory and forecast were developed using IRWD's historical GHG inventories and operational data to establish a baseline understanding of emissions sources and project future emissions trends through 2045. The analysis utilized IRWD inventory data from 2016 through 2023, including Scope 1 emissions (direct fuel combustion and process emissions), Scope 2 emissions (purchased electricity), and select Scope 3 emissions associated with imported water, biosolids management, and wastewater exports. Historical inventories served as the foundation for understanding emissions trends and identifying the operational factors that most strongly influence IRWD's carbon footprint, including electricity consumption, water deliveries, water imports, wastewater treatment operations, and service population.

Using the 2023 inventory as the baseline year, a business-as-usual (BAU) forecast and a legislative-adjusted forecast was developed for the years 2030, 2035, 2040, and 2045. For the BAU forecast, future activity levels for each emissions source were projected using growth indicators derived from historical operational data and emissions trends. A statistical correlation analysis was performed to identify the operational metrics most closely associated with emissions growth, including total water demand, potable water demand, imported water supplies, and service population. Growth factors were then applied to forecast future activity data such as electricity consumption, fuel use, wastewater loading, and imported water deliveries. Emissions for each source were calculated by multiplying the projected activity data by emissions factors derived from the 2023 inventory.

Future capital projects, including the Syphon Reservoir Improvement Project, Michelson Water Recycling Plant expansions, the Michelson warehouse expansion, and the Howiler Treatment Plant, were incorporated into the forecast using energy use and operational assumptions derived from CEQA documentation and project-specific analyses.

A legislative-adjusted forecast built upon the BAU forecast by incorporating expected emissions reductions associated with adopted State policies and IRWD initiatives. Most notably, the analysis accounts for California's Renewable Portfolio Standard, Senate Bill 100, and Senate Bill 1020, which require a progressively cleaner electricity grid and eventual transition to 100 percent carbon-free electricity by 2045. Future electricity emissions factors were adjusted to reflect anticipated changes in utility renewable energy portfolios, resulting in substantial reductions to forecasted Scope 2 emissions over time. The adjusted forecast also incorporated planned IRWD projects, including on-site renewable energy generation, alternative energy installations at treatment facilities, and fleet electrification efforts. A detailed description of the methodology and results of the GHG emissions analysis can be found in Appendix A.

3 Climate Hazards and Exposure Results

The CVA evaluated six primary climate hazards that could affect IRWD facilities, infrastructure, operations, and workforce: drought, wildfire, heavy precipitation and flooding, extreme heat, sea level rise and groundwater rise, and landslides and debris flows. Using 129 downscaled CMIP6 climate model simulations and a Global Warming Level framework, the assessment found that future climate conditions are expected to become increasingly variable and extreme. Across the service area, projections indicate more frequent droughts, increasing wildfire and PSPS conditions, fewer but more intense precipitation events, longer and more severe heatwaves, rising groundwater tables associated with sea level rise, and greater potential for landslide and debris flow impacts following wildfire and extreme rainfall. A key finding of the assessment is that compound hazards, such as wildfire followed by heavy precipitation or extreme heat combined with power outages, are expected to become increasingly important drivers of operational risk. In this assessment, 0.8°C warming roughly represents conditions from 2002, 1.5°C reflects present-day conditions through 2030, 2.0°C provides a planning analogue for approximately 2047, and 3.0°C represents a potential late-century warming level that could occur around 2075, recognizing that actual timing is uncertain and depends on future emissions trajectories.[3]

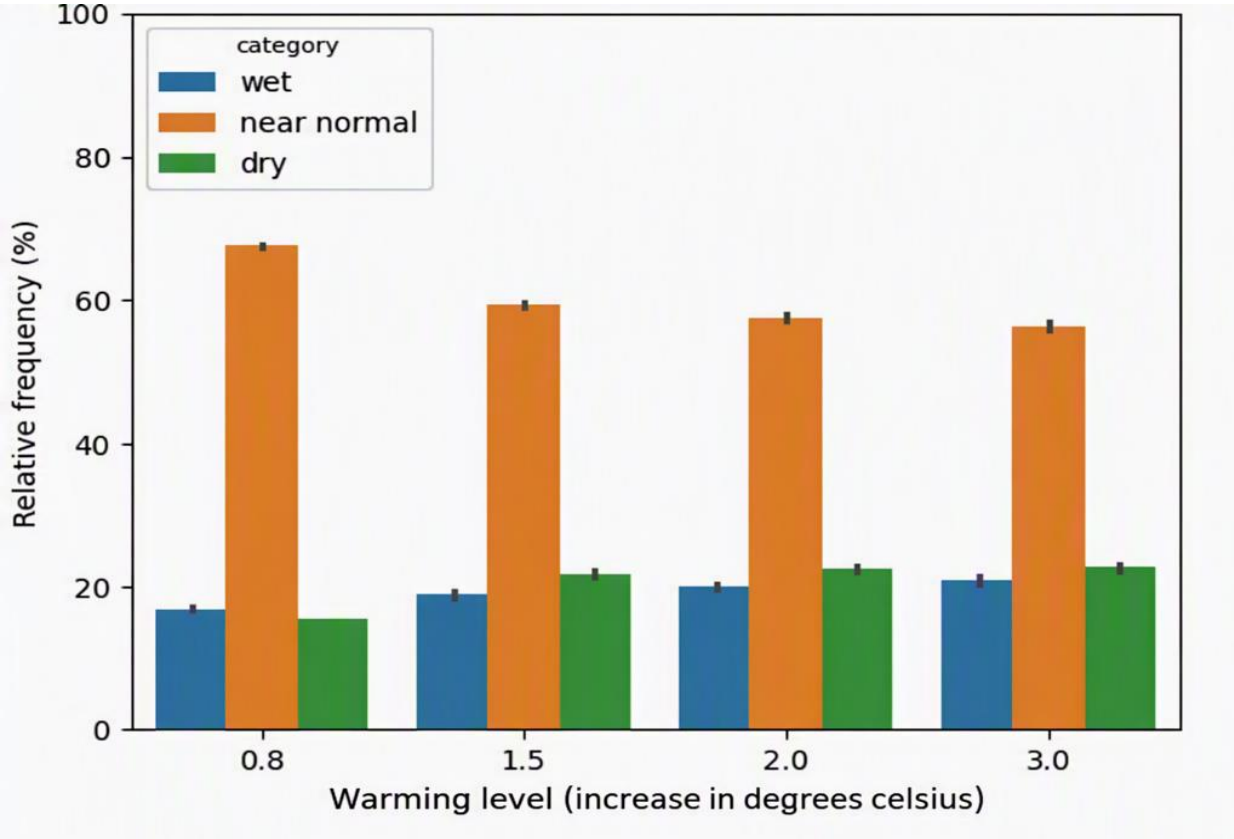
3.1 Drought

Climate modeling indicates a clear shift toward more frequent and more severe drought conditions within the Irvine Ranch Water District service area as temperatures increase. Analysis of both 24-month and 60-month Standardized Precipitation Index (SPI) metrics shows increasing frequencies of short-duration and multi-year droughts across all warming levels. Analysis of the 60-month SPI shows a high-confidence increase in the frequency of long-duration dry periods as climate change intensifies (Figure 7). While near-normal conditions remain most common, the relative occurrence of drought increases steadily over time. Results also suggest greater climate variability, with both prolonged droughts and extended wet periods becoming more common in the future.

For IRWD, drought impacts extend beyond water supply availability. Extended drought conditions can reduce reservoir and well inflows, increase water age within storage and distribution systems, and contribute to elevated biochemical oxygen demand (BOD), ammonia concentrations, algal activity, and thermal stratification. Drought also affects wastewater and recycled water operations by increasing sewage strength, raising treatment demands, increasing odor and corrosion concerns, and requiring additional monitoring and operational adjustments. Although IRWD's diversified water portfolio provides important resilience, projected increases in drought frequency and duration are expected to create ongoing operational challenges across multiple systems.

[3] This assessment utilized SSP (Shared Socioeconomic Pathway) 3-7.0. Each SSP includes different assumptions about how human civilization evolves and to what extent certain climate technologies will be implemented. Basing the analysis on Global Warming Level rather than specific years allows for the use of other SSP's to determine when impacts may occur in the future.

Figure 7 Multi-Model Frequency of Wet, Near-Normal, and Dry Conditions Based on the 60-Month SPI Under Increasing GWLs



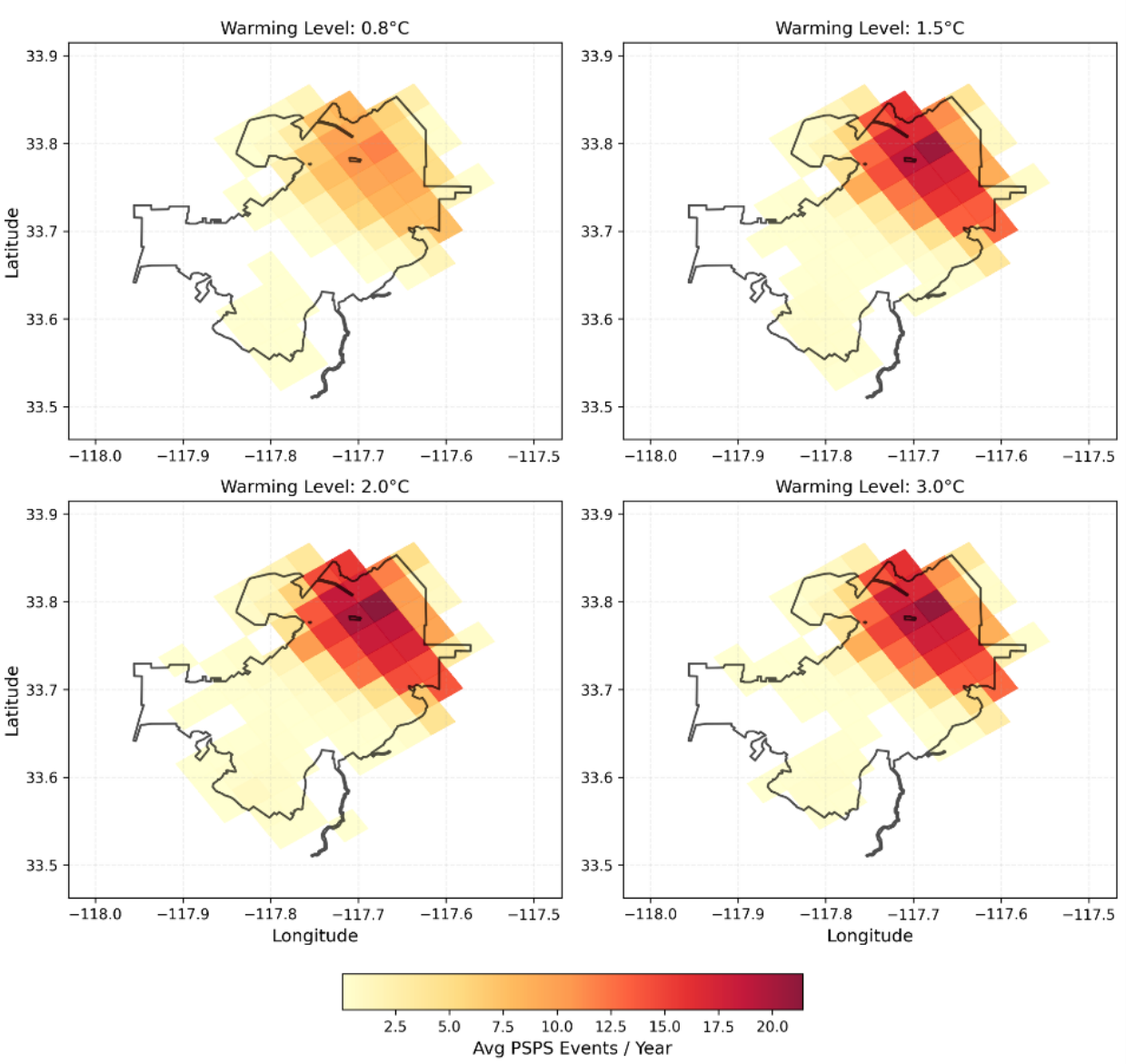
3.2 Wildfire

Climate projections indicate an increase in environmental conditions associated with wildfire conditions that are expected to increase the frequency of wildfires in the region. In addition to direct damage from wildfires, IRWD could also see an increase in electrical grid disruptions due to Public Safety Power Shutoff (PSPS) events.[4] As warming increases, the number of days characterized by extended dry periods combined with sustained wind speeds greater than 15 miles per hour is projected to increase, particularly in the northeastern portion of the service area. Modeling also indicates increases in critically low fuel moisture conditions and a growing number of PSPS-conducive days. At higher warming levels, wildfire conditions may occur across much longer portions of the year and extend beyond the traditional wildfire season. Modeling of PSPS-relevant conditions shows a clear increase in the average annual number of PSPS events per grid cell as GWLs rise (Figure 8). Across IRWD, the frequency of these events increases in a way that is concentrated in the northeastern portion of the service area. These results support moderate confidence that IRWD should expect an increase in the number of PSPS-relevant days per year as climate warming progresses

[4] Public Safety Power Shutoff (PSPS) events are utility-initiated power outages used to reduce wildfire ignition risk during high fire weather conditions, including periods of strong winds, low humidity, and elevated temperatures.

For IRWD, wildfire risks extend beyond direct fire damage. Smoke, ash, sediment, and debris can degrade source-water quality, while PSPS events can disrupt treatment, pumping, monitoring, and communications systems. Facilities within canyon and foothill areas face elevated risk from wildfire exposure, while utility power outages may affect facilities outside wildfire hazard zones. The assessment found that increased wildfire activity, combined with more frequent PSPS events, could create greater operational dependence on backup power, fuel availability, and emergency response resources.

Figure 8 Average Annual Number of Public Safety Power Shutoff (PSPS) – Relevant Events



3.3 Heavy Precipitation and Flooding

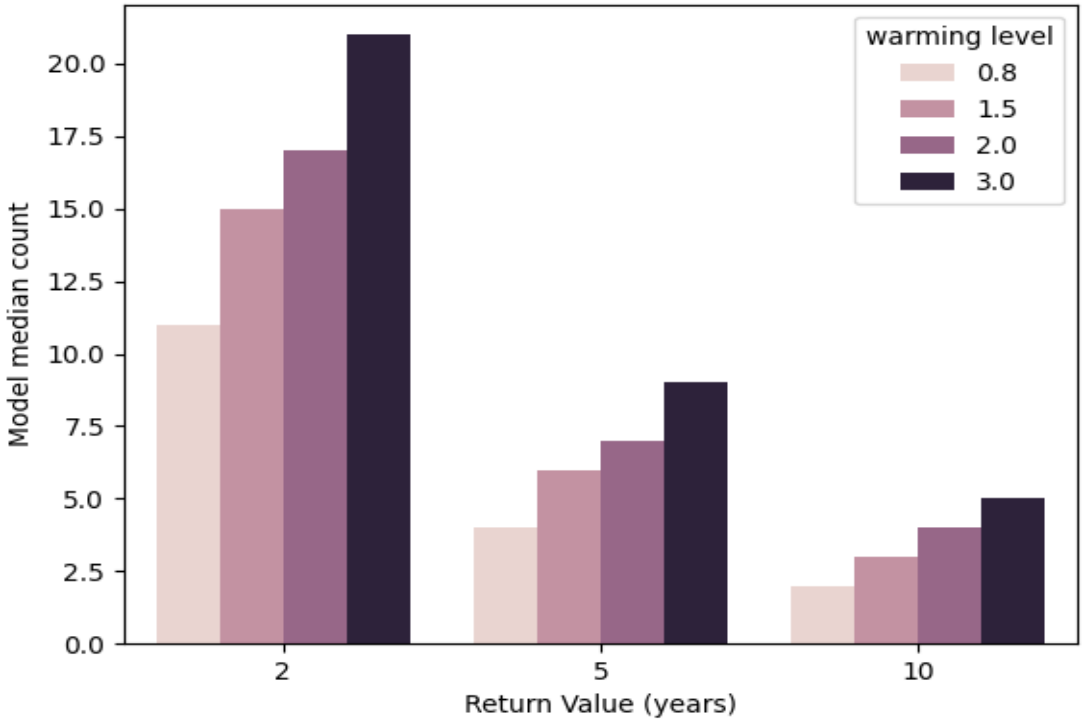
Although total annual precipitation is projected to remain relatively stable, the character of future rainfall is expected to change substantially. Climate models show a decrease in the overall number of wet days, coupled with increases in the intensity of multi-day and compound precipitation events. Future storms are expected to be more concentrated, with a greater likelihood of multiple storms occurring in rapid succession. These conditions increase the potential for flooding, inflow and infiltration, storage exceedance, erosion, and infrastructure damage. The assessment identified compound storm events as a particularly important concern.

Climate modeling indicates that back-to-back extreme rainfall events are likely to become more common in the future (Figure 9). Events involving at least three inches of rainfall within 24 hours followed by another significant storm within the same week are projected to become more frequent. These compound events occur when a major storm is followed by another significant storm within a short period, before soils and drainage systems have fully recovered. While overall precipitation may occur on fewer days each year, rainfall is expected to become more intense when it does occur. As a result, watersheds are more likely to experience repeated heavy storms over a short timeframe, increasing flood risk and reducing the effectiveness of existing flood management infrastructure. Several flood-related thresholds evaluated in the Climate Vulnerability Assessment show an increasing likelihood of being exceeded under future climate conditions, creating potential risks across IRWD's facilities and operations. Historic events, such as the storms of 1995, demonstrate how prolonged or successive storms can overwhelm drainage systems, inundate facilities, and create operational and regulatory challenges associated with high discharge volumes.[5]

Such conditions can create saturated watershed conditions, elevated inflows to treatment facilities, reservoir storage challenges, and compliance risks. Facilities such as MWRP, associated sewer conveyance systems, and low-lying infrastructure near San Diego Creek were identified as particularly sensitive to flooding and hydraulic overloading during prolonged wet-weather periods.

[5] In 1995, **Irvine** and the surrounding areas of **Orange County, California**, were struck by a historic series of relentless Pacific storms driven by a severe **El Niño** cycle. Two major waves of intense rainfall occurred in **January and March 1995**, causing widespread flooding, mudslides, and property damage across the region.

Figure 9 Frequency of Compound Extreme Precipitation Events, Defined as a ≥3-Inch Precipitation Event Within 24 Hours Followed by an Additional 1-in-2-Year, 1-in-5-Year, and 1-in-10-Year Precipitation Event Within the Same Week, Under Increasing GWLs

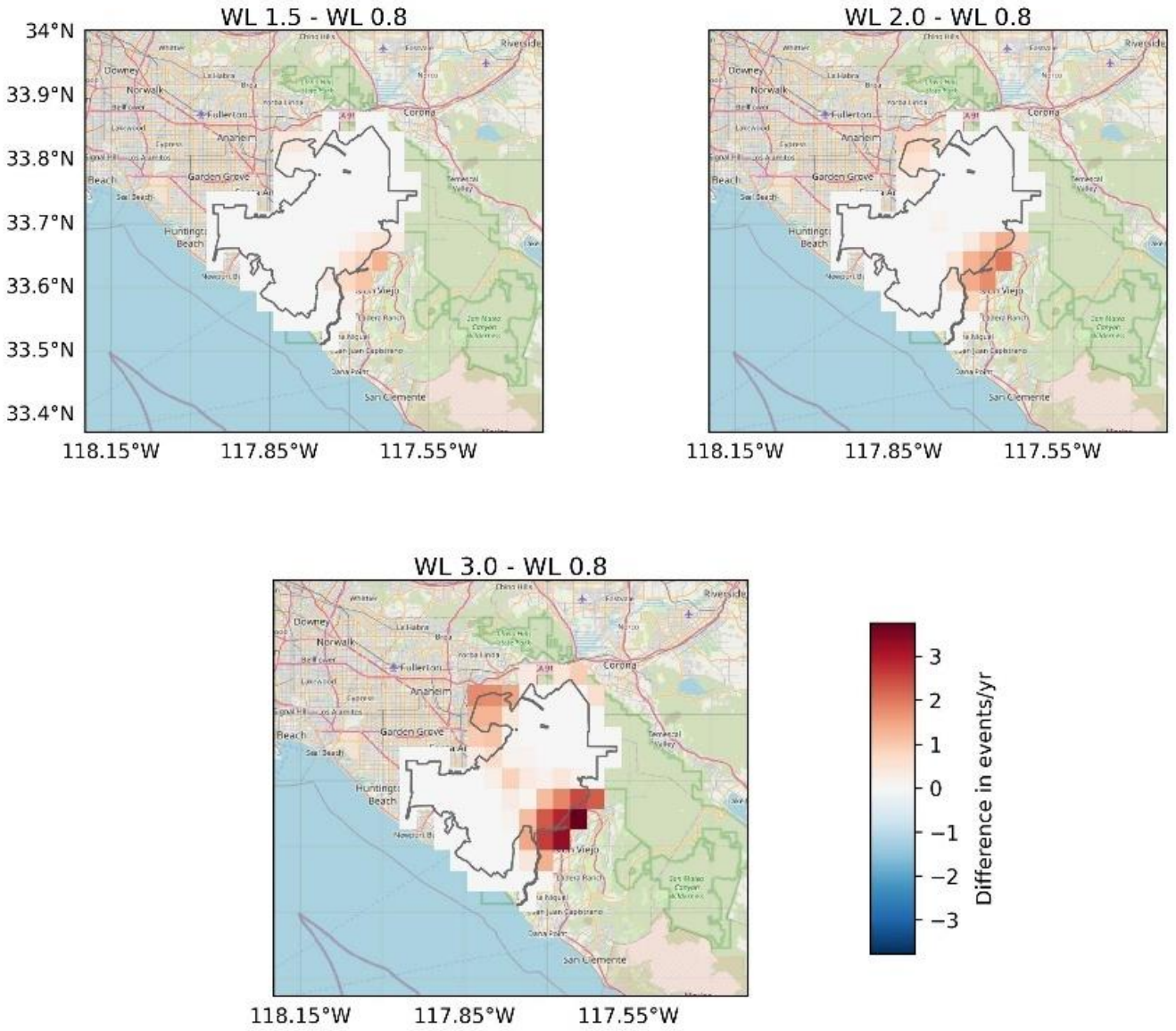


3.4 Extreme Heat

The assessment projects a substantially hotter future for the IRWD service area, characterized by more frequent heatwaves, increasing maximum temperatures, warmer nights, and expanding heat stress conditions. By higher warming levels, the service area is projected to experience significant increases in both 3-day and 10-day heatwave events. While days exceeding 105°F remain relatively infrequent, they become more common over time, particularly in inland portions of the service area. These areas are less influenced by moderating coastal marine air and are situated within inland valleys where surrounding topography can limit airflow and contribute to heat buildup, resulting in higher temperatures and more prolonged heat events. The most significant change may be the increase in nighttime temperatures, which reduces opportunities for cooling and recovery following extreme heat events. Days exceeding extreme maximum temperature thresholds increase under future warming scenarios, though they remain relatively infrequent overall. Across GWL 1.5 and GWL 2.0, days with maximum temperatures above 105°F occur sporadically and are spatially limited, with modest increases relative to present conditions (See Figure 10).

Heat-related impacts extend beyond air temperature alone. The assessment found substantial increases in NOAA Heat Index events that pose risks to worker health and safety, along with emerging winter heat conditions that historically have been uncommon. Elevated temperatures can increase treatment complexity, affect pumps and electronics, increase cooling demands, reduce equipment efficiency, and limit safe working conditions for field staff. Facilities such as Baker Water Treatment Plant and Los Alisos Water Recycling Plant are located in areas where future heat increases may be particularly significant.

Figure 10 Frequency of Days with Daily Maximum Temperature Exceeding 105°F Under Increasing GWLs

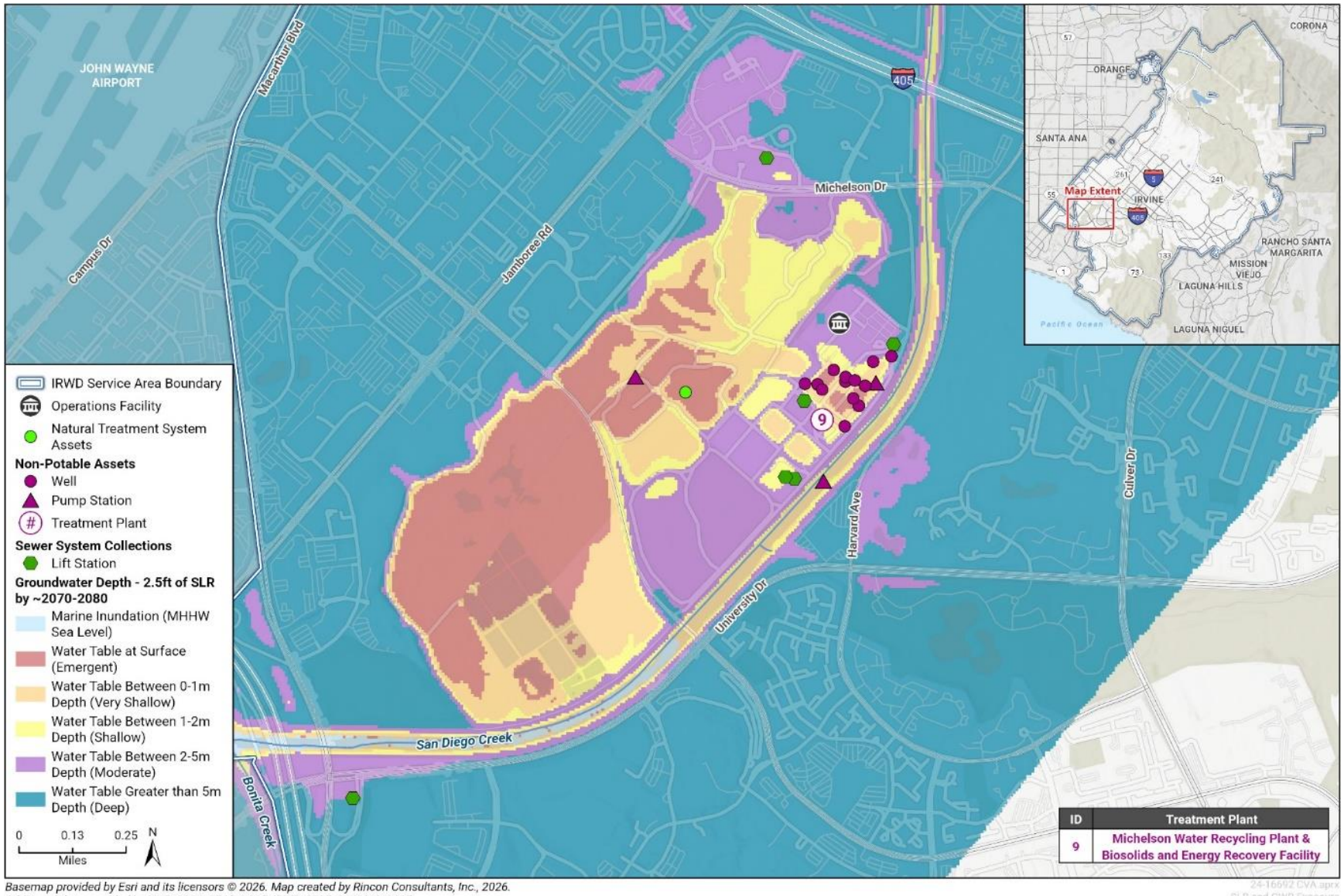


3.5 Sea Level Rise and Groundwater Rise

The assessment evaluated future conditions under 0.8-foot, 1.6-foot, and 2.5-foot sea level rise scenarios. Results indicate that direct marine inundation within the IRWD service area is relatively limited and largely confined to portions of the San Diego Creek corridor. Figure 11 depicts projected groundwater depth across the IRWD service area at 2.5 ft of sea level rise, expected to occur between 2070 and 2080. As shown in the figure, the MWRP and Biosolids and Energy Recovery Facility fall within zones where the water table is projected to rise to within 0–1 meter (m) of the surface, with some areas approaching emergent conditions.

Across all three scenarios (0.8-foot, 1.6-foot, and 2.5-foot sea level rise), the maps demonstrate that the MWRP and Biosolids and Energy Recovery Facility will increasingly overlap with shallow groundwater zones, heightening exposure of buried infrastructure, electrical conduits, dewatering wells, chemical pipelines, and below-grade mechanical systems. Numerous pump stations, siphons, and trunk sewer alignments fall within areas of projected shallow groundwater or marine inundation, increasing the risk of infiltration, corrosion, and loss of functionality for air-relief devices, vaults, and pipelines. As a result, direct flooding from sea level rise is not expected to be the primary climate concern for most IRWD facilities. Groundwater rise, however, emerged as a much more significant vulnerability. Modeling shows shallow groundwater conditions expanding northward and eastward under increasing sea level rise scenarios, particularly around the MWRP and Biosolids and Energy Recovery Facility, San Diego Creek corridor, and associated utility infrastructure. Rising groundwater may increase inflow and infiltration, accelerate corrosion, reduce the effectiveness of dewatering systems, affect buried electrical and mechanical infrastructure, and create long-term regulatory and operational challenges.

Figure 11 Groundwater Depth at 2.5 ft of Sea Level Rise (~2070-2080)



Basemap provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026.
Additional data provided by NHD, 2024; CPAD, 2025; IRWD, 2025; CoSMoS, 2025.

24-16692 CVA aprx
SLR and GWR Exposure

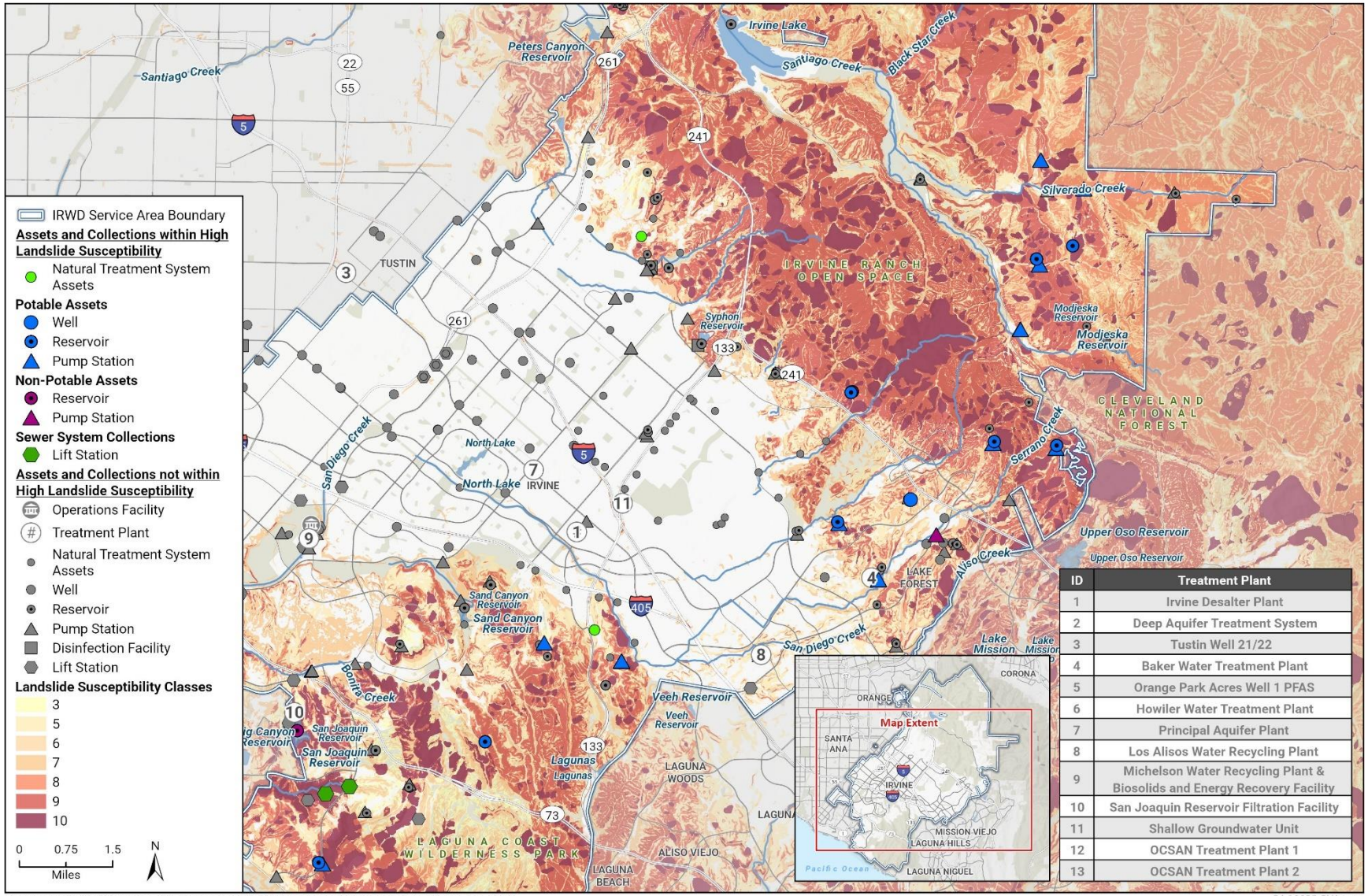
3.6 Landslide

Although landslides and debris flows were not modeled directly, the assessment evaluated the climate conditions that contribute to these hazards, including wildfire exposure, extreme precipitation, steep terrain, and mapped landslide susceptibility. The eastern and foothill portions of the service area contain extensive areas of high landslide susceptibility, including locations near pipelines, reservoirs, treatment infrastructure, and access roads. Future increases in wildfire conditions and extreme precipitation are expected to increase the likelihood of post-fire debris flows, erosion, and slope instability.

The landslide susceptibility mapping shown in Figure 12 is based on information from the California Geological Survey and evaluates the potential for deep-seated landslides based on two key factors: the steepness of a slope and the strength of the underlying geologic materials. In general, steep slopes underlain by weaker materials, such as shale, clay-rich soils, unconsolidated sediments, or areas with previous landslides, are considered more susceptible to slope failure than flatter areas or slopes underlain by stronger rock. The susceptibility rankings range from very low to very high, with the highest-risk categories representing steep slopes where geologic conditions are most favorable for landslides. It is important to note that the mapping shown in this figure addresses deep-seated landslides only and does not evaluate debris flows, which are typically caused by intense rainfall and are analyzed separately.

A particular concern identified in the assessment is the interaction of wildfire and subsequent storm events. Following wildfires, intense rainfall can mobilize large volumes of sediment, ash, and debris, resulting in debris flows that impact NTS facilities, reservoirs, pipelines, and road access. Irvine Lake and Baker Water Treatment Plant were specifically identified as susceptible to sedimentation and water quality degradation from post-fire runoff. Across the service area, landslide and debris flow hazards are expected to increase risks to conveyance infrastructure, treatment operations, the natural treatment system, and emergency access routes, particularly in canyon and burn-affected watersheds.

Figure 12 Landslide Susceptibility



Basemap provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026.
Additional data provided by NHD, 2024; CPAD, 2025; IRWD, 2025; CGS, Map Sheet 58, 2018.

24-16692 CVA.aprx
Landslide Exposure

3.7 Climate Vulnerability and Adaptation Strategies

Using the CMIP6 climate models, the thresholds associated with each of the six IRWD operational systems were evaluated to determine their exposure to each climate hazard. During the Climate Impact Threshold Workshops, IRWD staff identified distinct operational characteristics, climate sensitivities, and adaptation considerations for each system; Water Treatment and Quality, Recycled Water Treatment and Quality, Sewer System, Monitoring and Control, Fleet and Facilities, and the Natural Treatment System. This approach allowed climate hazards to be evaluated at a systems level, recognizing that operational performance depends not only on individual facilities but also on how interconnected assets function together under stress. See Tables 11-17 in Section 3.4 of Appendix B for further detail on climate hazard analysis.

To identify the most effective and implementable resilience actions, adaptation actions were evaluated for each of the six systems using a weighted multi-criteria framework. The framework was designed to balance risk reduction benefits with practical implementation considerations, to ensure that recommended actions not only address climate vulnerabilities but can also be realistically integrated into IRWD's ongoing planning, operations, and capital improvement programs. Each action was scored on a scale of 1 to 3 against six evaluation criteria and assigned a weighted score. Criteria related to feasibility and funding received the greatest emphasis, reflecting the importance of identifying actions that are both impactful and achievable in the near and long term.

Because resources available for implementation are finite, adaptation actions were developed only for vulnerabilities identified as having **moderate to high climate risk** through the threshold-based assessment. Focusing on moderate- and high-risk vulnerabilities allowed IRWD to prioritize actions that address the most consequential threats to system reliability, regulatory compliance, operational continuity, and service delivery, while ensuring that adaptation investments are directed toward areas where resilience benefits are expected to be greatest. This risk-based approach aligns adaptation planning efforts with the vulnerabilities most likely to require operational, capital, or management responses under future climate conditions.

Priority Score Interpretation

As described in Section 2.5, the Priority Score provides a relative measure of the expected resilience value, feasibility of each adaptation action. Scores are intended to support decision-making by helping IRWD identify actions that offer the greatest overall benefit for reducing climate-related risks while aligning with operational needs, funding opportunities, and implementation constraints. While higher-scoring actions generally represent the strongest candidates for near-term investment, lower-scoring actions may still provide value under specific circumstances or become more relevant as climate conditions, regulatory requirements, technologies, and available resources evolve. The priority categories described below are intended to guide planning and implementation rather than serve as rigid recommendations, recognizing that adaptive decision-making will continue to be informed by future monitoring, operational experience, and agency priorities.

2.6–3.0 = High Priority - Actions that provide substantial resilience benefits, address significant or likely climate risks, and are generally feasible and cost-effective to implement. These actions

represent the strongest near- to long-term investments for reducing climate vulnerability and improving system reliability.

2.0–2.5 = Moderate Priority - Actions that provide meaningful resilience benefits but may address lower-risk hazards, have greater implementation challenges, higher uncertainty, or more limited benefits. These actions should be considered as part of ongoing planning and investment programs where resources and opportunities allow.

1.0–1.9 = Lower Priority - Actions that currently provide relatively limited resilience benefits, address less significant climate risks, or face substantial barriers related to cost, feasibility, or long-term effectiveness. These actions may warrant future consideration as conditions, funding availability, technologies, or risk profiles evolve.

Implementation Timeframes

Implementation timeframes are intended to provide a general indication of when an adaptation action could reasonably be initiated and completed, recognizing that implementation may depend on funding availability, regulatory requirements, operational needs, and coordination with other capital improvement projects.

Short Term (Year 1-3): Short-term actions should be implemented over the course of the first three years of CAP implementation.

Medium Term (Year 4-6): Medium term actions need additional data or information before being implemented.

Long Term (>6 Years): Long term actions have high costs, operational impacts, or high degrees of uncertainty. These actions may become cost effective in the future, but long-term trends and a need to take action would need to be identified before implementation takes place.

Ongoing: Actions that IRWD is already implementing through existing operational practices, capital improvement projects, monitoring programs, maintenance activities, policies, or management initiatives. These actions contribute to climate resilience today and may continue to be expanded or refined over time.

Planned: Actions that IRWD has already identified, scoped, or incorporated into future planning documents, capital programs, operational strategies, or other agency initiatives but that have not yet been fully implemented. These actions represent activities already under consideration and expected to advance as resources and opportunities become available.

4 Adaptation Actions

4.1 Water Treatment and Quality

4.1.1 Asset Overview and Adaptive Capacity

The Water Treatment and Quality system encompasses the facilities, infrastructure, and operational programs responsible for delivering safe and reliable water throughout IRWD's service area. Assets evaluated within this system include treatment plants, recycled water and drinking water reservoirs, wells, pump stations, distribution infrastructure, chemical dosing systems, filtration facilities, and water quality monitoring programs. Key facilities and assets identified in the assessment include Irvine Lake, Syphon Reservoir, Sand Canyon Reservoir, San Joaquin Reservoir, Baker Water Treatment Plant, Orange Park Acres Well facilities, and associated treatment and conveyance infrastructure. Recycled water reservoirs are evaluated within this system because their primary role is long-term water storage, operational flexibility, and supply reliability, which are closely tied to water resource management and water quality objectives. The treatment and production of recycled water itself is evaluated separately under the Recycled Water system.

IRWD maintains a relatively high degree of adaptive capacity through its diversified water supply portfolio, groundwater banking programs, operational redundancy, monitoring systems, and established maintenance and emergency response programs. However, future climate conditions may place increasing pressure on these resources by reducing operational flexibility, affecting source-water quality, and increasing reliance on energy-intensive treatment and water management activities.

4.1.2 Facility Thresholds

Facility thresholds for the Water Treatment and Quality system were developed with IRWD staff through the Climate Impact Threshold Workshops and were designed to identify the conditions under which climate hazards begin to affect treatment performance, infrastructure reliability, or operational effectiveness. Key thresholds include prolonged drought conditions lasting more than five years, repeated droughts occurring with limited recovery between events, wildfire and PSPS conditions associated with extended dry periods and sustained winds, multi-day and compound precipitation events that affect source-water quality and reservoir operations, heatwaves exceeding operational comfort and equipment performance limits, groundwater rise that affects buried infrastructure, and post-fire storm events that mobilize sediment and debris into reservoirs and treatment facilities. See Section 3.4 of Appendix B for more detail.

4.1.3 Key Vulnerabilities

The Water Treatment and Quality system is exposed to a wide range of climate hazards, with the highest vulnerabilities associated with drought, wildfire, heavy precipitation and flooding, extreme heat, and landslides or debris flows. See Section 4.1 of Appendix B for more detail.

Drought

Increasing frequency and severity of 2-year and 5-year droughts will reduce local inflows, degrade water quality (higher BOD, ammonia, algal activity, stratification), and increase treatment complexity and chemical demand, creating Moderate–High vulnerability despite IRWD's diversified supply and monitoring programs.

Wildfire

Wildfire could impact several facilities directly including those located in Silverado Canyon, Williams Canyon, and Modjeska Canyon. Wildfire smoke, ashfall, and PSPS-related outages threaten treatment reliability by degrading source-water quality, increasing turbidity and chemical demand, and limiting staffing and process oversight, creating Moderate–High vulnerability at surface-water intakes and electrically dependent treatment facilities in PSPS-prone areas. Historical fires including the Santiago Fire in 2007 impacted Irvine Lake Reservoir and Syphon Reservoir. This fire left ash and other contaminants in the reservoir that impacted treatments plans. Current upgrades at Syphon Reservoir should also consider filtration needs in the future given the higher wildfire risk.

Heavy Precipitation and Flooding

Intense and clustered storms rapidly degrade source-water quality (turbidity, debris, organics, nutrients), overtop or damage natural treatment and reservoir spillways, and restrict operator access during flooding, creating Moderate to Moderate-High vulnerability where storm intensity, sediment mobilization, and access constraints challenge timely treatment adjustments. Historical challenges with overtopping occurred at Sand Canyon reservoir and IRWD has taken subsequent action to drain and manage reservoir supplies before storms. However, multiple back-to-back storms could still cause challenges to spillways.

Extreme Heat

Prolonged extreme heat and warm nighttime temperatures elevate source-water temperatures and increase chemical and biological treatment challenges. However, IRWD does not rely significantly on surface water which is more impacted by extreme heat than groundwater. More widespread will be indoor heat constraints at facilities without heating, venting or air conditioning (HVAC), resulting in Moderate to Moderate-High vulnerability where cooling limitations, sustained warm influent, or staff comfort issues reduce operational efficiency. The hottest temperatures are expected to be near Baker Water Treatment Plant but increases in temperatures and heatwaves are expected service-area wide.

Landslide and Debris Flow

Landslides and debris flows (especially following wildfire or high-intensity storms) can deliver large sediment, turbidity, and debris loads to reservoirs and NTS facilities, reducing intake reliability, overwhelming treatment processes, and limiting operator access, resulting in Moderate to Moderate-High vulnerability for surface-water-dependent facilities in steep or burn-affected areas. Several potable water lines also run through high landslide susceptibility areas including pipelines in Silverado Canyon and similar terrain.

4.1.4 Adaptation Actions

Climate change is expected to increase operational challenges across IRWD's water supply and treatment systems through more frequent droughts, worsening source water conditions, increased wildfire impacts, extreme storm events, and rising temperatures. Although IRWD's diversified water portfolio, robust monitoring programs, and ongoing capital improvements provide important resilience benefits, projected changes in climate conditions are expected to increase the frequency and severity of these challenges over time.

The list below identifies recommended implementation actions to improve resilience of IRWD's water treatment and quality systems. See Appendix G for a detailed list of proposed adaptation actions. Building on the findings of the Climate Vulnerability Assessment, actions were developed to reduce identified vulnerabilities, strengthen treatment reliability, improve operational flexibility, and support long-term resilience of IRWD's water supply and treatment infrastructure. Actions include both ongoing initiatives and additional strategies that can be implemented over time to address future climate risks.

Summary of Proposed Actions:

- Improve drought resilience and water supply reliability through climate-informed forecasting, demand management, water banking, and diversified supply planning.
- Expand operational flexibility and storage capacity to optimize use of reservoirs, imported water, groundwater, and recycled water during shortages.
- Enhance source water quality monitoring and treatment preparedness for drought-related impacts such as algal blooms, cyanotoxins, ammonia, and reservoir stratification.
- Strengthen wildfire resilience at water supply facilities through backup power, emergency preparedness, vegetation management, and coordination with utilities and fire agencies.
- Reduce post-wildfire water quality risks by upgrading pretreatment infrastructure, stabilizing watersheds, intercepting sediment, and developing reservoir bypass and blending strategies.
- Improve reservoir and treatment system resilience to extreme storms and flooding through debris management, flood protection measures, spillway maintenance, and operational storage enhancements.
- Adapt facilities and operations to extreme heat by protecting sensitive equipment, modifying operational practices, and incorporating high-temperature design standards into future projects.
- Reduce landslide and debris flow risks through watershed stabilization, infrastructure protection, emergency access planning, pipeline response measures, and development of rapid recovery protocols.

4.2 Recycled Water Treatment and Quality

4.2.1 Asset Overview and Adaptive Capacity

The Recycled Water Treatment and Quality system includes IRWD's recycled water treatment plants, non-potable water distribution infrastructure, storage facilities, wells, pump stations, treatment processes, and water quality monitoring programs that support recycled water production and reuse throughout the service area. Key facilities evaluated in the CVA include the Michelson Water Recycling Plant (MWRP), Los Alisos Water Recycling Plant (LAWRP),

disinfection facilities, pump stations, and associated conveyance infrastructure. The system benefits from strong adaptive capacity due to operational redundancy, SCADA-enabled process controls, backup power resources, well-established wet-weather operational procedures, and experienced operations staff. However, the system remains sensitive to large hydraulic fluctuations, biological treatment challenges, flooding, groundwater rise, and changing wastewater characteristics associated with drought conditions.

4.2.2 Facility Thresholds

Key climate thresholds for the Recycled Water Treatment and Quality system focus on conditions that affect hydraulic loading, treatment performance, compliance, and facility operations. Drought thresholds center on increasing wastewater strength, elevated ammonia concentrations, reduced flows, and increased treatment demands associated with long-duration dry periods. Wildfire thresholds emphasize power disruption risks associated with PSPS events and their effects on biological treatment and operational continuity. Heavy precipitation thresholds focus on inflow and infiltration, hydraulic overloading, treatment capacity exceedance, flood exposure, storage exceedance, and compliance risks during compound storms. Sea level rise thresholds primarily relate to groundwater rise surrounding MWRP, including impacts to dewatering systems, buried infrastructure, corrosion, and facility operations. See Section 3.4 of Appendix B for more detail.

4.2.3 Key Vulnerabilities

The Recycled Water Treatment and Quality system is generally resilient due to operational redundancy, advanced process controls, backup power capabilities, and experienced operations staff. However, the Climate Change Vulnerability Assessment identified several climate hazards that could significantly affect treatment performance, regulatory compliance, infrastructure reliability, and operational continuity. Of particular concern are heavy precipitation and flooding, sea-level rise and groundwater rise, and drought, all of which have the potential to alter influent characteristics, challenge biological treatment processes, increase infrastructure maintenance needs, and strain operational resources. Because facilities such as MWRP and LAWRP play a critical role in IRWD's recycled water program, disruptions to treatment operations could have implications for regulatory compliance, recycled water reliability, and overall system performance. These vulnerabilities are expected to become increasingly important as climate conditions become more variable and extreme over time. See Section 4.1 of Appendix B for more detail. Key vulnerabilities include the following:

Heavy Precipitation and Flooding

Extreme single-day, multi-day, and compound storms significantly increase influent flows and inflow and infiltration, stressing hydraulic and biological processes, raising bypass and compliance risks, and exposing electrical/mechanical systems to flooding, resulting in Moderate–High vulnerability at facilities operating near capacity or with aeration-dependent treatment in flood-prone areas. MWRP is located in a flood zone and has experienced near flooding events in the past. These events are likely to occur more frequently and with more intensity.

Sea-Level Rise and Groundwater Rise

While direct marine inundation is limited, sea level rise-induced groundwater rise expands shallow groundwater zones that surround MWRP, creating Moderate–High vulnerability for that facility.

Drought

Increases in water conservation and drought conditions have already been impacting the Water Recycling and Quality systems. While facilities like MWRP have been able to deal with these impacts so far, further or more regular decreases in flows as well as higher concentrations will likely continue to impact operations. Staff specifically identified odors and ammonia increases as key considerations.

4.2.4 Adaptation Actions

The CVA identified several climate-related challenges that could affect the performance and reliability of IRWD's wastewater treatment and water recycling facilities. Key vulnerabilities include more frequent extreme storm events, rising groundwater levels associated with sea-level rise, and reduced wastewater flows during prolonged drought conditions. These stressors have the potential to increase hydraulic loading, strain treatment processes, affect regulatory compliance, damage infrastructure, and increase operational and maintenance requirements. MWRP and LAWRP face particular exposure to these risks due to their locations, treatment processes, and reliance on collection and conveyance systems that may be affected by flooding, inflow and infiltration, groundwater intrusion, and changing wastewater characteristics. In addition, future climate conditions may increase the frequency of operational challenges associated with high-flow storm events, elevated groundwater conditions, and more concentrated wastewater during drought periods.

The list below identifies recommended implementation actions to improve resilience of IRWD's recycled water and treatment system. See Appendix G for a detailed list of proposed adaptation actions. The proposed actions build upon existing facility upgrades, operational programs, and capital improvement projects and are organized by implementation timeframe. These measures are intended to improve treatment reliability, reduce flood and groundwater intrusion risks, maintain regulatory compliance, and ensure the continued production of recycled water under a range of future climate conditions.

Summary of Proposed Actions:

- Improve flood resilience at MWRP and LAWRP through flood hardening, drainage improvements, and facility upgrades.
- Reduce inflow and infiltration and expand wet-weather management capacity to maintain treatment performance during extreme storm events.
- Enhance emergency discharge, storage, and conveyance capabilities to improve operational reliability during flooding and high-flow conditions.
- Protect pump stations, wells, and critical infrastructure from groundwater rise and sea level rise impacts through dewatering improvements, waterproofing, and infrastructure retrofits.
- Incorporate corrosion protection and groundwater intrusion measures into future rehabilitation and capital improvement projects.

- Adapt treatment processes and equipment to lower flows and more concentrated wastewater associated with drought and conservation-driven demand reductions.
- Strengthen monitoring and asset management programs to proactively address odor, corrosion, ammonia loading, and other climate-driven operational challenges.
- Integrate future climate conditions into facility planning, design, and technology investments, including evaluation of advanced treatment and ammonia recovery technologies.

4.3 Sewer System Collections

4.3.1 Asset Overview and Adaptive Capacity

The Sewer System includes gravity sewers, force mains, siphons, lift stations, pump stations, manholes, collection pipelines, and associated conveyance infrastructure that transport wastewater to treatment facilities. The system extends throughout urbanized areas, low-lying basins, canyon corridors, and hillside environments across the service area. Key assets identified in the assessment include the University Lift Station, Bayview Lift Station, trunk sewer alignments near San Diego Creek, force mains, pump stations, and pipelines located in hillside and canyon environments. Adaptive capacity is supported by established maintenance programs, odor and corrosion control efforts, portable generators, bypass pumping capability, inspection programs, emergency response procedures, and long-term asset management practices. Despite these strengths, the system remains vulnerable to inflow and infiltration, corrosion, flooding, groundwater rise, debris flows, and prolonged access limitations during extreme weather events.

4.3.2 Facility Thresholds

Facility thresholds for the Sewer System focus on the conditions that impair conveyance performance, increase overflow potential, accelerate infrastructure degradation, or reduce operational reliability. Drought thresholds include reduced wastewater flows, decreased conveyance velocities, increased sediment deposition, corrosion, odor production, and hydrogen sulfide generation. Wildfire and PSPS thresholds address interruptions to lift station operations, pumping reliability, and emergency response capabilities during extended outages. Flooding thresholds focus on inflow and infiltration, manhole surcharging, hydraulic capacity exceedance, prolonged soil saturation, and compound storm events that reduce recovery time between storms. Groundwater rise thresholds address elevated infiltration, increased hydrostatic pressures, corrosion, and impacts to buried infrastructure. Landslide and debris flow thresholds focus on pipeline burial, exposure, structural damage, sediment blockage, and limited access in canyon and burn-affected areas. These thresholds represent conditions under which system reliability, maintenance requirements, and compliance risks increase substantially. See Section 3.4 of Appendix B for more detail.

4.3.3 Key Vulnerabilities

The Sewer System was identified as one of the most climate-sensitive operational systems evaluated in the CVA. While IRWD benefits from strong adaptive capacity through established maintenance programs, odor and corrosion control efforts, backup power resources, emergency response procedures, and long-term asset management practices, several climate hazards have the potential to significantly affect conveyance performance, infrastructure condition, operational reliability, and regulatory compliance. Of particular concern are heavy precipitation

and flooding, sea-level induced groundwater rise, drought, and landslide or debris flow hazards, all of which can increase inflow and infiltration, accelerate asset deterioration, impair access to critical infrastructure, or increase the likelihood of sanitary sewer overflows and maintenance demands. Many of these risks are concentrated within older sewer infrastructure, low-lying conveyance corridors, lift stations, and areas located near San Diego Creek and other flood-prone or groundwater-sensitive locations.

The CVA found that climate change may place increasing pressure on the Sewer System through both direct and indirect mechanisms. More intense storms are expected to increase hydraulic loading and inflow and infiltration, while prolonged drought conditions may exacerbate corrosion, odor generation, and sediment accumulation. Rising groundwater levels may increase hydrostatic pressure and infiltration into buried infrastructure, while extreme heat can affect the performance of pumps and electrical systems. Although wildfire was generally identified as a lower-priority concern for portions of the sewer system, associated PSPS events, road closures, and post-fire debris can still affect operations and emergency response capabilities. See Section 4.1 of Appendix B for more detail. Key vulnerabilities include the following:

Drought

Lower flows reduce conveyance velocities, increasing sediment deposition, odor, and corrosion; extended dry periods exacerbate hydrogen sulfide generation, accelerate pipe degradation, and impair pump station cycling and wet-well turnover, resulting in Moderate–High vulnerability, especially in low-gradient sewers, older pipe segments, corrosion-vulnerable facilities, and pump stations that require minimum flow to maintain performance. Challenges with odor control and corrosion were identified as a key impact already being experienced at IRWD. These challenges require additional maintenance and cleaning programs as well as more frequent visits by staff which increase costs.

Wildfire

Wildfire and PSPS-related outages can interrupt pump station operations and increase the likelihood of sanitary sewer overflows; ash and post-storm debris can enter sewer segments, elevating blockage risk and maintenance needs; smoke, closures, or damaged roads can delay field response, creating Moderate–High vulnerability, particularly for lift/pump stations on PSPS-prone circuits, low-point wet wells, and force mains requiring continuous pumping. IRWD has been proactive in planning for back-up generation and only one lift station remains without backup power, but duration of available on-site fuel will be an important consideration.

Heavy Precipitation and Flooding

More intense storms raise rapid inflow, manhole surcharging, and capacity exceedance; prolonged and compound storms saturate soils, significantly increasing inflow and infiltration and reducing system recovery time; mobilized debris can obstruct inlets and trigger localized backups, producing High vulnerability, especially at lift/pump stations in low-lying basins, older segments with known inflow and infiltration, and areas prone to access disruptions or debris loading during major events.

Extreme Heat

High temperatures increase thermal loading on pumps, blowers, and auxiliary electronics, leading to overheating, surging, or abnormal operation; extended heatwaves and warm nights limit equipment cooling and recovery, particularly in low-lying or enclosed sites, resulting in Moderate–High vulnerability for lift stations, air-vac facilities, and pump stations with heat-sensitive electronics or limited ventilation.

Sea-Level Rise & Groundwater Rise

While direct marine inundation is limited, sea level rise-induced groundwater rise expands shallow groundwater zones that intersect pipelines, manholes, and vaults, increasing inflow and infiltration, reducing the effectiveness of air-relief devices, accelerating corrosion, and elevating hydrostatic pressure, creating Moderate–High vulnerability for assets near San Diego Creek and other low-elevation corridors where recurring shallow groundwater conditions are expected. Impacts to sewer systems surrounding MWRP will face the greatest groundwater rise threats.

Landslide & Debris Flow

Pipelines, manholes, siphons, and pump stations in steep terrain or downstream of burn scars are susceptible to burial, exposure, deformation, or debris impacts; slope failures and road closures can block access needed for inspections and emergency response, resulting in High vulnerability for canyon and drainage-corridor assets where post-fire debris-flow risk is elevated.

4.3.4 Adaptation Actions

The CVA identified several climate-related risks that could affect the performance and reliability of IRWD's sewer collection and conveyance system. Key vulnerabilities include reduced wastewater flows during droughts, wildfire and Public Safety Power Shutoff (PSPS) events, increasingly intense storm events, extreme heat, rising groundwater levels associated with sea-level rise, and landslides or debris flows in canyon and hillside areas. These hazards can affect collection system performance by increasing inflow and infiltration, accelerating corrosion, disrupting lift station operations, damaging pipelines, limiting site access, and increasing maintenance requirements.

The list below identifies recommended implementation actions to improve resilience of IRWD's sewer system. See Appendix G for a detailed list of proposed adaptation actions. The proposed actions build upon ongoing maintenance programs, planned lift station upgrades, sewer rehabilitation projects, and capital improvement efforts. These actions are intended to improve collection system reliability, reduce flood and corrosion risks, enhance emergency preparedness, protect critical infrastructure, and ensure continued wastewater conveyance under a range of future climate conditions.

Summary of Proposed Actions

- Adapt sewer operations for drought-driven low flows through targeted cleaning, flushing, monitoring, and hydraulic optimization to reduce sediment buildup, odors, and corrosion.
- Improve condition assessment and asset management of aging sewer infrastructure to identify and address corrosion-prone and vulnerable segments before failures occur.
- Strengthen lift station resilience to wildfire and PSPS events through backup power, fuel storage, microgrids, and operational continuity planning.

- Reduce wildfire-related system impacts by implementing debris exclusion measures and improving vegetation management and defensible space around critical facilities.
- Improve flood resilience across the sewer system through inflow and infiltration reduction, flood-proofing, manhole improvements, and climate-informed rehabilitation projects.
- Upgrade lift stations, pipelines, and conveyance infrastructure to accommodate future storm intensity, flooding, and changing hydraulic conditions.
- Protect critical sewer assets from extreme heat, sea level rise, and groundwater intrusion through equipment upgrades, cooling measures, floodproofing, and corrosion-resistant materials.
- Reduce landslide and debris flow risks through slope stabilization, creek crossing protection, pipeline hardening or relocation, watershed restoration, and emergency response planning.

4.4 Monitoring and Control

4.4.1 Asset Overview and Adaptive Capacity

The Monitoring and Control system includes Supervisory Control and Data Acquisition (SCADA) infrastructure, telemetry systems, communications networks, sensors, antennas, repeaters, remote monitoring facilities, automated controls, and supporting power systems. These assets provide real-time visibility into treatment processes, distribution systems, collection systems, reservoirs, pump stations, and operational conditions across IRWD. Because nearly all operational systems rely on monitoring and communications infrastructure, this system serves as a critical operational backbone supporting decision-making, emergency response, and regulatory compliance. Adaptive capacity is relatively high due to redundant communications pathways, backup power systems, uninterruptible power supplies (UPS), automated controls, remote visibility capabilities, and established procedures for operating under degraded conditions. However, the system remains vulnerable to power outages, communication failures, environmental exposure, and increasing thermal stress on electronic equipment

4.4.2 Facility Thresholds

Monitoring and Control thresholds focus primarily on environmental conditions that reduce communication reliability, interrupt power supplies, or impair electronic equipment. Wildfire thresholds emphasize PSPS events, communication disruptions, damage to telemetry infrastructure, and extended operating periods where remote control becomes critical. Extreme heat thresholds address overheating of electronics, sensor drift, abnormal equipment behavior, communication failures, reduced cooling opportunities, and cumulative stress from elevated nighttime temperatures. Flooding thresholds relate to communication interruptions, telemetry failures, increased alarm frequency, and heavy reliance on remote operations during periods of limited physical access. Groundwater rise thresholds focus on long-term moisture exposure to buried conduits, sensor pits, communications infrastructure, and electrical systems. These thresholds identify points at which data quality, operational visibility, communications reliability, and system control may be compromised. See Section 3.4 of Appendix B for more detail.

4.4.3 Key Vulnerabilities

Although the Monitoring and Control system benefits from a high degree of adaptive capacity through redundant communications pathways, backup power systems, uninterruptible power

supplies (UPS), remote monitoring capabilities, and established operating procedures, disruptions to monitoring and control assets have the potential to affect multiple operational systems simultaneously. As a result, vulnerabilities within this system are often amplified because they can reduce operational awareness, limit remote control capabilities, delay response actions, and hinder decision-making during emergency conditions. See Section 4.1 of Appendix B for more detail. Key vulnerabilities include the following:

Wildfire

Wildfire and related PSPS events are going to increase across the northern range of the service area (with PSPS events extended beyond). This could impact monitoring and control systems in these areas as they are either directly damaged by wildfire or indirectly impacted by PSPS events.

Extreme Heat

Extreme heat has been shown to impact electronics and decrease efficiency of electric equipment.

4.4.4 Adaptation Actions

The CVA identified several climate-related risks that could affect the reliability of IRWD's monitoring, communications, and control systems. Many of these risks are concentrated in the northern portion of the service area, where wildfire exposure and PSPS events are expected to increase over time. Communication outages, degraded telemetry, and loss of visibility into system conditions could limit IRWD's ability to respond effectively to changing operational conditions.

The list below identifies recommended implementation actions to improve resilience of IRWD's monitoring and control system. See Appendix G for a detailed list of proposed adaptation actions. The proposed actions build upon existing radio tower improvements, SCADA modernization efforts, and emergency preparedness programs and are organized by implementation timeframe. These measures are intended to strengthen operational awareness, maintain critical communications during emergencies, improve system reliability during extreme weather events, and support continued operation of essential monitoring and control functions under future climate conditions.

Summary of Proposed Actions

- Strengthen emergency communications and telemetry resilience through radio tower upgrades, redundant communications systems, and backup power.
- Expand real-time monitoring capabilities for wildfire smoke, ash, reservoir conditions, and water quality impacts, with integration into SCADA systems.
- Automate operational responses to climate hazards by developing triggers linked to PSPS events, wildfire threats, and water quality conditions.
- Improve power reliability for critical monitoring and control systems through battery backup systems and enhanced emergency power capabilities.
- Protect SCADA, communications, and control equipment from extreme heat using temperature monitoring, backup cooling systems, and upgraded environmental controls.

- Increase operational readiness during extreme weather events through enhanced staffing, system monitoring, and emergency response protocols.
- Incorporate climate resilience into equipment procurement and technology standards by requiring monitoring and communications equipment to withstand high-temperature conditions.

4.5 Fleet and Facilities

4.5.1 Asset Overview and Adaptive Capacity

The Fleet and Facilities system includes administrative buildings, maintenance facilities, fleet vehicles, generators, energy systems, operational support infrastructure, emergency response equipment, maintenance yards, and other facilities necessary to support day-to-day operations. The system also encompasses employee safety considerations, access routes, and continuity-of-operations resources. Because these assets support every major operational division, their performance directly affects IRWD's ability to respond to emergencies and maintain service reliability. Adaptive capacity is generally strong due to established emergency response capabilities, flexible deployment of personnel and equipment, dedicated maintenance resources, fuel supplies, backup power systems, and operational experience managing extreme events. Nevertheless, increasing climate hazards are expected to place additional strain on facilities, staff, equipment, generators, and transportation resources

4.5.2 Facility Thresholds

Key thresholds for Fleet and Facilities focus on conditions that affect worker safety, facility functionality, emergency response, and operational continuity. Wildfire thresholds include smoke impacts, PSPS events, extended generator operation, restricted facility access, and increasing fleet dependence on electricity as vehicles become electrified. Flooding thresholds relate to facility flooding, stormwater intrusion, reduced access, emergency mobilization, and increased wear on vehicles and generators during prolonged response efforts. Extreme heat thresholds focus on worker safety, facilities lacking HVAC systems, prolonged heatwave conditions, elevated nighttime temperatures, and increased demands on cooling equipment and facility management. Groundwater rise thresholds include increasing saturation around facility foundations, utility vaults, roadways, and dewatering systems. Landslide and debris flow thresholds focus on blocked access routes, debris removal operations, emergency mobilization requirements, and facilities located near steep terrain. These thresholds identify the conditions that can reduce operational flexibility and increase demands on support resources. See Section 3.4 of Appendix B for more detail.

4.5.3 Key Vulnerabilities

The Fleet and Facilities system supports nearly every aspect of IRWD's operations and is critical to maintaining continuity of service during emergency conditions. While the system benefits from strong adaptive capacity through established emergency response procedures, backup power resources, dedicated maintenance staff, fuel supplies, and flexible deployment of personnel and equipment, climate-related disruptions can have cascading effects across multiple operational systems. The CVA found that fleet vehicles, generators, maintenance facilities, access routes, and support infrastructure would be increasingly exposed to the effects of wildfire, extreme heat, and landslides or debris flows. Because these assets are relied upon

to support emergency response, inspections, maintenance, and restoration activities, disruptions to Fleet and Facilities can reduce IRWD's ability to respond effectively to climate-related or other incidents elsewhere in the system.

The most significant vulnerabilities identified for this system are associated with increasing wildfire and PSPS events, prolonged extreme heat, and access limitations caused by landslides, debris flows, and severe storms. Wildfire and PSPS events have the potential to directly affect facilities while also creating operational challenges as IRWD's vehicle fleet becomes increasingly electrified and more dependent on reliable power supplies. Extreme heat can reduce staff safety and operational flexibility while increasing wear on fleet assets, generators, cooling equipment, and facilities without adequate climate control. In canyon and hillside environments, landslides, debris flows, and road closures can delay emergency response, restrict access to critical facilities, and increase reliance on heavy equipment and recovery operations. See Section 4.1 of Appendix B for more detail. Key vulnerabilities include the following:

Wildfire

Wildfire and related PSPS events are going to increase across the northern range of the service area (with PSPS events extended beyond). This could impact facilities directly through wildfire damage or indirectly through PSPS events. Fleets also will be increasingly impacted by PSPS events as vehicles are electrified.

Extreme Heat

Extreme heat reduces opportunities for staff physiological recovery, affects indoor working conditions at facilities without HVAC, and can limit safe working hours for field crews. High temperatures increase wear on fleet assets, portable generators, and cooling equipment needed to support operations during peak-heat periods. Facility cooling limitations may also intersect with equipment and personnel protection needs, creating Moderate–High vulnerability, particularly for facilities lacking cooling systems, outdoor field operations, and locations where sustained heat limits operational flexibility.

Landslides & Debris Flow

Landslides, debris flows, and washed-out roads can restrict fleet mobility, delay response and repair activities, and require deployment of heavy equipment for debris removal or slope stabilization. Facilities located downslope of steep terrain may be exposed to sediment deposition, erosion, or access constraints during major storm events. Extended recovery operations increase equipment wear and elevate safety risks for field crews—resulting in Moderate–High vulnerability for facilities and access routes in steep terrain, canyons, or areas subject to post-wildfire debris-flow risk.

4.5.4 Adaptation Actions

The CVA identified several climate-related risks that could affect IRWD's facilities, vehicle fleet, and field operations. Key vulnerabilities include wildfire and Public Safety Power Shutoff (PSPS) events, extreme heat, flooding, landslides, debris flows, and transportation disruptions. These hazards can restrict access to critical facilities, impact emergency response capabilities, disrupt power supplies, and create challenges for maintaining safe and reliable operations during extreme weather events.

The list below identifies recommended implementation actions to improve resilience of IRWD's fleet and facilities. See Appendix G for a detailed list of proposed adaptation actions. The proposed actions build upon existing emergency preparedness programs, facility improvement projects, fleet modernization initiatives, and vegetation management efforts. Organized by implementation timeframe, these actions are intended to improve emergency response capabilities, maintain access to critical facilities, support workforce safety, strengthen operational continuity during outages and extreme weather events, and enhance the long-term resilience of IRWD's physical assets and operations.

Summary of Proposed Actions

- Improve fleet and facility resilience to wildfire and PSPS events through emergency power capabilities, resilient charging infrastructure, and operational continuity planning.
- Leverage fleet electrification to support emergency operations by expanding charging infrastructure and evaluating vehicle-to-grid and bi-directional charging capabilities.
- Enhance facility access and defensible space management through vegetation management, emergency access maintenance, and wildfire evacuation protocols.
- Protect staff health and safety during extreme heat through cooling stations, heat-health protocols, adjusted work schedules, and access to climate-controlled facilities.
- Incorporate climate resilience into fleet, charging, and facility investments by siting and designing infrastructure to withstand wildfire, flooding, groundwater rise, and extreme heat.
- Improve emergency preparedness for landslides, debris flows, and severe storms through alternative access routes, pre-positioned equipment, and emergency repair materials.
- Stabilize vulnerable facility sites and access corridors by addressing slope, drainage, and erosion issues around maintenance yards, roads, and critical facilities.
- Strengthen emergency response capabilities through standing contractor agreements, streamlined procurement procedures, and rapid deployment of resources during disaster events.

4.6 Natural Treatment System

4.6.1 Asset Overview and Adaptive Capacity

The natural treatment system is comprised of engineered and semi-natural facilities that use vegetation, soils, microbial communities, wetlands, sedimentation basins, and other natural processes to improve water quality and treat urban runoff. These systems provide treatment through physical, chemical, and biological mechanisms while supporting environmental and habitat objectives throughout the service area. Key NTS assets identified in the CVA include the San Joaquin Marsh, Peters Canyon facilities, Upper Eastfoot, Middle Eastfoot, Lower Eastfoot, Eastfoot Retarding Basin, Forge Meadow, and other NTS facilities. Compared to IRWD's traditional infrastructure systems, adaptive capacity is generally more limited because treatment performance depends heavily on ecological processes, vegetation communities, and watershed conditions that can be difficult to control or rapidly restore following disturbance events.

4.6.2 Facility Thresholds

NTS thresholds focus on the climatic conditions that reduce treatment performance, alter ecological function, or increase maintenance demands. The most significant threshold involves sediment accumulation and debris loading following wildfire and intense precipitation events, particularly when storms occur within three to six months after a wildfire. Under these conditions, large sediment loads may overwhelm treatment basins, clog infrastructure, reduce detention times, compromise vegetation-based treatment processes, and require extensive maintenance. Groundwater rise thresholds focus on rising water tables, increasing saturation, reduced infiltration capacity, salinity intrusion, altered vegetation communities, and changing wetland function, particularly within the San Joaquin Marsh. Wildfire thresholds address direct impacts to vegetation, increased ash deposition, sediment accumulation, degraded treatment performance, and post-fire erosion throughout contributing watersheds. These thresholds reflect the conditions under which NTS facilities may experience reduced effectiveness, increased maintenance requirements, or long-term ecological change. See Section 3.4 of Appendix B for more detail.

4.6.3 Key Vulnerabilities

The NTS provides water quality treatment, runoff management, and habitat benefits across the IRWD service area. Unlike traditional engineered infrastructure, these systems rely heavily on natural processes, including vegetation, soils, wetlands, microbial activity, and sedimentation, to achieve their treatment objectives. As a result, their performance is closely tied to environmental and watershed conditions and can be more difficult to control or rapidly restore following disturbance events. While NTS facilities provide important resilience and ecological benefits, their dependence on natural processes creates unique vulnerabilities to climate-driven changes in hydrology, sediment transport, vegetation health, groundwater conditions, and water quality. See Section 4.1 of Appendix B for more detail.

The assessment identified sea-level induced groundwater rise, wildfire, and landslide or debris flow hazards as the primary threats to NTS. Rising groundwater levels may alter infiltration capacity, change vegetation communities, and affect treatment effectiveness over time, particularly at low-lying facilities such as San Joaquin Marsh and Peters Canyon. Wildfires have the potential to directly damage vegetated treatment systems while also increasing erosion, sediment transport, and downstream water quality impacts. Similarly, landslides, debris flows, and post-fire storm events can overwhelm NTS facilities with sediment and debris, reducing treatment performance, increasing maintenance requirements, and limiting access for operations and recovery activities.

Sea Level Rise & Groundwater Rise

Rising groundwater levels may affect the natural treatment system before direct coastal flooding occurs, particularly at low-lying sites such as the San Joaquin Marsh and Peters Canyon. Groundwater rise and associated salinity changes could reduce infiltration capacity, impact vegetation communities, and gradually decrease treatment effectiveness. These long-term operational challenges create Moderate–High vulnerability, despite limited direct inundation risk.

Landslides & Debris Flow

Sediment and debris mobilized during landslide, debris-flow, and post-fire storm events can overwhelm NTS facilities, reducing infiltration capacity and treatment performance. Access constraints and upstream infrastructure disruptions may also delay maintenance and recovery activities. These combined impacts result in Moderate–High vulnerability, particularly following severe storms or wildfire events.

Wildfire

Increasing wildfire conditions may directly damage vegetated treatment areas and degrade natural treatment functions. Wildfire also increases erosion potential, elevating the risk of sediment accumulation and clogging during subsequent storm events. These impacts could reduce system performance and increase maintenance needs, resulting in Moderate–High vulnerability.

4.6.4 Adaptation Actions

The CVA identified several climate-related risks that could affect the performance of IRWD's Natural Treatment System, particularly facilities located in the northern portion of the service area. Key vulnerabilities include post-wildfire debris flows, landslides, extreme storm events, sediment and turbidity loading, sea-level rise impacts, and access limitations during emergencies. Because these facilities rely on natural processes and are closely connected to surrounding watersheds, changes in watershed conditions can directly influence treatment performance and maintenance requirements.

The list below identifies recommended implementation actions to improve resilience of NTS facilities. See Appendix G for a detailed list of proposed adaptation actions. The proposed actions focus on reducing sediment and debris impacts, strengthening watershed monitoring and forecasting capabilities, improving facility access during emergencies, addressing long-term sea-level rise concerns, and enhancing operational preparedness following wildfire and storm events. Organized by implementation timeframe, these actions are intended to maintain treatment performance, protect critical infrastructure, and improve the long-term reliability of the natural treatment system under a range of future climate conditions.

Summary of Proposed Actions

- Reduce sediment, debris, and turbidity impacts through construction of forebays, sedimentation basins, and pretreatment infrastructure upstream of vulnerable natural treatment facilities.
- Enhance monitoring and predictive capabilities by developing subwatershed-based monitoring programs and risk models to identify climate-related threats to treatment performance.
- Improve resilience to post-wildfire and extreme storm events through facility-specific response plans, sediment management strategies, and temporary intake protection measures.
- Strengthen access and operational continuity by hardening roads, stabilizing slopes, upgrading culverts, and pre-positioning debris removal equipment at vulnerable facilities.
- Manage flooding impacts on treatment systems through floodwater diversion and enhanced sediment control measures that protect water quality and treatment effectiveness.

- Prepare for sea-level induced groundwater rise and salinity intrusion by evaluating relocation of vulnerable intakes and pump stations and implementing salinity monitoring and management protocols.
- Protect water quality and treatment performance through enhanced pretreatment controls that capture contaminated sediment before it reaches natural treatment facilities.
- Improve emergency response and maintenance capabilities through streamlined permitting, pre-approved environmental compliance procedures, and rapid-response protocols.

4.7 System Wide Operational Changes

While many adaptation actions are tied to specific facilities or operational systems, several recommendations provide benefits across the entire organization. These system-wide actions strengthen IRWD's ability to prepare for, respond to, and recover from a broad range of climate hazards. Rather than addressing a single vulnerability, these actions improve organizational preparedness, operational flexibility, decision-making, workforce resilience, and long-term infrastructure planning. The proposed actions below help embed climate resilience into everyday operations and future investment decisions, incorporating resilience considerations across all IRWD programs and facilities.

Policy, Planning, and Operational Improvements

1. **Establish a standardized After-Action Report program** to document lessons learned following droughts, floods, wildfires, PSPS events, and water quality emergencies, creating a formal process to identify operational gaps, successful response measures, and future improvement opportunities.
2. **Formalize cross-training and staffing surge plans** to ensure critical treatment, conveyance, and operational functions can be maintained when staffing availability or access to facilities is disrupted by hazardous conditions.
3. **Implement a climate resilience screening checklist for capital projects** so that flood risks, wildfire exposure, sea-level rise, groundwater impacts, extreme heat, and backup power needs are evaluated consistently during project planning and design.
4. **Continue to formalize extreme heat operational protocols** that protect employees through adjusted work schedules, hydration requirements, cooling measures, and other workforce safety practices during high-temperature events.
5. **Conduct annual multi-hazard emergency exercises** that simulate compound events such as wildfire followed by debris flows or power outages occurring during heat emergencies to improve emergency preparedness and coordination.
6. **Establish emergency procurement agreements and pre-positioned contracts** for generators, fuel, treatment chemicals, debris removal, and emergency repair services to accelerate response and recovery during regional emergencies.
7. **Expand coordination with local jurisdictions on stormwater infiltration projects** to reduce runoff volumes, lessen flooding impacts, improve groundwater recharge, and increase watershed resilience.
8. **Continue to coordinate with Orange County Fire Authority, CalFire, and emergency responders to assess facilities** in high wildfire risk areas and identify opportunities for vegetation management, defensible space improvements, and facility hardening.

9. **Maintain and expand mutual aid partnerships with regional agencies** to improve access to emergency resources, including standby generators, specialized equipment, and emergency response personnel.
10. **Develop a District-wide climate data management and analytics program** that uses operational data such as temperature trends, groundwater levels, pumping records, and drought indicators to identify emerging risks, evaluate system performance, and support climate-informed decision making.

Facility and Infrastructure Improvements

1. **Transition backup generators to renewable diesel where feasible** to reduce greenhouse gas emissions while maintaining emergency power capabilities and operational resilience.
2. **Install heat pump systems in administrative and operational facilities** to improve energy efficiency, reduce emissions, and provide reliable heating and cooling under changing climate conditions.
3. **Retrofit maintenance facilities and operations centers with cooling systems**, shaded work areas, and air filtration to protect employees and maintain productivity during extreme heat and poor air quality events.
4. **Incorporate fire-resistant materials and design standards into facilities** located in high wildfire hazard areas to reduce damage risk and improve operational continuity during wildfire events.
5. **Expand redundant communications and backup power systems** to maintain situational awareness, coordination, and critical operations during PSPS events, flooding, extreme heat, and other emergencies.
6. **Support watershed conservation and restoration activities** that improve ecosystem health, reduce erosion and sedimentation, enhance groundwater recharge, and provide long-term resilience benefits across multiple IRWD systems.

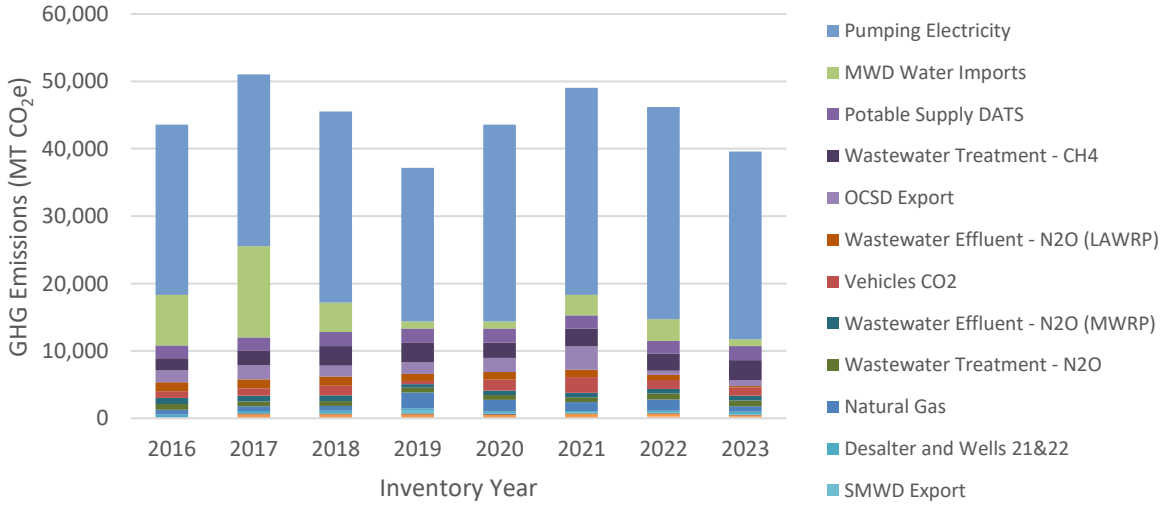
5 GHG Emissions and Climate Change Mitigation Opportunities

In addition to addressing the climate change impacts, this Plan also quantified the GHG emissions associated with IRWD's operations and completed technical analysis, site visits, and modeling exercises to better understand the opportunities available for IRWD to reduce their GHG emissions. Without mandated GHG reduction targets, IRWD voluntarily reduces GHG emissions. In addition to the GHG quantification, Willdan, an engineering firm, benchmarked IRWD facilities, identified energy optimization measures and analyzed opportunities for solar PV and BESS. Willdan also created a framework for analyzing future distributed energy resource projects at IRWD. This section outlines the results of the GHG emissions modeling, energy optimization assessment, and battery energy storage system and renewable energy analysis.

5.1 GHG Emissions Inventory

As a first step in understanding IRWD's contributions to climate change, a comprehensive GHG emissions inventory was developed. The inventory serves to highlight where GHG emissions are generated from IRWD operations as well as to identify trends in emissions over time. The results of the GHG inventory show that IRWD's GHG emissions are primarily associated with electricity consumption used to pump, treat, distribute, and recycle wastewater, with additional emissions generated from vehicle fuel consumption, natural gas use, wastewater treatment processes, imported water, and biosolids management. Because water and wastewater operations are inherently energy-intensive, IRWD's emissions profile is closely linked to water demand and treatment requirements. As part of the CAP, historical emissions trends were evaluated to establish major drivers of emissions. The single largest source of emissions for IRWD (and most water agencies) is electricity use associated with water pumping. Historical IRWD GHG Emissions can be seen in Figure 13. Appendix A discusses the GHG emissions and forecast in more detail.

Figure 13 Historical IRWD GHG Emissions by Year

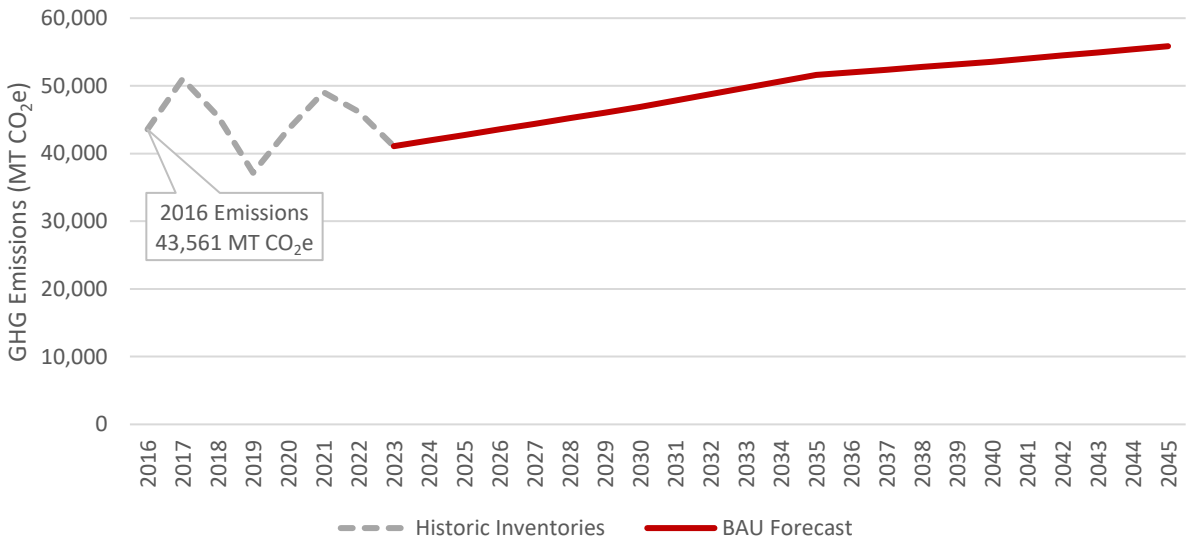


5.1 Business-as-Usual GHG Emissions Forecast

Based on IRWD's historical inventories from 2016 through 2023 the business-as-usual forecast projects how emissions might change over time without any additional GHG emissions reduction strategies. The forecast incorporated anticipated increases in service area population, potable and non-potable water demands, imported water supplies, wastewater treatment flows, and planned facility expansions. Future emissions were estimated by applying growth factors derived from operational metrics such as water demand, population served, and imported water purchases to the emissions factors used in the 2023 inventory. Planned capital projects, including the Syphon Reservoir Improvement Project, MWRP expansions, and recently acquired treatment facilities, were also incorporated into the forecast.

Under the BAU scenario, total emissions are projected to increase from approximately 41,100 metric tons of carbon dioxide equivalent (MT CO2e) in 2023 to nearly 55,900 MT CO2e by 2045, representing approximately 36 percent growth over the planning horizon. The forecast indicates that electricity consumption associated with water pumping and treatment will remain the largest source of emissions, followed by wastewater treatment processes, imported water supplies, and fleet operations. These results highlight the importance of reducing grid electricity dependence and improving operational energy efficiency to manage long-term emissions growth. Forecasted emissions can be seen in Figure 14.

Figure 14 Historic Inventories and BAU Forecast Scenario Results (MT CO_2e)



However, IRWD has several avenues to reduce GHG emissions and make progress towards the statewide GHG reduction targets.

5.2 Energy Optimization Measure Evaluation Summary

As shown in the GHG inventory, electricity consumption is the largest emissions source for IRWD. To understand opportunities to reduce emissions associated with electricity (and other

energy sources) and increase cost effectiveness, Willdan conducted an energy optimization evaluation of IRWD facilities. The evaluation included benchmarking of IRWD facilities, site visits to the facilities with the largest energy footprints, and the development of several energy saving measures.

5.2.1 Operations Benchmarking

Willdan conducted energy benchmarking for each of IRWD's facilities. The process of energy benchmarking includes a comparison of IRWD's facilities with similar facilities from other water agencies. Annual electricity consumption and corresponding energy intensity of key treatment and pumping facilities within the system were quantified across IRWD operations. Energy intensity values were developed and are expressed in kilowatt-hours per million gallons (kWh/MG) of water produced, treated, or delivered. This metric allows for a direct comparison of relative efficiency across facilities. Benchmark ranges were developed using industry literature, prior IRWD studies, and physics-based calculations to represent the expected operating energy intensity ranges for similar facilities. The Energy Intensity Percentile in Table 1 represents each facility's position relative to the benchmark range for IRWD facilities with over 1 million kWh of annual energy consumption. A full list of benchmarking results can be found in Appendix C. Lower values indicate more efficient operation, while higher values reflect less efficient performance than other similar facilities.

The benchmarking process demonstrated that a majority of IRWD's electricity consumption is concentrated in large-scale treatment facilities like Michelson Wastewater Treatment Plant, Los Alisos Wastewater Treatment Plant, Baker Water Treatment Plant, and DATS. The benchmarking process also showed that many of these large energy users are operating at or near the low end of energy intensity, demonstrating efficient operations.

Table 1 Summary of IRWD Facility Benchmarking Results

Site	Annual Energy Consumption (kWh)	Energy Intensity (kWh/MG)	Energy Intensity Benchmark Low (kWh/MG)	Energy Intensity Benchmark High (kWh/MG)	Energy Intensity Percentile
Michelson Water Reclamation	38,149,081	4,818	4,748	8,621	2%
Baker Water Treatment Plant	16,703,214	1,767	1,974	2,237	0%
Deep Aquifer Treatment System (DATS)**	8,987,208	3,579	466	4,198	83%
Los Alisos Water Reclamation Plant*	7,277,143	3,983	4,640	8,621	0%
Coastal Zn B-D PS B	3,150,514	1,990	166	2,998	64%
Dyer Road Well 15	2,913,859	2,356	1,346	6,728	19%
East Irvine Zn 1-3 PS*	2,784,950	1,228	166	2,998	38%
Dyer Road Well 10	2,678,207	2,594	1,346	6,728	23%
Foothill Zn 4-6 PS*	2,417,682	2,317	166	2,998	76%
Coastal Zn B-D PS A	2,092,658	2,453	166	2,998	81%

Site	Annual Energy Consumption (kWh)	Energy Intensity (kWh/MG)	Energy Intensity Benchmark Low (kWh/MG)	Energy Intensity Benchmark High (kWh/MG)	Energy Intensity Percentile
IDP Potable Treatment Plant*	1,984,408	2,691	666	8,332	26%
Eastwood Pump Station*	1,919,229		166	2,998	-
Tustin Well 21/22 Treatment Plant	1,803,548	2,956	666	8,332	30%
Well 21 Mitchell and Debusk	1,637,477	2,345	1,346	6,728	19%
Dyer Road Well 18	1,564,412	3,127	1,346	6,728	33%
Dyer Road Well 14	1,340,956	1,291	1,346	6,728	0%
Dyer Road Well 04 Segerstrom Park	1,336,871	1,904	1,346	6,728	10%
East Irvine Zn A-B PS	1,288,974	768	166	2,998	21%
Dyer Road Well 17	1,276,489	2,300	1,346	6,728	18%
Portola Hills Zn 6-8 PS	1,211,795	2,175	166	2,998	71%
Turtle Rock Zn 1-3 PS	1,133,864	1,078	166	2,998	32%
Dyer Road Well 11	1,112,003	1,760	1,346	6,728	8%
Well ET2 / TIC Well 113 (CERCLA)	1,077,067	2,947	1,346	6,728	30%
Dyer Road Well 01 Segerstrom/Thornton Pk	1,036,188	2,588	1,346	6,728	23%

Notes:

*SCADA flow data was unreliable or absent. Energy Intensity if available is from a previous IRWD study (Navigant Consulting, Inc. 2015 IRWD Embedded Energy Plan, Final Report).

**Benchmarks do not include well pumps.

General Notes:

1. Well benchmark range is calculated based on possible well conditions, ranging for a pump head of 300 ft to 1500 ft.
2. Energy intensity was calculated by summing daily water production data from SCADA to match the corresponding monthly electricity consumption. Monthly energy use (kWh) was then divided by total water production (MG) for each facility to determine energy intensity (kWh/MG).
3. Pump station benchmark range is estimated based on flat to hilly geography.
4. Annual data is from the most recent 12 months of data available at the time of the analysis, generally, January 2024 to December 2024.

5.2.2 Site Visits

Based on the benchmarking results and discussions with IRWD staff, Willdan conducted site visits with IRWD's Director of Water & Recycling Operations Jose Zepeda, Senior Energy and Water Resources Planner Robert Huang, and several IRWD facility operators at key facilities. The purpose of the visits was to perform facility walkthroughs and gather operational and

energy performance information at the following sites: Michelson Water Recycling Plant (MWRP), Deep Aquifer Treatment System (DATS), Wells 21/22 Treatment Facility, Baker Water Treatment Plant, Rattlesnake Reservoir, and Zone A Pump Station. Additional information on the site visit and benchmarking findings can be found in Appendix C.

5.2.3 Energy Optimization Measures

Although IRWD facilities were found to be within range for energy performance, Willdan identified three potential energy optimization measures designed to improve efficiency or operational efficiency. While individual projects vary by facility, the overall objective is to reduce energy consumption associated with pumping, treatment, process equipment, and facility operations through operational improvements, equipment upgrades, and modernization efforts. Measures were evaluated using multiple criteria weighted with feedback from IRWD staff, inluding:

- Cost Effectiveness - Weight: 30%
- Capital Requirements - Weight: 10%
- Technical Feasibility - Weight: 15%
- Operational Impact - Weight: 20%
- Grants and Incentives - Weight: 5%
- Stakeholder Support - Weight: 10%
- Benchmarking - Weight: 5%
- Resilience Benefit - Weight: 3%
- Greenhouse Gas Benefit - Weight: 3%

Three primary strategies were identifeid, while several additional strategies were flagged as having potential savings. For a full list of energy optimization measures, see Appendix C.

EEM-1 Hydro turbine Installation at Baker Water Treatment Plant (Score: 6.975 - 6.775)

This measure proposes installing a hydro turbine to capture wasted energy from reducing the incoming water pressure from 45 psi to 5 psi. The high flow and required pressure reduction present a great opportunity to capture and use clean energy. The recovered energy will be converted to electricity via the turbine and used onsite, reducing purchased electricity, GHG emissions and utility costs. The system is passive and requires minimal maintenance and can provide an estimated annual generation of 836,000 kWh depending on operating conditions.

Energy savings for this measure are estimated at 836,000 kWh which assumes an average power output of 95 kW 24/7 and an average blended utility rate of $0.159/kWh. This provides annual utility cost savings of $132,924.

EEM-2 Mainspring Linear Generator at Michelson Water Recycling Plant (Score: 7.025)

Willdan proposes installing one or more Mainspring Linear Generators at the Michelson Water Recycling Plant to supplement the existing microturbines. The fuel-flexible Mainspring Linear Generator does not use a traditional combustion process but instead relies on a low-temperature reaction of fuel and air that leads to higher electrical efficiency (~45%) and lower NOx emissions.

Energy savings are estimated at 1,642,500 kWh, which assumes a 250 kW linear generator provides an additional 6,570 hours above what is provided by the microturbines and a blended electricity rate of $0.15/kWh. This results in annual utility cost savings of $246,375.

EEM-3 Battery Energy Storage System (BESS) at Key Well Sites for Pump Soft Shutdown (Score: 5.15)

IRWD well sites do not currently have backup power to allow the well pumps to ride-through or perform a controlled shutdown of the pumps during unplanned power outages. When power is lost, pumps shut off suddenly, leading to pump and motor damage. These hard stops introduce mechanical and electrical stress, reduce pump life, and increase maintenance costs. This measure proposes installing battery energy storage systems (BESS) at well sites to provide a "soft stop" for well pumps in the event of an unplanned power outage. Operators reported pump and motor damage resulting from power outages. Installing BESS at well sites will allow the system to perform a controlled shutdown of the pumps to prevent damage to the system, pumps, and/or motors. This reduces mechanical and electrical stress, extends pump lifespan, and minimizes unplanned downtime.

No energy savings were identified for this project as the batteries are sized for only a few minutes of use.

These strategies can provide reductions in electricity consumption and/or a reduction in operating costs while also supporting long-term resiliency objectives. Because energy efficiency measures reduce electricity use regardless of future grid conditions, they represent a complementary strategy that compounds the benefits of renewable energy deployment and statewide grid decarbonization.

5.3 Solar PV and BESS Feasibility Analysis Summary

A Solar PV and BESS Feasibility Analysis and Report was also produced by Willdan for IRWD to understand the feasibility of expanding solar and battery storage resources at IRWD facilities as well as provide a pathway for managing the six existing BESS systems. The full Solar PV and BESS Feasibility Analysis can be found in Appendix D which includes the complete assessment of the selected solar PV and BESS systems.

5.3.1 Existing BESS System Option Evaluation

IRWD currently holds a contract with Hybrid Electric Building Technologies who owns and operates six BESS sites at IRWD facilities. The current savings sharing agreement with Hybrid Electric Building Technologies sunsets in 2029. As part of the analysis, Willdan analyzed four potential scenarios for IRWD to follow as the existing contract expires as shown in Table 2.

Table 2 Scenarios for Six Existing District BESS Sites After Agreement Sunset

Type	Description	Benefits	Concerns
Scenario 1: End of Life Existing Systems	Hybrid Electric Building Technologies covers the cost of demolition of existing systems. The District takes no further action to replace systems.	No risk or cost is incurred to the District	Current savings from BESS are not refreshed.
Scenario 2: New System Replacement	Hybrid Electric Building Technologies covers cost of demolition of existing systems, and the District utilizes remaining infrastructure in place for new system installation.	Refreshed savings opportunities, flexibility to choose new operator and type of agreement	Utility demand response revenue opportunities are difficult to predict. The District may end up taking more financial risk for other bill savings operations such as peak shaving.
Scenario 3: Extension of Existing Agreement	The District extends shared savings agreement with Hybrid Electric Building Technologies, and existing systems remain in place.	Low-hassle approach to refresh savings	Future utility demand response revenue opportunities are uncertain as Hybrid Electric Building Technologies may not be willing to extend contract under current conditions (namely the minimum savings guarantee). As systems approach their original 10-year operation date, maintenance for extended operation would likely increase. Demo cost coverage of existing systems would be forfeit.
Scenario 4: System Buyout	The District purchases the systems from current operator, and selects a third-party to continue operating the systems.	Flexibility to extract new bill savings measures from existing systems	Existing controllers would not be compatible with a new operating algorithm, and significant control system retrofits would be required. Finding a suitable control operator who is willing and able to manage 10- year-old hardware and continue their maintenance is likely to prove difficult.

Under the current agreement with the Hybrid Electric Building Technologies, the systems will be considered end-of-life at Year 10 (2029), at which point all costs of demolition and removal of these systems will be covered. Ultimately, Willdan identified Scenario 2 as the most reasonable path forward for IRWD's six BESS systems. Scenario 2 allows IRWD to leverage existing electrical infrastructure but make updates to systems sizing and controls, avoid demolition costs, and potentially enter into an agreement with another service provider.

5.3.2 New PV and BESS System Analysis

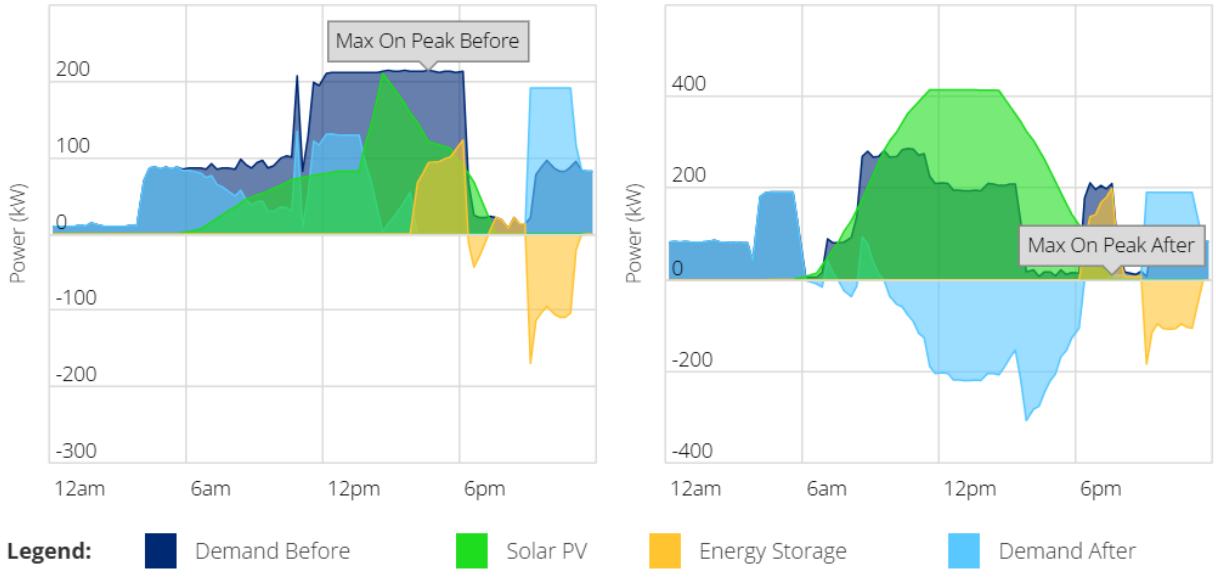
In addition to the analysis of the existing BESS systems, the feasibility of installing new distributed energy systems was also analyzed. Adding additional solar PV or BESS systems could lower GHG emissions for IRWD operations and provide resilience benefits in the case of power outages. IRWD identified the following sites for the PV and BESS analysis:

- Rattlesnake Reservoir Baseball Field
- Michelson Water Recycling Plant
- Zone A North Reservoir 3
- Baker Water Treatment Plant

At the four proposed Solar PV/BESS sites, a site audit was conducted as an initial step to understand the site-specific scope of work associated with developing the distributed energy resource (DER) systems. The interconnection with the electric utility requires an interconnection application and subsequent interconnection study carried out by Southern California Edison (SCE), to ensure the DER project will meet performance requirements and that the utility-side infrastructure can handle additional resources importing from and exporting to its grid.

Next, 12 months of recent 15-minute electricity usage data from each of the focus facilities was analyzed to understand overall energy demand. Since IRWD is on a time-of-use rate structure (with electricity rates changing depending on time of day) understanding when and how much electricity can be offset by a distributed energy resource is key to accurately modeling financials. Two example scenarios are shown in Figure 15 where solar PV and BESS systems are able to shift demand (dark blue) away from peak energy pricing (4pm to 9pm) to less costly times of day (light blue). The left and right graphs represent two different scenarios and baseline electricity demand curves and demonstrate how solar and BESS can be used to shift loads to less expensive times of day.

Figure 15 Zone A North and Rattlesnake Reservoir BESS + Solar PV Simulation



A rate structure analysis was also completed to understand current utility rates and to inform the cost savings that a PV and/or BESS system could provide. Finally, current utility programs that support distributed energy resources (like PV and BESS) were summarized to understand the additional financial incentives and allowances currently supported by IRWD's utility provider, Southern California Edison. One major change to PV and BESS programs were the changes to the Federal Incremental Tax Credit (ITC) implemented by the One Big Beautiful Bill Act in July 2025. Under these changes, Solar PV projects not underway by 07/04/2026 can no longer receive the 30% ITC credit. However, the Federal ITC base rate for BESS projects will remain at 30% of total project costs (provided labor and apprenticeship requirements are met) for projects commencing construction through 2033.

Based on these analyses, the resulting PV and BESS system sizes, blended demand charges, and savings expectations are included in Table 3. If the ITC was renewed, or a similar cost reduction program was instituted, the payback periods were found to be much better, with multiple projects having payback periods shorter than the systems expected lifespan as shown in Table 4.

In summary, the key factors influencing cost-effectiveness across all scenarios include site load shape, demand charge structure, export compensation methodology, system sizing discipline, and availability of financial incentives such as the ITC. RES-BCT Solar PV represents the best near-term opportunity for the District. BESS investments should remain targeted and load-driven rather than incentive driven. For all projects examined, calculated simple paybacks are not within the District's desired typical payback periods for capital investment.

Should the ITC be reinstated and additional incentives or demand response programs be offered for Solar PV and BESS systems, the District is advised to:

- Consider a phased, stepwise implementation approach that prioritizes RES-BCT solar development at suitable sites with attractive paybacks,
- Prepare for strategic BESS replacement post-2029, and
- Remain flexible to re-evaluate Solar PV deployment broadly

Table 3 Summary of Solar PV and BESS system Analysis (Without ITC)

Site	System Type	PV System Size (kWDC)	BESS System Size (Inverter Capacity/ Energy Capacity)	Blended Demand Charges ($/kW)	Year 1 Solar PV Savings ($)	Year 1 BESS Savings ($)	Year 1 DSGS Program Payments ($)	Year 1 Total Savings ($)	Total Project Cost ($)	Simple Payback (Years)
Michelson Water Recycling Plant	Solar Paired Storage	1809.6	449 kW / 1795 kWh	42.3	272,738.15	141,415	37,160	451,314	11,385,556	25
Baker Water Treatment Plant	Solar Paired Storage	355.2	326 kW / 1306 kWh	39.8	56,018.24	69,984	27,026	153,028	3,847,928	25
Deep Aquifer Treatment System	Standalone Storage	N/A	100 kW / 406 kWh	42.6	-	17,434	8,280	25,714	782,600	30
Los Alisos Water Recycling Plant	Standalone Storage	N/A	100 kW / 406 kWh	42.0	-	18,566	8,280	26,846	782,600	29
Potable Treatment Plant	Standalone Storage	N/A	60 kW / 120 kWh	35.7	-	3,998	3,768	7,766	331,189	43
Wells 21/22 Desalter Facility	Standalone Storage	N/A	50 kW / 203 kWh	24.3	-	4,240	4,140	8,380	564,473	67

Table 4 Summary of Solar PV and BESS system Analysis (With ITC)

Site	System Type	PV System Size (kWDC)	BESS System Size (Inverter Capacity/ Energy Capacity)	Blended Demand Charges ($/kW)	Year 1 Solar PV Savings ($)	Year 1 BESS Savings ($)	Year 1 DSGS Program Payments ($)	Year 1 Total Savings ($)	Total Project Cost ($)	Simple Payback (Years)
Michelson Water Recycling Plant	Solar Paired Storage	1809.6	449 kW / 1795 kWh	42.3	272,738.15	141,415	37,160	451,314	7,969,889	18
Baker Water Treatment Plant	Solar Paired Storage	355.2	326 kW / 1306 kWh	39.8	56,018.24	69,984	27,026	153,028	2,693,550	18
Deep Aquifer Treatment System	Standalone Storage	N/A	100 kW / 406 kWh	42.6	-	17,434	8,280	25,714	547,820	21
Los Alisos Water Recycling Plant	Standalone Storage	N/A	100 kW / 406 kWh	42.0	-	18,566	8,280	26,846	547,820	20
Potable Treatment Plant	Standalone Storage	N/A	60 kW / 120 kWh	35.7	-	3,998	3,768	7,766	231,832	30
Wells 21/22 Desalter Facility	Standalone Storage	N/A	50 kW / 203 kWh	24.3	-	4,240	4,140	8,380	395,131	47

5.4 GHG Savings Opportunities

Based on the technical analysis completed by Willdan and a review of existing legislation, several voluntary and regulatory driven opportunities to reduce emissions relative to the BAU were identified. These opportunities include statewide electricity grid decarbonization (SB100), renewable energy and BESS systems discussed in Section 5.3, fleet electrification, and the energy optimization projects identified in Section 5.2. Based on project feasibility, several of these projects were identified for inclusion in an adjusted forecast that demonstrates IRWD's ability to reduce GHG emissions over time. The following section outlines the projects and regulations considered for the adjusted forecast and identifies why they were or were not included, their status as a voluntary or mandatory requirement, and their associated benefits.

Renewable Portfolio Standard (RPS)

California's Renewable Portfolio Standard (RPS), Senate Bill 100 (SB 100), and Senate Bill 1020 establish increasingly stringent requirements for utilities to procure renewable and carbon-free electricity, culminating in a statewide goal of 100 percent carbon-free electricity by 2045. Because purchased electricity accounts for the majority of IRWD's emissions, these statewide policies are projected to provide the single largest source of emissions reductions available to IRWD. As utility electricity becomes progressively cleaner, the emissions intensity associated with pumping, treatment, and facility operations declines substantially without requiring changes to water service levels. The analysis found that RPS-driven grid decarbonization alone could reduce emissions by nearly 40,000 MT CO2e annually by 2045 compared to BAU conditions.

Electric Vehicles and Advanced Clean Fleets (EVs)

IRWD currently generates direct emissions from gasoline and diesel fuel consumption associated with fleet operations. Under California law, the Advanced Clean Fleets (ACF) rule requires public fleets (including water agencies) to phase out fossil fuel powered medium and heavy-duty vehicles for carbon free versions. The rule currently requires 50% of new covered vehicle purchases to meet ACF requirements. Under the current implementation timeline this number will be increased to 100% by 2030. This analysis assumed approximately 70 percent of IRWD's F-250 fleet would be replaced with electric vehicles (EVs) or lower-emission alternatives by 2030, with a longer-term goal of transitioning the entire fleet to electric or other carbon-free fuels by 2045. As California's electricity grid becomes increasingly carbon-free, electrification provides progressively greater emissions benefits over time. In addition to reducing GHG emissions, fleet electrification can lower fuel costs, reduce maintenance requirements, and support compliance with emerging state transportation and air quality regulations.

Solar PV and BESS Systems

Due to the overall poor financial performance of the solar PV and BESS projects analyzed, they were not selected for inclusion in the adjusted forecast.

Energy Optimization Projects

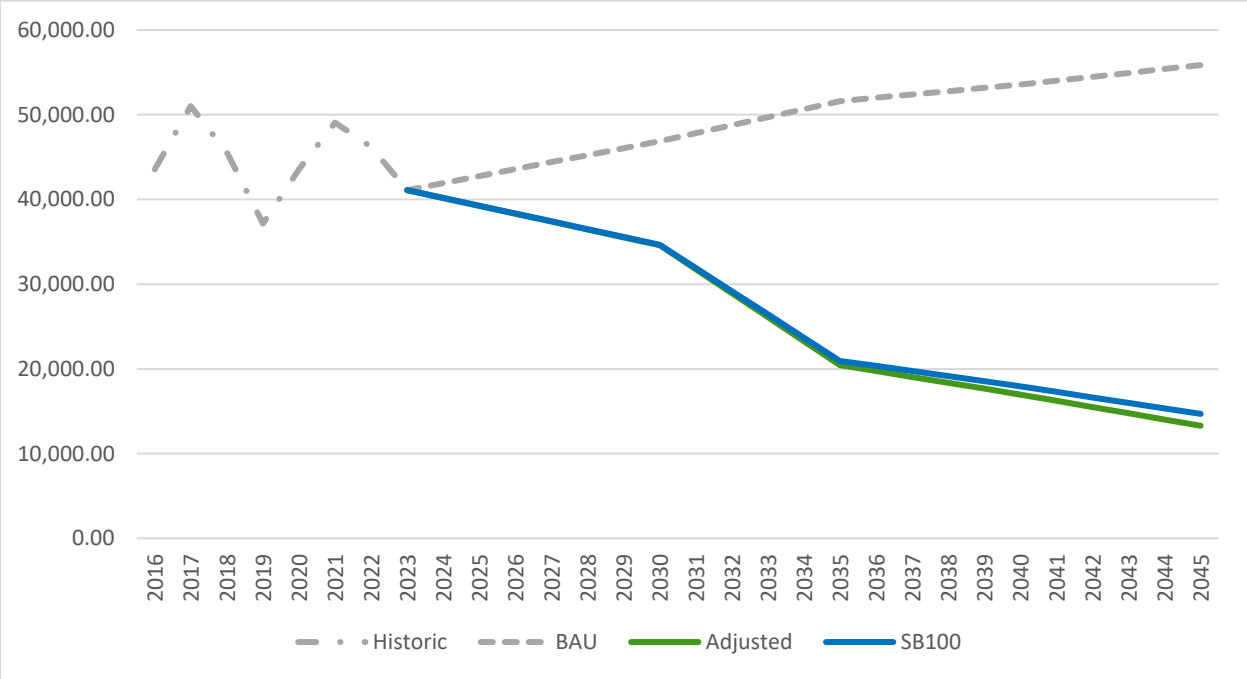
Two of the energy optimization projects identified in Section 5.2 were included in the adjusted forecast based on their overall high prioritization scores and ability to reduce costs and energy

consumption at IRWD facilities. EEM-3 BESS at Key Well Sites for Pump Soft Shutdown was not included in the Adjusted Forecast since it does not produce any measurable GHG emissions reductions. Both EEM-1 Hydro turbine Installation at Baker Water Treatment Plant and EEM-2 Mainspring Linear Generator at Michelson Water Recycling Plant were included in the adjusted forecast. EEM-3 was not included since any GHG benefits would be negligible.

5.4.1 Adjusted GHG Forecast

To better understand the combined effects of legislation and planned IRWD initiatives, a legislative-adjusted forecast was developed that incorporates statewide electricity decarbonization requirements and planned IRWD mitigation projects. Unlike the BAU forecast, which assumes current emissions factors remain unchanged, the adjusted forecast reflects reductions associated with the RPS, energy optimization projects, and fleet electrification efforts. As a result, forecasted emissions decline substantially over time despite projected growth in population, water demand, and IRWD operations. Two adjusted forecasts are shown below in Figure 16, one which reflects just the impacts of SB100 (100% carbon free electricity by 2045) as well as an additional forecast which reflects the impacts of SB100 and the additional GHG reduction strategies discussed above.

Figure 16 Historic Inventories and SB100 and Adjusted Forecast (MT CO_2e)



Under the adjusted scenario, total emissions decrease from approximately 41,100 MT CO_2e in 2023 to approximately 34,600 MT CO2e by 2030, representing a 16 percent reduction. By 2045, emissions are projected to decline to approximately 13,300 MT CO_2e, representing a 68 percent reduction relative to the 2023 baseline. Most of these reductions occur due to SB100 (blue line) as California's electric grid transitions toward carbon-free power generation. Additional GHG reductions from the voluntary energy optimization measures and ongoing fleet electrification reduce emissions beyond the reductions provided by SB100. Under the adjusted forecast the majority of IRWD's GHG emission remaining in 2045 are tied to Scope 1 emissions sources

including wastewater treatment process emissions, the DATS facility, and natural gas combustion.

The adjusted forecast demonstrates that IRWD is well-positioned to benefit from statewide climate policies while leveraging voluntary local initiatives to further reduce emissions as they are deemed to be feasible by IRWD. While statewide grid decarbonization is expected to provide the largest reductions, additional energy optimization projects and fleet electrification measures can further strengthen IRWD's climate leadership, reduce operational costs, and support IRWD's broader sustainability and resilience objectives.

6 Priority Actions and Implementation Framework

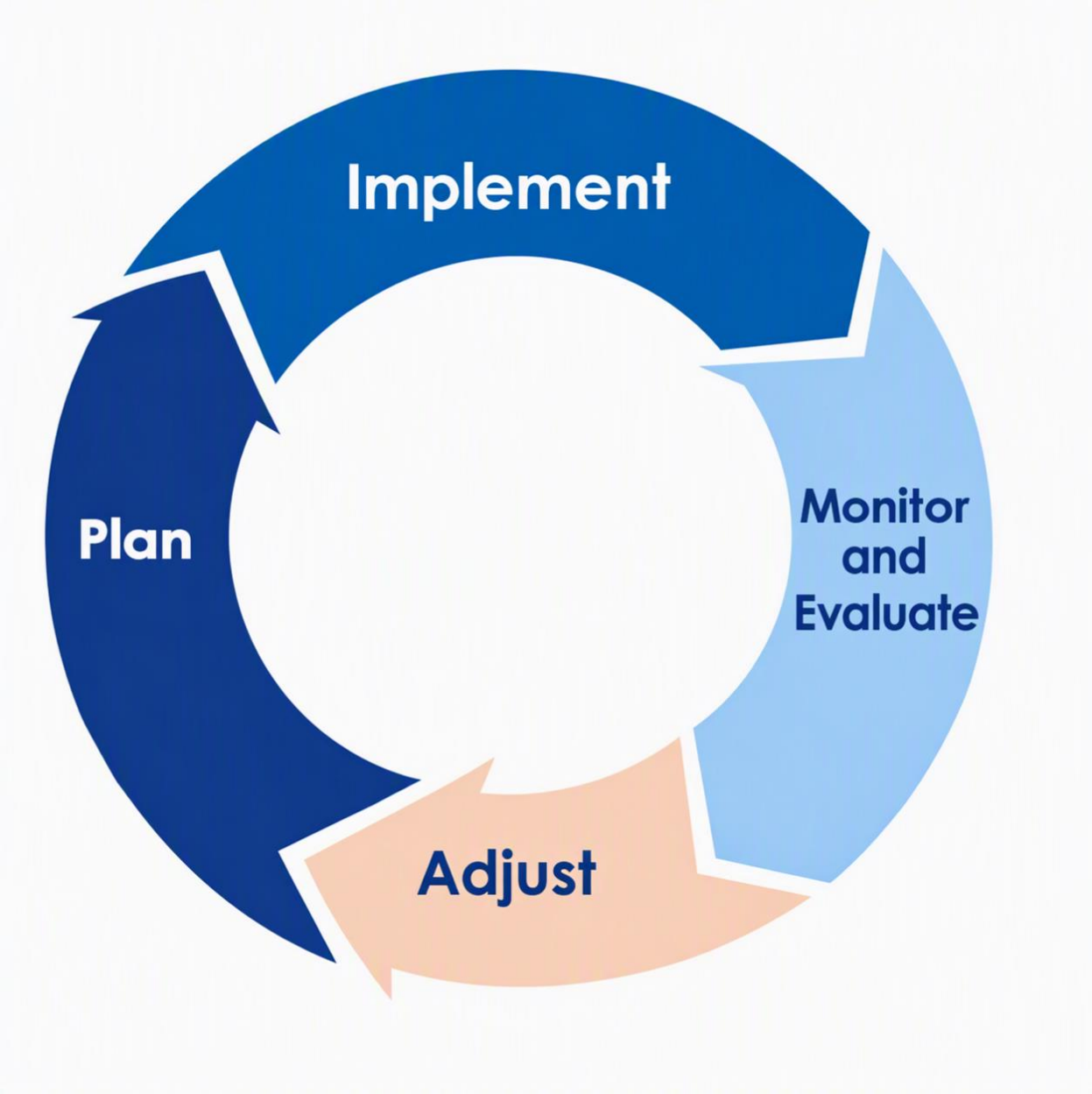
While the CMIP6 data used for analyzing future climate hazards associated with IRWD's facilities is the best data set currently available, modeling climate impacts over decades remains a challenge. Uncertainty is introduced both through the climate data which has a wide range of potential outcomes driven by the efficacy of global mitigation efforts, positive feedback loops, and the overall complexity of climate patterns as well as changes in technology, and the actual, rather than perceived, adaptive capacity of existing infrastructure and operations. To manage this uncertainty, this plan focuses on an adaptive management approach. Adaptive management acknowledges uncertainty is unavoidable, promotes transparency through ongoing data collection and analysis, establishes triggers to initiate deployment of appropriate adaptation strategies, and establishes a process to make adjustments based on outcomes and changing conditions.

Even with future uncertainties, IRWD is already experiencing climate impacts. Many of the actions identified in this section can be integrated into existing operations and decision-making processes. The Implementation Framework described below provides a pathway for IRWD to address existing risks, collect and analyze critical climate data, and weigh upfront costs against future impacts in a systematic manner.

6.1 Implementation Framework

IRWD will utilize an adaptive management approach to preparing for climate change. Adaptive management is a structured approach to managing uncertainty. The CAP provides both the initial steps for implementation as well as a framework to adapt and change over time as conditions shift. As shown in Figure 17, adaptive management involves implementing the initial phases of the plan, monitoring and evaluating both the progress made and the changing climate conditions and adjusting implementation in response to emerging needs.

Figure 17 Adaptive Management Process



Implementation involves the preparation of an **Implementation Program** which highlights the activities, priorities, timelines, costs, responsible parties overseeing implementation, and funding and resources available or needed to pursue each adaptation strategy. Specifically, IRWD will develop an implementation program that will:

1. Identify responsible parties who are currently implementing adaptation actions and/or will oversee implementation of each strategy.
2. Identify existing strategies, those ready for implementation and those ready for implementation but require additional funding.
3. Identify strategies that require further refinement or feasibility assessments.
4. Identify strategies that are implemented only when certain triggers are reached.

The **Monitoring Program** involves monitoring changing climate and operational conditions and tracking effectiveness of adaptation strategies to determine if adjustments are needed. A monitoring program will include clear monitoring and evaluation metrics to track climate and operational conditions, including thresholds and triggers, and adaptation action implementation progress and effectiveness assessments. The purpose of the monitoring program is to determine whether the strategies are achieving intended outcomes and whether triggers are reached.

Findings from the monitoring and evaluation phase will then inform the process of identifying how and what **adjustments** should be made. If monitoring indicates that a strategy is not effective, the strategy should be carefully assessed to determine the extent to which it can be bolstered to address climate change impacts. If a trigger threshold is reached, IRWD will initiate the relevant adaptation actions to address vulnerabilities.

IRWD will develop an Implementation Program, Monitoring Program, and Adjustment Protocols as an immediate next step to implementation of the CAP. The following sections provide an initial framing for each component of the adaptive management approach.

6.2 Near-Term Implementation Program

The near-term implementation program is an initial list of priority actions that will form the foundation of IRWD's implementation strategy for the CAP. IRWD conducted a ranking and prioritization exercise on CAP adaptation actions. Each action was ranked based on its scoring across multiple categories, as described in detail in Section 3.7. Actions were ranked as 1, 2 or 3 with 1 being a low priority and/or benefit and 3 being a high priority. Actions were also identified as being planned (included in an IRWD planning process or document) ongoing (currently being deployed by IRWD), Short Term (priority action for the next 3 years), medium term (4-6 year actions), or long term (>6 year actions). The prioritization of each action was based on their rankings as well as whether the action was foundational to the later implementation of other priority actions.

Areas within IRWD's area of analysis that were deemed to be high risk should be further investigated in the short term to better understand the benefits and costs associated with upgrades. Priority should be given to hazards and facilities identified in the CVA as having a Moderate-High or High vulnerability, including MWRP flooding and groundwater rise risks, sewer system inflow and infiltration systems, critical conveyance infrastructure, NTS facilities exposed to sediment loading, and facilities susceptible to extreme heat and PSPS-related disruptions. Additional analyses may include facility-level adaptation studies, benefit-cost analyses, engineering assessments, conceptual designs, and implementation roadmaps with threshold triggers.

6.2.1 Implementation Plan Actions

The following section identifies the adaptation actions that should form the foundation of IRWD's initial implementation program. These actions were selected from the broader portfolio of adaptation strategies based on a combination of their prioritization scores, implementation timing, readiness for deployment, and alignment with existing IRWD programs and capital planning efforts. The implementation program focuses primarily on actions that are already underway, planned, or can reasonably be advanced in the near term through ongoing operations,

maintenance activities, equipment replacement cycles, capital improvements, and planning efforts.

While prioritization scores were used to identify actions that provide the greatest resilience benefits relative to cost, feasibility, and operational needs, not all high-scoring actions are appropriate for immediate implementation. Some medium- and long-term actions received high prioritization scores but require additional planning, engineering analysis, funding, partnerships, or trigger-based conditions before implementation.

6.2.1.1 Water Treatment and Quality Short Term Implementation Actions

The following actions represent the highest-priority adaptation actions identified through the vulnerability assessment and prioritization process for IRWD's Water Treatment and Quality System. These actions received some of the highest overall scores because they address moderate to high climate risks while also demonstrating strong operational feasibility, cost effectiveness, funding viability, and potential for implementation in the near term. Many of these measures are already being advanced through existing IRWD programs and capital improvement efforts, while others can be initiated in the short term with relatively limited barriers to implementation.

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Drought Increasing frequency and severity of 2- and 5-year droughts reduce local inflows and degrade water quality (elevated BOD, ammonia, algal activity, and stratification), increasing treatment complexity and chemical demand, resulting in Moderate–High vulnerability despite IRWD's diversified supply and monitoring programs.								
Improve demand management and water use efficiency to improve source reliability during low-flow periods.	Ongoing	2	3	3	3	3	2	2.75
Develop climate-informed drought forecasting tools integrating imported supply reliability, groundwater availability, and recycled water demand projections.	Short Term	2	3	3	3	1	3	2.65
Enhance monitoring, forecasting, and operational response protocols for harmful algal blooms and cyanotoxins through monitoring, predictive tools, treatment optimization, and reservoir management strategies.	Short Term	2	3	3	3	1	2	2.55
Integrate climate change impacts into future urban water management plans.	Ongoing	1	3	3	3	2	2	2.50
Coordinate water banking and imported water reliability planning with Kern Fan groundwater storage partnerships to improve long-term drought supply resilience.	Short Term	2	3	2	2	3	2	2.25

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Wildfire Wildfire impacts facilities in Silverado Canyon, Williams Canyon, and Modjeska Canyon, with smoke, ashfall, and PSPS-related outages degrading source water quality (higher turbidity and chemical demand) and limiting staffing and process oversight. Historical impacts from the 2007 Santiago Fire affected Irvine Lake Reservoir and Siphon Reservoir, with ash and contaminants impairing treatment; future filtration upgrades at Siphon Reservoir may be needed, resulting in Moderate–High vulnerability at surface water intakes and PSPS-prone facilities								
Develop a post-fire sediment interception, watershed stabilization for Syphon Reservoir.	Short Term	3	3	3	3	2	3	2.90
Expand ongoing collaborations with fire fighting entities to understand and plan for wildfire fighting water needs in preparation for larger and more frequent wildfires in and around IRWD territory.	Ongoing	2	3	3	3	1	2	2.55
Continue to build or retrofit intake pretreatment systems, including the San Joaquin Reservoir Filtration Facility project to improve resilience to post-fire turbidity, nutrient loading, and degraded source water quality.	Ongoing	2	3	3	2	3	2	2.50
Evaluate the impacts of wildfire ash, sediment, turbidity, and nutrient loading on Irvine Lake, Syphon Reservoir, and treatment operations, and develop monitoring, operational, treatment, and infrastructure response measures.	Short Term	1	3	3	3	2	2	2.50
Coordinate with Edison to identify areas outside of the high wildfire zones that could be impacted by PSPS events.	Short Term	1	3	3	3	1	2	2.40
Continue to increase onsite fuel storage, portable generators, and mobile charging systems to maintain operations during PSPS events.	Ongoing	2	3	3	2	1	2	2.30

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Develop a plan to conduct site walks periodically with firefighters at facilities located within the high fire zone and implement vegetation clearing and/or infrastructure hardening. Locations include pumps and reservoirs in and around Williams Canyon, Santiago Canyon, Orchard Hills, Manning Pump Station, and Los Trancos Canyon.	Short Term	3	3	2	2	1	2	2.20
Ensure each facility in and around high wildfire areas have backup power sufficient for 3 days.	Ongoing	3	3	2	2	1	2	2.20
Heavy Precipitation and Flooding Intense and clustered storms degrade source water quality (turbidity, debris, organics, nutrients), damage or overtop reservoirs and the natural treatment system, and restrict operator access, creating Moderate to Moderate–High vulnerability. Historical overtopping risks at Sand Canyon Reservoir require drawdown actions, but back-to-back storms still pose spillway challenges.								
Incorporate automated debris screening and sediment management infrastructure into Sand Canyon and San Joaquin Reservoir improvement projects and upland areas.	Ongoing	3	3	3	3	1	3	2.80
Formalize a regular spillway review and repair process prior to each winter season.	Ongoing	2	3	3	3	2	2	2.65
Evaluate reservoir projects for opportunities to increase capacity to capture additional precipitation while leaving capacity to limit releases.	Ongoing	1	3	3	3	1	2	2.40
Extreme Heat Prolonged heat and warm nights increase source water temperatures and treatment complexity; although IRWD relies less on surface water, indoor heat constraints at facilities without HVAC reduce operational efficiency. The highest temperatures are expected near Baker Water Treatment Plant, contributing to Moderate to Moderate–High vulnerability service-area wide.								
Include extreme heat of temperatures over 105F as a design specification when designing new buildings or procuring new equipment.	Short Term	3	3	3	3	1	2	2.70

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Continue to track impacts of extreme heat to surface water reservoirs and evaluate cost/benefit of mitigation devices such as mechanical mixing, floating covers or solar.	Short Term	1	3	3	3	2	2	2.50
Landslide and Debris Flow Post-wildfire or high-intensity storm-driven landslides and debris flows increase sediment, turbidity, and debris loads, impacting treatment reliability and access especially in relation to Sand Canyon Reservoir and San Joaquin Reservoir. Vulnerability is elevated for facilities in steep or burn-affected watersheds and along pipelines in Silverado Canyon and similar terrain, resulting in Moderate to Moderate–High vulnerability.								
Work with regional land managers to develop and deploy post fire replanting and other stabilization approaches in landslide risk areas.	Short Term	2	2	3	3	3	2	2.60
Prepare for pipeline shutoff and repair in areas vulnerable to landslides, including but not limited to Silverardo Canyon pipelines, by advancing landslide response plans.	Ongoing	3	2	3	2	2	3	2.50
Develop debris clearance protocols, contractor agreements, and emergency response procedures to rapidly restore facility access after landslides.	Short Term	2	2	3	3	2	2	2.50
Identify and establish alternative access routes, easements, and staging areas for facilities vulnerable to landslide-related road closures.	Short Term	1	2	3	3	2	2	2.35
Identify site stability models to utilize after wildfires in areas holding underground infrastructure like water pipes.	Short Term	1	2	3	3	1	2	2.25

6.2.1.2 Recycled Water Treatment and Quality Short Term Implementation Actions

The following actions represent the highest-priority adaptation actions identified for IRWD's recycled water treatment and water quality systems. These actions focus on addressing the most significant climate-related risks affecting the Michelson Water Recycling Plant (MWRP), Los Alisos Water Recycling Plant, associated pump stations, and the broader recycled water system. Key priorities include improving resilience to extreme precipitation and flooding through flood hardening, drainage improvements, wet-weather flow management, and operational response protocols; preparing for sea-level rise and groundwater rise impacts through infrastructure assessments and capacity planning; and reducing drought-related operational challenges by strengthening monitoring, corrosion management, and proactive response measures during extended low-flow conditions. Many of these actions build upon existing IRWD programs and planned facility improvements, while others can be implemented in the short term to address emerging vulnerabilities before they result in more significant operational, regulatory, or maintenance concerns.

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Heavy Precipitation and Flooding Extreme single-day, multi-day, and compound storms increase influent flows and inflow/infiltration, stressing hydraulic and biological processes and raising bypass and compliance risks. Flood exposure at MWRP, which is already located in a flood zone and has experienced near-flood events, results in Moderate–High vulnerability as well as and Los Alisos WRP which experienced issues with accelerated inflow.								
Develop protocols for discharging stormwater and bypassing treatment facilities with consideration for creeks already at full capacity.	Ongoing	2	3	3	3	2	2	2.65
Upgrade electrical and mechanical systems above flood levels, included in the EPA adaptation strategies.	Planned	3	3	2	2	1	2	2.20
Monitor floodwall performance and incorporate flood hardening, drainage upgrades, and wet-weather equalization improvements into planned Michelson Water Recycling Plant facility upgrades.	Short Term	3	3	2	2	1	2	2.20

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Sea-Level Rise & Groundwater Rise Sea-level rise-induced groundwater expansion increases shallow groundwater around MWRP, creating subsurface exposure and operational risks, including inundation of wells and pump stations, compromising operational reliability and increasing corrosion and maintenance demands resulting in Moderate–High vulnerability despite limited direct marine inundation.								
Evaluate San Joaquin Marsh and San Diego Creek Pump Stations for sea-level induced groundwater rise impacts and capacity increase needs.	Short Term	3	3	2	2	2	2	2.30
Evaluate dewatering permitting constraints and discharge requirements as dewatering activities increase.	Short Term	1	3	1	3	2	2	2.00
Drought Reduced flows and increased concentrations linked to conservation and drought conditions impact system performance, with documented concerns at MWRP including odor and ammonia increases, resulting in ongoing and increasing operational stress.								
Incorporate future climate conditions and operational stressors into design criteria for facility rehabilitation and upgrade projects.	Planned	3	3	2	2	1	3	2.30
Establish odor and corrosion trigger thresholds to initiate operational responses when low-flow conditions persist beyond defined limits.	Short Term	2	3	3	3	2	3	2.75
Implement formal condition assessments and monitoring programs to identify corrosion risks and establish proactive maintenance thresholds.	Short Term	1	3	3	3	2	3	2.60

6.2.1.3 Sewer System Collections Short Term Implementation Actions

The following actions represent the highest-priority adaptation actions identified for IRWD's sewer collection system. These actions focus on protecting wastewater conveyance infrastructure, lift station operations, and maintenance activities from climate-driven challenges including drought, wildfire, flooding, extreme heat, and landslides. Key priorities include addressing low-flow conditions that increase odor, corrosion, sediment accumulation, and hydrogen sulfide generation through enhanced monitoring, targeted cleaning programs, and operational planning; improving reliability during wildfire and Public Safety Power Shutoff events through backup power, defensible space management, and emergency response coordination; and strengthening resilience to heavy precipitation by reducing inflow and infiltration, protecting lift stations from flooding, and integrating climate-adjusted design standards into future capital improvements. Additional actions focus on preparing infrastructure and field staff for more frequent extreme heat events through equipment upgrades, cooling measures, and heat-informed design specifications, while also improving readiness for landslides and debris flows that could damage pipelines and restrict access to critical facilities. Many of these measures build upon existing maintenance, inspection, capital improvement, and emergency preparedness programs already underway at IRWD, while others can be implemented in the short term to reduce operational risks and maintenance costs.

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Drought Lower flows reduce velocities, increasing sediment deposition, odor, and corrosion, while hydrogen sulfide generation accelerates pipe degradation. Vulnerability is highest in low-gradient sewers and aging infrastructure, with existing odor and corrosion challenges requiring increased maintenance and costs, resulting in Moderate–High vulnerability.								
Coordinate conservation-related flow reduction planning to minimize impacts on conveyance operations.	Short Term	3	3	3	3	1	3	2.80
Expand inspection and monitoring of aging, corroding sewer lines vulnerable to cracking and releasing odors under dry soil conditions.	Ongoing	2	3	3	3	2	3	2.75
Adjust sewer cleaning and flushing schedules in low-flow areas vulnerable to sediment buildup during drought.	Short Term	2	3	3	3	1	2	2.55

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Utilize pump station cycling optimization and wet-well redesign to maintain turnover during low flow.	Short Term	2	3	2	2	1	2	2.05
Wildfire Wildfire and PSPS events disrupt lift station operations, increase overflow risk, and introduce ash/debris into systems; response may be delayed by access constraints. Vulnerability is greatest at PSPS-exposed lift stations and relies on backup power and fuel duration (with one lift station lacking backup power), resulting in Moderate–High vulnerability.								
Collaborate with partners (firefighters) to establish defensible space/fire safe practices at University and Bayview Lift Stations to maintain operational visibility during outages.	Short Term	2	2	3	3	2	2	2.50
Heavy Precipitation and Flooding Intense and prolonged storms increase inflow, surcharging, and inflow/infiltration, while debris and access limitations drive localized failures. Vulnerability is highest at low-lying lift stations, aging infrastructure, and constrained access areas, resulting in High vulnerability.								
Develop flooding continuity plans for University Lift Station and Bayview Lift Station including mobile generators, fuel staging, and emergency staffing assignments.	Ongoing	3	3	3	3	2	2	2.80
Audit sewer system to identify leaks which occur during large storms and flooding. Install sewer/stormwater monitoring equipment in key areas as a pilot project to identify potential leaks.	Planned	3	3	2	3	2	2	2.55
Incorporate creek crossing stabilization and scour protection into future sewer capital replacement projects. Raise or seal manholes in flood-prone areas.	Ongoing	2	3	3	2	2	2	2.40
Expand upon proposed lift station replacement projects to include climate-adjusted hydraulic capacity and flood protection standards.	Ongoing	3	3	2	2	2	2	2.30

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Replace manhole covers and small leaks before they create infiltration challenges.	Short Term	3	3	2	2	2	2	2.30
Extreme Heat Elevated temperatures stress pumps and electronics, particularly in enclosed or poorly ventilated systems, reducing reliability in lift stations and air-vac facilities, resulting in Moderate–High vulnerability.								
Include system design specifications associated with 105F degree days in future equipment procurement guidelines.	Short Term	3	3	3	3	1	3	2.80
Increase inspection frequency of motor and other overheating equipment during heat events.	Short Term	2	3	3	3	2	2	2.65
Expand shaded staging and cooling areas for sewer maintenance crews.	Short Term	2	3	3	3	2	2	2.65
Upgrade pump motors, electrical systems, and telemetry equipment to operate reliably during sustained high temperatures by incorporating ventilation and cooling.	Ongoing	2	3	3	2	2	2	2.40
14. Landslide & Debris Flow Slope failures and post-fire debris flows threaten pipelines and access routes in steep terrain and canyon corridors, resulting in burial, deformation, and response delays, leading to High vulnerability.								
Work with regional land managers to develop and deploy post fire replanting and other stabilization approaches in landslide risk areas.	Short Term	2	2	3	3	3	2	2.60

6.2.1.4 Monitoring and Control Short Term Implementation Actions

The following actions represent the highest-priority adaptation actions identified for IRWD's monitoring and control systems, including telemetry networks, communications infrastructure, SCADA-related operations, and environmental monitoring programs. These actions are primarily focused on reducing operational disruptions associated with wildfire, Public Safety Power Shutoff events, and extreme heat, which pose some of the most significant climate-related risks to the reliability of monitoring, communications, and decision-support systems. Key priorities include strengthening emergency communications and telemetry through radio tower improvements, redundant communications pathways, battery backup systems, and backup power capabilities that allow critical monitoring and control functions to remain operational during extended outages. Additional actions focus on expanding smoke and ash monitoring capabilities and establishing operational triggers tied to wildfire activity, PSPS notifications, and water quality degradation to support more proactive decision-making during emergency conditions. Many of these actions build upon systems and procedures already in place, allowing IRWD to further enhance situational awareness, operational continuity, and emergency response capabilities.

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Wildfire Wildfire and PSPS events increasingly affect monitoring and control systems across the northern service area, causing direct damage or power-related outages.								
Expand systems already in place to manage smoke and ash monitoring.	Ongoing	2	3	3	3	3	3	2.85
Continue to develop procedures and operational triggers tied to PSPS notifications, wildfire proximity, and reservoir water quality degradation.	Ongoing	2	3	3	3	3	2	2.75
Consider expanding battery backup systems for key control systems.	Short Term	3	3	3	2	2	2	2.55
Expand proposed Radio Tower Improvements to support hardened emergency communications, redundant telemetry, and backup power during PSPS and wildfire conditions.	Ongoing	2	3	3	2	1	2	2.30

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Extreme Heat High temperatures degrade electronic equipment performance and reduce operational efficiency of monitoring and control systems.								
Maintain and enforce procurement specifications requiring equipment to passively withstand temperatures up to 50°C without performance degradation or additional cooling requirements.	Ongoing	2	3	3	3	1	3	2.65

6.2.1.5 Fleet and Facilities

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Wildfire Wildfire and PSPS events across the northern service area directly threaten facilities and indirectly affect operations, with increased exposure for electrified fleet assets during outages.								
Expand vegetation management and emergency access maintenance around facilities in very high wildfire hazard severity zones to improve emergency vehicle access.	Ongoing	2	3	3	3	1	2	2.55
Determine protocols for evacuation from remote facilities during wildfire events. Define when vehicles can re-enter areas post wildfire.	Short Term	2	3	3	3	1	2	2.55
Extreme Heat Extreme heat reduces safe working conditions, limits field operations, and increases wear on fleet assets and generators. Facilities without HVAC face compounded risks to equipment and personnel, resulting in Moderate–High vulnerability.								
Implement heat-health protocols that provide scheduled cooling breaks and designated air-conditioned refuge locations for field crews.	Short Term	2	3	3	3	1	2	2.55
Landslides & Debris Flow Landslides, debris flows, and road washouts restrict access and delay response in steep terrain and canyon areas, increasing reliance on heavy equipment and elevating safety risks, resulting in Moderate–High vulnerability.								
Pre-position debris removal equipment and emergency repair materials ahead of major storm events.	Short Term	2	2	3	2	1	2	2.15
Identify alternative emergency access routes to facilities vulnerable to slope failure and debris blockage.	Short Term	1	2	3	2	2	2	2.10

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Flooding Heavy precipitation and flooding increase demands on fleet mobilization for inspections, generator deployment, and emergency response. Flooded roadways can limit staff access to facilities, pump stations, and treatment sites, delaying critical maintenance or corrective actions. Facilities themselves may face localized flooding, stormwater intrusion, or stress on electrical and mechanical systems during prolonged wet periods resulting in moderate vulnerability overall with low lying facilities like Michelson having elevated vulnerability.								
Develop standing emergency contractor agreements and streamlined procurement processes to reduce permitting and contracting delays during emergency response.	Short Term	3	3	3	3	1	3	2.80
Complete expansion of Charge-ready program at IRWD headquarters and MWRP.	Ongoing	2	3	3	2	1	3	2.40
Ensure EV charging infrastructure is located in areas not affected by flooding/groundwater rise.	Short Term	3	3	1	3	1	3	2.30

6.2.1.6 Natural Treatment System Short Term Implementation Actions

The following actions represent the highest-priority adaptation actions identified for IRWD's natural treatment system, including constructed wetlands, dewatering systems, creek intakes, pump stations, and associated treatment infrastructure. These actions focus on strengthening resilience to the combined impacts of wildfire, landslides, debris flows, flooding, and sea-level induced groundwater rise, which can increase sediment and debris loads, impair treatment performance, damage infrastructure, and limit access to critical facilities. Key priorities include developing facility-specific post-wildfire response protocols, implementing rapid sediment removal and revegetation strategies, protecting intakes from erosion and debris, and improving preparedness for first-flush storm events that can overwhelm treatment systems following wildfire. Additional actions emphasize enhancing flood management by developing operational and infrastructure measures to safely convey extreme runoff, reducing damage to the natural treatment system while maintaining treatment effectiveness during major storm events. To address long-term groundwater rise and salinity concerns, recommended measures include well-specific salinity monitoring programs, threshold-based operational triggers, and evaluations of future infrastructure modifications, including relocation of vulnerable intakes and pump stations where feasible. The portfolio also includes efforts to streamline permitting and environmental compliance procedures, allowing IRWD to respond more quickly to changing site conditions and emergency maintenance needs.

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Landslides, Wildfire, Groundwater Rise and Debris Flow Sediment, turbidity, and debris loads from post-wildfire storms and landslides overwhelm treatment processes and limit access, creating Moderate to Moderate–High vulnerability for systems in steep or burn-affected watersheds, with higher susceptibility at Eastfoot, Forge Meadow, Orchard, and Rattlesnake in the northern service area.								
Establish facility-specific post-wildfire response protocols, including rapid sediment removal, revegetation, intake protection, and first-flush storm preparedness measures to reduce erosion and protect treatment infrastructure.	Short Term	2	3	3	3	3	3	2.85

Vulnerabilities to Hazards & Proposed Adaptation Actions	Implementation Phase	Risk Reduction	Hazard Occurrence	Operational Feasibility	Cost and Funding Viability	Multiple Benefits	Adaptability Under Uncertainty	Overall Priority
Develop operational and infrastructure measures to temporarily divert high-flow floodwaters and manage extreme runoff conditions, reducing damage NTS facilities and preserving treatment performance during major storm events.	Ongoing	2	3	3	3	3	3	2.85
Implement well-specific salinity monitoring and threshold-based management protocols to protect dewatering systems from saltwater intrusion impacts.	Short Term	2	3	3	3	3	3	2.85
Establish streamlined permitting pathways and pre-approved environmental compliance procedures to accelerate NTS maintenance and emergency response.	Short Term	2	3	3	2	2	2	2.40

6.2.2 Integration of Climate Projections into Infrastructure, Equipment, and Operations Projects

In addition to the priority actions identified above,, IRWD will also consider the changing climate as part of new infrastructure designs and equipment purchases. The CVA (Appendix B) developed for this report provides high fidelity data and projections for each of the climate hazards identified for IRWD's Area of Analysis. Climate resilience should be incorporated into the District's asset management, capital improvement planning, facility master plans, equipment replacement programs, emergency preparedness planning, and procurement processes. Integrating climate considerations into existing planning and investment cycles is often more cost-effective than implementing stand-alone resilience projects after vulnerabilities emerge. The following steps should be taken when analyzing projects and equipment purchases for climate impacts.

a. Identify the location of the planned infrastructure/equipment.
b. Cross check this location to the hazard maps provided in the CVA.
c. For all applicable hazards, identify the projected occurrence of climate hazards based on the provided analysis.
d. Consider the lifespan of the equipment or infrastructure and align with the appropriate climate warming levels. For projects with a design life extending beyond 2045, consider climate conditions associated with approximately 2°C of warming. For projects with service lives extending beyond 2075, consider climate conditions associated with approximately 3°C of warming. Hazards for each warming level can be found in Appendix B.
e. Based on the provided climate projections, incorporate project features such as siting outside hazard zones, materials changes, specialized equipment, and passive or active design attributes that could address or lessen the impact of the climate hazard.
f. Identify the incremental cost of more resilient design features or equipment by comparing the incremental cost of building more resilient infrastructure or more resilient equipment with the direct and indirect costs incurred from owning less resilient infrastructure. Direct costs include the cost of repairing damage from expected climate hazards as well as the costs of the temporary solutions to get operations online in the short term. Indirect costs include the impact on operations and the health and safety of workers, and potential short-term revenue losses. IRWD is revenue neutral and would recover costs through rates and charges.

Where uncertainty exists, preference should be given to flexible, scalable, and adaptive solutions that can be expanded or modified as climate conditions evolve. Examples may include modular infrastructure, phased implementation approaches, future expansion allowances, redundant systems, and nature-based solutions that provide multiple benefits.

6.2.3 Funding and Financing Pathways for More Resilient Infrastructure

For high upfront cost projects, IRWD could consider additional funding pathways including grants, green bonds, resilience bonds, or other strategies. Addressing upfront costs with these mechanisms can be critical in spreading out high upfront costs especially when addressing uncertain but high-risk climate hazards that have a low chance of occurrence, but a very high impact if they do occur.

Funding opportunities should be reviewed annually and aligned with the adaptation priorities identified in this Plan. Potential sources may include Proposition 4 funded programs, FEMA hazard mitigation funding, Bureau of Reclamation programs, Department of Water Resources grants, State Revolving Fund programs, energy efficiency incentives, and regional partnership opportunities. Projects that provide multiple benefits, including water reliability, water quality improvement, habitat enhancement, flood protection, energy savings, or greenhouse gas reductions, may have better success in securing grant funding.

6.3 Monitoring Program

The second phase of adaptive management is the monitoring and evaluation phase. During this phase, IRWD will begin collecting and analyzing key metrics and data points and charting trends over time. The Monitoring Program should include both implementation related information such as major hurdles or successes in implementing the actions identified in the Implementation Program as well as important climate metrics that will cumulatively drive when medium- and long-term actions should be implemented. This section provides guidance for IRWD to develop a robust monitoring program for the CAP.

Data Collection and Metric Monitoring

Critical climate-related data points should be monitored and compiled for trends tracking over time. Data such as frequency of climate related infrastructure impacts, extreme heat days, heat related staff impacts, frequency of equipment repairs, and other data should be collected and analyzed at least annually for any long-term trends in climate impacts. This data should begin to inform IRWD's decision making processes.

An IRWD-specific Climate Resilience Scorecard summarizing key climate indicators and observed impacts would support this monitoring. Critical metrics include the following:

1. Number of PSPS events affecting facilities
2. Number of wildfire events impacting facilities
3. Days exceeding operational heat thresholds
4. Number of flooding incidents at critical facilities
5. Inflow and infiltration volumes
6. Groundwater elevations at vulnerable facilities
7. Climate-related emergency response activations
8. Treatment disruptions and equipment failures
9. Staff safety incidents caused by extreme heat, flooding and wildfire conditions
10. Climate-related maintenance costs.

Results should be reviewed annually and periodically reported to District leadership and the Board to support future investment decisions.

Where feasible, IRWD should establish trigger thresholds that prompt additional analysis or implementation of adaptation actions. For example, thresholds may include repeated flooding at a facility, recurring heat-related equipment failures, increased groundwater levels near critical infrastructure, or repeated PSPS events requiring emergency response actions.

Metrics by Operational System

The following metrics and data points should be tracked to inform ongoing adaptive management of the CAP implementation program. Metrics are organized by operational system and include the time period over which the metrics or data should be summarized. IRWD already tracks some of the metrics. Metrics may be modified or added as the program is developed and new needs are identified.

Table 5 Baseline Monitoring Program Metrics

	Time period
Water Treatment and Quality Metrics	
Harmful Algal Bloom (HAB) levels	Monthly
Harmful Algal Bloom (HAB) events	Annual
Source water turbidity levels	Monthly
Annual Treatment Chemical Use	Annual
Annual Treatment Chemical Costs	Annual
Reservoir Water Temperatures	Monthly
Hours of PSPS/Power Outages at Facilities	Annual
Sites evaluated for vegetation management needs	Annual
Water quality impacts post-wildfire	After wildfire event
Emergency generator operating hours	Monthly
Post-wildfire sediment or debris loading events (event requiring cleanup)	Annual
Equipment failures and equipment lifespan by equipment type	At failure
Spillway repair projects	Annual
Post-flooding pipeline damage events and location	Annual
Recycled Water Treatment and Quality	
Hours of PSPS/power outage impacts	Annual
Groundwater pumping/dewatering volumes	Annual
Treatment system bypass events	Annual
Salinity of San Diego Creek/dewatering outflows	Monthly
Estimated infiltration rates	Monthly
Number of odor complaints	Annual
Number of corrosion related repairs/replacements	Annual
Hours outside of treatment parameters	Annual
Influent ammonia levels	Monthly
Equipment failures and equipment lifespan by equipment type	At failure
Sewer System	
Number of odor complaints	Annual
Number of corrosion related repairs/replacements	Annual
Hours of PSPS/power outage impacts	Annual
Pipeline damage events and location	Annual
Equipment failures and equipment lifespan by equipment type	At failure

	Time period
Monitoring and Control	
Equipment failures and equipment lifespan by equipment type	At failure
Hours of PSPS/power outage impacts	Annual
Fleet	
Hours of PSPS/power outage impacts	Annual
Uncharged/undercharged EV events	Annual
Mobile generation deployments	Annual
Days with access challenges by location	Annual
Natural Treatment System	
Sedimentation/maintenance events in NTS by location	Annual
Wildfire events affecting NTS facilities by location	Annual
Salinity levels in effected NTS facilities by location	Annual
System Wide Metrics	
Days over 95 degrees	Monthly
Flooding events	Annual
Inches of rain during two-week period	At flooding event
Heat related staff health/safety reports	Annual
Costs driven by climate impacts[6]	Annual
CAP actions implemented	Annual
Metropolitan imports	Annual (Ongoing)
Water banking recharge and recovery	Annual (Ongoing)

6.4 Adjustment and Future Implementation Programs

The third-phase of the adaptive management approach is making future adjustments to the Implementation and Monitoring Programs. As IRWD implements the priority actions in Section 6, overall uncertainty of future climate conditions will continue to decrease.

Existing infrastructure and equipment should be upgraded preventively when collected data (maintenance occurrences, climate impacts, or staff impacts) has sufficiently reduced uncertainty about the future and the cost of the necessary upgrade is lower than the ongoing costs of the status quo.

Decisions to advance major adaptation investments should be informed by both observed conditions and projected future climate risks. Trigger-based implementation allows IRWD to avoid premature investments while reducing the likelihood of reactive emergency expenditures.

[6] IRWD could establish project codes or budget categories for costs associated with:
- Repairs resulting from extreme weather events (e.g., flood damage, wildfire impacts, heat-related equipment failures).
- Accelerated asset deterioration linked to higher temperatures, more intense storms, or changing water quality conditions.
- Additional operational costs during climate events, such as emergency pumping, supplemental water purchases, increased treatment requirements, or wildfire response.
- Adaptation investments that exceed standard replacement costs, such as upsizing drainage infrastructure, elevating equipment, adding backup power, or selecting more heat- and flood-resistant materials.

Considerations may include increasing maintenance costs, repeated service disruptions, regulatory compliance risks, recurring climate-related incidents, declining asset performance, workforce safety concerns, or achievement of predefined climate thresholds identified through monitoring efforts.

This implementation framework should be revisited at least every five years, or following major climate-related events, to incorporate new climate science, operational experience, infrastructure investments, regulatory requirements, and changing District priorities.

7 References

California Coastal Commission. (2024). Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits. Retrieved from https://documents.coastal.ca.gov/assets/slr/guidance/2024/2024Adoptedsea level risePolicyGuidanceUpdate.pdf in January 2026.

California Public Utilities Commission (2024). Utility Company PSPS Reports: Post-Event and Post-Season. Retrieved from https://www.cpuc.ca.gov/consumer-support/psps/utility-company-psps-reports-post-event-and-post-season in January 2026.

Edison International. 2022, *Adapting for Tomorrow: Powering a Resilient Future*. Retrieved from https://download.newsroom.edison.com/create_memory_file/?f_id=6283a624b3aed3110eaf1a89&content_verified=True in March 2026.

_____. 2020. "Reimagining the Grid." Retrieved from https://www.edison.com/clean-energy/reimagining-the-grid in March 2026.

Irvine Ranch Water District. (2017). SCE-IRWD water-energy pilot phase 1 report.

_____. (2020a). Water system risk and resilience assessment: A comprehensive analysis consistent with America's Water Infrastructure Act of 2018.

_____. (2020b). Urban water management plan (2020). Adopted June 2021.

_____. (2021). Local hazard mitigation plan.

_____. (2023). Emergency operations plan.

_____. (2024). Orange County Water & Wastewater Multi-Jurisdictional Hazard Mitigation Plan.

Keyantash, John & National Center for Atmospheric Research Staff (Eds). Last modified 2025-12-11 "The Climate Data Guide: Standardized Precipitation Index (SPI)." Retrieved from https://climatedataguide.ucar.edu/climate-data/standardized-precipitation-index-spi in January 2026.

Mahdavi, M., et al. (2023). A Review of Public Safety Power Shutoffs (PSPS) for Wildfire Mitigation: Policies, Practices, Models, and Data Sources. Retrieved from https://ieeexplore.ieee.org/abstract/document/10154121 in January 2026.

Ocean Protection Council (2024). State of California Sea Level Rise Guidance: 2024 Science and Policy Update. Retrieved from https://opc.ca.gov/wp-content/uploads/2024/05/California-Sea-Level-Rise-Guidance-2024-508.pdf in January 2026.

Pacific Gas and Electric Company (2022). Power Off for Safety: 2022 Safety Outage Decision-Making Guide. Retrieved from https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2022-pge-safety-outage-decision-making-guide.pdf in January 2026.

UC San Diego School of Global Policy and Strategy. (2025). California's Fifth Climate Change Assessment: Climate impacts to the economy. Available: https://sdgpolicyinitiative.org/california_fifth_climate_change_assessment_climate_impacts_to_the_economy/. Accessed September 2026

U.S. Geological Survey, 2020, *CoSMoS-Groundwater (CoSMoS-GW)*: Pacific Coastal and Marine Science Center. Retrieved from https://www.usgs.gov/centers/pcmsc/science/cosmos-groundwater in February 2026.

Wills, C.J., Perez, F.G., and Gutierrez, C.I., 2011, Susceptibility to Deep-Seated Landslides in California: California Geological Survey Map Sheet 58. Retrieved from https://www.napawatersheds.org/managed_files/Document/4859/Susceptibility%20to%20Deep-Seated%20Landslides%20in%20CA%20-%20MS58.pdf in February 2026.

Xie, J., et al. (2024). Analyzing Climate-Driven Wildfire and PSPS Conditions Using Environmental Threshold Modeling. Retrieved from https://arxiv.org/pdf/2409.20511 in January 2026.

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PRESENTATION OVERVIEW

1. Purpose of the Climate Adaptation Plan (CAP)
2. Methodology
3. Climate Hazards & Vulnerabilities
4. Adaptation Actions
5. Energy Management
6. Next Steps

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PURPOSE OF CLIMATE ADAPTATION PLAN

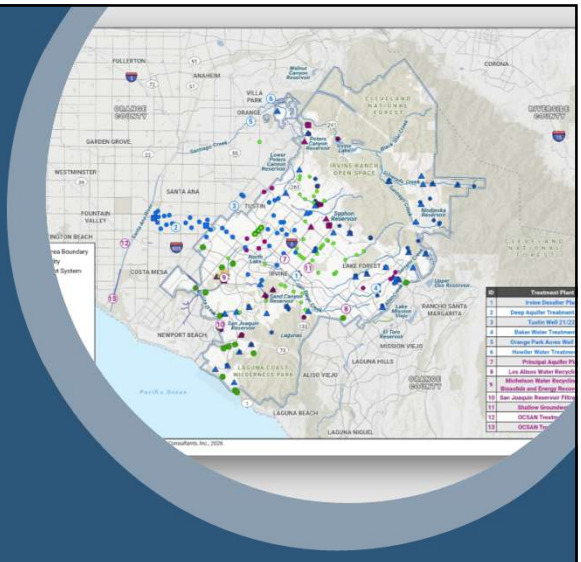
1. Understand Risk
2. Identify Actions
3. Adaptive Management
4. Energy Management Study
5. Provide Strategic Value

Outcome: A comprehensive roadmap for responding to climate change

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3

METHODOLOGY



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4

BUILDING THE ASSESSMENT

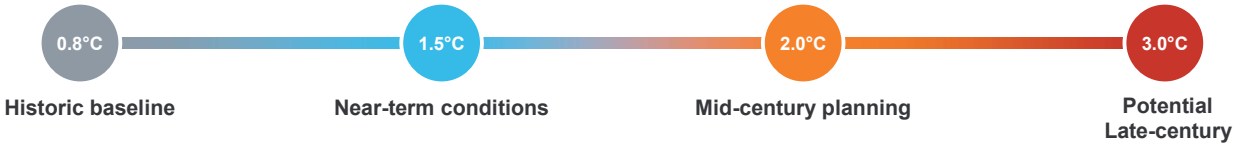
1 **Staff Workshops**

2 **129 Simulations**

3 **Warming Levels**

4 **Facility mapping**

5 **Operational metrics**



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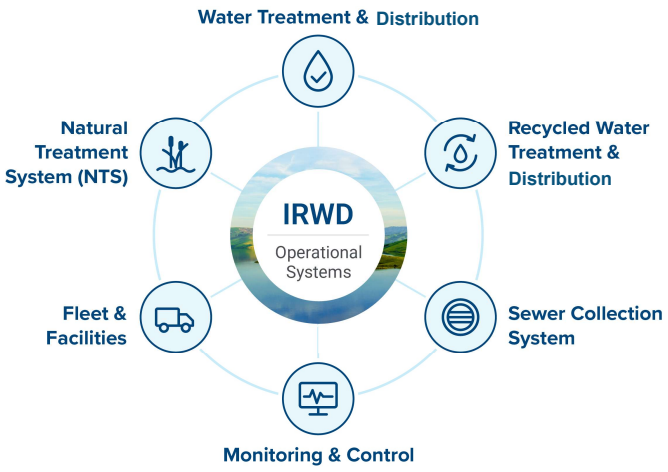
5

THRESHOLDS, VULNERABILITY, AND ACTIONS

Operational Thresholds

Vulnerability Ratings

Action Prioritization



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6

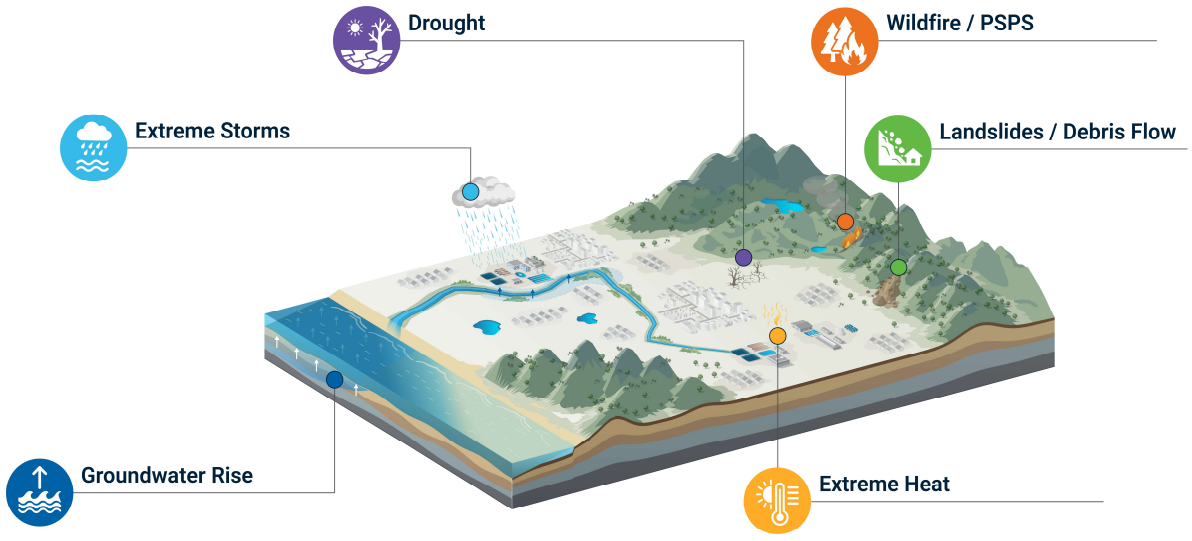
CLIMATE HAZARDS & VULNERABILITIES



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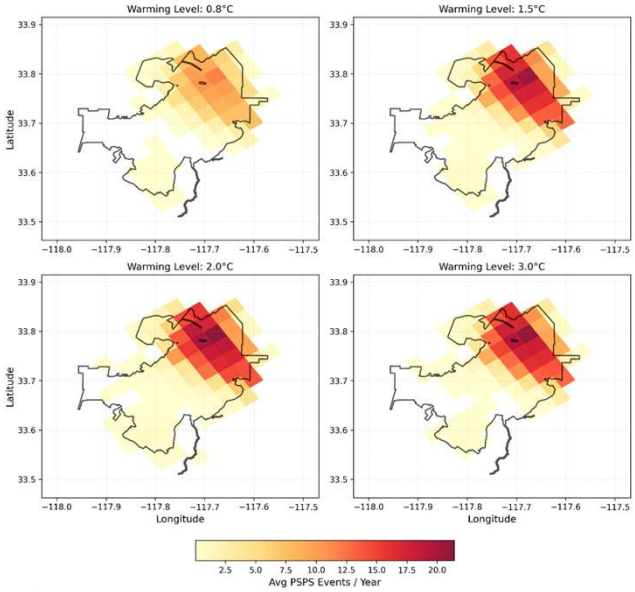
CLIMATE HAZARDS



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8

WILDFIRE AND PSPS EVENTS



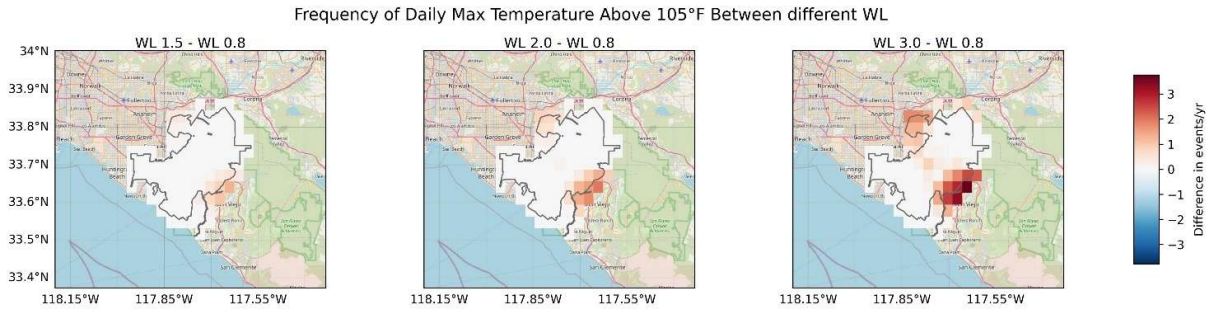
Wildfire and PSPS conditions increase – mainly in northeast

- Ash, smoke, sediment, and nutrients degrade water quality.
- Power outages interrupt operations.
- Canyon/ foothill facilities face direct exposure and access limitations.



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EXTREME HEAT EVENTS



Baker WTP and LAWRP face greatest temperature increases.

Workforce safety
Risk of Heat-illness

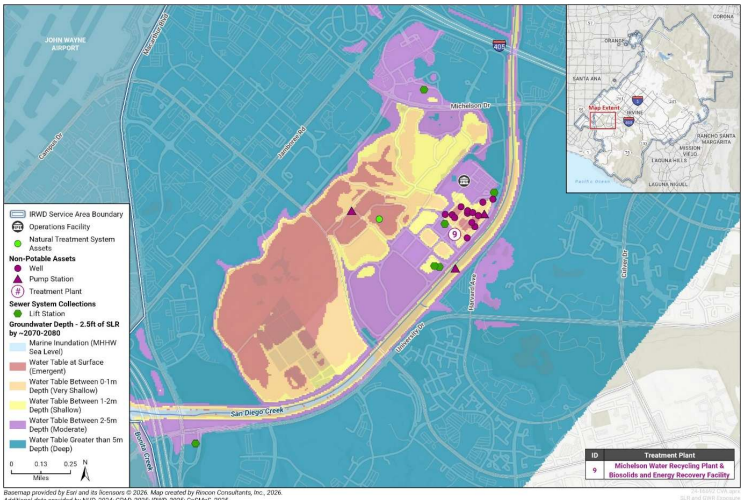
Equipment
Pumps, electronics, and treatment processes are stressed.

Warm Nights
Less overnight recovery for staff and equipment.

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GROUNDWATER RISE



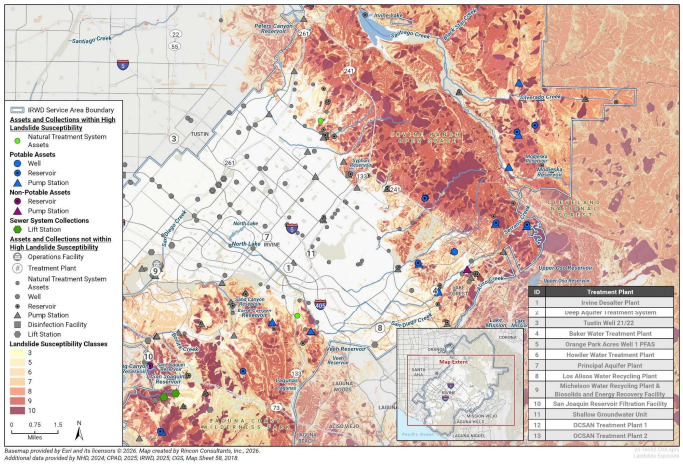
Sea level rise leads to shallow groundwater at MWRP

- Buried assets face increased infiltration, corrosion, and hydrostatic pressure.
- Dewatering requirements and permitting constraints may increase over time.



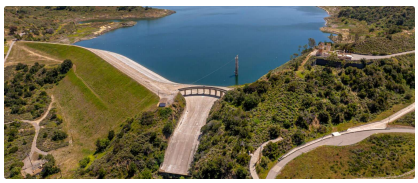
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LANDSLIDES / DEBRIS FLOWS



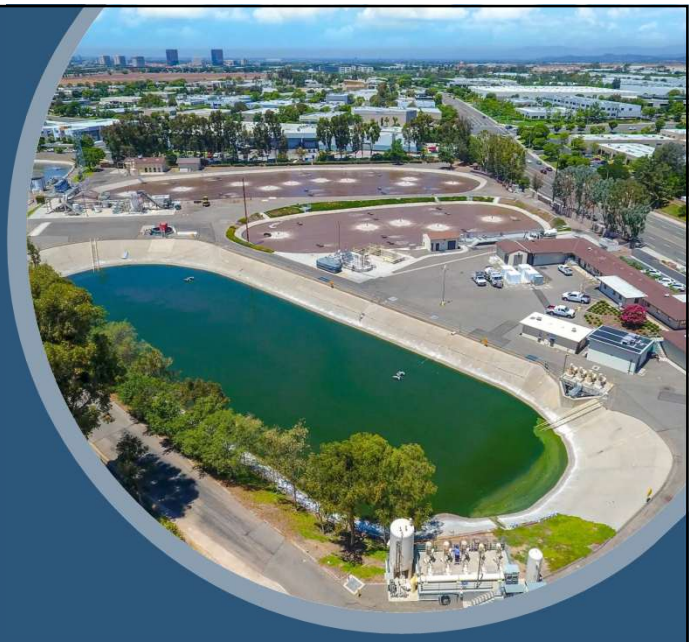
Eastern foothill areas have high landslide susceptibility

- Damage/expose pipelines and restrict access.
- Post-fire rainfall leads to debris flow into reservoirs and NTS.
- Irvine Lake, Baker WTP, canyon pipelines, and northern NTS sites are key areas of concern.



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ADAPTATION ACTIONS

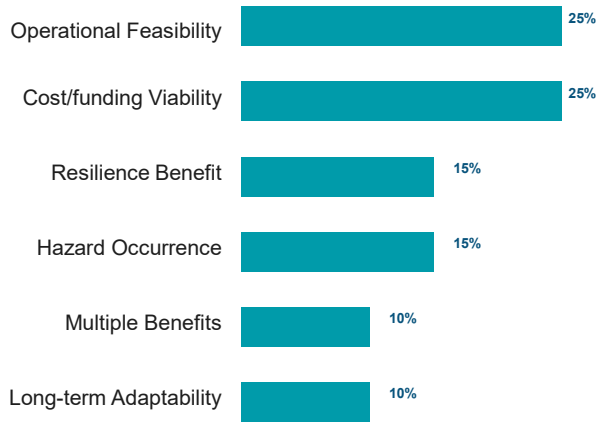


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ADAPTATION ACTIONS

Priority Criteria (Scored 1 to 3) and Weights



- **144 actions** to address climate vulnerabilities at infrastructure and operations
- **76 actions** deemed high priority

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ADAPTATION ACTIONS: WATER TREATMENT & DISTRIBUTION

23 actions · 13 short term · 10 ongoing (1 of 2)

Short Term | Ongoing | Planned

Proposed High-Priority Adaptation Actions	Implementation Phase
Improve water use efficiency.	Ongoing
Develop drought forecasting tools.	Short Term
Enhance monitoring of algal blooms/ cyanotoxins.	Short Term
Integrate climate change impacts into UWMP.	Ongoing
Incorporate long-term drought into supply reliability efforts.	Short Term
Develop post-fire protocols for Syphon Reservoir.	Short Term
Collaborate w/firefighters on wildfire-fighting water needs.	Ongoing
Pretreat post-fire turbidity, nutrient loading, and degraded water quality.	Ongoing
Evaluate wildfire operational impacts and develop response measures.	Short Term
Identify PSPS events outside of the high wildfire zones.	Short Term
Increase backup systems to maintain operations during PSPS events.	Ongoing
Clear vegetation/ harden infrastructure in high fire zone facilities.	Short Term
Ensure high wildfire zone facilities have 3 days of backup power.	Ongoing

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ADAPTATION ACTIONS: WATER TREATMENT & DISTRIBUTION (CONTINUED)

23 actions · 13 short term · 10 ongoing (2 of 2)

Short Term | Ongoing | Planned

Proposed High-Priority Adaptation Actions	Implementation Phase
Initiate reservoir debris screening/sediment management.	Ongoing
Formalize a regular spillway review and repair process.	Ongoing
Evaluate reservoir projects for opportunities to increase capacity.	Ongoing
Include 105°F as a design specification.	Short Term
Track impact of extreme heat on reservoirs.	Short Term
Deploy post-fire replanting in landslide risk areas.	Short Term
Prepare landslide response plans.	Ongoing
Develop procedures to restore access after landslides.	Short Term
Establish alternative access routes for vulnerable facilities.	Short Term
Identify site stability models for areas with underground infrastructure.	Short Term

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ADAPTATION ACTIONS: RECYCLED WATER TREATMENT & DISTRIBUTION

8 actions · 5 short term · 1 ongoing · 2 planned

Short Term | Ongoing | Planned

Proposed High-Priority Adaptation Actions	Implementation Phase
Develop stormwater discharge/treatment bypass protocols.	Ongoing
Upgrade electrical/mechanical systems above flood levels.	Planned
Incorporate flood resiliency in planned MWRP upgrades.	Short Term
Evaluate pump stations groundwater rise impacts.	Short Term
Examine dewatering permit and discharge requirements.	Short Term
Establish odor and corrosion trigger thresholds.	Short Term
Implement monitoring programs to identify corrosion risks.	Short Term
Incorporate future climate conditions into facility design criteria.	Planned

Irvine Ranch Water District

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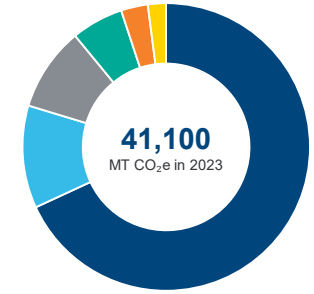
ENERGY MANAGEMENT



Irvine Ranch Water District

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ENERGY MANAGEMENT ANALYSIS: KEY FINDINGS



- **68%** Electricity
- **12%** Wastewater
- **9%** Other
- **6%** Water imports
- **3%** Fleets
- **2%** Natural gas

- **Electricity is IRWD's largest emissions source, driven primarily by pumping and treatment.**
- **IRWD's largest energy use sites are already efficient.**
- **Potential energy projects offer additional opportunities.**
- **Evaluate existing battery storage replacement.**

State grid decarbonization is the biggest driver of future emissions reductions

Irvine Ranch Water District

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NEXT STEPS



Irvine Ranch Water District

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CLIMATE ADAPTATION PLAN: WHAT COMES NEXT?

1. Implement Adaptive Management Strategy:
   a) Actions delegated to responsible departments
   b) Integrate actions into planning processes
   c) Define action schedules, dependencies, costs, and funding needs
   d) Track action progress and status
   e) Monitor climate thresholds
2. Energy Management Actions:
   a) Consider recommended energy projects
   b) Evaluate battery replacement project opportunities



Irvine Ranch Water District

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QUESTIONS

Irvine Ranch Water District

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November 23, 2026
Prepared by: M. Alvarez / B. Waite
Submitted by: K. Burton
Approved by: Paul A. Cook

PRESENTATION

MICHELSON WATER RECYCLING PLANT 2025 FLOWS AND LOADS UPDATE
PHASE III EXPANSION

SUMMARY:

The 2025 Flows and Loads Update analyzes the most recent sewage flows and loading rates coming into to Michelson Water Recycling Plant (MWRP) including pandemic-era data to reassess future flow and loading projections. These projections are then used to evaluate the most viable treatment technology alternatives for the next expansion (Phase III) of MWRP including planning level facility sizing. The results of the treatment alternative economic and non-economic evaluations identified membrane bioreactor (MBR) as the preferred approach for the MWRP Phase III Expansion. This and other findings of the 2025 Flows and Loads Update will subsequently be utilized for the design of the MWRP Phase III Expansion.

BACKGROUND:

The 2021 Sewage Treatment Master Plan (STMP) established the District's long-term strategy for wastewater treatment, capacity expansion, regulatory compliance, and water recycling. Subsequent updates to the STMP were performed in 2023 and 2025 to incorporate additional historical data, update flow projections, reassess regulatory requirement assumptions and future treatment needs.

The 2025 Flows and Loads Update evaluated two long-term planning scenarios. Scenario 1 would retain and modernize the Los Alisos Water Recycling Plant (LAWRP) while expanding to the projected ultimate buildout flow of 32.4 million gallons per day (mgd) at MWRP and 3.6 mgd at LAWRP. Scenario 2 would permanently divert all LAWRP wastewater flows to MWRP, resulting in a projected buildout flow of 36.0 mgd at MWRP.

Based on the detailed evaluation and results of the 2025 Flows and Loads Update, staff recommends expanding the capacity of MWRP to 32.4 mgd using MBR technology and decommissioning the conventional activated sludge (CAS) facility. The MBR treatment alternative has a similar 50-year life cycle cost compared to the other CAS related alternatives while offering greater non-economic benefits including improved recycled water quality, greater treatment flexibility and robustness, and the opportunity to retire aging treatment facilities. Staff also recommends retaining and rebuilding LAWRP with a modernized treatment process to be identified at a future date.

Staff proposes to advance the preliminary and final design of the MWRP Phase III Expansion, adding a new MBR treatment facility sized for over 23 mgd at the southeast area of the plant. Additional assessments are required for various existing MWRP facilities such as the CAS condition and reliability assessment to ensure consistent operation until the Phase III expansion is completed.

A draft of the MWRP 2025 Flows and Loads Update Phase III Expansion Presentation is provided as Exhibit “A”.

FISCAL IMPACTS:

No expenditure or project budget approval is requested as part of this informational update. The life-cycle costs presented are for planning-level comparison of alternatives. Any future design or construction funding requests will be considered separately, as appropriate.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

COMMITTEE STATUS:

This item was reviewed by the Engineering and Operations Committee on November 17, 2026.

RECOMMENDATION:

RECEIVE AND FILE.

LIST OF EXHIBITS:

Exhibit “A” – MWRP 2025 Flows and Loads Update Phase III Expansion Presentation Draft


Irvine Ranch Water District
MWRP 2025 FLOWS AND LOADS UPDATE - PHASE III EXPANSION
Board of Directors
November 23, 2026
DRAFT
1


AGENDA
1. Review of Objectives
2. Background, Flow Projections, and Planning Values
3. MWRP Treatment Alternatives
• Economic Evaluation
• Non-Economic Evaluation
4. Cost-Benefit Analysis
5. Recommended Next Steps
Irvine Ranch Water District
2

OBJECTIVES

Update evaluation of wastewater flow and constituent loading

Update treatment alternatives evaluation for MWRP and LAWRP

Define MWRP future expansions and fate of LAWRP

Irvine Ranch Water District

BACKGROUND

2021 SEWAGE TREATMENT MASTER PLAN (STMP)

- Established IRWD's long-term strategy for sewage management, treatment-capacity expansion, regulatory compliance, and water recycling.
- Developed future flows and loads, conveyance and treatment needs, and a phased capital improvement program for MWRP and LAWRP.

PLAN UPDATES

- 2023 STMP update added historical data and evaluated pandemic-era wastewater characteristics.
- 2025 Flows and Loads Update incorporates 2023–2025 data, revised flow projections, updated regulatory assumptions, assessed future treatment requirements.

2021
Sewage Treatment Master Plan

2023
STMP Update

2025
Flows and Loads Update

Irvine Ranch Water District

PLANNING SCENARIOS

Scenario 1
Treatment Expansion at MWRP and Treatment Modernization at LAWRP

- No change to collection system
- Expand MWRP to meet projected flows and loads
- Modernize LAWRP

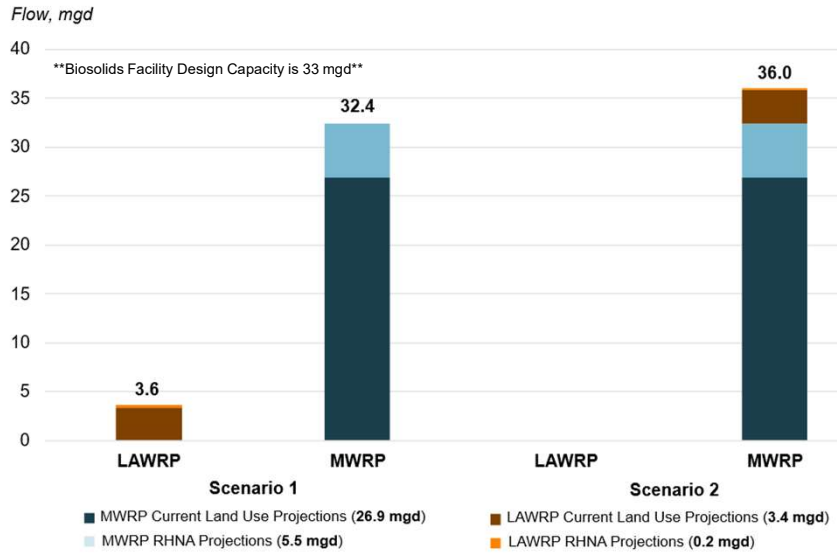
Scenario 2
Treatment of All Flows at MWRP and Repurpose LAWRP

- Redirect all LAWRP sewershed flow to MWRP
- Expand MWRP to treat combined MWRP and LAWRP flows and loads
- Demolish LAWRP and repurpose site

Irvine Ranch Water District

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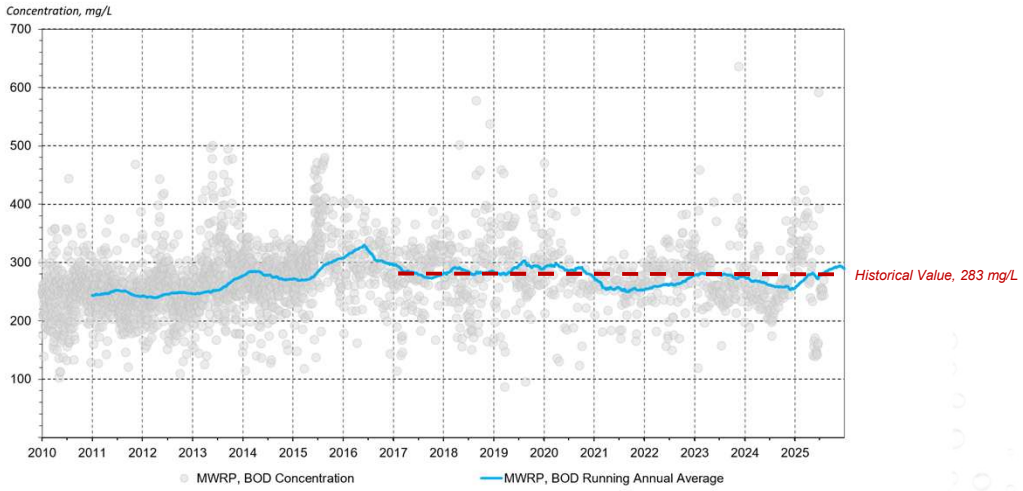
MWRP AND LAWRP BUILD OUT FLOW PROJECTIONS



Irvine Ranch Water District

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MWRP INFLUENT LOADING ANALYSIS

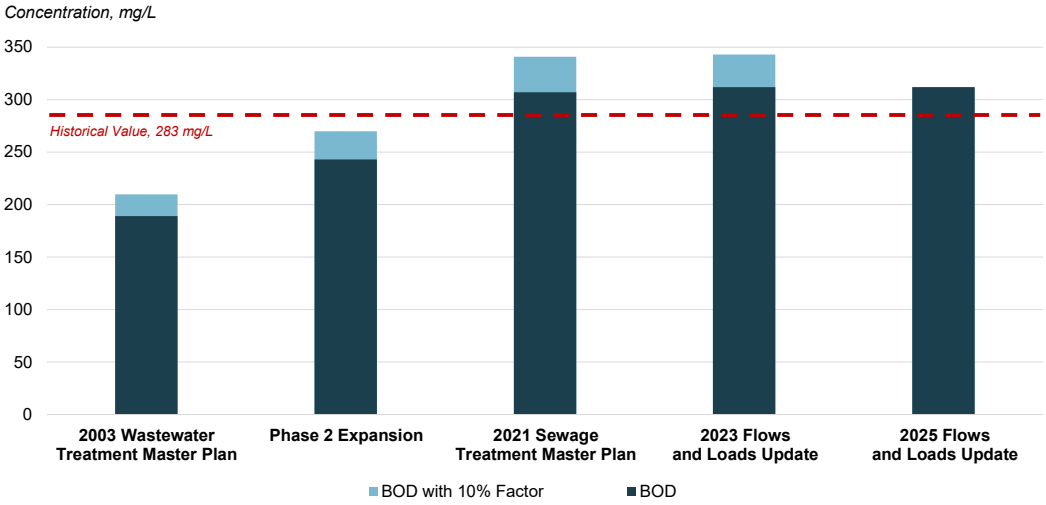


Need to revisit planning assumptions to avoid being overly conservative

Irvine Ranch Water District

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MWRP PLANNING VALUES



Planning Decision

Avoid carrying forward concentration growth that has not been observed in historical data.

Irvine Ranch Water District

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MWRP TREATMENT ALTERNATIVES

Irvine Ranch Water District

TREATMENT ALTERNATIVE CONSIDERATIONS

Regulatory Drivers

- Currently no nitrate-N limit
- Future nitrate-N limit is 10.2 mg/L
- Reservoir TDS limit of 720 mg/L

Technology Screening

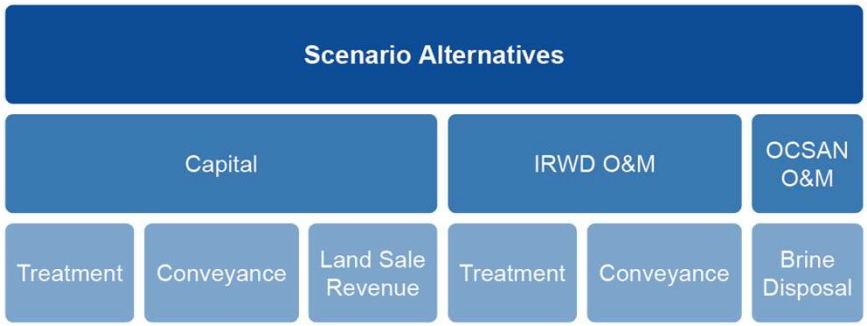
- Carries forward screening framework from 2021 STMP and 2023 Update.
- Considered permitting approval risk, implementation, proven technology, and community impacts.

MWRP Treatment Focus

- Consider only proven technologies.
- Maintain current CAS process (MLE), improve CAS process (Bardenpho) or replace with full MBR

Irvine Ranch Water District

ECONOMIC EVALUATION ELEMENTS



Basis of Estimate

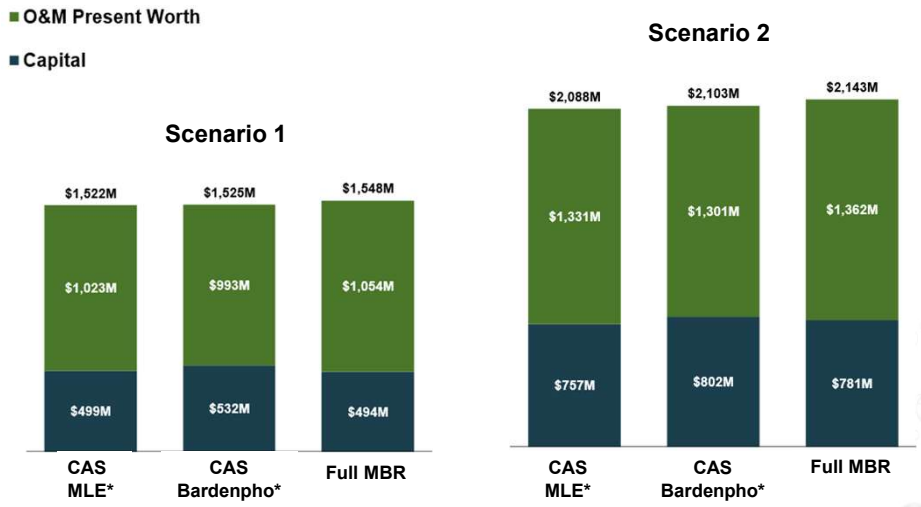
- Base year: 2026
- Analysis period: 50-year (ending 2076)

Planning-Level Cost Estimates

AACE Class 5 estimates were developed for comparing alternatives, not final budgeting or procurement.

Irvine Ranch Water District

50-YEAR LIFECYCLE COST



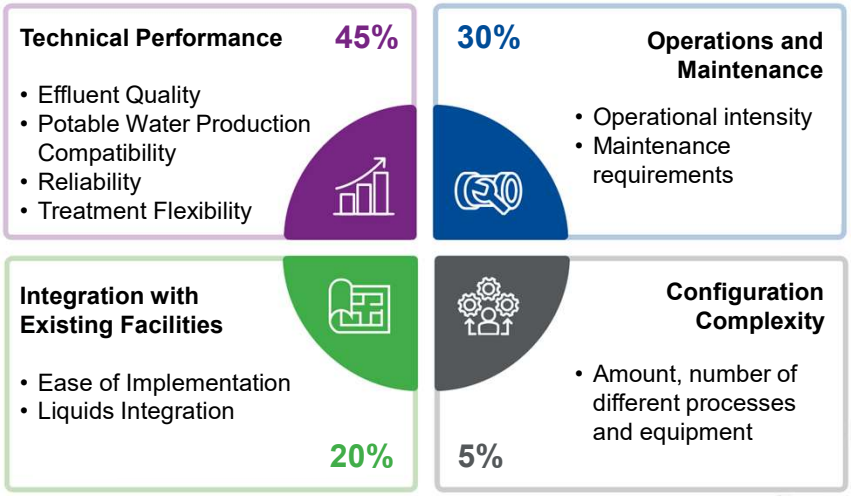
Economic Comparison

Full MBR has a comparable life-cycle cost to CAS MLE and CAS Bardenpho

Irvine Ranch Water District

*CAS alternatives include a new 10-11 mgd West MBR facility as part of Phase III.

NON-ECONOMIC CRITERIA AND WEIGHTING



Irvine Ranch Water District

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NON-ECONOMIC EVALUATION RESULTS

Category	Weight	CAS MLE	CAS Bardenpho	MBR
Technical Performance	45%	Moderate	Moderately Strong	Very Strong
Operation and Maintenance	30%	Moderately Strong	Moderately Strong	Strong
Integration with Existing Facilities	20%	Moderately Low	Moderately Low	Very Strong
Complexity and Risk of Treatment Requirements	5%	Low	Extremely Low	Strong
Overall Weighted Score		**4.90**	**5.15**	**7.70**

Overall Weighted Score

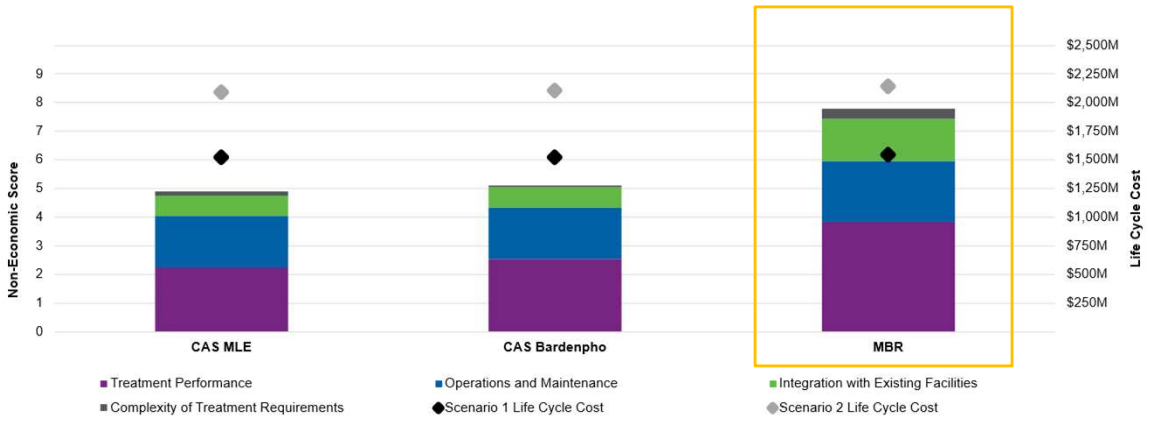
CAS MLE:	4.90
CAS Bardenpho:	5.15
MBR:	**7.70**

*Options were scored from 1 (Extremely Low) to 9 (Extremely Strong) and weighted by criterion.

Irvine Ranch Water District

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COST-BENEFIT ANALYSIS



Preferred Alternative: MBR

100% MBR at MWRP provides the best recycled water quality, greater treatment flexibility and robustness at a similar life-cycle cost.

Irvine Ranch Water District

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BENEFITS AND CONSIDERATIONS OF LAWRP DECISION

Scenario 1
Modernize LAWRP

BENEFITS
- Maintains treatment flexibility and redundancy
- Supports future direct potable reuse opportunities
- Retains multiple effluent disposal opportunities
- Sewer collection system capacity unaffected

CONSIDERATIONS
- Requires LAWRP modernization
- Maintains O&M responsibilities at two modern plants

Scenario 2
Repurpose LAWRP Site

BENEFITS
- Consolidates wastewater treatment at MWRP
- Reduces number of treatment facilities to operate

CONSIDERATIONS
- Requires long-term conveyance of LAWRP flows
- Limits ability for direct potable reuse at Baker WTP
- Reduces flexibility in where sewage can be treated
- Reduces SD Creek interceptor sewer capacity

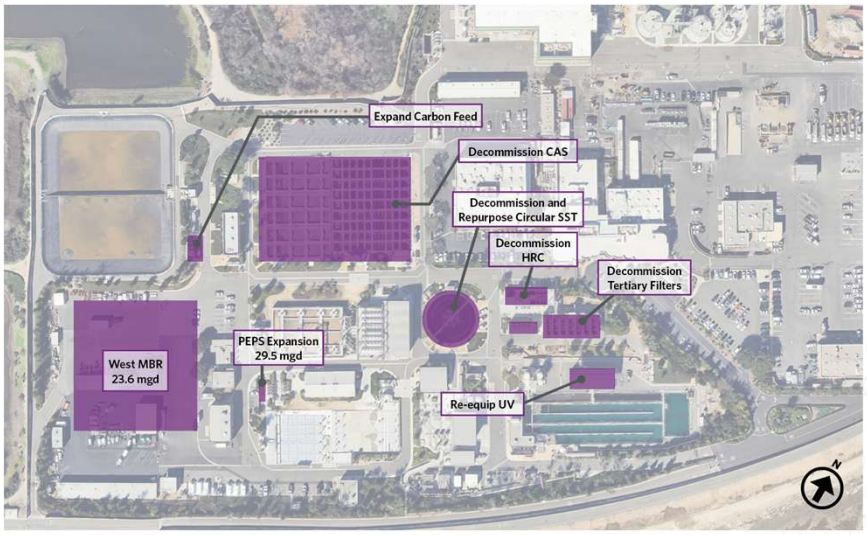
Recommendation: Modernize LAWRP

Modernizing LAWRP provides the greatest flexibility and resiliency with treatment and effluent disposal and allows future direct potable reuse

Irvine Ranch Water District

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RECOMMENDED MWRP PHASE III CONFIGURATION



Irvine Ranch Water District

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CAS DECOMMISSIONING

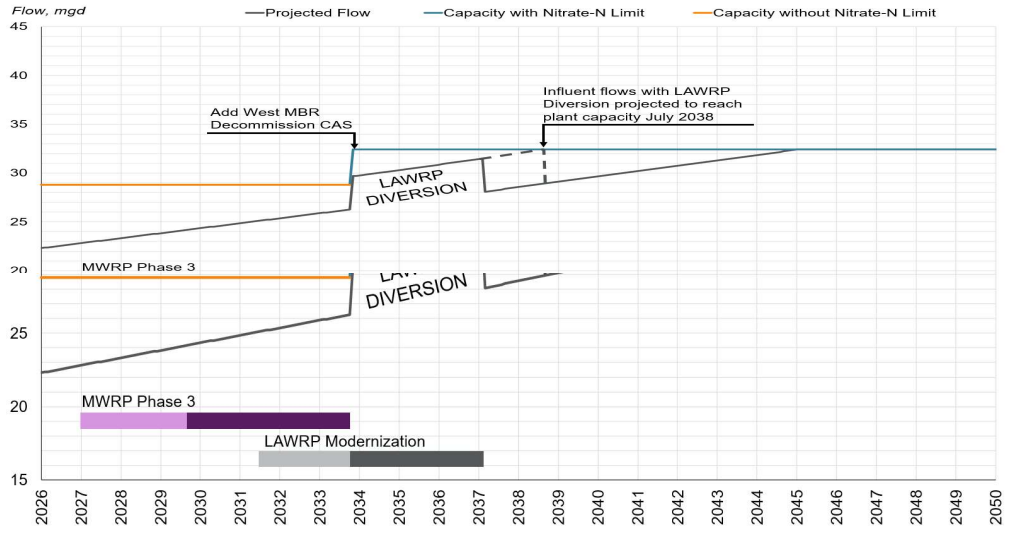
- Decommission CAS treatment at the end of Phase III, avoiding major CAS rehabilitation and simplifying future process integration.
- CAS condition and reliability assessment will identify any interim work needed before decommissioning.



Irvine Ranch Water District

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PHASE III IMPLEMENTATION SEQUENCING



Irvine Ranch Water District

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RECOMMENDED NEXT STEPS

Irvine Ranch Water District

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RECOMMENDED NEXT STEPS

Anticipated Date	Recommended Action
Q1 2027	**Initiate RFP for preliminary and final design of the MWRP Phase III Expansion.**
Q2-Q3 2027	**Complete targeted CAS condition assessment and reliability assessment.** • Findings will inform interim rehabilitation needs and CAS decommissioning requirements.
Q2 2027	**Complete disinfection evaluation comparing UV and chlorine disinfection alternatives.** • Findings will inform the disinfection improvements and associated facilities incorporated into Phase III design.
Q1 2027	**Initiate design of temp LAWRP sewershed diversion facilities.** • Coordinate diversion requirements and implementation schedule with Phase III construction timeline.



Irvine Ranch Water District

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Irvine Ranch Water District

QUESTIONS?

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November 23, 2026
Prepared and
submitted by: K. Swan
Approved by: Paul A. Cook

CONSENT CALENDAR

BOARD MEETING MINUTES

SUMMARY:

Provided are the minutes of the November 9, 2026 Board of Directors meeting for approval.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

Not applicable.

RECOMMENDATION:

THAT THE MINUTES OF THE NOVEMBER 9, 2026 BOARD OF DIRECTORS MEETING BE APPROVED AS PRESENTED.

LIST OF EXHIBITS:

Exhibit “A” – November 9, 2026 Minutes

Note: This page is intentionally left blank.

Exhibit "A"

MINUTES OF REGULAR MEETING – NOVEMBER 9, 2026

The regular meeting of the Board of Directors of the Irvine Ranch Water District (IRWD) was called to order by President LaMar at 5:00 p.m. on November 9, 2026 at the District offices, 15600 Sand Canyon Avenue, Irvine.

Secretary Swan announced that Director Reinhart will participate in the meeting remotely as a reasonable accommodation pursuant to California Government Code Section 54953(c) via teleconference as a result of a disability, and was confirmed by General Counsel Collins.

Directors Present: Reinhart (via teleconference), Miller, Swan, Ferons, and President LaMar.

Directors Absent: None.

Written and Oral Communications: None.

Items too late to be agendized: None.

Also Present: General Manager Cook, Executive Director of Technical Services Burton, Executive Director of Operations Chambers, Executive Director of Water Policy Weghorst, Director of Water Resources Nye, Director of Human Resources Mitcham, Director of Accounting Lin, Director of Maintenance Manning, Director of Information Technology Kaneshiro, Director of Water & Recycling Operations Zepeda, Director of Safety Choi, Director of Water Quality and Regulatory Compliance, Engineering Manager Moeder, Water Efficiency Manager McNulty, Community Liaison Newell, General Counsel Collins, Secretary Swan, members of the staff, and public.

CONSENT CALENDAR

Director Swan requested that Item 6 be moved to the Action Calendar.

On MOTION by Swan, seconded by Ferons, unanimously carried, CONSENT CALENDAR ITEMS FOUR, FIVE, and SEVEN THROUGH NINE WERE APPROVED AS FOLLOWS:

4. BOARD MEETING MINUTES

Recommendation: That the minutes of the October 26, 2026 Regular Board Meeting be approved as presented.

5. REVIEW OF 2026 ADVOCACY ACTIVITIES AND 2027 LEGISLATIVE AND REGULATORY ISSUES PLANNING

Recommendation: That the Board provide input on the proposed 2027 regional, state, and federal legislative issues of interest to IRWD, and receive and file the proposed "Initial 2027 Legislative and Regulatory Resource Allocation Plan" and the "Legislative / Regulatory Issues and Activities of High Concern to IRWD in 2027."

7. FISCAL YEAR 2025-2026 ANNUAL COMPREHENSIVE FINANCIAL REPORT

Recommendation: That the Board approve the Fiscal Year 2025-26 Annual Comprehensive Financial Report.

CONSENT CALENDAR (CONTINUED)

8. PROFESSIONAL SERVICES AGREEMENT TO UPDATE LAND USE CLASSIFICATION DATA

Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with Eagle Aerial Solutions in the amount of $252,102 to update IRWD's Land Use Classification Data.

9. RESOLUTION FOR SMALL STORAGE PROGRAM FUNDING FOR THE SOUTH VALLEY PROJECT

Recommendation: That the Board adopt the following resolution by title:

RESOLUTION NO. 2026 – 18

RESOLUTION OF THE BOARD OF DIRECTORS OF
IRVINE RANCH WATER DISTRICT AUTHORIZING THE
ACCEPTANCE OF GRANT FUNDS FROM THE
BUREAU OF RECLAMATION'S SMALL SURFACE WATER AND
GROUNDWATER STORAGE PROJECTS GRANT FUNDING PROGRAM

ACTION CALENDAR

6. IRWD POLICY POSITION PAPER REVIEW AND UPDATES

Director Swan asked if his recommendation from the previous Board meeting was conveyed in the paper presented this evening, which was confirmed by staff and the Board. Following discussion among the Board and staff, on MOTION by Ferons, seconded by Miller, and unanimously carried, the BOARD APPROVED THE UPDATED IRWD WATER RESOURCES FUNDING POLICY POSITION PAPER.

10. BAKER WATER TREATMENT PLANT CLEAN-IN-PLACE PIPING REPLACEMENT BUDGET INCREASE AND CONSTRUCTION AWARD

On MOTION by Swan, seconded by Miller, and unanimously carried, the BOARD AUTHORIZED A BUDGET INCREASE IN THE AMOUNT OF $480,550, FROM $435,750 TO $916,300, AND AUTHORIZED THE GENERAL MANAGER TO EXECUTE A CONSTRUCTION CONTRACT WITH CORA CONSTRUCTORS INC. IN THE AMOUNT OF $507,600 FOR THE BAKER TREATMENT PLANT CLEAN-IN-PLACE PIPING REPLACEMENT PROJECT, PROJECT 13200.

11. ANNUAL BOARD OF DIRECTORS' FEES

General Manager Cook reported that the Finance and Personnel Committee annually reviews the Board of Directors' compensation and recommends to either accept or decline an increase in the amount of day-of-service fees for the new calendar year. Additionally, Assembly Bill 2568 was signed by the Governor amending Section 20202 of the Water Code, allowing governing boards to increase the number of days to be compensated.

Director Ferons reported that the Committee supports the increase of the per day increase of five percent and recommended that the Board maintain the current maximum number of days to be compensated at ten days per month.

ACTION CALENDAR (CONTINUED)

Following discussion with the Board, on MOTION by Ferons, seconded by Swan, and carried unanimously, the BOARD ACCEPTED THE FIVE PERCENT (5%) COMPENSATION INCREASE FOR CALENDAR YEAR 2027; AND DECLINED TO PURSUE AN INCREASE IN THE MAXIMUM NUMBER OF CALENDAR DAYS PER MONTH COMPENSATION IS PAID.

OTHER BUSINESS

GENERAL MANAGER'S REPORT

Mr. Cook stated that he did not have a report for the evening.

RECEIVE ORAL UPDATE(S) FROM DISTRICT LIAISON(S) REGARDING COMMUNITIES WITHIN IRWD'S SERVICE AREA AND INTERESTS.

Mr. Newell reported that the hillside behind OCFA Station 14 is failing, and that OCFA is appreciative to IRWD for allowing OCFA to park their emergency vehicles and equipment at IRWD's Read Reservoir in Silverado Canyon. General Manager Cook stated that he did receive an message from the OCFA Chief, thanking the District for quickly accommodating OCFA's request by providing mutual aid for Station 14.

DIRECTORS' COMMENTS AND MEETING REPORTS

Director Miller reported on her attendance at the ISDOC Quarterly Luncheon, and her participation in the WACO Monthly meeting via teleconference.

Director Reinhart reported on his participation in the WACO Monthly meetings for September, October, and November via teleconference; and the MWDOC Board Workshop with MWD Directors via teleconference.

Director Swan reported on his participation in the Quarterly MWDOC / OCWD Joint Planning Committee meeting via teleconference; the Water Education Foundation Water Summit in Sacramento; the MWDOC Planning and Operations Committee via teleconference; the Southern California Water Dialogue Steering Committee via teleconference; and the Water Education Foundation Kern River Tour in Bakersfield.

Director Ferons reported on his participation in the ISDOC Executive Committee meeting via teleconference, and the WACO Monthly meeting via teleconference.

President LaMar reported on his participation in the WAG Member Virtual Briefing regarding the Updated CW3E Website/Forecast; the Southern California Water Dialogue Meeting via teleconference; the Natural Communities Coalition Executive Committee meeting; his meeting with the CFEE CEO at IRWD; his participation as the alternate for the IRWD Finance and Personnel Committee Meeting and the IRWD 115 Trusts Board meeting; the NWRA Annual Conference in Coronado; the WACO Monthly meeting via teleconference; and a meeting with the Kittleman & Associates executive search firm regarding the search for a new NCC Executive Director via teleconference.

OTHER BUSINESS (CONTINUED)

CLOSED SESSION

President LaMar convened the meeting into Closed Session at 5:20 p.m. with General Counsel Collins announcing the following items to be discussed:

A. PUBLIC EMPLOYEE PERFORMANCE EVALUATION and CONFERENCE WITH LABOR NEGOTIATOR pursuant to Government Code Sections 54957(b) and 54957.6, respectively:

Agency Designated Representative: President LaMar

Position Title / Unrepresented Employee: General Manager

OPEN SESSION

Following the Closed Session, the meeting was reconvened in Open Session with Directors Miller, Reinhart, Swan, and Ferons present. President LaMar announced that there was nothing to report.

ADJOURNMENT

At 7:13 p.m., President LaMar adjourned the Board meeting.

APPROVED and SIGNED this 23rd day of November 2026.

_____
President, IRVINE RANCH WATER DISTRICT

_____
District Secretary,
IRVINE RANCH WATER DISTRICT

APPROVED AS TO FORM:

_____
Claire Hervey Collins, General Counsel
Hanson Bridgett LLP

November 23, 2026
Prepared by: D. Rocha
Submitted by: J. Davis / C. Smithson
Approved by: Paul A. Cook

CONSENT CALENDAR

OCTOBER 2026 TREASURY REPORT

SUMMARY:

The following is submitted for the Board's information and approval:

A. The October 2026 Investment Summary Report. This Investment Summary Report conforms with the 2026 Investment Policy as outlined in Exhibit "A";

B. The Summary of Fixed and Variable Rate Debt as of October 31, 2026, as outlined in Exhibit "B";

C. The Monthly Interest Rate Swap Summary as of October 31, 2026, as outlined in Exhibit "C";

D. The October 31, 2026, Disbursement Summary of warrants 457280 through 457889, Workers' Compensation distributions, ACH payments, wire transfers, payroll withholding distributions, and voided checks in the net total amount of $68,271,620 as outlined in Exhibit "D";

E. The Summary of Payroll ACH payments in the total amount of $4,920,296 as outlined in Exhibit "E"; and

F. The Disclosure Report of Reimbursements to Board members and staff for October 2026, detailing payments or reimbursements for individual charges of or more per transaction as outlined in Exhibit "F".

FISCAL IMPACTS:

As of October 31, 2026, the book value of the investment portfolio was $492,604,662, with a 4.18% rate of return and a market value of $487,445,446.

As of October 31, 2026, the outstanding principal amount of fixed and variable rate debt was $676,905,000. The monthly weighted average all-in variable rate was 2.45%. Including IRWD's weighted average fixed rate bond issues of 3.98% and the negative cash accruals from fixed payer interest rate swaps, which hedge a portion of the District's variable rate debt, the total average debt rate was 2.69%.

Payroll ACH payments totaled $4,920,296. Wire transfers, other ACH payments, and checks issued for debt service, accounts payable, payroll, water purchases, and voided checks for October were $68,271,620.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

All items in this report were not submitted to a Committee; the investment and debt reports are submitted to the Finance and Personnel Committee monthly.

RECOMMENDATION:

THAT THE BOARD RECEIVE AND FILE THE TREASURER'S INVESTMENT SUMMARY REPORT, THE SUMMARY OF FIXED AND VARIABLE RATE DEBT, AND THE DISCLOSURE REPORT OF REIMBURSEMENTS TO BOARD MEMBERS AND STAFF, APPROVE THE OCTOBER 2026 SUMMARY OF PAYROLL ACH PAYMENTS IN THE TOTAL AMOUNT OF $4,920,296 AND APPROVE THE OCTOBER 2026 ACCOUNTS PAYABLE DISBURSEMENT SUMMARY OF WARRANTS 457280 THROUGH 457889, WORKERS' COMPENSATION DISTRIBUTIONS, ACH PAYMENTS, WIRE TRANSFERS, PAYROLL WITHHOLDING DISTRIBUTIONS, AND VOIDED CHECKS IN THE NET TOTAL AMOUNT OF $68,271,620.

LIST OF EXHIBITS:

Exhibit "A" – Investment Summary Report
Exhibit "B" – Summary of Fixed and Variable Rate Debt
Exhibit "C" – Monthly Interest Rate Swap Summary
Exhibit "D" – Monthly Summary of District Disbursements
Exhibit "E" – Monthly Payroll ACH Summary
Exhibit "F" – Disclosure of Reimbursements to Board Members and Staff

MEEDER PUBLIC FUNDS

Exhibit A (534706)

10/01/2026 - 10/31/2026

Irvine Ranch Water District (491783)

Dated: 11/10/2026

Portfolio Summary

	Irvine Ranch Water District	*Grand Total*
Par Value	499,124,153.51	499,124,153.51
Principal Cost	492,604,662.00	492,604,662.00
Book Value	492,604,662.00	492,604,662.00
Market Value	487,445,446.38	487,445,446.38
Unrealized Gain/Loss	-5,159,215.62	-5,159,215.62
Accrued Interest	3,105,533.27	3,105,533.27

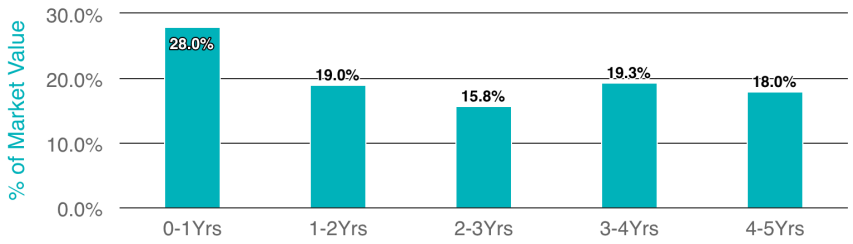
Footnotes: 1,2,3

Portfolio Characteristics

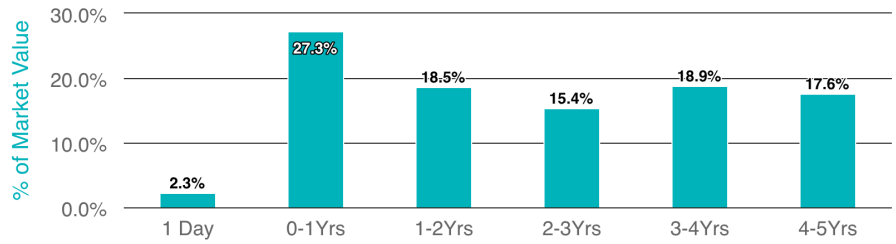
	Irvine Ranch Water District	*Grand Total*
Weighted Average Maturity	2.231	2.231
Portfolio Effective Duration	1.926	1.926
Weighted Average Life	2.079	2.079
Average Credit Rating	AA	AA
Yield at Cost	4.18	4.18

Footnotes: 1,2,3

Maturity Distribution (Excl. Cash & Equiv.)



Maturity Distribution (All)



MEEDER
PUBLIC FUNDS

Exhibit A (534706)

10/01/2026 - 10/31/2026

Irvine Ranch Water District (491783)

Dated: 11/10/2026

Asset Allocation

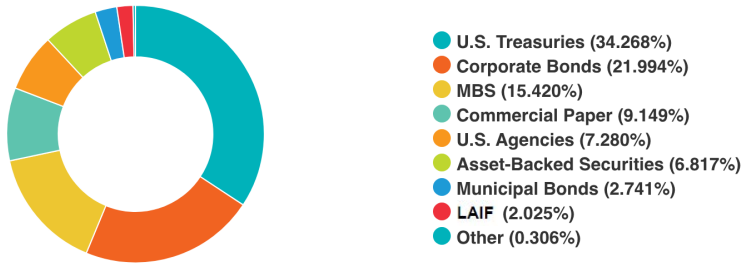


Chart calculated by: % of Market Value

Issuer Concentration

Issuer	*Ending Current Units*	*Ending Book Value*	*% of Ending Book Value*
Other	198,957,547.62	197,285,190.14	40.019%
USA	169,900,000.00	167,419,010.74	33.961%
Federal Home Loan Mortgage Corporation	47,391,679.14	46,863,127.49	9.506%
Federal National Mortgage Association	37,498,000.00	36,678,551.88	7.440%
New York Life Global Funding	16,900,000.00	17,061,113.00	3.461%
Metropolitan Life Global Funding I	14,500,000.00	14,467,390.00	2.935%
Federal Farm Credit Banks Funding Corporation	14,350,000.00	13,203,352.00	2.678%
Total	**499,497,226.76**	**492,977,735.25**	**100.000%**

Other is the total of individual issuer concentration below 2.6%
**Total includes receivable of $373,073.25 not reflected in portfolio summary.

Asset Type

Asset Type	*Ending Current Units*	*Market Value*	*% of Market Value*
U.S. Treasuries	169,900,000.00	167,167,260.43	34.268%
Corporate Bonds	109,550,000.00	107,291,452.50	21.994%
MBS	78,279,679.14	75,220,008.54	15.420%
Commercial Paper	45,500,000.00	44,628,697.09	9.149%
U.S. Agencies	37,460,000.00	35,512,407.70	7.280%
Asset-Backed Securities	33,639,734.98	33,256,585.86	6.817%
Municipal Bonds	13,795,000.00	13,369,294.88	2.741%
LAIF	9,877,756.91	9,877,756.91	2.025%
Other	1,495,055.73	1,495,055.73	0.306%
Total	**499,497,226.76**	**487,818,519.63**	**100.000%**

**Total includes receivable of $373,073.25 not reflected in portfolio summary.

Credit Quality



Chart calculated by: % of Market Value

MEEDER
PUBLIC FUNDS

Portfolio Detail Committee and Board (478363)

Irvine Ranch Water District (491783)

Base Currency: USD As of 10/31/2026

Dated: 11/10/2026

Issuer, Description	*Asset Type, Identifier*	*Yield at Cost, Average Credit Rating*	*Par Value, Principal Cost*	*Book Value, Market Value*	*Unrealized Gain/Loss, Final Maturity*
Dreyfus Government Cash Management Fund BNY DREYFUS GVT CM INV	Money Market Funds 262006307	3.56 AAA	1,121,982.48 1,121,982.48	1,121,982.48 1,121,982.48	0.00 10/31/2026
California LAIF California LAIF	LAIF CALAIF	3.99 NA	9,877,756.91 9,877,756.91	9,877,756.91 9,877,756.91	0.00 10/31/2026
UNITED STATES OF AMERICA Receivable	Receivable CCYUSD	0.00 AAA	373,073.25 373,073.25	373,073.25 373,073.25	0.00 10/31/2026
Ventura County Public Financing Authority VENTURA CNTY CALIF PUB FING AUTH LEASE REV	Municipal Bonds 923078CW7	3.79 AA+	3,000,000.00 2,946,540.00	2,946,540.00 3,000,000.00	53,460.00 11/01/2026
Lloyds Bank Corporate Markets plc Lloyds Bank Corporate Markets plc	Commercial Paper 53948BLH0	3.76 A-1	8,000,000.00 7,782,840.00	7,782,840.00 7,986,986.67	204,146.67 11/17/2026
Citibank, N.A. CITIBANK NA	Corporate Bonds 17325FBC1	3.75 A+	5,000,000.00 5,069,650.00	5,069,650.00 5,001,450.00	-68,200.00 12/04/2026
Walmart Inc. Walmart Inc.	Commercial Paper 93114FMU5	4.15 A-1+	5,000,000.00 4,944,763.89	4,944,763.89 4,967,541.67	22,777.78 12/28/2026
USA UNITED STATES TREASURY	U.S. Treasuries 912797VJ3	4.13 A-1+	10,000,000.00 9,911,410.28	9,911,410.28 9,934,478.40	23,068.12 12/31/2026
USA UNITED STATES TREASURY	U.S. Treasuries 912797WR4	4.25 A-1+	10,000,000.00 9,863,315.28	9,863,315.28 9,906,070.70	42,755.42 01/26/2027
Private Export Funding Corporation PRIVATE EXPORT FUNDING CORP	U.S. Agencies 74274TAL4	3.72 AA	6,500,000.00 6,553,209.00	6,553,209.00 6,494,670.00	-58,539.00 02/07/2027
Verto Capital I Verto Capital I	Commercial Paper 92544XPN1	4.21 A-1	5,000,000.00 4,896,427.78	4,896,427.78 4,935,338.89	38,911.11 02/22/2027
MUFG Bank, Ltd., New York Branch MUFG Bank, Ltd., New York Branch	Commercial Paper 62479MQK2	4.28 A-1	5,000,000.00 4,896,413.89	4,896,413.89 4,919,691.67	23,277.78 03/19/2027
Bank of America Corporation BANK OF AMERICA CORPORATION	Corporate Bonds 06055JPX1	3.86 A-	5,000,000.00 5,000,000.00	5,000,000.00 4,976,650.00	-23,350.00 03/23/2027
New York Life Global Funding NEW YORK LIFE GLOBAL FUNDING	Corporate Bonds 64952WEQ2	3.71 AA+	5,000,000.00 4,972,150.00	4,972,150.00 4,972,400.00	250.00 04/07/2027
MUFG Bank, Ltd., New York Branch MUFG Bank, Ltd., New York Branch	Commercial Paper 62479MRK1	4.41 A-1	5,000,000.00 4,875,180.56	4,875,180.56 4,899,069.45	23,888.89 04/19/2027
State of Oregon OREGON ST	Municipal Bonds 68609TWF1	3.67 AA+	2,395,000.00 2,323,341.60	2,323,341.60 2,359,134.88	35,793.28 05/01/2027
Credit Agricole Corporate And Investment Bank, New York Branch Credit Agricole Corporate And Investment Bank, New	Commercial Paper 22533USM6	4.20 A-1	7,500,000.00 7,272,758.33	7,272,758.33 7,329,568.75	56,810.42 05/21/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CKV2	4.22 AA+	5,000,000.00 5,044,921.88	5,044,921.88 5,009,765.65	-35,156.23 06/15/2027
City of Huntington Beach, California HUNTINGTON BEACH CALIF PENSION OBLIG	Municipal Bonds 446201AF2	3.73 AA+	2,100,000.00 2,040,360.00	2,040,360.00 2,063,781.30	23,421.30 06/15/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CKZ3	4.16 AA+	5,000,000.00 5,027,343.75	5,027,343.75 5,001,367.20	-25,976.55 07/15/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CKZ3	4.54 AA+	5,000,000.00 4,993,164.06	4,993,164.06 5,001,367.20	8,203.14 07/15/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CFH9	4.30 AA+	5,000,000.00 4,854,687.50	4,854,687.50 4,948,437.50	93,750.00 08/31/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CFH9	4.62 AA+	5,000,000.00 4,933,398.44	4,933,398.44 4,948,437.50	15,039.06 08/31/2027
BofA Securities, Inc. BofA Securities, Inc.	Commercial Paper 06054PWM4	4.77 A-1	10,000,000.00 9,538,680.56	9,538,680.56 9,590,500.00	51,819.44 09/21/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CFM8	4.19 AA+	5,000,000.00 4,988,476.57	4,988,476.57 4,988,085.95	-390.62 09/30/2027
State Street Corporation STATE STREET CORPORATION	Corporate Bonds 857477CP6	3.71 A	5,000,000.00 5,050,750.00	5,050,750.00 4,982,200.00	-68,550.00 10/22/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CPE5	4.57 AA+	5,000,000.00 4,942,968.75	4,942,968.75 4,953,320.30	10,351.55 10/31/2027
USA UNITED STATES TREASURY	U.S. Treasuries 9128283F5	4.57 AA+	10,000,000.00 9,742,968.75	9,742,968.75 9,776,562.50	33,593.75 11/15/2027
New York Life Global Funding NEW YORK LIFE GLOBAL FUNDING	Corporate Bonds 64952WFL2	3.87 AA+	3,000,000.00 3,028,860.00	3,028,860.00 2,988,030.00	-40,830.00 12/13/2027
USA UNITED STATES TREASURY	U.S. Treasuries 91282CPS4	4.62 AA+	7,000,000.00 6,892,812.50	6,892,812.50 6,912,226.58	19,414.08 12/31/2027

MEEDER
PUBLIC FUNDS

Portfolio Detail Committee and Board (478363)

Irvine Ranch Water District (491783)

Base Currency: USD As of 10/31/2026

Dated: 11/10/2026

Issuer, Description	*Asset Type, Identifier*	*Yield at Cost, Average Credit Rating*	*Par Value, Principal Cost*	*Book Value, Market Value*	*Unrealized Gain/Loss, Final Maturity*
New York Life Global Funding NEW YORK LIFE GLOBAL FUNDING	Corporate Bonds 64952WEY5	3.88 AA+	3,000,000.00 3,055,260.00	3,055,260.00 2,999,880.00	-55,380.00 01/09/2028
Caterpillar Financial Services Corporation CATERPILLAR FINANCIAL SERVICES CORP	Corporate Bonds 14913UBF6	3.72 A	5,000,000.00 4,998,250.00	4,998,250.00 4,942,450.00	-55,800.00 01/10/2028
USA UNITED STATES TREASURY	U.S. Treasuries 9128283W8	4.23 AA+	5,000,000.00 4,783,593.75	4,783,593.75 4,891,015.65	107,421.90 02/15/2028
USA UNITED STATES TREASURY	U.S. Treasuries 9128283W8	4.66 AA+	5,000,000.00 4,872,265.63	4,872,265.63 4,891,015.65	18,750.02 02/15/2028
USA UNITED STATES TREASURY	U.S. Treasuries 91282CMS7	4.82 AA+	5,000,000.00 4,933,789.06	4,933,789.06 4,958,203.15	24,414.09 03/15/2028
NORTHWESTERN MUTUAL GLOBAL FUNDING NORTHWESTERN MUTUAL GLOBAL FUNDING	Corporate Bonds 66815L2V0	3.91 AA+	5,000,000.00 5,059,750.00	5,059,750.00 4,978,150.00	-81,600.00 03/21/2028
Pacific Life Global Funding II PACIFIC LIFE GLOBAL FUNDING II	Corporate Bonds 6944PL2S7	3.96 AA-	2,450,000.00 2,498,485.50	2,498,485.50 2,447,770.50	-50,715.00 04/04/2028
USA UNITED STATES TREASURY	U.S. Treasuries 91282CBZ3	4.15 AA+	5,000,000.00 4,496,484.38	4,496,484.38 4,763,867.20	267,382.82 04/30/2028
USA UNITED STATES TREASURY	U.S. Treasuries 91282CBZ3	4.70 AA+	3,000,000.00 2,841,445.31	2,841,445.31 2,858,320.32	16,875.01 04/30/2028
USA UNITED STATES TREASURY	U.S. Treasuries 91282CND9	4.87 AA+	5,000,000.00 4,913,281.25	4,913,281.25 4,941,210.95	27,929.70 05/15/2028
Schlumberger Holdings Corporation SCHLUMBERGER HOLDINGS CORP	Corporate Bonds 806851AK7	4.25 A-	5,000,000.00 4,965,650.00	4,965,650.00 4,920,300.00	-45,350.00 05/17/2028
USA UNITED STATES TREASURY	U.S. Treasuries 91282CHQ7	4.39 AA+	10,000,000.00 9,900,000.00	9,900,000.00 9,928,125.00	28,125.00 07/31/2028
USA UNITED STATES TREASURY	U.S. Treasuries 9128284V9	3.85 AA+	5,000,000.00 4,820,312.50	4,820,312.50 4,855,078.15	34,765.65 08/15/2028
USA UNITED STATES TREASURY	U.S. Treasuries 9128284V9	4.90 AA+	5,000,000.00 4,820,312.50	4,820,312.50 4,855,078.15	34,765.65 08/15/2028
Federal Home Loan Mortgage Corporation FHMS K-510 A2	MBS 3137HB3D4	4.31 AA+	3,440,203.00 3,488,446.47	3,488,446.47 3,443,953.58	-44,492.89 10/25/2028
Ventura County Public Financing Authority VENTURA CNTY CALIF PUB FING AUTH LEASE REV	Municipal Bonds 923078CY3	3.79 AA+	4,000,000.00 3,806,760.00	3,806,760.00 3,777,992.00	-28,768.00 11/01/2028
Private Export Funding Corporation PRIVATE EXPORT FUNDING CORP	U.S. Agencies 742651EA6	3.57 AA+	5,000,000.00 5,100,100.00	5,100,100.00 4,938,250.00	-161,850.00 12/15/2028
Federal Home Loan Mortgage Corporation FHMS K-087 A2	MBS 3137FKUP9	3.74 AA+	4,147,384.25 4,140,579.98	4,140,579.98 4,049,704.85	-90,875.13 12/25/2028
Federal Home Loan Mortgage Corporation FHMS K-087 A2	MBS 3137FKUP9	3.77 AA+	129,605.76 129,271.61	129,271.61 126,553.28	-2,718.34 12/25/2028
PepsiCo, Inc. PEPSICO, INC.	Corporate Bonds 713448GL6	3.82 A+	5,000,000.00 5,038,350.00	5,038,350.00 4,922,800.00	-115,550.00 01/15/2029
USA UNITED STATES TREASURY	U.S. Treasuries 91282CJW2	3.85 AA+	5,000,000.00 5,025,585.94	5,025,585.94 4,934,765.65	-90,820.29 01/31/2029
Federal Farm Credit Banks Funding Corporation FEDERAL FARM CREDIT BANKS FUNDING CORP	U.S. Agencies 3133ER6D8	3.87 AA+	5,000,000.00 5,022,850.00	5,022,850.00 4,919,850.00	-103,000.00 03/07/2029
WF Card Issuance Trust WFCIT 2026-1 A	Asset-Backed Securities 92970QAK1	4.08 AAA	5,000,000.00 4,999,299.00	4,999,299.00 4,905,467.95	-93,831.05 04/16/2029
Federal Home Loan Mortgage Corporation FHMS K-093 A2	MBS 3137FMCR1	3.70 AA+	4,870,960.65 4,750,518.57	4,750,518.57 4,654,279.62	-96,238.95 05/25/2029
Metropolitan Life Global Funding I METROPOLITAN LIFE GLOBAL FUNDING I	Corporate Bonds 59217GDC0	4.11 AA-	1,000,000.00 966,290.00	966,290.00 948,610.00	-17,680.00 06/17/2029
Toyota Motor Credit Corporation TOYOTA MOTOR CREDIT CORP	Corporate Bonds 89236TKD6	3.97 A+	3,000,000.00 3,046,320.00	3,046,320.00 2,957,880.00	-88,440.00 06/29/2029
Federal Home Loan Mortgage Corporation FHMS K-097 A2	MBS 3137FNX54	3.79 AA+	5,000,000.00 4,780,078.13	4,780,078.13 4,690,159.05	-89,919.08 07/25/2029
Chase Auto Owner Trust 2024-4 CHAOT 244 A3	Asset-Backed Securities 16144YAC2	3.85 AAA	2,202,744.27 2,225,029.85	2,225,029.85 2,205,943.64	-19,086.20 07/25/2029
Eli Lilly and Company ELI LILLY AND COMPANY	Corporate Bonds 532457CQ9	3.89 AA-	5,000,000.00 5,049,950.00	5,049,950.00 4,919,850.00	-130,100.00 08/14/2029
Metropolitan Life Global Funding I METROPOLITAN LIFE GLOBAL FUNDING I	Corporate Bonds 592179KX2	4.75 AA-	8,500,000.00 8,500,000.00	8,500,000.00 8,406,500.00	-93,500.00 08/24/2029

MEEDER
PUBLIC FUNDS

Portfolio Detail Committee and Board (478363)

Irvine Ranch Water District (491783)

Base Currency: USD As of 10/31/2026

Dated: 11/10/2026

Issuer, Description	*Asset Type, Identifier*	*Yield at Cost, Average Credit Rating*	*Par Value, Principal Cost*	*Book Value, Market Value*	*Unrealized Gain/Loss, Final Maturity*
Chase Auto Owner Trust 2024-5 CHAOT 245 A3	Asset-Backed Securities 16144QAC9	3.84 AAA	2,936,990.71 2,947,086.62	2,947,086.62 2,928,566.69	-18,519.93 08/27/2029
COMET_24-A1 COMET 2024-1 A	Asset-Backed Securities 14041NGE5	3.77 AAA	5,000,000.00 5,012,500.00	5,012,500.00 4,970,152.40	-42,347.60 09/17/2029
State of Hawaii HAWAII ST	Municipal Bonds 419792R99	4.39 AA	1,000,000.00 988,980.00	988,980.00 974,637.00	-14,343.00 10/01/2029
USA UNITED STATES TREASURY	U.S. Treasuries 91282CFT3	4.01 AA+	5,000,000.00 4,997,656.25	4,997,656.25 4,910,156.25	-87,500.00 10/31/2029
Federal Home Loan Mortgage Corporation FHMS K-X04 A2X	MBS 3137FWHK9	3.52 AA+	817,625.21 751,927.74	751,927.74 739,040.23	-12,887.51 11/25/2029
USA UNITED STATES TREASURY	U.S. Treasuries 91282CMA6	3.97 AA+	5,000,000.00 5,031,250.00	5,031,250.00 4,924,609.40	-106,640.60 11/30/2029
Federal Home Loan Mortgage Corporation FH WN5182	MBS 3132XKXL6	4.22 AA+	5,000,000.00 5,065,039.06	5,065,039.06 4,930,078.40	-134,960.66 12/01/2029
New York Life Global Funding NEW YORK LIFE GLOBAL FUNDING	Corporate Bonds 64952WFK4	4.10 AA+	5,900,000.00 6,004,843.00	6,004,843.00 5,806,013.00	-198,830.00 12/05/2029
Federal Home Loan Mortgage Corporation FHMS K-539 A2	MBS 3137HKXJ8	3.89 AA+	5,000,000.00 5,082,421.88	5,082,421.88 4,905,069.95	-177,351.93 01/25/2030
USA UNITED STATES TREASURY	U.S. Treasuries 91282CGQ8	3.98 AA+	5,000,000.00 5,004,687.50	5,004,687.50 4,898,828.15	-105,859.35 02/28/2030
USA UNITED STATES TREASURY	U.S. Treasuries 91282CMU2	3.99 AA+	5,000,000.00 5,002,148.44	5,002,148.44 4,895,312.50	-106,835.94 03/31/2030
USA UNITED STATES TREASURY	U.S. Treasuries 91282CMZ1	4.68 AA+	6,000,000.00 5,840,625.00	5,840,625.00 5,848,593.78	7,968.78 04/30/2030
Chevron Corporation CHEVRON CORP	Corporate Bonds 166764BY5	4.04 AA-	6,000,000.00 5,572,080.00	5,572,080.00 5,472,420.00	-99,660.00 05/11/2030
USA UNITED STATES TREASURY	U.S. Treasuries 91282CNK3	3.82 AA+	7,500,000.00 7,519,628.91	7,519,628.91 7,300,195.35	-219,433.56 06/30/2030
Federal Home Loan Mortgage Corporation FHMS K-544 A2	MBS 3137HMCE8	4.44 AA+	5,370,000.00 5,320,075.78	5,320,075.78 5,226,894.33	-93,181.45 07/25/2030
USA UNITED STATES TREASURY	U.S. Treasuries 91282CHR5	3.68 AA+	5,000,000.00 5,069,726.56	5,069,726.56 4,884,765.65	-184,960.91 07/31/2030
Tennessee Valley Authority TENNESSEE VALLEY AUTHORITY	U.S. Agencies 880591FE7	3.95 AA+	5,000,000.00 4,984,075.00	4,984,075.00 4,855,800.00	-128,275.00 08/01/2030
Federal National Mortgage Association FN BZ4585	MBS 3140Q0CX8	4.00 AA+	2,588,000.00 2,599,221.41	2,599,221.41 2,508,490.64	-90,730.77 08/01/2030
Covina-Valley California Unified School District COVINA-VALLEY CALIF UNI SCH DIST	Municipal Bonds 223093VT9	3.94 AA	1,300,000.00 1,222,039.00	1,222,039.00 1,193,749.70	-28,289.30 08/01/2030
Federal National Mortgage Association FN BZ4801	MBS 3140Q0KP6	4.04 AA+	6,410,000.00 6,459,076.56	6,459,076.56 6,219,810.56	-239,266.00 09/01/2030
Federal Home Loan Mortgage Corporation FH WN1753	MBS 3132XF5P9	4.58 AA+	6,300,000.00 6,150,621.09	6,150,621.09 6,134,061.09	-16,560.00 09/01/2030
John Deere Capital Corporation JOHN DEERE CAPITAL CORP	Corporate Bonds 24422EYF0	4.11 A	5,000,000.00 5,057,600.00	5,057,600.00 4,869,550.00	-188,050.00 10/15/2030
Citibank Credit Card Issuance Trust 2018-A7 CCCIT 2018-A7 A7	Asset-Backed Securities 17305EGS8	3.85 AAA	6,500,000.00 6,518,789.06	6,518,789.06 6,381,293.68	-137,495.38 10/15/2030
Federal National Mortgage Association FN BM6468	MBS 3140JBFJ0	4.00 AA+	5,500,000.00 4,868,359.38	4,868,359.38 4,775,880.50	-92,478.88 11/01/2030
Federal National Mortgage Association FN BZ5364	MBS 3140Q06A5	4.03 AA+	5,250,000.00 5,236,464.84	5,236,464.84 5,038,836.23	-197,628.61 11/01/2030
Meta Platforms, Inc. META PLATFORMS INC	Corporate Bonds 30303MAB8	4.17 AA-	5,000,000.00 5,005,950.00	5,005,950.00 4,784,450.00	-221,500.00 11/15/2030
Carmax Auto Owner Trust 2025-4 CARMX 2025-4 A3	Asset-Backed Securities 14320HAD8	3.91 AAA	5,000,000.00 5,011,132.81	5,011,132.81 4,928,395.50	-82,737.31 12/16/2030
Metropolitan Life Global Funding I METROPOLITAN LIFE GLOBAL FUNDING I	Corporate Bonds 59217GFU8	4.35 AA-	5,000,000.00 5,001,100.00	5,001,100.00 4,809,850.00	-191,250.00 01/12/2031
Federal National Mortgage Association FEDERAL NATIONAL MORTGAGE ASSOCIATION	U.S. Agencies 3136GCG90	3.88 AA+	1,750,000.00 1,750,000.00	1,750,000.00 1,658,877.50	-91,122.50 01/27/2031
Federal National Mortgage Association FN BZ6395	MBS 3140Q2C97	4.01 AA+	6,000,000.00 5,951,953.13	5,951,953.13 5,725,900.32	-226,052.81 02/01/2031

MEEDER
PUBLIC FUNDS

Portfolio Detail Committee and Board (478363)

Irvine Ranch Water District (491783)

Base Currency: USD As of 10/31/2026

Dated: 11/10/2026

Issuer, Description	*Asset Type, Identifier*	*Yield at Cost, Average Credit Rating*	*Par Value, Principal Cost*	*Book Value, Market Value*	*Unrealized Gain/Loss, Final Maturity*
Federal Farm Credit Banks Funding Corporation FEDERAL FARM CREDIT BANKS FUNDING CORP	U.S. Agencies 3133EMPE6	4.41 AA+	9,350,000.00 8,180,502.00	8,180,502.00 8,004,535.00	-175,967.00 02/03/2031
Novartis Capital Corporation NOVARTIS CAPITAL CORP	Corporate Bonds 66989HBG2	4.33 AA-	4,700,000.00 4,714,946.00	4,714,946.00 4,568,259.00	-146,687.00 03/18/2031
T-Mobile Us Trust 2026-2 TMUST 262 A	Asset-Backed Securities 87268UAA5	4.66 AAA	7,000,000.00 7,023,789.06	7,023,789.06 6,936,765.99	-87,023.07 03/20/2031
Protective Life Global Funding PROTECTIVE LIFE GLOBAL FUNDING	Corporate Bonds 74368CCE2	4.72 AA-	5,000,000.00 5,023,650.00	5,023,650.00 4,863,650.00	-160,000.00 04/14/2031
Federal Home Loan Mortgage Corporation FEDERAL HOME LOAN MORTGAGE CORP	U.S. Agencies 3134HCL80	4.48 AA+	4,860,000.00 4,787,100.00	4,787,100.00 4,640,425.20	-146,674.80 04/30/2031
Federal Home Loan Mortgage Corporation FH WA3349	MBS 3132WW5K4	4.67 AA+	2,455,900.28 2,417,047.17	2,417,047.17 2,417,047.17	0.00 05/01/2031
Meta Platforms, Inc. META PLATFORMS INC	Corporate Bonds 30303MAF9	5.06 AA-	7,000,000.00 6,850,900.00	6,850,900.00 6,752,340.00	-98,560.00 05/15/2031
USA UNITED STATES TREASURY	U.S. Treasuries 91282CQX2	4.30 AA+	6,400,000.00 6,350,750.00	6,350,750.00 6,248,000.00	-102,750.00 06/30/2031
Federal National Mortgage Association FN BZ7642	MBS 3140Q3P42	4.69 AA+	5,000,000.00 4,875,781.25	4,875,781.25 4,794,816.90	-80,964.35 08/01/2031
Federal National Mortgage Association FN BZ1840	MBS 3140NWBJ3	4.66 AA+	5,000,000.00 4,937,695.31	4,937,695.31 4,839,431.85	-98,263.46 09/01/2031
--- **---**	**---** **---**	**4.18** **AA**	**499,497,226.76** **492,977,735.25**	**492,977,735.25** **487,818,519.63**	**-5,159,215.62** **01/22/2029**

* Weighted by: Market Value. * Holdings Displayed by: Lot.

MEEDER PUBLIC FUNDS

Transaction Statement

IRVINE RANCH WATER DISTRICT

	TRADE DATE	SETTLE DATE	CUSIP	DESCRIPTION	PAR VALUE	PRINCIPAL COST	PURCHASED INTEREST	TOTAL	PURCHASE YIELD
BUY									
	10/09/2026	10/13/2026	912797VJ3	US TREASURY BILL 12/31/26	10,000,000.00	9,911,410.28	0.00	(9,911,410.28)	4.13
BUY TOTAL					**10,000,000.00**	**9,911,410.28**	**0.00**	**(9,911,410.28)**	**4.13**

	TRADE DATE	SETTLE DATE	CUSIP	DESCRIPTION	PAR VALUE	BOOK VALUE	TOTAL	NET REALIZED GAIN/LOSS
MATURITY								
	10/01/2026	10/01/2026	46625HRV4	JPMORGAN CHASE & CO 2.95 10/01/2026	(3,000,000.00)	2,982,990.00	3,000,000.00	17,010.00
MATURITY TOTAL					**(3,000,000.00)**	**2,982,990.00**	**3,000,000.00**	**17,010.00**

	TRADE DATE	SETTLE DATE	CUSIP	DESCRIPTION	PAR VALUE	BOOK VALUE	TOTAL	NET REALIZED GAIN/LOSS
PRINCIPAL PAYDOWN								
	10/26/2026	10/26/2026	3132WW5K4	Federal Home Loan Mortgage Corporation 4.3 05/01/2031	(1,869.72)	1,840.14	1,869.72	29.58
	10/26/2026	10/26/2026	16144YAC2	Chase Auto Owner Trust 2024-4 4.94 07/25/2029	(207,963.44)	210,067.45	207,963.44	(2,104.01)
	10/26/2026	10/26/2026	16144QAC9	Chase Auto Owner Trust 2024-5 4.18 08/27/2029	(253,197.12)	254,067.49	253,197.12	(870.37)
	10/26/2026	10/26/2026	3137FKUP9	Federal Home Loan Mortgage Corporation 3.771 12/25/2028	(5,432.87)	5,423.80	5,432.92	9.12
	10/26/2026	10/26/2026	3137FMCR1	Federal Home Loan Mortgage Corporation 2.982 05/25/2029	(6,153.40)	6,001.25	6,153.45	152.20
	10/26/2026	10/26/2026	3137FWHK9	Federal Home Loan Mortgage Corporation 1.088 11/25/2029	(79,818.01)	73,404.51	79,818.01	6,413.50
PRINCIPAL PAYDOWN TOTAL					**(554,434.56)**	**550,804.63**	**554,434.66**	**3,630.03**

MEEDER
PUBLIC FUNDS

Report: Future Maturities (374182)
Account: Irvine Ranch Water District (491783)
As of: 10/31/2026
Base Currency USD

Maturity Bands	Identifier	Security Description	Final Maturity	Asset Type	Base Current Units	Base Original Cost	Base Market Value + Accrued
1 Month	---	---	11/06/2026	---	21,999,739.39	21,729,119.39	22,009,841.06
2 Months	---	---	12/16/2026	---	10,000,000.00	10,014,413.89	10,081,038.33
3 Months	---	---	01/13/2027	U.S. Treasuries	20,000,000.00	19,774,725.56	19,840,549.10
6 Months	---	---	03/18/2027	---	33,895,000.00	33,516,722.83	33,656,074.23
9 Months	---	---	06/20/2027	---	24,600,000.00	24,378,548.02	24,636,596.08
12 Months	---	---	09/26/2027	---	35,000,000.00	34,308,961.82	34,488,531.15
<12 Months	---	---	10/23/2029	---	353,629,414.12	348,882,170.49	345,838,349.70
---	**---**	**---**	**01/23/2029**	**---**	**499,124,153.51**	**492,604,662.00**	**490,550,979.65**

CURRENT PORTFOLIO & CREDIT OVERSIGHT

In accordance with our Investment Policy and California Government Code 53601, the following investments are currently included in the portfolio:

INVESTMENT CATEGORY	PORTFOLIO LIMIT
U.S. Treasury and U.S. Agencies U.S. Treasury securities and certain federal agency or GSE securities.	UP TO **100%** OF PORTFOLIO
Corporate Bonds High-quality corporate bonds from U.S. companies or banks, as long as they mature within 5 years, with limits on the total amount invested and the amount invested in any one issuer.	UP TO **30%** OF PORTFOLIO Single Issuer Limit: **10%**
Commercial Paper Commercial paper is short-term corporate debt. It must be highly rated, issued by a large U.S. corporation, and mature within about 13 months. There are also limits on how much an agency can invest overall and in any one company.	UP TO **40%** OF PORTFOLIO Single Issuer Limit: **10%**
Money Market Funds High-quality, professionally managed money market funds.	UP TO **20%** OF PORTFOLIO Single Fund Limit: **10%**
Asset Backed Securities High-quality secutities backed by leases, or consumer loans, but non-government-backed securities must be AA-rated or better, mature within 5 years, and stay within the 20% investment limit **Mortgage Obligation** High-quality securities backed by mortgages but non-government-backed securities must be AA-rated or better, mature within 5 years, and stay within the.	UP TO **20%** OF PORTFOLIO
Municipal Bonds Certain government debt issued by California, other states, and California local governments, including certain revenue bonds.	UP TO **100%** OF PORTFOLIO
Local Agency Investment Fund Funds invested with the State Treasurer for investment in approved securities.	UP TO **$75MM** of Portfolio

CREDIT MONITORING

The District Financial Advisor, Meeder Public Funds, provides ongoing credit analysis on investments.

Daily:

- Review market signals such as stock prices, bond spreads, and credit default swaps.
- Monitor credit-rating changes for approved issuers and the broader investment-grade market.

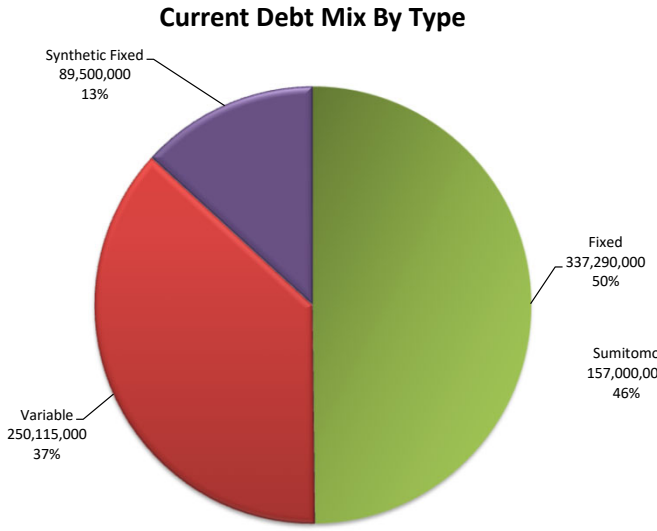
Quarterly:

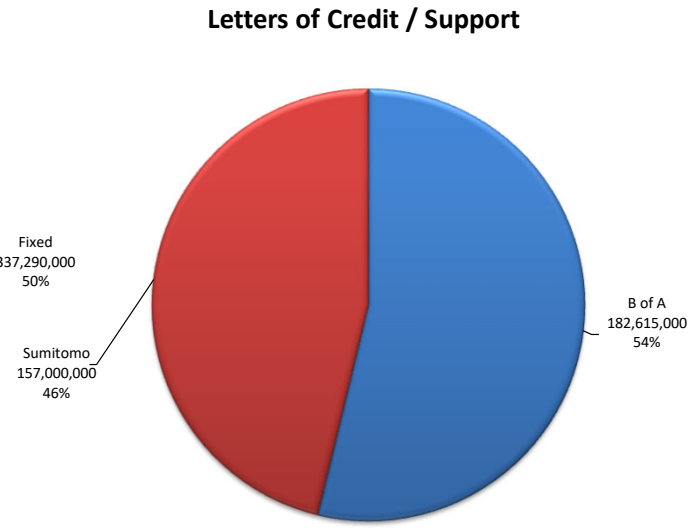
- Review asset-backed securities (ABS) performance using Bloomberg dashboards.
- Analyze corporate earnings and conference calls and update forecasting models.

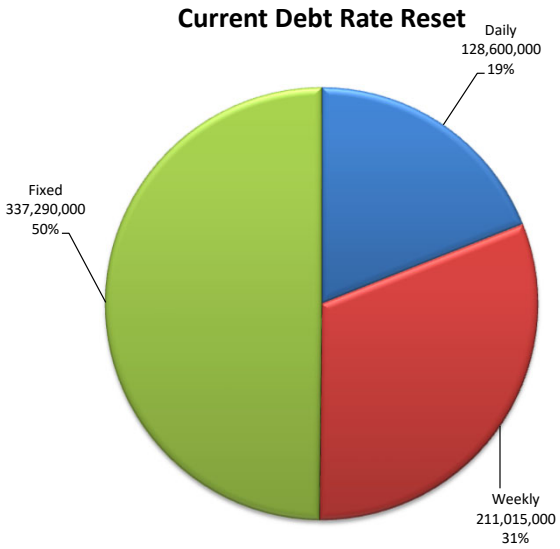
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Exhibit "B"

Irvine Ranch Water District
Summary of Fixed and Variable Rate Debt
October 2026







Outstanding Par by Series

Series	Issue Date	Maturity Date	Remaining Principal	Percent	Letter of Credit/Support	Rmkt Agent	Mode	Reset
Series 2008-A Refunding	04/24/08	07/01/35	$32,000,000	4.73%	Sumitomo	BAML	Variable	Weekly
Series 2025-A Refunding	07/15/25	05/01/40	$125,000,000	18.47%	Sumitomo	BAML	Variable	Weekly
Series 2026-A	08/20/26	02/01/56	$54,015,000	7.98%	B of A	BAML	Variable	Weekly
Series 2011-A-1 Refunding	04/15/11	10/01/37	$32,160,000	4.75%	B of A	Goldman	Variable	Daily
Series 2011-A-2 Refunding	04/15/11	10/01/37	$21,440,000	3.17%	B of A	Goldman	Variable	Daily
Series 2009 - A	06/04/09	10/01/41	$37,500,000	5.54%	B of A	US Bank	Variable	Daily
Series 2009 - B	06/04/09	10/01/41	$37,500,000	5.54%	B of A	Goldman	Variable	Daily
2026 COPS	09/17/26	03/01/56	$198,895,000	29.38%	N/A	N/A	Fixed	Fixed
Series 2025-B Refunding	07/25/25	05/01/35	$54,755,000	8.09%	N/A	N/A	Fixed	Fixed
Series 2026-B Refunding	08/20/26	02/01/46	$83,640,000	12.36%	N/A	N/A	Fixed	Fixed
Total			$676,905,000	100.00%				

IRVINE RANCH WATER DISTRICT

SUMMARY OF FIXED & VARIABLE RATE DEBT

October-26

Daily

Weekly

GENERAL BOND INFORMATION							LETTER OF CREDIT INFORMATION										TRUSTEE INFORMATION				
VARIABLE RATE ISSUES	Issue Date	Maturity Date	Principal Payment Date	Payment Date	Original Par Amount	Remaining Principal	Letter of Credit	Reimbursment Agreement Date	L/C Exp. Date	Prior Letter of Credit Bank	MOODYS	S&P	FITCH	LOC Stated Amount	LOC Fee	Annual LOC Cost	Rmkt Agent	Reset	Rmkt Fees	Annual Cost	Trustee
SERIES 2008-A Refunding	04/24/08	07/01/35	Jul 1	5th Bus. Day	$60,215,000	$32,000,000	SUMITOMO	04/01/11	03/13/28	SUMITOMO	A1/P-1	A/A-1	A/F1	$32,473,425	0.3400%	$110,410	BAML	WED	0.07%	$22,400	BANK OF NY
SERIES 2025-A Refunding	07/15/25	05/01/40	May 1, 2035	1st Bus. Day	$125,000,000	$125,000,000	SUMITOMO	07/01/25	07/25/29	SUMITOMO	NA	A/A	A/F1	$127,054,795	0.3150%	$400,223	BAML	WED	0.07%	$87,500	US BANK
SERIES 2026-A	08/20/26	02/01/56	Feb 1, 2041	1st Bus. Day	$54,015,000	$54,015,000	B of A	08/01/26	08/20/30	SUMITOMO	NA	A+/A-1	AA/F1+	$54,902,918	0.3400%	$186,670	BAML	WED	0.07%	$37,811	US BANK
SERIES 2011-A-1 Refunding	04/15/11	10/01/37	Oct 1	1st Bus. Day	$60,545,000	$32,160,000	B of A	02/01/24	02/08/27	B of A	Aa1/VMIG1	A+/A-1	AAA/F1+	$32,519,487	0.3200%	$104,062	Goldman	DAILY	0.07%	$22,512	BANK OF NY
SERIES 2011-A-2 Refunding	04/15/11	10/01/37	Oct 1	1st Bus. Day	$40,370,000	$21,440,000	B of A	02/01/24	02/08/27	B of A	Aa1/VMIG1	A+/A-1	AAA/F1+	$21,679,658	0.3200%	$69,375	Goldman	DAILY	0.07%	$15,008	BANK OF NY
SERIES 2009 - A	06/04/09	10/01/41	Oct 1	1st Bus. Day	$75,000,000	$37,500,000	B of A	04/01/25	05/01/28	US BANK	Aa1/VMIG1	A+/A-1	AAA/F1+	$37,919,178	0.3400%	$128,925	US Bank	DAILY	0.07%	$26,250	US BANK
SERIES 2009 - B	06/04/09	10/01/41	Oct 1	1st Bus. Day	$75,000,000	$37,500,000	B of A	04/01/11	05/01/28	B of A	Aa1/VMIG1	A+/A-1	AAA/F1+	$37,919,178	0.3400%	$128,925	Goldman	DAILY	0.07%	$26,250	US BANK
					$490,145,000	**$339,615,000**	**SUB-TOTAL VARIABLE RATE DEBT**							**$344,468,638**	**0.3276%**	**$1,128,590**			**0.07%**	**$237,731**	
														(Wt. Avg)					(Wt. Avg)		
FIXED RATE ISSUES																					
2026 COPS	09/17/26	03/01/56	Mar 1, 2027	Mar/Sept	$198,895,000	$198,895,000	N/A	N/A	N/A	N/A	NR	AAA	AAA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	US BANK
SERIES 2025B Refunding	07/15/25	05/01/35	May 1	May/Nov	$57,890,000	$54,755,000	N/A	N/A	N/A	N/A	NR	AAA	AAA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	US BANK
SERIES 2026B Refunding	08/20/26	02/01/46	Feb 1, 2027	Feb/Aug	$83,640,000	$83,640,000	N/A	N/A	N/A	N/A	NR	AAA	AAA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	US BANK
					$340,425,000	**$337,290,000**	**SUB-TOTAL FIXED RATE DEBT**														
					$830,570,000	**$676,905,000**	**TOTAL- FIXED & VARIABLE RATE DEBT**														

Remarketing Agents		
Goldman	91,100,000	27%
BAML	211,015,000	62%
US Bank	37,500,000	11%
	339,615,000	

GO VS COP's		
GO:	478,010,000	71%
COPS:	198,895,000	29%
Total	**676,905,000**	

LOC Banks		
SUMITOMO	157,000,000	46%
BANK OF AMERICA	182,615,000	54%
	339,615,000	

Breakdown Between Variable & Fixed Rate Mode		
Daily Issues	128,600,000	19%
Weekly Issues	211,015,000	31%
Sub-Total	**339,615,000**	
Fixed Rate Issues	$337,290,000	50%
Sub-Total - Fixed	**337,290,000**	
TOTAL DEBT FIXED & VAR.	**676,905,000**	100%

SUMMARY OF DEBT RATES
Oct-26

Cusips	4636324K2	4636324Q9	4636324R7	4636324D8	4636325R6	4636326D6	4636324H9
Rmkt Agent	GOLDMAN	GOLDMAN	GOLDMAN	MERRILL LYNCH	MERRILL LYNCH	MERRILL LYNCH	US BANK
Mode	DAILY	DAILY	DAILY	WEEKLY	WEEKLY	WEEKLY	DAILY
Bond Issue	2009 - B	2011 A-1	2011 A-2	2008-A	2025 - A Ref	2026 - A	2009-A
Par Amount	37,500,000	32,160,000	21,440,000	32,000,000	125,000,000	54,015,000	37,500,000
LOC Bank	BOFA	BOFA	BOFA	Sumitomo	Sumitomo	BOFA	BOFA
Reset				Wednesday	Wednesday	Wednesday	
10/1/2026	2.40%	2.40%	2.40%	3.70%	3.70%	3.75%	2.95%
10/2/2026	2.05%	2.05%	2.05%	3.70%	3.70%	3.75%	2.00%
10/3/2026	2.05%	2.05%	2.05%	3.70%	3.70%	3.75%	2.00%
10/4/2026	2.05%	2.05%	2.05%	3.70%	3.70%	3.75%	2.00%
10/5/2026	1.65%	1.65%	1.65%	3.70%	3.70%	3.75%	2.00%
10/6/2026	1.40%	1.40%	1.40%	3.70%	3.70%	3.75%	1.85%
10/7/2026	1.65%	1.65%	1.65%	3.70%	3.70%	3.75%	1.60%
10/8/2026	1.55%	1.55%	1.55%	2.60%	2.60%	2.65%	1.60%
10/9/2026	1.10%	1.10%	1.10%	2.60%	2.60%	2.65%	1.50%
10/10/2026	1.10%	1.10%	1.10%	2.60%	2.60%	2.65%	1.50%
10/11/2026	1.10%	1.10%	1.10%	2.60%	2.60%	2.65%	1.50%
10/12/2026	1.10%	1.10%	1.10%	2.60%	2.60%	2.65%	1.50%
10/13/2026	0.45%	0.45%	0.45%	2.60%	2.60%	2.65%	1.15%
10/14/2026	0.35%	0.35%	0.35%	2.60%	2.60%	2.65%	0.50%
10/15/2026	0.65%	0.65%	0.65%	1.75%	1.75%	1.80%	0.40%
10/16/2026	0.55%	0.55%	0.55%	1.75%	1.75%	1.80%	0.60%
10/17/2026	0.55%	0.55%	0.55%	1.75%	1.75%	1.80%	0.60%
10/18/2026	0.55%	0.55%	0.55%	1.75%	1.75%	1.80%	0.60%
10/19/2026	0.55%	0.55%	0.55%	1.75%	1.75%	1.80%	0.60%
10/20/2026	0.60%	0.60%	0.60%	1.75%	1.75%	1.80%	0.65%
10/21/2026	0.65%	0.65%	0.65%	1.75%	1.75%	1.80%	0.65%
10/22/2026	0.95%	0.95%	0.95%	1.85%	1.85%	1.90%	1.05%
10/23/2026	1.65%	1.65%	1.65%	1.85%	1.85%	1.90%	1.35%
10/24/2026	1.65%	1.65%	1.65%	1.85%	1.85%	1.90%	1.35%
10/25/2026	1.65%	1.65%	1.65%	1.85%	1.85%	1.90%	1.35%
10/26/2026	1.00%	1.00%	1.00%	1.85%	1.85%	1.90%	1.35%
10/27/2026	1.60%	1.60%	1.60%	1.85%	1.85%	1.90%	1.35%
10/28/2026	1.95%	1.95%	1.95%	1.85%	1.85%	1.90%	1.95%
10/29/2026	2.50%	2.50%	2.50%	2.00%	2.00%	2.05%	2.40%
10/30/2026	2.85%	2.85%	2.85%	2.00%	2.00%	2.05%	3.15%
10/31/2026	2.85%	2.85%	2.85%	2.00%	2.00%	2.05%	3.15%
Avg Interest Rates	1.38%	1.38%	1.38%	2.43%	2.43%	2.48%	1.49%
Rmkt Fee	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
LOC Fee	0.34%	0.32%	0.32%	0.34%	0.32%	0.34%	0.34%
All-In Rate	**1.79%**	**1.77%**	**1.77%**	**2.84%**	**2.81%**	**2.89%**	**1.90%**
Par Amount	91,100,000			211,015,000			37,500,000

Interest Rate Mode	Percent of Total Variable Rate Debt	Par Outstanding	Weighted All-In Average Rate	Base Rate Average
Daily	37.87%	128,600,000	1.81%	1.41%
Weekly	62.13%	211,015,000	2.84%	2.44%
	100.00%	**$339,615,000**	2.45%	2.05%
Fixed				
COPS 2026	58.97%	198,895,000	4.33%	
SERIES 2025 B	16.23%	54,755,000	2.77%	
SERIES 2026 B	24.80%	83,640,000	3.94%	
	100.00%	**$337,290,000**	3.98%	
All-In Debt Rate Including $60 Million Notional Amount of Swaps				**2.69%**

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Exhibit "C"

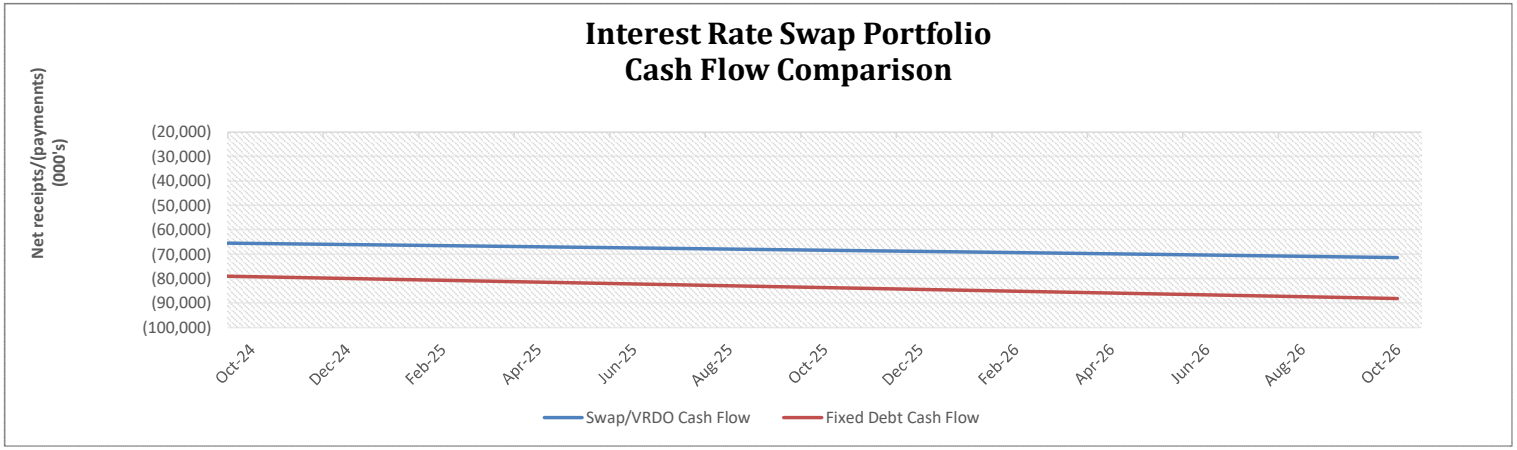
Irvine Ranch Water District
Interest Rate Swap Summary
October 2026

	Prior Mo.	Current Mo.	12-Mo Avg
SFR1M (Lbr Rpl) Avg %	3.96%	4.04%	3.90%

Current Fiscal Year Active Swaps								Cash Flow			(Since 3/07)	Mark to Market	
Effective Date	Maturity Date	Years to Maturity	Counter Party	Notional Amt	Type	Base Index	Fixed Rate	Prior Month	Current Month	Fiscal YTD	Cumulative Net Accrual	Current Mark to Market	Notional Difference
Fixed Payer Swaps - By Effective Date													
3/10/2007	3/10/2029	2.4	ML	30,000,000	FXP	LIBOR	5.687%	(41,330)	(45,525)	(178,033)	(22,880,675)	29,223,565	(776,435)
3/10/2007	3/10/2029	2.4	CG	30,000,000	FXP	LIBOR	5.687%	(41,330)	(45,525)	(178,033)	(22,880,468)	29,224,440	(775,560)
Totals/Weighted Avgs		2.4		$ 60,000,000			5.687%	$ (82,660)	$ (91,050)	$ (356,066)	$ (45,761,144)	$ 58,448,005	$ (1,551,995)
Total Current Year Active Swaps				$ 60,000,000				$ (82,660)	$ (91,050)	$ (356,066)	$ (45,761,144)	$ 58,448,005	$ (1,551,995)

Current Fiscal Year Terminated Swaps								Cash Flow				Mark to Market	
Effective Date	Maturity Date		Counter Party	Notional Amt	Type	Base Index	Fixed Rate	Prior Month	Current Month	Fiscal YTD	Cumulative Net Accrual	Current Mark to Market	Notional Difference
Total Current Year Terminated Swaps				$ -				$ -	$ -	$ -	$ -	$ -	$ -

Current Fiscal Year - Total Swaps								Cash Flow				Mark to Market	
								Prior Month	Current Month	Fiscal YTD	Cumulative Net Accrual	Current Mark to Market	Notional Difference
Total Current Year Active & Terminated Swaps				$ 60,000,000				$ (82,660)	$ (91,050)	$ (356,066)	$ (45,761,144)	$ 58,448,005	$ (1,551,995)



Cash Flow Comparison
Synthetic Fixed vs. Fixed Rate Debt

	Cash Flow to Date
Synthetic Fixed =	$71,408,359
Fixed Rate =	$88,163,607

Assumptions:
- Fixed rate debt issued at 4.93% in Mar-07 (estimated TE rate - Bloomberg)
- 'Synthetic' includes swap cash flow + interest + fees to date

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Exhibit "D"

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457280	1-Oct-26	US BANK NAT'L ASSOCIATION NORTH DAKOTA	92,891.99
457281	1-Oct-26	FEDEX	554.75
457282	1-Oct-26	GMU GEOTECHNICAL INC	2,712.00
457283	1-Oct-26	IRVINE UNIFIED SCHOOL DISTRICT	6,400.31
457284	1-Oct-26	CANON FINANCIAL SERVICES, INC.	1,389.28
457285	1-Oct-26	CORELOGIC INC	1,504.00
457286	1-Oct-26	COX COMMUNICATIONS, INC.	77.40
457287	1-Oct-26	APCO GRAPHICS INC	293.38
457288	1-Oct-26	ORRICK, HERRINGTON & SUTCLIFFE LLP	300,000.00
457289	1-Oct-26	PLUMBERS DEPOT INC	3,077.03
457290	1-Oct-26	SCHINDLER ELEVATOR CORPORATION	390.92
457291	1-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	731,688.43
457292	1-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	204.93
457293	1-Oct-26	THIRKETTLE CORPORATION	82,117.22
457294	1-Oct-26	UNITED PARCEL SERVICE INC	129.19
457295	1-Oct-26	FRONTIER CALIFORNIA INC.	755.98
457296	1-Oct-26	VERIZON WIRELESS SERVICES LLC	13,792.63
457297	1-Oct-26	VWR FUNDING, INC.	292.74
457298	1-Oct-26	WAXIE'S ENTERPRISES, LLC, A BRADYPLUS COMPANY	1,301.59
457299	1-Oct-26	AIRGAS, INC.	7,064.95
457300	1-Oct-26	INDUSTRIAL METAL SUPPLY CO	1,427.39
457301	1-Oct-26	MC MASTER-CARR SUPPLY COMPANY	1,431.40
457302	1-Oct-26	DAIOHS USA INCORPORATED	5,586.53
457303	1-Oct-26	SOUTHERN CALIFORNIA GAS COMPANY	9,152.29
457304	1-Oct-26	AT&T CORP	237.78
457305	1-Oct-26	AT&T CORP	93.87
457306	1-Oct-26	AT&T CORP	721.55
457307	1-Oct-26	PRUDENTIAL OVERALL SUPPLY	1,159.33
457308	1-Oct-26	UNITED SITE SERVICES OF CALIFORNIA INC	419.81
457309	1-Oct-26	HACH COMPANY	9,043.82
457310	1-Oct-26	GEI CONSULTANTS INC	8,213.49
457311	1-Oct-26	MISCOWATER	17,447.55
457312	1-Oct-26	DELL MARKETING LP	717.62
457313	1-Oct-26	OCTA	1,346.00
457314	1-Oct-26	ORANGE COUNTY TREASURER	294.17
457315	1-Oct-26	MISSION COMMUNICATIONS, LLC	416.00
457316	1-Oct-26	VULCAN MATERIALS COMPANY	3,093.19
457317	1-Oct-26	STANDARD & POOR'S FINANCIAL SERVICES LLC	108,520.00
457318	1-Oct-26	SID TOOL CO., INC.	304.11
457319	1-Oct-26	TIC-IPG-COMMON	745.09
457320	1-Oct-26	SAN MARCO APARTMENTS	25.95
457321	1-Oct-26	TIC-OFFICE PROPERTIES	1,778.56
457322	1-Oct-26	FORTIS RESOURCE PARTNERS INC	6,930.00
457323	1-Oct-26	MITY-LITE INC	2,626.73
457324	1-Oct-26	ESSEX PORTFOLIO, LP	27.52
457325	1-Oct-26	SANTA MARGARITA FORD	789.67
457326	1-Oct-26	COASTLINE EQUIPMENT COMPANY	136.41

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457327	1-Oct-26	WESTERN NATIONAL CONTRACTORS	1,739.32
457328	1-Oct-26	SAFETY-KLEEN SYSTEMS, INC	625.00
457329	1-Oct-26	BLAIRS TOWING INC	865.00
457330	1-Oct-26	RS HUGHES COMPANY, INC.	993.02
457331	1-Oct-26	ZIMA CORPORATION	8,562.22
457332	1-Oct-26	DEMARIA ELECTRIC MOTOR SERVICES, INC	10,376.90
457333	1-Oct-26	WANG, JING	33.88
457334	1-Oct-26	DG INVESTMENT INTERMEDIATE HOLDINGS 2, INC.	663.00
457335	1-Oct-26	HI-LINE INC	395.02
457336	1-Oct-26	EUROFINS ENVIRONMENT TESTING SOUTHWEST	4,315.50
457337	1-Oct-26	THE PAPE' GROUP INC.	94.11
457338	1-Oct-26	THOMPSON & PHIPPS INC	4,922.72
457339	1-Oct-26	SPIRAC (USA) INC	26,295.86
457340	1-Oct-26	LOZANO SMITH, LLP	25,094.39
457341	1-Oct-26	UNITED RENTALS (NORTH AMERICA), INC.	1,974.01
457342	1-Oct-26	MICHAEL K. NUNLEY & ASSOCIATES, LLP	40,951.00
457343	1-Oct-26	THE BOYD GROUP US INC	349.93
457344	1-Oct-26	11:11 SYSTEMS INC.	4,335.00
457345	1-Oct-26	SAND CANYON MEDICAL GROUP	570.00
457346	1-Oct-26	MITHRIL ENTERPRISES, DBA FC SAFETY	80.37
457347	1-Oct-26	SOUTHERN CALIFORNIA GRADING INC	1,678.74
457348	1-Oct-26	REVIVE: A CORPORATE WELLNESS MOVEMENT	10,730.00
457349	1-Oct-26	BARRETT, RICHARD	4,580.49
457350	1-Oct-26	CONTINENTAL AMERICAN INSURANCE COMPANY	1,612.46
457351	1-Oct-26	CUESTA CONSTRUCTION	3,122.45
457352	1-Oct-26	ELIJAH STANDING WARRIOR	750.00
457353	1-Oct-26	MCCARTHY BUILDING COMPANIES INC	983.61
457354	1-Oct-26	RRB WATER CONSULTING LLC	2,100.00
457355	1-Oct-26	THATCHER COMPANY, INC	4,977.30
457356	1-Oct-26	CENTROID INTERMEDIATE, LLC	9,765.00
457357	1-Oct-26	PROGROUP	465.16
457358	1-Oct-26	BLUETRITON BRANDS INC	960.56
457359	1-Oct-26	NEXUS HOLDING, LLC	7,058.61
457360	1-Oct-26	RAYBURN, PAULA	64.07
457361	1-Oct-26	TANG, LIZHONG	27.59
457362	1-Oct-26	SETHI, ROHIT	61.57
457363	1-Oct-26	HUANG, YUN	988.10
457364	1-Oct-26	PSQ PRODUCTIONS	6,055.64
457365	1-Oct-26	MANDAVIA, KHUSHI	20.52
457366	1-Oct-26	ARAKELIAN JR, RON	135.01
457367	1-Oct-26	RS REAL ESTATE PLUS	28.46
457368	1-Oct-26	HALL, RANDY	51.57
457369	1-Oct-26	PILATOS, MICHAEL	176.77
457370	1-Oct-26	SALEM, RAAFAT	30.25
457371	1-Oct-26	LAM, WANG	20.76
457372	1-Oct-26	TANG, NATHAN	45.97
457373	1-Oct-26	ALLEN, JULIA	22.31

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457374	1-Oct-26	HART, RICHARD G	20.00
457375	1-Oct-26	26210-26220 ENTERPRISE CT LLC	9,516.41
457376	1-Oct-26	VHANG, QUINNY	2,861.33
457377	1-Oct-26	YANG, PING CHU	1,950.00
457378	1-Oct-26	MATCON GENERAL ENGINEERING INC	3,097.69
457379	1-Oct-26	AGHIGHI, NAZANIN	62.87
457380	1-Oct-26	ALEXANDER, BARBARA	51.58
457381	1-Oct-26	ALQUBAISI, SAEED	30.61
457382	1-Oct-26	WARD, ANA	72.91
457383	1-Oct-26	YIM, NYEON JAE	54.70
457384	1-Oct-26	GILMAN BUILDERS INC	2,957.16
457385	1-Oct-26	AIM PROPERTIES LLC	56.04
457386	1-Oct-26	ANDERSON, KELSEY	51.86
457387	1-Oct-26	OLDFIELD INVESTMENT COMPANY LLC	508.40
457388	1-Oct-26	2453 ORANGE AVENUE LLC	232.42
457389	1-Oct-26	ALLVIEW REAL ESTATE	27.98
457390	1-Oct-26	ALLVIEW REAL ESTATE	266.00
457391	1-Oct-26	DHALIWAL, SURINDER	36.60
457392	1-Oct-26	YAO, XINYU	22.31
457393	1-Oct-26	WU, ANDREW	59.09
457394	1-Oct-26	1 INVESTMENTS ALTURA	19.30
457395	1-Oct-26	ALABED, ZEID	74.33
457396	1-Oct-26	ALLMAND, STEVE	46.03
457397	1-Oct-26	AMBER ORNAMENTAL IRON	34.44
457398	1-Oct-26	ANDERSON, DIANE	24.97
457399	1-Oct-26	TROWBRIDGE, EUGENE	54.15
457400	1-Oct-26	ACEVEDO, MICHAEL	41.40
457401	1-Oct-26	ANDREWS, DOUGLAS	22.10
457402	1-Oct-26	BURGE, KIMBERLY	26.56
457403	1-Oct-26	IRVINE UNIFIED SCHOOL DISTRICT	565.69
457404	1-Oct-26	COUNTY OF ORANGE	11,082.00
457405	1-Oct-26	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	31,700.00
457406	1-Oct-26	JOHN MICHAEL COVAS	202.90
457407	1-Oct-26	KELLY FIRE PROTECTION INC	300.00
457408	1-Oct-26	SPEAR, LINDA	22,500.00
457409	8-Oct-26	FEDEX	1,355.58
457410	8-Oct-26	FISHER SCIENTIFIC COMPANY, LLC	5,807.98
457411	8-Oct-26	CORE & MAIN LP	15,762.80
457412	8-Oct-26	COLONIAL LIFE & ACCIDENT INSURANCE CO.	370.32
457413	8-Oct-26	COUNTY OF ORANGE	137.00
457414	8-Oct-26	COX COMMUNICATIONS, INC.	410.81
457415	8-Oct-26	CPI-INTERNATIONAL, INC	98.05
457416	8-Oct-26	ENVIRONMENTAL EXPRESS, INC.	6,655.87
457417	8-Oct-26	ENVIRONMENTAL RESOURCE ASSOCIATES, INC.	538.19
457418	8-Oct-26	ADS CORP.	2,880.00
457419	8-Oct-26	AGILENT TECHNOLOGIES, INC.	45,909.03
457420	8-Oct-26	NINYO & MOORE	921.00

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457421	8-Oct-26	PLUMBERS DEPOT INC	568.26
457422	8-Oct-26	POLLARDWATER.COM	140.67
457423	8-Oct-26	RESTEK CORPORATION	242.65
457424	8-Oct-26	SERRANO WATER DISTRICT	54,783.68
457425	8-Oct-26	SIGMA-ALDRICH, INC.	288.09
457426	8-Oct-26	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	176.41
457427	8-Oct-26	SOUTH COAST WATER CO.	125.00
457428	8-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	293,193.50
457429	8-Oct-26	SOUTHERN COUNTIES LUBRICANTS LLC	2,609.66
457430	8-Oct-26	UNITED PARCEL SERVICE INC	123.52
457431	8-Oct-26	V&A CONSULTING ENGINEERS	19,111.29
457432	8-Oct-26	VERIZON WIRELESS SERVICES LLC	5,484.21
457433	8-Oct-26	VWR FUNDING, INC.	5,036.90
457434	8-Oct-26	WALTERS WHOLESALE ELECTRIC CO	7,205.60
457435	8-Oct-26	USA WASTE OF CALIFORNIA, INC.	961.00
457436	8-Oct-26	WAXIE'S ENTERPRISES, LLC, A BRADYPLUS COMPANY	3,035.80
457437	8-Oct-26	YSI INCORPORATED	1,089.36
457438	8-Oct-26	AIRGAS, INC.	78.52
457439	8-Oct-26	FERGUSON US HOLDINGS, INC.	34,269.23
457440	8-Oct-26	AT&T CORP	312.90
457441	8-Oct-26	PRUDENTIAL OVERALL SUPPLY	24,712.31
457442	8-Oct-26	UNITED SITE SERVICES OF CALIFORNIA INC	1,344.10
457443	8-Oct-26	HACH COMPANY	23,401.98
457444	8-Oct-26	MOTION INDUSTRIES INC	4,949.42
457445	8-Oct-26	DELL MARKETING LP	88,337.36
457446	8-Oct-26	IRVINE COMMUNITY DEVELOPMENT COMPANY LLC	971,650.68
457447	8-Oct-26	TK ELEVATOR CORPORATION	3,000.61
457448	8-Oct-26	CHEM-TECH INTERNATIONAL INC	59,173.17
457449	8-Oct-26	MC FADDEN-DALE INDUSTRIAL HARDWARE, LLC	2,341.71
457450	8-Oct-26	PACIFIC HYDROTECH CORPORATION	9,533.12
457451	8-Oct-26	TAIT ENVIRONMENTAL SERVICES, INC.	675.00
457452	8-Oct-26	ARAKELIAN ENTERPRISES, INC.	24,345.75
457453	8-Oct-26	DIRECTV INC	277.48
457454	8-Oct-26	GOLDMAN, SACHS & CO. LLC	17,185.09
457455	8-Oct-26	HAMILTON, KURT	2,412.17
457456	8-Oct-26	MILES CHEMICAL COMPANY, INC.	13,100.57
457457	8-Oct-26	DEALERS SERVICE COMPANY, INC	4,535.66
457458	8-Oct-26	SGS NORTH AMERICA INC.	610.50
457459	8-Oct-26	D & H WATER SYSTEMS INC.	17,734.73
457460	8-Oct-26	SID TOOL CO., INC.	133.11
457461	8-Oct-26	SITEONE LANDSCAPE SUPPLY, HOLDING LLC	414.95
457462	8-Oct-26	LA HABRA FENCE COMPANY LLC	12,189.00
457463	8-Oct-26	GAS GENERATION SOLUTIONS. / STEMCO	1,469.82
457464	8-Oct-26	SANTA MARGARITA FORD	908.07
457465	8-Oct-26	R C FOSTER CORPORATION	111,318.85
457466	8-Oct-26	SAFETY-KLEEN SYSTEMS, INC	475.00
457467	8-Oct-26	THERMO ELECTRON NORTH AMERICA LLC	67,632.00

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457468	8-Oct-26	R.F. MACDONALD CO., LLC	9,808.22
457469	8-Oct-26	RESILIENT COMMUNICATIONS INC.	2,442.99
457470	8-Oct-26	COSTCO WHOLESALE CORPORATION	1,711.63
457471	8-Oct-26	INTERNATIONAL E-Z UP, INC.	2,012.40
457472	8-Oct-26	DXP ENTERPRISES, INC.	26,787.07
457473	8-Oct-26	ABBA TERMITE & PEST CONTROL, INC.	820.00
457474	8-Oct-26	INFOSEND, INC.	65,647.97
457475	8-Oct-26	DANESHVAR, RAHI REZA	335.16
457476	8-Oct-26	MESA LABORATORIES, INC.	1,008.86
457477	8-Oct-26	BOFA SECURITIES, INC.	9,996.83
457478	8-Oct-26	DG INVESTMENT INTERMEDIATE HOLDINGS 2, INC.	6,629.60
457479	8-Oct-26	BIOTAGE LLC	323.25
457480	8-Oct-26	BRAX COMPANY, INC	2,800.00
457481	8-Oct-26	ORANGE COUNTY MATTRESS	476.62
457482	8-Oct-26	FASTBLUE COMMUNICATIONS INC.	3,600.95
457483	8-Oct-26	WASTE MANAGEMENT COLLECTIONS AND RECYCLING, INC.	10,637.41
457484	8-Oct-26	GEA MECHANICAL EQUIPMENT US, INC.	39,563.84
457485	8-Oct-26	THOMPSON & PHIPPS INC	1,278.45
457486	8-Oct-26	AVIAT U.S., INC	9,492.19
457487	8-Oct-26	8X8 INC	12,288.74
457488	8-Oct-26	VEOLIA NORTH AMERICA, INC.	1,968.14
457489	8-Oct-26	LOZANO SMITH, LLP	1,016.00
457490	8-Oct-26	UNITED RENTALS (NORTH AMERICA), INC.	1,918.85
457491	8-Oct-26	SPERBER COMPANIES	84,590.09
457492	8-Oct-26	NATIONAL OILWELL VARCO, L.P.	3,199.72
457493	8-Oct-26	REECE SUPPLY LLC	3,379.51
457494	8-Oct-26	DMS FACILITY SERVICES, LLC	41,995.04
457495	8-Oct-26	11:11 SYSTEMS INC.	4,335.00
457496	8-Oct-26	J & R CONCRETE PRODUCTS, INC.	59,289.44
457497	8-Oct-26	HUBBELL LENOIR CITY	14,914.46
457498	8-Oct-26	MIKE PRLICH AND SONS, INC.	188,331.29
457499	8-Oct-26	CANON U.S.A., INC.	8.61
457500	8-Oct-26	CANON U.S.A., INC.	7,133.65
457501	8-Oct-26	WATER SYSTEMS CONSULTING, INC.	38,479.80
457502	8-Oct-26	VOICE, LLC	2,179.65
457503	8-Oct-26	IRON MOUNTAIN INCORPORATED	78.30
457504	8-Oct-26	JO-KELL, INC.	5,513.83
457505	8-Oct-26	EUNA SOLUTIONS, INC	18,862.16
457506	8-Oct-26	GCP WW HOLDCO LLC	286.08
457507	8-Oct-26	NEXUS HOLDING, LLC	15,748.50
457508	8-Oct-26	NUVIS	980.00
457509	8-Oct-26	NEWGEN STRATEGIES AND SOLUTIONS LLC	17,265.00
457510	8-Oct-26	JAMES W FOWLER CO	336,149.45
457511	8-Oct-26	JAMES W FOWLER CO	17,692.08
457512	8-Oct-26	ARIAS, MARIA	41.01
457513	8-Oct-26	THE GROVES HOMEOWNERS ASSN	16,155.64
457514	8-Oct-26	ARORA, HARNEET	52.17

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457515	8-Oct-26	ATIEQUE, HALEEMA	40.06
457516	8-Oct-26	CYNTHIA FROELICH & CASEY ATWATER	99.20
457517	8-Oct-26	HURTGEN, PETER	705.79
457518	8-Oct-26	CONESA, ALEXANDRE	33.88
457519	8-Oct-26	VARGAS, OLIVIA	100.00
457520	8-Oct-26	SHIN, DIANE	22.31
457521	8-Oct-26	LEPORT EDU INSTITUTE INC	175.38
457522	8-Oct-26	WOODFORD, JIM	977.14
457523	8-Oct-26	STATE WATER RESOURCES CONTROL BOARD	365,465.00
457524	8-Oct-26	ORANGE COUNTY LOCAL AGENCY FORMATION COMMISSION	5,600.00
457525	8-Oct-26	AMERICAN FAMILY LIFE ASSURANCE COMPANY OF COLUMBUS	3,527.42
457526	12-Oct-26	ORANGE COUNTY SHERIFF'S OFFICE	999.56
457527	12-Oct-26	INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS LOCAL 47	11,868.86
457528	12-Oct-26	IRVINE COMMUNITY DEVELOPMENT COMPANY LLC	971,650.68
457529	15-Oct-26	BANK OF NEW YORK MELLON TRUST COMPANY NA	2,400.00
457530	15-Oct-26	FEDEX	519.65
457531	15-Oct-26	FISHER SCIENTIFIC COMPANY, LLC	5,264.97
457532	15-Oct-26	BRUCE HADLEY NEWELL	1,250.00
457533	15-Oct-26	CANON FINANCIAL SERVICES, INC.	8,208.31
457534	15-Oct-26	CITY OF TUSTIN	557.13
457535	15-Oct-26	EMERSON LLLP	3,084.37
457536	15-Oct-26	NMG GEOTECHNICAL INC	8,709.40
457537	15-Oct-26	PLUMBERS DEPOT INC	1,284.49
457538	15-Oct-26	SHAMROCK SUPPLY COMPANY, INC.	4,845.27
457539	15-Oct-26	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	583.73
457540	15-Oct-26	SOUTH COAST WATER CO.	55.00
457541	15-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	492,470.98
457542	15-Oct-26	STERIS CORPORATION	10,138.47
457543	15-Oct-26	THIRKETTLE CORPORATION	14,395.77
457544	15-Oct-26	TRIPAC MARKETING INC	1,794.05
457545	15-Oct-26	UNITED PARCEL SERVICE INC	75.60
457546	15-Oct-26	VERIZON WIRELESS SERVICES LLC	1,241.05
457547	15-Oct-26	WAXIE'S ENTERPRISES, LLC, A BRADYPLUS COMPANY	37.88
457548	15-Oct-26	AIRGAS, INC.	1,094.05
457549	15-Oct-26	MCBAIN SYSTEMS LP	395.00
457550	15-Oct-26	SOUTHERN CALIFORNIA GAS COMPANY	1,439.50
457551	15-Oct-26	AT&T CORP	219.77
457552	15-Oct-26	ONESOURCE DISTRIBUTORS, LLC	793.34
457553	15-Oct-26	HACH COMPANY	17,034.33
457554	15-Oct-26	SOUTH COAST WATER DISTRICT	1,066.67
457555	15-Oct-26	CHEM-TECH INTERNATIONAL INC	9,336.08
457556	15-Oct-26	MC FADDEN-DALE INDUSTRIAL HARDWARE, LLC	84.89
457557	15-Oct-26	ULINE, INC	354.15
457558	15-Oct-26	US BANK NAT'L ASSOC N.DAKOTA	22,000.00
457559	15-Oct-26	US BANK NAT'L ASSOC N.DAKOTA	7,057.53
457560	15-Oct-26	FITCH RATINGS, INC.	180,000.00
457561	15-Oct-26	VULCAN MATERIALS COMPANY	3,144.28

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457562	15-Oct-26	REFRIGERATION SUPPLIES DISTRIBUTOR	277.44
457563	15-Oct-26	ENDRESS AND HAUSER INC	230.11
457564	15-Oct-26	SID TOOL CO., INC.	338.86
457565	15-Oct-26	KPRS CONSTRUCTION SERVICES, INC.	345,611.89
457566	15-Oct-26	CALIFORNIA COUNCIL FOR ENVIRONMENTAL AND ECONOMIC BALANCE	59,325.00
457567	15-Oct-26	CHARLES P CROWLEY COMPANY INC	587.55
457568	15-Oct-26	SANTA MARGARITA FORD	46.61
457569	15-Oct-26	EVANTEC CORPORATION	200.00
457570	15-Oct-26	EUROFINS DRINKING WATER AND WASTEWATER WEST, LLC	12,529.73
457571	15-Oct-26	FUSCOE ENGINEERING, INC.	12,106.00
457572	15-Oct-26	MEDIAVALET INC.	16,786.00
457573	15-Oct-26	RS HUGHES COMPANY, INC.	370.32
457574	15-Oct-26	RESILIENT COMMUNICATIONS INC.	14,167.89
457575	15-Oct-26	SITMATIC	830.43
457576	15-Oct-26	VEOLIA WATER TECHNOLOGIES TREATMENT SOLUTIONS USA INC.	6,605.68
457577	15-Oct-26	PREMIER PAVING INC.	3,259.34
457578	15-Oct-26	DXP ENTERPRISES, INC.	53,619.05
457579	15-Oct-26	LINKEDIN CORPORATION	22,220.00
457580	15-Oct-26	IMAGEMASTER LLC	5,357.84
457581	15-Oct-26	ACCUSOURCE, INC.	975.54
457582	15-Oct-26	CALIFORNIA NEWSPAPERS PARTNERSHIP	1,857.56
457583	15-Oct-26	GUIDA	2,462.80
457584	15-Oct-26	EXCEL PAVING CO.	2,636.74
457585	15-Oct-26	INFOSEND, INC.	68,415.33
457586	15-Oct-26	CLIFFORD MORIYAMA	5,000.00
457587	15-Oct-26	BOFA SECURITIES, INC.	22,054.79
457588	15-Oct-26	KAN VENTURES, INC	7,750.00
457589	15-Oct-26	TRUCK CRANE RENTAL	4,565.50
457590	15-Oct-26	EUROFINS ENVIRONMENT TESTING SOUTHWEST	23,512.25
457591	15-Oct-26	WASTE MANAGEMENT COLLECTIONS AND RECYCLING, INC.	975.86
457592	15-Oct-26	GEA MECHANICAL EQUIPMENT US, INC.	14,782.48
457593	15-Oct-26	THOMPSON & PHIPPS INC	2,277.48
457594	15-Oct-26	O'REILLY AUTO ENTERPRISES, LLC	308.02
457595	15-Oct-26	GRACE BJORNSTAD	183.18
457596	15-Oct-26	SCA OF CA, LLC	3,042.16
457597	15-Oct-26	ROBINS BORGHEI LLP	24.05
457598	15-Oct-26	GOLDEN STAR TECHNOLOGY, INC.	265.00
457599	15-Oct-26	REECE SUPPLY LLC	16,772.49
457600	15-Oct-26	J & R CONCRETE PRODUCTS, INC.	19,879.88
457601	15-Oct-26	CALPINE CORPORATION	551,725.94
457602	15-Oct-26	PRIME SYSTEMS INDUSTRIAL AUTOMATION, INC.	12,312.00
457603	15-Oct-26	NATIONAL SAFETY COMPLIANCE, INC	1,167.59
457604	15-Oct-26	RETURN TO WORK PARTNERS INC.	9,450.00
457605	15-Oct-26	AQUATIC BIOASSAY & CONSULTING LABORATORIES, INC.	2,010.00
457606	15-Oct-26	PE INSTRUMENTS	500.00
457607	15-Oct-26	CANON U.S.A., INC.	24.67
457608	15-Oct-26	DO SUPPLY COMPANY INC	4,674.20

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457609	15-Oct-26	PROGROUP	61.48
457610	15-Oct-26	EUNA SOLUTIONS, INC	4,250.00
457611	15-Oct-26	VTX INTERMEDIATE HOLDINGS II, INC.	17,923.85
457612	15-Oct-26	GCP WW HOLDCO LLC	1,190.80
457613	15-Oct-26	WBCP, INC.	14,809.99
457614	15-Oct-26	LEPE JONES CONSULTING LLC	6,000.00
457615	15-Oct-26	AUSTIN BUILDING AND DESIGN INC.	34,706.00
457616	15-Oct-26	MATTUCCI PLUMBING, INC	1,580.00
457617	15-Oct-26	W.A. RASIC CONSTRUCTION CO INC	2,499.92
457618	15-Oct-26	BARON POOL PLASTERING OF SOUTHERN CALI	2,648.64
457619	15-Oct-26	MIKE PRLICH & SONS INC	4,747.54
457620	15-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	1,132.42
457621	15-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	301,548.69
457622	15-Oct-26	STATE WATER RESOURCES CONTROL BOARD	17,485.00
457623	15-Oct-26	ORION CONSTRUCTION CORPORATION	1,221,210.23
457624	15-Oct-26	70 HARMONY, LLC	6,246.02
457625	22-Oct-26	FEDEX	322.85
457626	22-Oct-26	FISHER SCIENTIFIC COMPANY, LLC	2,885.38
457627	22-Oct-26	CORE & MAIN LP	34,993.62
457628	22-Oct-26	IRVINE UNIFIED SCHOOL DISTRICT	6,215.79
457629	22-Oct-26	CALIFORNIA STATE UNIVERSITY, FULLERTON	9,800.00
457630	22-Oct-26	CANON FINANCIAL SERVICES, INC.	1,711.70
457631	22-Oct-26	CITY OF SANTA ANA	409.06
457632	22-Oct-26	JUST ENERGY SOLUTIONS INC.	63.45
457633	22-Oct-26	CR & R INCORPORATED	258.23
457634	22-Oct-26	EAGLE GRAPHICS INC.	4,751.41
457635	22-Oct-26	ENVIRONMENTAL SCIENCE ASSOCIATES	9,360.51
457636	22-Oct-26	AGILENT TECHNOLOGIES, INC.	194.41
457637	22-Oct-26	PLUMBERS DEPOT INC	7,978.03
457638	22-Oct-26	TOM PONTON INDUSTRIES, INC.	2,537.83
457639	22-Oct-26	QUINN COMPANY	24,338.08
457640	22-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	63,612.82
457641	22-Oct-26	THIRKETTLE CORPORATION	9,123.98
457642	22-Oct-26	FRONTIER CALIFORNIA INC.	925.25
457643	22-Oct-26	VWR FUNDING, INC.	3,379.34
457644	22-Oct-26	WAXIE'S ENTERPRISES, LLC, A BRADYPLUS COMPANY	5,588.72
457645	22-Oct-26	AIRGAS, INC.	3,393.12
457646	22-Oct-26	MC MASTER-CARR SUPPLY COMPANY	927.24
457647	22-Oct-26	FERGUSON US HOLDINGS, INC.	3,577.30
457648	22-Oct-26	DAIOHS USA INCORPORATED	4,796.29
457649	22-Oct-26	SOUTHERN CALIFORNIA GAS COMPANY	13,414.78
457650	22-Oct-26	AT&T CORP	303.54
457651	22-Oct-26	AT&T CORP	13,257.70
457652	22-Oct-26	AT&T CORP	168.27
457653	22-Oct-26	UNITED SITE SERVICES OF CALIFORNIA INC	1,763.91
457654	22-Oct-26	MOTION INDUSTRIES INC	506.44
457655	22-Oct-26	ORANGE COUNTY FIRE AUTHORITY	691.00

IRVINE RANCH WATER DISTRICT
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CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457656	22-Oct-26	FIERRO, SERGIO D	4,662.00
457657	22-Oct-26	CHEM-TECH INTERNATIONAL INC	14,432.54
457658	22-Oct-26	MC FADDEN-DALE INDUSTRIAL HARDWARE, LLC	131.97
457659	22-Oct-26	PINNACLE TOWERS LLC	985.91
457660	22-Oct-26	REFRIGERATION SUPPLIES DISTRIBUTOR	101.42
457661	22-Oct-26	DUDLEY RIDGE WATER DISTRICT	14,984.95
457662	22-Oct-26	RICHARD C. SLADE & ASSOCIATES LLC	19,252.50
457663	22-Oct-26	BADGER METER INC.	7,106.36
457664	22-Oct-26	SID TOOL CO., INC.	687.14
457665	22-Oct-26	PARKWAY LAWNMOWER SHOP	17.24
457666	22-Oct-26	SHELF MASTER INC	1,386.93
457667	22-Oct-26	FORTIS RESOURCE PARTNERS INC	10,617.75
457668	22-Oct-26	TUTTLE-CLICK FORD, INC.	46,377.89
457669	22-Oct-26	INNOVATIVE CONSTRUCTION SOLUTIONS	23,544.70
457670	22-Oct-26	THERMO ELECTRON NORTH AMERICA LLC	3,795.63
457671	22-Oct-26	BRINTON BLEAK, JUDITH	78.53
457672	22-Oct-26	PACIFIC EH&S SERVICES, INC.	2,955.34
457673	22-Oct-26	DAVIS FARR LLP	30,500.00
457674	22-Oct-26	CHAVEZ, PEDRO	44.48
457675	22-Oct-26	SMOGSTAR LLC	65.00
457676	22-Oct-26	DILYTICS INC	9,696.00
457677	22-Oct-26	CHAMPION PAVING INC	2,734.81
457678	22-Oct-26	CHEN, DAVID	50.10
457679	22-Oct-26	VEOLIA WATER TECHNOLOGIES TREATMENT SOLUTIONS USA INC.	4,857.29
457680	22-Oct-26	DXP ENTERPRISES, INC.	5,210.94
457681	22-Oct-26	SECURITAS SECURITY SERVICES USA, INC.	86,580.27
457682	22-Oct-26	RENTOKIL NORTH AMERICA, INC	5,760.00
457683	22-Oct-26	CHANG, CONNIE	17.30
457684	22-Oct-26	DEAVER SPRING INC	479.67
457685	22-Oct-26	CAO, RAYMOND	20.15
457686	22-Oct-26	JACK DOHENY COMPANIES, INC.	5,278.50
457687	22-Oct-26	ALLIANCE AG SERVICES, INC.	3,500.00
457688	22-Oct-26	WASTE MANAGEMENT COLLECTIONS AND RECYCLING, INC.	2,446.42
457689	22-Oct-26	THOMPSON & PHIPPS INC	16,333.82
457690	22-Oct-26	AVIAT U.S., INC	7,440.00
457691	22-Oct-26	LANCE FRANCIS PICOTTE	2,000.00
457692	22-Oct-26	VISTA PAINT CORPORATION	743.60
457693	22-Oct-26	PAYMENTUS CORPORATION	17,338.38
457694	22-Oct-26	UNITED RENTALS (NORTH AMERICA), INC.	3,035.01
457695	22-Oct-26	SUN CAL REAL ESTATE CORP	87.72
457696	22-Oct-26	SPERBER COMPANIES	5,469.70
457697	22-Oct-26	MICHAEL K. NUNLEY & ASSOCIATES, LLP	5,161.00
457698	22-Oct-26	GALLAGHER BENEFIT SERVICES, INC.	10,800.00
457699	22-Oct-26	ENEL X ADVISORY SERVICES NORTH AMERICA, INC.	3,300.00
457700	22-Oct-26	REECE SUPPLY LLC	11,291.94
457701	22-Oct-26	DMS FACILITY SERVICES, LLC	928.00
457702	22-Oct-26	SAND CANYON MEDICAL GROUP	1,190.00

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457703	22-Oct-26	CALPINE CORPORATION	76,147.88
457704	22-Oct-26	RETURN TO WORK PARTNERS INC.	4,250.00
457705	22-Oct-26	MIKE PRLICH AND SONS, INC.	32,096.59
457706	22-Oct-26	RINCON CONSULTANTS, INC.	9,884.10
457707	22-Oct-26	CENTROID INTERMEDIATE, LLC	9,765.00
457708	22-Oct-26	PROGROUP	2,181.14
457709	22-Oct-26	KURITA AMERICA INC.	24,982.29
457710	22-Oct-26	OLDCASTLE INFRASTRUCTURE, INC	123,750.00
457711	22-Oct-26	M3 NURSERIES INC.	937.42
457712	22-Oct-26	STEPHENS MECHANICAL OF THE SOUTHWEST, LLC	54,748.36
457713	22-Oct-26	NEXUS HOLDING, LLC	17,047.70
457714	22-Oct-26	DENKEN SOLUTIONS, INC	18,590.00
457715	22-Oct-26	COWI-GANNETT FLEMING JOINT VENTURE	207,883.92
457716	22-Oct-26	TASHIIRO CHOI & ASSOCIATES	7,000.00
457717	22-Oct-26	BAKER, JOHN E	43.00
457718	22-Oct-26	ELLIOT AUTO SUPPLY	8,519.65
457719	22-Oct-26	TCFIV VENTURI LLC	12,108.98
457720	22-Oct-26	DICKEY, RYAN	15.15
457721	22-Oct-26	ALIYEV, ELVIN	45.58
457722	22-Oct-26	PACIS, DEVINA	828.19
457723	22-Oct-26	SCOTT, RYAN	20.91
457724	22-Oct-26	LAI, YUHSIANG	13.32
457725	22-Oct-26	KIM, CHANGHYUN	59.90
457726	22-Oct-26	MALONE, MARIYA	151.65
457727	22-Oct-26	WUNDERLICH, VALERIE	206.47
457728	22-Oct-26	ALVANDI, ANITA	31.65
457729	22-Oct-26	WEI, CHANGLONG	64.62
457730	22-Oct-26	LIU, STACY	104.06
457731	22-Oct-26	YAO, TZU YUN	24.10
457732	22-Oct-26	CHEN, KATHLEEN	113.37
457733	22-Oct-26	CABRERAV MORA, LILIANA	570.23
457734	22-Oct-26	CANNON, ERIN	47.18
457735	22-Oct-26	CALIFORNIA RECEIVERSHIP GROUP	29.24
457736	22-Oct-26	CARLILE, ROBERT	36.83
457737	22-Oct-26	BALI, HARPREET	30.94
457738	22-Oct-26	BHUTA, MAHESH	22.76
457739	22-Oct-26	BRADY, JOHN A	54.83
457740	22-Oct-26	AVILA, SAL	104.82
457741	22-Oct-26	BRAND, VANESSA	28.56
457742	22-Oct-26	BRAUER, BARRETT	65.40
457743	22-Oct-26	CASE, SHARYN	90.44
457744	22-Oct-26	CHEN, LIYAN	1,083.11
457745	22-Oct-26	BUESCHER, TETYANA	37.68
457746	22-Oct-26	CAO, JUNHE	36.16
457747	22-Oct-26	CHEE, JUNGSOO	57.68
457748	22-Oct-26	BILLHEIMER, TRACY	59.34
457749	22-Oct-26	ESTATES GENERAL CONTRACTING INC	3,277.31

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

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457750	22-Oct-26	CARROLL, MARLYN	21.03
457751	22-Oct-26	CHEN, HUNGLIEH	43.08
457752	22-Oct-26	BALANCIO, MIA	16.98
457753	22-Oct-26	BELLOMY, DAVID S	61.46
457754	22-Oct-26	BHATE, MANEESHA	49.05
457755	22-Oct-26	CAI, JEFFERY	50.78
457756	22-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	745,399.72
457757	22-Oct-26	ORANGE COUNTY SHERIFF'S OFFICE	999.56
457758	22-Oct-26	INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS LOCAL 47	11,868.86
457759	22-Oct-26	STATE OF CALIFORNIA, DEPARTMENT OF WATER RESOURCES	36,397.00
457760	22-Oct-26	ALTEC, INC.	824,998.42
457761	22-Oct-26	HERITAGE FIELDS LLC	631,978.60
457762	22-Oct-26	RUSH TRUCK CENTERS OF CALIFORNIA, INC	709,172.14
457763	29-Oct-26	US BANK NAT'L ASSOCIATION NORTH DAKOTA	132,846.68
457764	29-Oct-26	FEDEX	1,991.08
457765	29-Oct-26	FISHER SCIENTIFIC COMPANY, LLC	18,270.94
457766	29-Oct-26	HARRINGTON INDUSTRIAL PLASTICS LLC	9,042.39
457767	29-Oct-26	CORE & MAIN LP	39,434.45
457768	29-Oct-26	BRUCE HADLEY NEWELL	1,250.00
457769	29-Oct-26	CANON FINANCIAL SERVICES, INC.	1,389.28
457770	29-Oct-26	CITY OF SANTA ANA	605.97
457771	29-Oct-26	CORELOGIC INC	752.00
457772	29-Oct-26	COX COMMUNICATIONS, INC.	3,279.70
457773	29-Oct-26	CR & R INCORPORATED	771.81
457774	29-Oct-26	EAST ORANGE COUNTY WATER DISTRICT	1,387.34
457775	29-Oct-26	ENVIRONMENTAL RESOURCE ASSOCIATES, INC.	368.14
457776	29-Oct-26	ENVIRONMENTAL SCIENCE ASSOCIATES	10,852.34
457777	29-Oct-26	AGILENT TECHNOLOGIES, INC.	4,877.90
457778	29-Oct-26	ANIXTER INC	971.86
457779	29-Oct-26	ASSOCIATION OF CALIFORNIA WATER AGENCIES	3,245.00
457780	29-Oct-26	MUTUAL PROPANE	318.13
457781	29-Oct-26	CITY OF NEWPORT BEACH	7,241.43
457782	29-Oct-26	PLUMBERS DEPOT INC	1,505.03
457783	29-Oct-26	SCHINDLER ELEVATOR CORPORATION	766.62
457784	29-Oct-26	SHAMROCK SUPPLY COMPANY, INC.	272.75
457785	29-Oct-26	SIGMA-ALDRICH, INC.	352.21
457786	29-Oct-26	SKC-WEST INC	4,984.13
457787	29-Oct-26	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	2,280.42
457788	29-Oct-26	SOUTH COAST BOBCAT	86.98
457789	29-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	217.24
457790	29-Oct-26	SOUTHWEST VALVE & EQUIPMENT, LLC	4,611.56
457791	29-Oct-26	THIRKETTLE CORPORATION	53,063.09
457792	29-Oct-26	TRIPAC MARKETING INC	215.50
457793	29-Oct-26	UNITED PARCEL SERVICE INC	450.30
457794	29-Oct-26	FRONTIER CALIFORNIA INC.	281.15
457795	29-Oct-26	VERIZON WIRELESS SERVICES LLC	14,687.43
457796	29-Oct-26	WAXIE'S ENTERPRISES, LLC, A BRADYPLUS COMPANY	1,465.70

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
457797	29-Oct-26	AIRGAS, INC.	1,134.91
457798	29-Oct-26	FERGUSON US HOLDINGS, INC.	359.13
457799	29-Oct-26	FERGUSON US HOLDINGS, INC.	4,625.28
457800	29-Oct-26	DAIOHS USA INCORPORATED	49.15
457801	29-Oct-26	AT&T CORP	3,729.76
457802	29-Oct-26	AT&T CORP	237.78
457803	29-Oct-26	ONESOURCE DISTRIBUTORS, LLC	2,962.69
457804	29-Oct-26	GEI CONSULTANTS INC	1,666.50
457805	29-Oct-26	DELL MARKETING LP	2,134.06
457806	29-Oct-26	IRVINE COMMUNITY DEVELOPMENT COMPANY LLC	129,352.39
457807	29-Oct-26	CHEM-TECH INTERNATIONAL INC	13,968.40
457808	29-Oct-26	OCTA	751.00
457809	29-Oct-26	US RIGGING SUPPLY CORP	2,170.76
457810	29-Oct-26	VULCAN MATERIALS COMPANY	3,109.66
457811	29-Oct-26	TAIT ENVIRONMENTAL SERVICES, INC.	1,663.95
457812	29-Oct-26	DIRECTV INC	352.48
457813	29-Oct-26	D & H WATER SYSTEMS INC.	19,448.08
457814	29-Oct-26	LSA ASSOCIATES INC	621.25
457815	29-Oct-26	OLEN COMMERCIAL REALTY CORP	9,540.29
457816	29-Oct-26	FORTIS RESOURCE PARTNERS INC	7,920.00
457817	29-Oct-26	LA HABRA FENCE COMPANY LLC	5,613.00
457818	29-Oct-26	SANTA MARGARITA FORD	472.02
457819	29-Oct-26	COASTLINE EQUIPMENT COMPANY	2,408.96
457820	29-Oct-26	R C FOSTER CORPORATION	29,737.65
457821	29-Oct-26	RS HUGHES COMPANY, INC.	1,313.94
457822	29-Oct-26	VHG LABS, INC	355.58
457823	29-Oct-26	PRONTO GYM SERVICES, INC.	360.00
457824	29-Oct-26	KAYUGA SOLUTION, INC.	25,000.00
457825	29-Oct-26	VEOLIA WATER TECHNOLOGIES TREATMENT SOLUTIONS USA INC.	71,801.94
457826	29-Oct-26	SYN-TECH SYSTEMS INC	900.00
457827	29-Oct-26	SAF-T-FLO WATER SERVICES, INC.	5,757.05
457828	29-Oct-26	TASSIN SCIENTIFIC SERVICES	1,437.00
457829	29-Oct-26	BLACK CHAMBER OF ORANGE COUNTY	2,500.00
457830	29-Oct-26	DG INVESTMENT INTERMEDIATE HOLDINGS 2, INC.	2,312.00
457831	29-Oct-26	HI-LINE INC	555.16
457832	29-Oct-26	L&S CONSTRUCTION INC	2,084.99
457833	29-Oct-26	WASTE MANAGEMENT COLLECTIONS AND RECYCLING, INC.	6,674.65
457834	29-Oct-26	ITR PM INC	380.31
457835	29-Oct-26	AMAYA SOLUTIONS INC.	35,169.76
457836	29-Oct-26	NICK BARBIERI TRUCKING, LLC	3,905.19
457837	29-Oct-26	STANTEC ARCHITECTURE INC	8,157.50
457838	29-Oct-26	CPARS CONSULTING, INC.	8,812.50
457839	29-Oct-26	LOZANO SMITH, LLP	31.50
457840	29-Oct-26	SPERBER COMPANIES	137,009.79
457841	29-Oct-26	LIGHTBOX PARENT, L.P.	5,636.46
457842	29-Oct-26	REECE SUPPLY LLC	189.26
457843	29-Oct-26	SA GEOTECHNICAL INC.	14,412.00

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

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457844	29-Oct-26	ELIJAH STANDING WARRIOR	750.00
457845	29-Oct-26	MCCARTHY BUILDING COMPANIES INC	1,403.37
457846	29-Oct-26	CENTROID INTERMEDIATE, LLC	19,267.50
457847	29-Oct-26	TT TECHNOLOGIES INC	1,177.96
457848	29-Oct-26	BLUETRITON BRANDS INC	574.34
457849	29-Oct-26	M3 NURSERIES INC.	4,763.63
457850	29-Oct-26	GCP WW HOLDCO LLC	9,245.41
457851	29-Oct-26	NEXUS HOLDING, LLC	1,685.00
457852	29-Oct-26	HERITAGE LANDSCAPE SUPPLY GROUP, INC.	207.58
457853	29-Oct-26	FERRARA, DANIEL	176.32
457854	29-Oct-26	FEI, QINGCHUAN	45.30
457855	29-Oct-26	VLS ENVIRONMENTAL SOLUTIONS, LLC	600.00
457856	29-Oct-26	WESTERN NATIONAL CONTRACTORS - TCM	1,752.58
457857	29-Oct-26	FARJAMI, PAYAM	208.28
457858	29-Oct-26	ELLIOT AUTO SUPPLY	232.23
457859	29-Oct-26	TCFIV VENTURI LLC	3,967.44
457860	29-Oct-26	FORCE FLOW	3,350.75
457861	29-Oct-26	KINGER INDUSTRY INC	4,164.33
457862	29-Oct-26	LIU, STACY	7.99
457863	29-Oct-26	W.L BUTLER CONSTRUCTION INC	2,568.35
457864	29-Oct-26	SANTOS, ANGELA TANYA	1,049.13
457865	29-Oct-26	LIN, JULIA	37.41
457866	29-Oct-26	GILLHOUSE, JOANNA	252.57
457867	29-Oct-26	DUQUE, JUAN	15.12
457868	29-Oct-26	YOUNGLOVE, BRIAN	38.35
457869	29-Oct-26	LUCIO, MICHAEL	40.99
457870	29-Oct-26	CHUNG, HYEJOO	604.66
457871	29-Oct-26	KHADER, WISAM	20.55
457872	29-Oct-26	BINNQUIST, JESSICA	46.72
457873	29-Oct-26	W. L. BUTLER CONSTRUCTION INC	2,600.00
457874	29-Oct-26	MIKE CHALAN AND HALA CHALAN	43.64
457875	29-Oct-26	CASTANEDA, PRISCILLA	305.47
457876	29-Oct-26	ROSTOM, SARAH	51.87
457877	29-Oct-26	LI, YIXIAO	187.24
457878	29-Oct-26	JEONG, SUYEON	23.60
457879	29-Oct-26	ELEMENTS 3A LLC	2,600.00
457880	29-Oct-26	TOMER, GLORIA	1,518.86
457881	29-Oct-26	IACONO, GINA	71.89
457882	29-Oct-26	KROYER, CONNIE	146.52
457883	29-Oct-26	WHITE, JACOB	373.24
457884	29-Oct-26	HARTFORD LIFE AND ACCIDENT INSURANCE COMPANY	28.11
457885	29-Oct-26	ANTHEM BLUE CROSS	425.95
457886	29-Oct-26	SOUTHERN CALIFORNIA EDISON COMPANY	632,968.19
457887	29-Oct-26	AMERICAN FAMILY LIFE ASSURANCE COMPANY OF COLUMBUS	5,038.77
457888	29-Oct-26	CALPINE CORPORATION	472,971.25
457889	29-Oct-26	BADGER METER INC.	10,613.13
SUB-TOTAL IRWD JPM CHASE CHECK AND JPM CHASE CHECK NO PRINT DISBURSEMENTS			**16,198,968.17**

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012173	1-Oct-26	Moeder, Jacob J	131.12
1012174	1-Oct-26	Cariker, Cody J	18.17
1012175	1-Oct-26	Karpan, Casey L	60.00
1012176	1-Oct-26	Coria, Alejandro (Alex)	382.00
1012177	1-Oct-26	Davis, Jennifer R	174.54
1012178	1-Oct-26	Hansen, Casey	34.60
1012179	1-Oct-26	Ludwig, Jason	588.96
1012180	1-Oct-26	Chauv, Denise	63.06
1012181	1-Oct-26	Pascual, Allan	32.83
1012182	1-Oct-26	Mwe, Nang	1.40
1012183	1-Oct-26	Cervantes, Angel	30.40
1012184	1-Oct-26	Sagert, Justin	445.95
1012185	1-Oct-26	Aguilar, Alan C	2,042.38
1012186	1-Oct-26	Bosley, Kelleen M	33.44
1012187	1-Oct-26	Shapiro, Matthew Harris	66.12
1012188	1-Oct-26	Contreras, Joaquin	3.04
1012189	1-Oct-26	Lopez, Miguel	25.54
1012190	1-Oct-26	Contreras, Max Albert	36.48
1012191	1-Oct-26	Lu, Michael	1.36
1012192	1-Oct-26	Anderson, Winston James	0.76
1012193	1-Oct-26	Villella, Aaren	48.03
1012194	1-Oct-26	Zhang, Yang	60.80
1012195	1-Oct-26	Almazan, Robert (Chris)	61.56
1012196	1-Oct-26	Scagliotti, Lucas Matthew	8.97
1012197	1-Oct-26	Rigby, Lori Ann	26.13
1012198	1-Oct-26	Haug, Jack Philip Ryan	19.00
1012199	1-Oct-26	Lorn, Channy	89.98
1012200	1-Oct-26	Shepard, Edward Milton (Ed)	89.67
1012201	1-Oct-26	Byrd, Gina Benina	30.40
1012202	1-Oct-26	Stupy, Cole Austin	49.08
1012203	1-Oct-26	Estrada, Audie Nickolas	52.14
1012204	1-Oct-26	Kaganyuk, Grigoriy Grigorovich (Greg)	150.00
1012205	1-Oct-26	Hernandez, Eriberto	60.95
1012206	1-Oct-26	Carrabello, Damien William	0.67
1012207	1-Oct-26	Lopez, Frankie	36.48
1012208	1-Oct-26	Sepulveda, Jeremy Joe	21.74
1012260	8-Oct-26	Danielson, Gregg B	46.98
1012261	8-Oct-26	Chaney, David (Dave)	15.66
1012262	8-Oct-26	Compton, Christine A	205.44
1012263	8-Oct-26	Orozco, Linda	36.50
1012264	8-Oct-26	Reed, Megan A	88.02
1012265	8-Oct-26	Cadena, Miguel	52.90
1012266	8-Oct-26	Mwe, Nang	14.14
1012267	8-Oct-26	Jakubas-Pufal, Dorota	28.88
1012268	8-Oct-26	Bosley, Kelleen M	16.72
1012269	8-Oct-26	Shapiro, Matthew Harris	184.12

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012270	8-Oct-26	Castillo, Maya	15.20
1012271	8-Oct-26	Ramirez, Eric	100.92
1012272	8-Oct-26	McQuown, Devin Christina	557.96
1012273	8-Oct-26	Drenner, Raymond	67.03
1012274	8-Oct-26	Huang, Robert	101.22
1012275	8-Oct-26	Villella, Aaren	191.22
1012276	8-Oct-26	Madding, Joshua (Hunter)	108.07
1012277	8-Oct-26	Salazar, Kyle	40.43
1012278	8-Oct-26	Bronstein, Louis (Lou)	51.38
1012279	8-Oct-26	Gates, April	21.89
1012280	8-Oct-26	Valdes, Jeffrey Glenn	117.64
1012281	8-Oct-26	Davidson, Megan Marie	35.79
1012282	8-Oct-26	Estrada, Audie Nickolas	20.00
1012283	8-Oct-26	Noller, Maria Guadalupe	36.48
1012284	8-Oct-26	Atilano, Juan Jose	94.24
1012285	8-Oct-26	Stiles, Michael Paul	382.00
1012286	8-Oct-26	Ornelas Monroy, Jose Isidro	135.55
1012361	15-Oct-26	Cariker, Cody J	15.96
1012362	15-Oct-26	Daniel, Matthew	128.09
1012363	15-Oct-26	Lam, Chau B (Joe)	499.00
1012364	15-Oct-26	Garcia, Juan	155.00
1012365	15-Oct-26	Ludwig, Jason	864.00
1012366	15-Oct-26	Kulick, Michael	377.00
1012367	15-Oct-26	Pascual, Allan	20.59
1012368	15-Oct-26	Cervantes, Angel	30.40
1012369	15-Oct-26	Bosley, Kelleen M	16.72
1012370	15-Oct-26	Rios, Elias L	39.30
1012371	15-Oct-26	Asman, David Jr.	23.10
1012372	15-Oct-26	Mendoza, Evelyn	114.00
1012373	15-Oct-26	Gomez, Moises David (David)	34.20
1012374	15-Oct-26	Villella, Aaren	224.24
1012375	15-Oct-26	Salazar, Kyle	40.43
1012376	15-Oct-26	Munoz, Ruben	654.99
1012377	15-Oct-26	Rigby, Lori Ann	23.98
1012378	15-Oct-26	Greer, Matthew	57.90
1012379	15-Oct-26	Gates, April	21.89
1012380	15-Oct-26	Byrd, Gina Benina	30.40
1012381	15-Oct-26	Stupy, Cole Austin	127.68
1012382	15-Oct-26	Dang, Tony Tien	35.26
1012383	15-Oct-26	Alvarez, Guadalupe Manuel (Manuel)	1,472.40
1012384	15-Oct-26	Atilano, Juan Jose	368.24
1012385	15-Oct-26	Bainter, Kendall	13.38
1012386	15-Oct-26	Valdez, Stephanie	23.41
1012387	15-Oct-26	Lopez, Jose Luis	43.32
1012388	15-Oct-26	Carrabello, Damien William	14.59
1012459	22-Oct-26	Ordonez, Bernardino A (Berny)	51.68
1012460	22-Oct-26	Yue, Andrew R	15.20

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012461	22-Oct-26	Duarte, Elizabeth (Liz)	31.92
1012462	22-Oct-26	Moeder, Jacob J	60.00
1012463	22-Oct-26	Habiger, Steve Jr	105.00
1012464	22-Oct-26	McNulty, Amy K	62.78
1012465	22-Oct-26	Sosa, Ives	280.20
1012466	22-Oct-26	Chaney, David (Dave)	583.00
1012467	22-Oct-26	Garcia, Dorys Elizabeth	106.40
1012468	22-Oct-26	Denhaan, Robert E	56.40
1012469	22-Oct-26	Chauv, Denise	9.12
1012470	22-Oct-26	Mares, Michael	105.00
1012471	22-Oct-26	Jakubas-Pufal, Dorota	28.88
1012472	22-Oct-26	Shapiro, Matthew Harris	374.18
1012473	22-Oct-26	Nguyen, Claire	9.12
1012474	22-Oct-26	Huang, Robert	1,333.74
1012475	22-Oct-26	Giatpaiboon, Scott	71.44
1012476	22-Oct-26	Anderson, Winston James	33.14
1012477	22-Oct-26	Villella, Aaren	136.06
1012478	22-Oct-26	Salazar, Kyle	120.00
1012479	22-Oct-26	Zhang, Yang	60.80
1012480	22-Oct-26	Hansberger, Brianna Larae	3.04
1012481	22-Oct-26	Ramirez, Lizandro	4.56
1012482	22-Oct-26	Scagliotti, Lucas Matthew	8.97
1012483	22-Oct-26	Haug, Jack Philip Ryan	606.96
1012484	22-Oct-26	Lorn, Channy	89.98
1012485	22-Oct-26	Halligan, Aimee Elise	145.41
1012486	22-Oct-26	Estrada, Audie Nickolas	104.28
1012487	22-Oct-26	Shih, Jung Chin (Mei)	88.06
1012488	22-Oct-26	Ahn, Ahra	7.60
1012489	22-Oct-26	Bainter, Kendall	14.06
1012490	22-Oct-26	Chavez, Edward	100.00
1012544	29-Oct-26	Vu, Johnny T	22.04
1012545	29-Oct-26	Garcia, Sandra E	28.88
1012546	29-Oct-26	Do, Thu-Tam T (Tammy)	21.28
1012547	29-Oct-26	Cariker, Cody J	15.96
1012548	29-Oct-26	Koenig, Timothy (Tim)	749.35
1012549	29-Oct-26	Escobar, Omar	140.00
1012550	29-Oct-26	Chaney, David (Dave)	15.66
1012551	29-Oct-26	Martinez, Jose A IV	14.64
1012552	29-Oct-26	Hansen, Casey	30.40
1012553	29-Oct-26	Ludwig, Jason	72.96
1012554	29-Oct-26	Reed, Megan A	88.02
1012555	29-Oct-26	Cadena, Miguel	52.90
1012556	29-Oct-26	Aguilar, Alan C	20.00
1012557	29-Oct-26	Bosley, Kelleen M	33.44
1012558	29-Oct-26	Rios, Elias L	39.32
1012559	29-Oct-26	Shapiro, Matthew Harris	241.12
1012560	29-Oct-26	Asman, David Jr.	22.95

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012561	29-Oct-26	Ramirez, Eric	201.84
1012562	29-Oct-26	Carlos, Jacob	7.60
1012563	29-Oct-26	Cahatol, Justin	118.00
1012564	29-Oct-26	Barboza, Kyra	18.24
1012565	29-Oct-26	Villella, Aaren	150.26
1012566	29-Oct-26	Madding, Joshua (Hunter)	125.30
1012567	29-Oct-26	Salazar, Kyle	40.43
1012568	29-Oct-26	Marquez, Jesus	49.40
1012569	29-Oct-26	Scagliotti, Lucas Matthew	8.97
1012570	29-Oct-26	Rigby, Lori Ann	434.66
1012571	29-Oct-26	Lorn, Channy	179.96
1012572	29-Oct-26	Byrd, Gina Benina	30.40
1012573	29-Oct-26	Stupy, Cole Austin	36.48
1012574	29-Oct-26	Tran, David Van	22.80
1012575	29-Oct-26	Tran, Loc Phuc	506.00
1012576	29-Oct-26	Valdes, Jeffrey Glenn	58.82
1012577	29-Oct-26	Davidson, Megan Marie	41.73
1012578	29-Oct-26	Estrada, Audie Nickolas	52.14
1012579	29-Oct-26	Morgan, Colton Duane	30.40
1012580	29-Oct-26	Aparicio, Francisco Javier	66.73
1012581	29-Oct-26	Chavez, Edward	100.00
1012582	29-Oct-26	Carrabello, Damien William	29.18
SUB-TOTAL IRWD JPM CHASE ACH FOR EXPENSE REPORTS			**21,938.84**
1012209	1-Oct-26	GM SAGER CONSTRUCTION CO, INC.	44,000.00
1012210	1-Oct-26	W. W. GRAINGER, INC.	18,911.07
1012211	1-Oct-26	HAAKER EQUIPMENT COMPANY	1,174.63
1012212	1-Oct-26	IDEXX DISTRIBUTION, INC	8,443.18
1012213	1-Oct-26	JCI JONES CHEMICALS, INC.	128,312.11
1012214	1-Oct-26	C WELLS PIPELINE MATERIALS, INC	6,887.38
1012215	1-Oct-26	CALIFORNIA BARRICADE RENTALS, INC.	39,120.50
1012216	1-Oct-26	GRISWOLD INDUSTRIES	8,404.50
1012217	1-Oct-26	ACCUSTANDARD, INC.	289.63
1012218	1-Oct-26	LAYNE CHRISTENSEN COMPANY	4,576.00
1012219	1-Oct-26	MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	1,639,029.36
1012220	1-Oct-26	ORANGE COUNTY AUTO PARTS	1,197.50
1012221	1-Oct-26	PACIFIC MECHANICAL SUPPLY	15,043.64
1012222	1-Oct-26	PARKHOUSE TIRE, INC.	4,991.10
1012223	1-Oct-26	LINDE GAS & EQUIPMENT INC.	2,680.83
1012224	1-Oct-26	PSOMAS	22,990.93
1012225	1-Oct-26	RINCON TRUCK CENTER INC.	1,851.16
1012226	1-Oct-26	TETRA TECH, INC	3,785.00
1012227	1-Oct-26	RAM AIR ENGINEERING INC	6,621.49
1012228	1-Oct-26	R&B AUTOMATION, INC.	5,323.45
1012229	1-Oct-26	RED WING SHOE STORE	526.60
1012230	1-Oct-26	COUNTY OF ORANGE SANITATION DISTRICT	2,058.00
1012231	1-Oct-26	GEOSYNTEC CONSULTANTS, INC.	21,735.00

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012232	1-Oct-26	BORCHARD SURVEYING & MAPPING, INC.	8,700.00
1012233	1-Oct-26	INTEGRITY MUNICIPAL SYSTEMS LLC	4,270.00
1012234	1-Oct-26	PYRO-COMM SYSTEMS INC	6,474.82
1012235	1-Oct-26	AUTOZONE PARTS, INC.	148.67
1012236	1-Oct-26	THE GUERRA COMPANIES	11,040.42
1012237	1-Oct-26	BIOENERGY ASSOCIATION OF CALIFORNIA	4,370.00
1012238	1-Oct-26	QUINCY COMPRESSOR LLC	15,070.00
1012239	1-Oct-26	MORRISROE, EDWARD	586.11
1012240	1-Oct-26	AMAZON CAPITAL SERVICES, INC.	1,016.43
1012241	1-Oct-26	SUPPORT PRODUCT SERVICES, INC	1,047.75
1012242	1-Oct-26	LANDCARE HOLDINGS, INC.	459.78
1012243	1-Oct-26	REAL WATER CONSULTANTS INC.	21,865.00
1012244	1-Oct-26	THE IRVINE COMPANY	5,030.72
1012245	1-Oct-26	WATER TREATMENT CHEMICALS INC	77,716.88
1012246	1-Oct-26	TOTAL RESOURCE MANAGEMENT, INC	5,990.23
1012247	1-Oct-26	WEST YOST & ASSOCIATES, INC.	7,830.00
1012248	1-Oct-26	EL TORO WATER DISTRICT	225,299.25
1012249	1-Oct-26	SELECT TRENCHLESS PIPELINES INC	8,833.90
1012250	1-Oct-26	ABC ICE, INC	452.55
1012251	1-Oct-26	CANNON CORPORATION	8,628.50
1012252	1-Oct-26	JL GROUP, LLC	20,369.95
1012253	1-Oct-26	EXLINE, INC.	3,290.10
1012254	1-Oct-26	REXEL USA, INC.	5,976.00
1012255	1-Oct-26	LWP CLAIMS SOLUTIONS INC	26,957.19
1012256	1-Oct-26	P&M HOLDING GROUP, LLP	22,293.75
1012257	1-Oct-26	ORANGE COUNTY WINWATER WORKS	6,770.45
1012258	1-Oct-26	DRAKE TRAFFIC CONTROL SERVICES	13,870.00
1012259	1-Oct-26	INSTANT JUNGLE LLC	2,856.48
1012287	8-Oct-26	FARRELL PRINTING, INC.	108.10
1012288	8-Oct-26	GANAHL LUMBER CO.	1,436.87
1012289	8-Oct-26	W. W. GRAINGER, INC.	22,584.09
1012290	8-Oct-26	INORGANIC VENTURES INC	317.72
1012291	8-Oct-26	JCI JONES CHEMICALS, INC.	83,790.74
1012292	8-Oct-26	LAGUNA BEACH COUNTY WATER DISTRICT	11,761.55
1012293	8-Oct-26	C WELLS PIPELINE MATERIALS, INC	4,891.85
1012294	8-Oct-26	CALIFORNIA BARRICADE RENTALS, INC.	30,266.31
1012295	8-Oct-26	CITY OF IRVINE	158,710.65
1012296	8-Oct-26	GRISWOLD INDUSTRIES	59,893.98
1012297	8-Oct-26	PROMERA LLC	1,518.00
1012298	8-Oct-26	EHS INTERNATIONAL,INC	3,630.00
1012299	8-Oct-26	ACCUSTANDARD, INC.	241.23
1012300	8-Oct-26	AECOM TECHNICAL SERVICES, INC.	73,707.50
1012301	8-Oct-26	ALLIANT INSURANCE SERVICES,INC	16,881.17
1012302	8-Oct-26	AQUA BEN CORPORATION	3,746.89
1012303	8-Oct-26	KIMBALL MIDWEST	934.69
1012304	8-Oct-26	MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	6,000.00
1012305	8-Oct-26	NCL OF WISCONSIN INC	711.04

IRVINE RANCH WATER DISTRICT
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CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012306	8-Oct-26	ORANGE COUNTY AUTO PARTS	1,265.51
1012307	8-Oct-26	PACIFIC MECHANICAL SUPPLY	10,853.92
1012308	8-Oct-26	PARKHOUSE TIRE, INC.	563.21
1012309	8-Oct-26	LINDE GAS & EQUIPMENT INC.	15,433.66
1012310	8-Oct-26	PSOMAS	3,979.00
1012311	8-Oct-26	SWAINS ELECTRIC MOTOR SERVICE	6,824.61
1012312	8-Oct-26	SOUTHERN CALIFORNIA SECURITY CENTERS, INC.	298.60
1012313	8-Oct-26	UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA	9,973.33
1012314	8-Oct-26	WATERLINE TECHNOLOGIES INC	2,870.00
1012315	8-Oct-26	HILL BROTHERS CHEMICAL COMPANY	11,769.02
1012316	8-Oct-26	RAM AIR ENGINEERING INC	20,347.94
1012317	8-Oct-26	BRENNTAG PACIFIC INC.	10,094.60
1012318	8-Oct-26	PAPER DEPOT DOCUMENT DESTRUCTION LLC	185.00
1012319	8-Oct-26	RED WING SHOE STORE	3,147.85
1012320	8-Oct-26	COUNTY OF ORANGE SANITATION DISTRICT	10,190.22
1012321	8-Oct-26	PACIFIC HYDROTECH CORPORATION	181,129.32
1012322	8-Oct-26	A&A WIPING CLOTH CO	2,198.10
1012323	8-Oct-26	POLYDYNE INC	86,309.91
1012324	8-Oct-26	QUALITY ENVIRONMENTAL CONTAINERS, INC	138.24
1012325	8-Oct-26	NATURALWELL, LLC	2,307.50
1012326	8-Oct-26	WEST COAST SAND & GRAVEL INC.	2,905.03
1012327	8-Oct-26	VERDANTAS INC.	1,908.00
1012328	8-Oct-26	AUTOZONE PARTS, INC.	182.35
1012329	8-Oct-26	QUINCY COMPRESSOR LLC	15,743.64
1012330	8-Oct-26	LU'S LIGHTHOUSE, INC.	94.88
1012331	8-Oct-26	AMAZON CAPITAL SERVICES, INC.	10,459.10
1012332	8-Oct-26	JIG CONSULTANTS	3,027.50
1012333	8-Oct-26	SMITH SYSTEM DRIVER IMPROVEMENT INSTITUTE, INC.	20,500.00
1012334	8-Oct-26	DEMARIA ELECTRIC MOTOR SERVICES, INC	25,543.24
1012335	8-Oct-26	WOODARD & CURRAN INC	19,166.25
1012336	8-Oct-26	ABSOLUTE STANDARDS, INC.	445.00
1012337	8-Oct-26	TANKVISIONS, INC	30.00
1012338	8-Oct-26	ABC ICE, INC	452.55
1012339	8-Oct-26	PACIFIC STAR CHEMICAL, LLC	9,937.13
1012340	8-Oct-26	PROTEUS CONSULTING	12,960.00
1012341	8-Oct-26	ORIGIN CONSULTING LLC	15,255.43
1012342	8-Oct-26	ECO SERVICES OPERATIONS CORP.	8,484.06
1012343	8-Oct-26	ACE INDUSTRIES INC	5,398.34
1012344	8-Oct-26	LABORATORY DATA CONSULTANTS, INC.	348.91
1012345	8-Oct-26	EXLINE, INC.	887.52
1012346	8-Oct-26	DELTA DENTAL OF CALIFORNIA	50,421.32
1012347	8-Oct-26	SUPERIOR ELECTRIC MOTOR SERVICE, INC.	22,516.41
1012348	8-Oct-26	BLUE-WHITE INDUSTRIES	15,604.47
1012349	8-Oct-26	BIRMINGHAM FASTENER & SUPPLY INC	10,226.99
1012350	8-Oct-26	FORGE MEDIA GROUP LLC	147,000.00
1012351	8-Oct-26	LWP CLAIMS SOLUTIONS INC	2,523.75
1012352	8-Oct-26	P&M HOLDING GROUP, LLP	98,923.35

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012353	8-Oct-26	ORANGE COUNTY WINWATER WORKS	24,469.63
1012354	8-Oct-26	DRAKE TRAFFIC CONTROL SERVICES	1,400.00
1012355	8-Oct-26	CLIFTON MAXWELL II	5,240.00
1012356	8-Oct-26	ELECTRICAL NOW, LLC	11,915.27
1012357	8-Oct-26	IRRIGATION TAG SUPPLY	4,242.66
1012358	8-Oct-26	SPRYPOINT SERVICES, INC.	94,400.00
1012359	8-Oct-26	STRADA TOPCO, LLC	11,648.49
1012360	8-Oct-26	WORKDAY, INC.	525,909.00
1012389	15-Oct-26	FARRELL PRINTING, INC.	173.75
1012390	15-Oct-26	FIDELITY SECURITY LIFE INSURANCE COMPANY	8,882.88
1012391	15-Oct-26	GANAHL LUMBER CO.	4,341.25
1012392	15-Oct-26	W. W. GRAINGER, INC.	22,681.56
1012393	15-Oct-26	JCI JONES CHEMICALS, INC.	50,446.65
1012394	15-Oct-26	C WELLS PIPELINE MATERIALS, INC	2,271.37
1012395	15-Oct-26	CALIFORNIA BARRICADE RENTALS, INC.	52,846.00
1012396	15-Oct-26	CAROLLO ENGINEERS, INC	25,909.00
1012397	15-Oct-26	GRISWOLD INDUSTRIES	76,080.22
1012398	15-Oct-26	PROMERA LLC	1,359.00
1012399	15-Oct-26	DISCOVERY SCIENCE CENTER OF ORANGE COUNTY	2,064.00
1012400	15-Oct-26	A&Y ASPHALT CONTRACTORS, INC.	78,271.00
1012401	15-Oct-26	AECOM TECHNICAL SERVICES, INC.	550,331.50
1012402	15-Oct-26	KIMBALL MIDWEST	171.56
1012403	15-Oct-26	ORANGE COUNTY AUTO PARTS	1,083.12
1012404	15-Oct-26	SWAINS ELECTRIC MOTOR SERVICE	25,440.89
1012405	15-Oct-26	TETRA TECH, INC	49,270.00
1012406	15-Oct-26	WECK ANALYTICAL ENVIRONMENT SERVICES, INC.	105.00
1012407	15-Oct-26	ALEXANDER'S CONTRACT SERVICES, INC.	166,579.91
1012408	15-Oct-26	BRENNTAG PACIFIC INC.	3,151.48
1012409	15-Oct-26	ROSEDALE - RIO BRAVO WATER STORAGE DISTRICT	31,631.93
1012410	15-Oct-26	MCR TECHNOLOGIES INC	4,589.23
1012411	15-Oct-26	ZEBRON CONTRACTING INC	100,773.29
1012412	15-Oct-26	SPECTRUM PUMPING SOLUTIONS	30,632.33
1012413	15-Oct-26	HDR ENGINEERING INC	68,484.45
1012414	15-Oct-26	RED WING SHOE STORE	5,439.31
1012415	15-Oct-26	COUNTY OF ORANGE SANITATION DISTRICT	29,872,915.95
1012416	15-Oct-26	DOUGLAS ENVIRONMENTAL GROUP INC	3,930.00
1012417	15-Oct-26	DUKE'S ROOT CONTROL INC	86,310.56
1012418	15-Oct-26	ENVIRONMENTAL ENGINEERING AND CONTRACTING, INC.	23,732.50
1012419	15-Oct-26	BORCHARD SURVEYING & MAPPING, INC.	1,080.00
1012420	15-Oct-26	INDUSTRIAL NETWORKING SOLUTIONS	4,398.16
1012421	15-Oct-26	BURLINGTON SAFETY LABORATORY	420.00
1012422	15-Oct-26	HANSON BRIDGETT LLP	104,761.37
1012423	15-Oct-26	WEST COAST SAND & GRAVEL INC.	600.42
1012424	15-Oct-26	SIGNCASTER CORPORATION	797.62
1012425	15-Oct-26	AUTOZONE PARTS, INC.	1,046.20
1012426	15-Oct-26	THE GUERRA COMPANIES	6,111.88
1012427	15-Oct-26	QUINCY COMPRESSOR LLC	1,635.00

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012428	15-Oct-26	AMAZON CAPITAL SERVICES, INC.	2,388.96
1012429	15-Oct-26	GEIGER BROS	1,366.28
1012430	15-Oct-26	LANDCARE HOLDINGS, INC.	5,913.00
1012431	15-Oct-26	JIG CONSULTANTS	410.00
1012432	15-Oct-26	CRH CALIFORNIA WATER, INC	25,500.00
1012433	15-Oct-26	WEST YOST & ASSOCIATES, INC.	51,267.75
1012434	15-Oct-26	KRONICK MOSKOVITZ TIEDEMANN & GIRARD	7,040.00
1012435	15-Oct-26	WOODARD & CURRAN INC	13,475.00
1012436	15-Oct-26	MARK KADESH	11,092.00
1012437	15-Oct-26	RESOLUTE COMPANY	13,500.00
1012438	15-Oct-26	MICROSOFT CORPORATION	24.00
1012439	15-Oct-26	MSA SAFETY INCORPORATED	602.32
1012440	15-Oct-26	N1 CRITICAL TECHNOLOGIES, INC	9,418.85
1012441	15-Oct-26	CONSERV CONSTRUCTION INC.	7,512.00
1012442	15-Oct-26	TONY DEMARIA ELECTRIC, INC	4,240.00
1012443	15-Oct-26	HELPMATES STAFFING SERVICES, LLC	7,546.00
1012444	15-Oct-26	ACE INDUSTRIES INC	6,317.72
1012445	15-Oct-26	INNOVATIVE MACHINE TOOL REPAIR LLC	1,981.78
1012446	15-Oct-26	ARAG NORTH AMERICA, INC.	707.50
1012447	15-Oct-26	FISHER & PHILLIPS LLP	8,683.50
1012448	15-Oct-26	ARTICULATE GLOBAL, LLC	5,247.00
1012449	15-Oct-26	ACCELERATED TECHNOLOGY LABORATORIES, LLC	14,806.00
1012450	15-Oct-26	ANIMAL PEST MANAGEMENT SERVICES, INC.	9,541.50
1012451	15-Oct-26	DRAKE TRAFFIC CONTROL SERVICES	6,635.00
1012452	15-Oct-26	SYNAGRO WEST, LLC	193,961.07
1012453	15-Oct-26	AIR PRODUCTS AND CHEMICALS, INC.	755.61
1012454	15-Oct-26	BLUE SKIES DRONE RENTAL, LLC	600.00
1012455	15-Oct-26	MAXGRIP AMERICAS INC	26,212.50
1012456	15-Oct-26	STRADA TOPCO, LLC	13,886.70
1012457	15-Oct-26	NEIGHBORLY PEST MANAGEMENT, INC	28,000.00
1012458	15-Oct-26	INSTANT JUNGLE LLC	3,575.00
1012491	22-Oct-26	FARRELL PRINTING, INC.	172.75
1012492	22-Oct-26	GANAHL LUMBER CO.	2,789.53
1012493	22-Oct-26	GCI CONSTRUCTION, INC.	371,252.97
1012494	22-Oct-26	W. W. GRAINGER, INC.	22,373.38
1012495	22-Oct-26	JCI JONES CHEMICALS, INC.	127,762.28
1012496	22-Oct-26	CALIFORNIA BARRICADE RENTALS, INC.	28,084.00
1012497	22-Oct-26	CDW GOVERNMENT LLC	1,371.73
1012498	22-Oct-26	CHO DESIGN ASSOCIATES, INC	13,800.00
1012499	22-Oct-26	GRISWOLD INDUSTRIES	33,413.32
1012500	22-Oct-26	PROMERA LLC	759.00
1012501	22-Oct-26	EHS INTERNATIONAL,INC	1,980.00
1012502	22-Oct-26	AECOM TECHNICAL SERVICES, INC.	82,035.00
1012503	22-Oct-26	ALLIANT INSURANCE SERVICES,INC	4,095.40
1012504	22-Oct-26	AQUA BEN CORPORATION	64,600.87
1012505	22-Oct-26	KIMBALL MIDWEST	1,556.50
1012506	22-Oct-26	MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	224,064.19

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012507	22-Oct-26	ORANGE COUNTY AUTO PARTS	558.18
1012508	22-Oct-26	PACIFIC MECHANICAL SUPPLY	16,876.36
1012509	22-Oct-26	PAYNE & FEARS LLP	1,740.00
1012510	22-Oct-26	LINDE GAS & EQUIPMENT INC.	24,880.37
1012511	22-Oct-26	S & J SUPPLY CO INC	2,773.55
1012512	22-Oct-26	RAM AIR ENGINEERING INC	25,570.00
1012513	22-Oct-26	BRENNTAG PACIFIC INC.	46,949.42
1012514	22-Oct-26	HDR ENGINEERING INC	10,131.45
1012515	22-Oct-26	L & S CONSTRUCTION INC	708,940.15
1012516	22-Oct-26	COUNTY OF ORANGE SANITATION DISTRICT	16,869.74
1012517	22-Oct-26	BORCHARD SURVEYING & MAPPING, INC.	1,492.50
1012518	22-Oct-26	YORKE ENGINEERING, LLC	3,795.75
1012519	22-Oct-26	WEST COAST SAND & GRAVEL INC.	2,514.27
1012520	22-Oct-26	AUTOZONE PARTS, INC.	834.41
1012521	22-Oct-26	LILLESTRAND LEADERSHIP CONSULTING, INC.	10,750.00
1012522	22-Oct-26	AMAZON CAPITAL SERVICES, INC.	3,084.64
1012523	22-Oct-26	GEIGER BROS	7,583.31
1012524	22-Oct-26	LANDCARE HOLDINGS, INC.	8,923.48
1012525	22-Oct-26	THE IRVINE COMPANY	1,709.19
1012526	22-Oct-26	DAYTON CERTIFIED WELDING,INC.	8,300.00
1012527	22-Oct-26	TOTAL RESOURCE MANAGEMENT, INC	124,236.28
1012528	22-Oct-26	WEST YOST & ASSOCIATES, INC.	63,588.90
1012529	22-Oct-26	MERRIMAC PETROLEUM, INC.	39,023.20
1012530	22-Oct-26	ABSOLUTE STANDARDS, INC.	180.00
1012531	22-Oct-26	INDUSTRIAL SCIENTIFIC CORPORATION	20,776.78
1012532	22-Oct-26	GANNETT FLEMING, INC.	1,800.00
1012533	22-Oct-26	HELPMATES STAFFING SERVICES, LLC	12,073.60
1012534	22-Oct-26	ACE INDUSTRIES INC	2,824.70
1012535	22-Oct-26	INNOVATIVE MACHINE TOOL REPAIR LLC	2,547.40
1012536	22-Oct-26	BIRMINGHAM FASTENER & SUPPLY INC	1,213.22
1012537	22-Oct-26	LWP CLAIMS SOLUTIONS INC	13,210.11
1012538	22-Oct-26	JT THORPE & SON, INC	33,992.67
1012539	22-Oct-26	STUDSON, INC.	14,830.50
1012540	22-Oct-26	ORANGE COUNTY WINWATER WORKS	1,655.56
1012541	22-Oct-26	SYNAGRO WEST, LLC	190,106.70
1012542	22-Oct-26	FRESHBI LLC	1,500.00
1012543	22-Oct-26	INSTANT JUNGLE LLC	145.46
1012583	29-Oct-26	GM SAGER CONSTRUCTION CO, INC.	123,565.00
1012584	29-Oct-26	W. W. GRAINGER, INC.	28,215.47
1012585	29-Oct-26	JCI JONES CHEMICALS, INC.	77,112.61
1012586	29-Oct-26	LAGUNA BEACH COUNTY WATER DISTRICT	7,399.07
1012587	29-Oct-26	C WELLS PIPELINE MATERIALS, INC	2,327.40
1012588	29-Oct-26	CALIFORNIA BARRICADE RENTALS, INC.	51,255.50
1012589	29-Oct-26	CAROLLO ENGINEERS, INC	894.00
1012590	29-Oct-26	GRISWOLD INDUSTRIES	44,045.49
1012591	29-Oct-26	ORANGE COUNTY AUTO PARTS	1,634.35
1012592	29-Oct-26	PACIFIC MECHANICAL SUPPLY	17,521.76

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012593	29-Oct-26	PARKHOUSE TIRE, INC.	1,728.25
1012594	29-Oct-26	LINDE GAS & EQUIPMENT INC.	21,745.01
1012595	29-Oct-26	REACH EMPLOYEE ASSISTANCE INC	1,195.60
1012596	29-Oct-26	ROBERTS ROOFING INC	22,783.00
1012597	29-Oct-26	S & J SUPPLY CO INC	5,673.15
1012598	29-Oct-26	SOUTHERN CALIFORNIA SECURITY CENTERS, INC.	22.47
1012599	29-Oct-26	HILL BROTHERS CHEMICAL COMPANY	59,107.61
1012600	29-Oct-26	RAM AIR ENGINEERING INC	56,479.26
1012601	29-Oct-26	BRENNTAG PACIFIC INC.	2,982.05
1012602	29-Oct-26	R&B AUTOMATION, INC.	3,525.43
1012603	29-Oct-26	ORANGE COUNTY MOSQUITO AND VECTOR CONTROL DISTRICT	2,868.10
1012604	29-Oct-26	RED WING SHOE STORE	286.82
1012605	29-Oct-26	COUNTY OF ORANGE SANITATION DISTRICT	4,048.00
1012606	29-Oct-26	STANTEC CONSULTING SERVICES INC.	5,537.00
1012607	29-Oct-26	JOHN MICHAEL COVAS	202.90
1012608	29-Oct-26	PYRO-COMM SYSTEMS INC	3,961.43
1012609	29-Oct-26	PACRIM ENGINEERING INC.	9,360.00
1012610	29-Oct-26	AUTOZONE PARTS, INC.	1,085.26
1012611	29-Oct-26	THE GUERRA COMPANIES	5,854.07
1012612	29-Oct-26	QUINCY COMPRESSOR LLC	1,563.95
1012613	29-Oct-26	AMAZON CAPITAL SERVICES, INC.	4,964.59
1012614	29-Oct-26	GEIGER BROS	1,906.70
1012615	29-Oct-26	KAESER COMPRESSORS, INC.	3,738.70
1012616	29-Oct-26	LANDCARE HOLDINGS, INC.	11,219.25
1012617	29-Oct-26	BRIAN HOMSY	2,093.35
1012618	29-Oct-26	MULTIQUIP INC	3,161.82
1012619	29-Oct-26	RELIANCE STANDARD LIFE INSURANCE COMPANY	43,998.78
1012620	29-Oct-26	WATER TREATMENT CHEMICALS INC	27,256.04
1012621	29-Oct-26	HOWDEN USA COMPANY	35,851.62
1012622	29-Oct-26	ABC ICE, INC	301.70
1012623	29-Oct-26	PACIFIC STAR CHEMICAL, LLC	9,998.57
1012624	29-Oct-26	CANNON CORPORATION	5,720.00
1012625	29-Oct-26	MSA SAFETY INCORPORATED	4,659.11
1012626	29-Oct-26	CISCO SYSTEMS, INC.	5,580.00
1012627	29-Oct-26	ECO SERVICES OPERATIONS CORP.	8,571.21
1012628	29-Oct-26	HELPMATES STAFFING SERVICES, LLC	16,645.16
1012629	29-Oct-26	ARAG NORTH AMERICA, INC.	707.50
1012630	29-Oct-26	DELTA DENTAL OF CALIFORNIA	51,057.54
1012631	29-Oct-26	SUPERIOR ELECTRIC MOTOR SERVICE, INC.	5,530.76
1012632	29-Oct-26	BLUE-WHITE INDUSTRIES	2,300.68
1012633	29-Oct-26	NAVIAM GIS TECHNOLOGIES LLC	18,328.75
1012634	29-Oct-26	P&M HOLDING GROUP, LLP	20,448.75
1012635	29-Oct-26	STUDSON, INC.	212.26
1012636	29-Oct-26	ORANGE COUNTY WINWATER WORKS	16,655.13
1012637	29-Oct-26	DRAKE TRAFFIC CONTROL SERVICES	9,590.00
1012638	29-Oct-26	CONNEXUS INDUSTRIES, INC.	2,366.00
1012639	29-Oct-26	SYNAGRO WEST, LLC	6,931.32

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
1012640	29-Oct-26	AIR PRODUCTS AND CHEMICALS, INC.	7,427.92
SUB-TOTAL IRWD JPM CHASE ACH DISBURSEMENTS			**39,798,603.55**
100583	8-Oct-26	CALPERS	955,395.02
100584	8-Oct-26	BANK OF AMERICA	9,366,614.36
100585	8-Oct-26	SUMITOMO MITSUI BANKING CORPORATION	249,143.84
100586	15-Oct-26	FRANCHISE TAX BOARD	125,317.12
100587	15-Oct-26	INTERNAL REVENUE SERVICE	362,735.16
100588	15-Oct-26	CALIFORNIA DEPARTMENT OF CHILD SUPPORT SERVICES	3,602.61
100589	15-Oct-26	EMPLOYMENT DEVELOPMENT DEPARTMENT	31,892.12
100590	15-Oct-26	EMPOWER RETIREMENT, LLC	233,929.82
100591	29-Oct-26	CALIFORNIA DEPARTMENT OF TAX AND FEE ADMINISTRATION	13,144.98
100592	29-Oct-26	CALPERS	381,634.11
100593	29-Oct-26	FRANCHISE TAX BOARD	125,562.78
100594	29-Oct-26	BANK OF AMERICA	1,295.00
100595	29-Oct-26	INTERNAL REVENUE SERVICE	364,016.91
100596	29-Oct-26	SUMITOMO MITSUI BANKING CORPORATION	63,780.83
100597	29-Oct-26	CALIFORNIA DEPARTMENT OF CHILD SUPPORT SERVICES	3,602.61
100598	29-Oct-26	EMPLOYMENT DEVELOPMENT DEPARTMENT	32,018.27
100599	29-Oct-26	EMPOWER RETIREMENT, LLC	245,031.78
100600	29-Oct-26	INSPIRA FINANCIAL HEALTH, INC	87,447.08
100601	29-Oct-26	JP MORGAN CHASE BANK N.A.	19,963.43
100602	29-Oct-26	CALPERS	382,542.47
100603	29-Oct-26	JP MORGAN CHASE BANK N.A.	695.45
100604	29-Oct-26	JP MORGAN CHASE BANK N.A.	92,667.67
100605	29-Oct-26	SUMITOMO MITSUI BANKING CORPORATION	103,029.11
100606	29-Oct-26	WELLS FARGO BANK, N.A.	2,530.04
SUB-TOTAL IRWD JPM CHASE WIRE DISBURSEMENTS			**13,247,592.57**
100341	29-Oct-26	WELLS FARGO BANK, N.A.	2,530.04
SUB-TOTAL IRWD WELLS FARGO WIRE DISBURSEMENTS			**2,530.04**
SUB-TOTAL IRWD BOFA WIRE DISBURSEMENTS			**-**
SUB-TOTAL BOFA, WELLS FARGO CHECK, AND JPM CHASE ELECTRONIC DISBURSEMENTS			**69,269,633.17**
455260	14-May-26	SOUTHERN CALIFORNIA EDISON COMPANY	1,132.42
455601	4-Jun-26	TOP TEN REAL ESTATE INC	50.17
455645	4-Jun-26	KELLY, SYBILLE	44.75
455651	4-Jun-26	LAI, FRANCES	46.16
455654	4-Jun-26	MANGAT, AMOLIKA	23.56
455657	4-Jun-26	KUANG, ZHIYU	10.65
455661	4-Jun-26	SHIM, JULIE	15.60
455664	4-Jun-26	DALAIE MOVASSAGH, GOLNAZ	27.51
455744	11-Jun-26	CHU, FIONA	38.48
455774	11-Jun-26	WI NAIL SPA	73.31
455775	11-Jun-26	CHENG, PING	198.73

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
455777	11-Jun-26	HUANG, YI-CHING	31.23
455778	11-Jun-26	ZHANG, HAODONG	31.22
455779	11-Jun-26	LIU, CHENCHENG	73.30
455781	11-Jun-26	SAVIO, GREG	70.50
455783	11-Jun-26	KANG, GYUNHA	17.61
455784	11-Jun-26	KORKOLA, GARY A	31.70
455785	11-Jun-26	CHAUSSE, RONALD	29.82
455786	11-Jun-26	HILDA ABRAHAM AND TODD ABRAHAM	15.63
455787	11-Jun-26	DURNING, THOMAS	15.20
455789	11-Jun-26	JENA, SHEETAL	22.77
455790	11-Jun-26	TURKS, JACQUELINE	388.81
455791	11-Jun-26	DINH, MATTHEW	21.49
455792	11-Jun-26	RAZZAGHI, TARLAN	20.18
455794	11-Jun-26	SUTTERFIELD, WYATT	15.20
455797	11-Jun-26	HARMON, JERRY W	61.15
455799	11-Jun-26	YUE LEI AND GEOFF LIN	274.60
455800	11-Jun-26	CHAVEZ, BRIAN	29.83
455801	11-Jun-26	RIVERA, LIA	52.95
455802	11-Jun-26	LIU, JINGNAN	39.12
455803	11-Jun-26	ALMAZROUEI, ZAYED	28.80
455804	11-Jun-26	HITCHCOOK, ELAINA	27.44
455807	11-Jun-26	JUNG, PAUL	37.52
455809	11-Jun-26	LI, YUEFANG	29.74
455810	11-Jun-26	YANG, CHENHAO	28.81
455811	11-Jun-26	TWUMASI, WILLIAM	20.31
455812	11-Jun-26	LI, YUN	17.37
455813	11-Jun-26	BORA, DAN	117.73
455815	11-Jun-26	KHAUV, ANDY	74.00
455816	11-Jun-26	LI, DANYU	39.59
455817	11-Jun-26	DO, JIWON	82.48
455819	11-Jun-26	HUANG, SUI	204.58
455828	11-Jun-26	BAKER, JOHN E	215.00
455970	25-Jun-26	TUSTIN TOYOTA	1,780.14
455981	25-Jun-26	PORTRAIT CONSTRUCTION INC	2,600.00
455986	25-Jun-26	ZHAI, ENDI	186.90
456006	25-Jun-26	ZHOU, JIA	57.23
456007	25-Jun-26	YANNITELLI, KRISTINE	102.93
456026	25-Jun-26	YAN LAI & YONGCHUN PENG	1,305.27
456648	6-Aug-26	70 HARMONY, LLC	6,246.02
457049	17-Sep-26	BRUCE HADLEY NEWELL	1,250.00
457051	17-Sep-26	CITY OF SANTA ANA	605.97
457183	17-Sep-26	REGENTS OF THE UNIVERSITY OF CALIFORNIA	800.00
457198	24-Sep-26	USA WASTE OF CALIFORNIA, INC.	4,838.13
457388	1-Oct-26	2453 ORANGE AVENUE LLC	232.42
457446	8-Oct-26	IRVINE COMMUNITY DEVELOPMENT COMPANY LLC	971,650.68
100341	29-Oct-26	WELLS FARGO BANK, N.A.	2,530.04
SUB-TOTAL BOFA, WELLS FARGO CHECK, AND JPM CHASE ELECTRONIC VOIDED IN OCTOBER 2026			**998,012.75**

IRVINE RANCH WATER DISTRICT
AP DISBURSEMENTS AND VOIDS FOR OCTOBER 2026

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIER	PAYMENT AMOUNT
	NET		**68,271,620.42**

Exhibit "E"

MONTHLY SUMMARY OF PAYROLL ACH PAYMENTS

October
2026

	AMOUNT	VENDOR	PURPOSE
10/2/2026	1,620,383.93	J.P. MORGAN	ACH Payments for Payroll
10/16/2026	1,622,728.71	J.P. MORGAN	ACH Payments for Payroll
10/30/2026	1,677,183.42	J.P. MORGAN	ACH Payments for Payroll
	$4,920,296.06		

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Exhibit "F"

IRWD Gov Code 53065.5 Disclosure Report

Payment or Reimbursements for Individual charges of $100 or more per transaction for services or product received.
01-OCT-26 to 31-OCT-26

NAME	CHECK NUMBER	CHECK DATE	TRANSACTION AMOUNT	ITEM DESCRIPTION	EXPENSE JUSTIFICATION
Alvarez, Guadalupe Manuel (Manuel)	1012383	15-Oct-26	933.92	Lodging	WEFTEC Conference, New Orleans, LA September 27-30, 2026
Atilano, Juan Jose	1012384	15-Oct-26	274	Certification	SWRCB WW Operator Grade I fee reimbursement
Cahatol, Justin	1012563	29-Oct-26	118	Certification	CWEA Environmental Compliance Inspector Grade 1 Certificate Renewal Fee
Chaney, David (Dave)	1012466	22-Oct-26	201	Certification	Wastewater Treatment Grade III Renewal Fee Reimbursement
Chaney, David (Dave)	1012466	22-Oct-26	382	Certification	CWEA CSM Grade II Renewal Fee Reimbursement
Chavez, Edward	1012490	22-Oct-26	100	OT Meal	OT Meal - 5 employees
Chavez, Edward	1012581	29-Oct-26	100	OT Meal	OT Meal - 5 employees
Compton, Christine A	1012262	8-Oct-26	167.81	Mileage	CSDA Annual Conference, Palm Desert, CA August 24-27, 2026
Coria, Alejandro (Alex)	1012176	1-Oct-26	259	Membership	CWEA Membership & Coll 2 reimbursement
Coria, Alejandro (Alex)	1012176	1-Oct-26	123	Certification	CWEA Membership & Coll 2 reimbursement
Daniel, Matthew	1012362	15-Oct-26	128.09	OT Meal	O.T. MEAL ALLOWANCES - 9 Employees
Escobar, Omar	1012549	29-Oct-26	140	OT Meal	Overtime Meal - 7 Employees
Garcia, Juan	1012364	15-Oct-26	140	Certification	AWWA Water Use Efficiency 1 Certification Renewal
Habiger, Steve Jr	1012463	22-Oct-26	105	Certification	Water Distribution Grade V Renewal Fee Reimbursement
Halligan, Aimee Elise	1012485	22-Oct-26	145.41	Other(Misc)	Safety Shoe Allowance
Haug, Jack Philip Ryan	1012483	22-Oct-26	117.8	OT Meal	O.T. meal - 6 Employees
Haug, Jack Philip Ryan	1012483	22-Oct-26	110.01	OT Meal	O.T. meal - 6 Employees
Haug, Jack Philip Ryan	1012483	22-Oct-26	344.37	Other(Misc)	Safety tailgate department meeting (40)
Huang, Robert	1012474	22-Oct-26	228.99	Lodging	Reimburse Sites Reservoir Tour/Meeting April 17, 2025
Huang, Robert	1012474	22-Oct-26	189.7	Lodging	Sites Reservoir-Authority Board and Reservoir Committee Meetings
Huang, Robert	1012474	22-Oct-26	184.11	Auto Rental	Sites Reservoir-Authority Board and Reservoir Committee Meetings
Huang, Robert	1012474	22-Oct-26	212.15	Lodging	May 2026 Sites Workshop
Huang, Robert	1012474	22-Oct-26	106	Airfare	May 2026 Sites Workshop
Kaganyuk, Grigoriy Grigorovich (Greg)	1012204	1-Oct-26	150	Other(Misc)	Copy of CSDA Award
Koenig, Timothy (Tim)	1012548	29-Oct-26	587.83	Lodging	Tri-State Seminar, Las Vegas, NV August 2-6, 2026
Kulick, Michael	1012366	15-Oct-26	259	Membership	CWEA Membership and CSM Grade I Renewal Fee
Kulick, Michael	1012366	15-Oct-26	118	Certification	Mike Kulick CWEA Membership and CSM Grade I Renewal Fee Reimbursement
Lam, Chau B (Joe)	1012363	15-Oct-26	499	Certification	SANS GICSP Certification Renewal Fee
Madding, Joshua (Hunter)	1012276	8-Oct-26	108.07	Mileage	Mileage reimbursement for shift coverage GEA centrifuge training on 9/29/2026
Madding, Joshua (Hunter)	1012566	29-Oct-26	108.07	Mileage	Mileage reimbursement for HAZMAT training on October 13, 2026
Mares, Michael	1012470	22-Oct-26	105	Certification	Water Treatment Grade IV Renewal Fee Reimbursement
McQuown, Devin Christina	1012272	8-Oct-26	174.62	Lodging	Western Regional Panel on Aquatic Nuisance Species Annual Meeting, Sacramento,. CA September 23-25, 2026
McQuown, Devin Christina	1012272	8-Oct-26	174.62	Lodging	Western Regional Panel on Aquatic Nuisance Species Annual Meeting, Sacramento,. CA September 23-25, 2026
Munoz, Ruben	1012376	15-Oct-26	305	Certification	AWWA WUEP1 fee
Munoz, Ruben	1012376	15-Oct-26	349.99	Certification	CEU Course Fee
Rigby, Lori Ann	1012570	29-Oct-26	127.52	Auto Rental	CASA Innovative Technology Seminar, Davis, CA October 21, 2026
Rigby, Lori Ann	1012570	29-Oct-26	106.89	Shuttle/Taxi	CASA Innovative Technology Seminar, Davis, CA October 21, 2026
Sagert, Justin	1012184	1-Oct-26	155.8	Other(Misc)	830 Team Meeting Breakfast September 24, 2026
Salazar, Kyle	1012478	22-Oct-26	120	OT Meal	OT Meal reimbursement - 6 Employees
Shapiro, Matthew Harris	1012269	8-Oct-26	118	Certification	CWEA Collections Grade I Renewal Reimbursement
Shapiro, Matthew Harris	1012472	22-Oct-26	160	OT Meal	OT meal allowance - 8 Employees
Shapiro, Matthew Harris	1012559	29-Oct-26	175	Certification	CEU Course Fee Reimbursement
Sosa, Ives	1012465	22-Oct-26	280.2	Other(Misc)	Safety Shoe Allowance
Stiles, Michael Paul	1012285	8-Oct-26	123	Certification	CWEA Membership & MT2 fees reimbursement
Stiles, Michael Paul	1012285	8-Oct-26	259	Membership	CWEA Membership & MT2 fees reimbursement
Tran, Loc Phuc	1012575	29-Oct-26	114	Certification	CWEA Environmental Compliance Inspector Grade 1 Certificate Renewal Fee, Membership Renewal and Lab Analyst Grade 4 Certificate Renewal
Tran, Loc Phuc	1012575	29-Oct-26	259	Membership	CWEA Environmental Compliance Inspector Grade 1 Certificate Renewal Fee, Membership Renewal and Lab Analyst Grade 4 Certificate Renewal
Tran, Loc Phuc	1012575	29-Oct-26	133	Certification	CWEA Environmental Compliance Inspector Grade 1 Certificate Renewal Fee, Membership Renewal and Lab Analyst Grade 4 Certificate Renewal
Villella, Aaren	1012275	8-Oct-26	103.06	Other(Misc)	Safety tailgate reimbursment
			Total Amount:	**9,984.03**	

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November 23, 2026
Prepared and
submitted by: K. Swan
Approved by: Paul A. Cook

CONSENT CALENDAR

APPOINTMENT OF DISTRICT NON-BOARD OFFICERS

SUMMARY:

Staff recommends that the Board appoint IRWD Director of Accounting Eileen Lin as the Treasurer of IRWD and IRWD Controller Christine Thompson as an Assistant Treasurer of IRWD effective immediately.

BACKGROUND:

The Board-appointed position Treasurer of IRWD is currently vacant. To fill the vacant Treasurer position, staff recommends that the Board appoint Eileen Lin as the Treasurer of IRWD. Ms. Lin currently serves as one of IRWD's two Assistant Treasurers, along with Jennifer Davis.

To fill the Assistant Treasurer position that will be vacant with the appointment of Ms. Lin as Treasurer, staff recommends that the Board appoint IRWD Controller Christine Thompson as one of the two Assistant Treasurers of IRWD.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was not reviewed by a Committee.

RECOMMENDED MOTION:

THAT THE BOARD APPOINT EILEEN LIN AS THE TREASURER OF THE IRVINE RANCH WATER DISTRICT AND APPOINT CHRISTINE THOMPSON AS AN ASSISTANT TREASURER OF THE IRVINE RANCH WATER DISTRICT, EFFECTIVE IMMEDIATELY.

LIST OF EXHIBITS:

None.

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November 23, 2026
Prepared by: T. Mitcham / C. Collins
Submitted by: Paul A. Cook

CONSENT CALENDAR

CHANGES TO GENERAL MANAGER'S COMPENSATION

SUMMARY:

The annual performance review of the General Manager was conducted on November 9, 2026. This item presents the proposed changes to the annual compensation of the General Manager.

BACKGROUND:

The General Manager's annual performance evaluation was conducted in Closed Session during the November 9, 2026, IRWD Board meeting. After the discussion, President LaMar, as the designated representative of the Board of Directors, discussed potential changes in compensation with the General Manager. Based on this discussion, the recommended changes are to:

1) Increase the base salary of the General Manager from $421,644 to $446,000 per year (a 5.78% increase), effective October 1, 2026;

2) Provide a one-time performance award for the General Manager in the amount of $42,400 as a taxable lump sum cash payment; and

3) Increase the General Manager's Annual Automobile Allowance from $11,500 to $12,000 (a 6.0% increase).

An amendment to the General Manager's Employment Agreement, which reflects these changes, is provide as Exhibit "A".

FISCAL IMPACTS:

Funds for compensation of the General Manager are included in IRWD's annual Operating Budget.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

Not applicable.

RECOMMENDATION:

THAT THE BOARD APPROVE THE 2026 AMENDMENT TO THE GENERAL MANAGER EMPLOYMENT AGREEMENT, EFFECTIVE OCTOBER 1, 2026.

LIST OF EXHIBITS:

Exhibit "A" – 2026 Amendment to General Manager Employment Agreement

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Exhibit "A"

2026 AMENDMENT TO GENERAL MANAGER EMPLOYMENT AGREEMENT

This 2026 Amendment to General Manager Employment Agreement ("2026 Amendment") is effective as of October 1, 2026 and is between the IRVINE RANCH WATER DISTRICT, a California Water District ("District") and PAUL A. COOK, an individual.

The Parties entered into an Employment Agreement on October 17, 2011, which establishes the terms under which Mr. Cook serves as General Manager of the District. The Employment Agreement provides that Mr. Cook's compensation will be subject to adjustment for each annual period beginning October 1, and that the District may award Mr. Cook a performance bonus.

The Employment Agreement also provides for an auto allowance for Mr. Cook.

The District intends by this 2026 Amendment to adjust Mr. Cook's compensation and his auto allowance to be effective as of October 1, 2026.

The Parties therefore amend the Employment Agreement as follows:

1. Salary Adjustment. The Employment Agreement at Section 6.A. is hereby amended to provide that Mr. Cook's gross annual salary for his services as General Manager beginning October 1, 2026 will be: $446,000.

2. Performance Bonus. Pursuant to the Employment Agreement at Section 6.B., in recognition of Mr. Cook's performance over the prior year, the District awards him a performance bonus in the amount of $42,400, payable in a lump sum.

3. Auto Allowance Adjustment. The Employment Agreement at Section 6.C. is hereby amended to reflect that the District shall reimburse Mr. Cook for use of his personal vehicle on District business at a rate of $12,000 per year as a car allowance, beginning October 1, 2026.

4. No Other Changes. The General Manager will remain eligible for the District's Deferred Compensation Match program, subject to the IRS Annual Compensation Limit. Except as described in this 2026 Amendment, there are no other changes to the Employment Agreement.

The Parties are signing this 2026 Amendment following the District's approval at a public meeting held November 23, 2026.

IRVINE RANCH WATER DISTRICT

By: _____
President

_____
Paul A. Cook, General Manager

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November 23, 2026
Prepared by: G. Radvar / J. Moeder
Submitted by: K. Burton
Approved by: Paul A. Cook

CONSENT CALENDAR

SYPHON RESERVOIR IMPROVEMENT PROJECT
CONSULTANT SELECTION FOR SYSTEM INTEGRATOR SERVICES

SUMMARY:

As construction of the Syphon Reservoir Improvement Project (SRIP) progresses, specialized system integration services are needed to program and test the new dam control and water treatment systems and integrate them with IRWD's supervisory control and data acquisition (SCADA) system. Staff solicited proposals from three qualified firms and evaluated them based on qualifications, experience, technical approach, and overall value. Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with Prime Systems Industrial Automation, Inc. in the amount of $415,840 for system integrator services.

BACKGROUND:

SRIP will replace the existing Syphon Dam and expand recycled water storage capacity from approximately 535 acre-feet to 5,000 acre-feet. Project improvements include a new dam, inlet/outlet facilities, a dam control building, and a downstream water treatment facility. The dam control building will contain controls for reservoir-related equipment, and the treatment facility will include filtration, chemical treatment, and associated instrumentation and controls.

The construction contract includes furnishing and installing the instrumentation and control equipment and vendor-provided control systems. A separate System Integrator (SI) is needed to develop and test the project programmable logic controller (PLC), operator interface, and SCADA applications; coordinate integration with equipment vendors; and support system testing, startup, and commissioning. The SI will coordinate with IRWD Automation staff, the construction management team, AECOM as the Engineer of Record, the general contractor Sukut Construction, subcontractors, and equipment suppliers.

System Integrator Services and Consultant Selection Process:

On September 3, 2026, staff issued a Request for Proposals to three qualified firms: Enterprise Automation, Advanced Integration & Controls (AIC), and Prime Systems Industrial Automation, Inc. (PSIA). Staff held a pre-proposal meeting on September 21, 2026. Following the meeting, Enterprise Automation declined to submit a proposal. Staff received proposals from AIC and PSIA.

Staff evaluated the proposals based on technical approach, qualifications, experience, availability, and overall value. The proposed fees were comparable, with PSIA proposing $415,840 and AIC proposing $417,054.64. PSIA demonstrated a thorough understanding of the project through its detailed review of the contract documents, identification of key system interfaces, and recommendations for addressing potential integration challenges. PSIA also brings relevant IRWD experience with similar control systems and SCADA platforms. In addition, PSIA proposed a more experienced technical team with greater depth in senior-level

programming support, providing additional flexibility and continuity throughout the project. PSIA's proposal, provided as Exhibit "A", includes pricing based on the proposed project schedule as described below.

The consultant evaluation matrix, provided as Exhibit "B," reflects the results of this process.

Schedule:

The SI will begin with document review and coordination, starting in 2027. Programming and testing for the dam control building are anticipated in 2028, followed by treatment facility programming and integration in 2029. Startup and commissioning are anticipated in late 2029 through early 2030, with documentation and closeout to follow. The SI schedule will be coordinated with Sukut's approved schedule.

FISCAL IMPACTS:

The Syphon Reservoir Improvements, Project 03808, is included in the Fiscal Year 2026-27 Capital Budget. Sufficient budget is available to fund the recommendations presented herein.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). The Syphon Reservoir Improvement Project Final Environmental Impact Report (EIR) was adopted by the IRWD Board of Directors on July 26, 2021. Addendum No. 1 to the Syphon Reservoir Improvement Project Final EIR was adopted by the IRWD Board of Directors on August 26, 2024. Addendum No. 2 to the Syphon Reservoir Improvement Project Final EIR was adopted by the IRWD Board of Directors on May 12, 2025. Addendum No. 3 to the Syphon Reservoir Improvement Project Final EIR was adopted by the IRWD Board of Directors on October 27, 2025. Corresponding Notices of Determinations were filed with the County of Orange.

COMMITTEE STATUS:

This item was reviewed by the Engineering and Operations Committee on November 17, 2026.

RECOMMENDATION:

THAT THE BOARD AUTHORIZE THE GENERAL MANAGER TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH PRIME SYSTEMS INDUSTRIAL AUTOMATION, INC. IN THE NOT-TO-EXCEED AMOUNT OF $415,840 FOR SYSTEM INTEGRATOR SERVICES FOR THE SYPHON RESERVOIR IMPROVEMENT PROJECT.

LIST OF EXHIBITS:

Exhibit "A" – Prime Systems Industrial Automation Proposal
Exhibit "B" – System Integrator Services Evaluation Matrix

PRIME SYSTEMS
INDUSTRIAL AUTOMATION, INC.

PROPOSAL FOR

System Integrator Services

Syphon Reservoir Improvement Project

Request for Proposals PR 03808

SUBMITTED TO

Irvine Ranch Water District
15600 Sand Canyon Avenue, Irvine, CA 92618
Attention: Giti Radvar, Project Manager

SUBMITTED BY

Prime Systems Industrial Automation, Inc.
6236 River Crest Drive, Suite B, Riverside, CA 92507
Marc Smith, President | 951-237-7916

October 12, 2026

PRIME SYSTEMS
INDUSTRIAL AUTOMATION, INC.

October 12, 2026

Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618
Attention: Giti Radvar, Project Manager
Ethan Fike, Senior Automation System Administrator

Subject: **Irvine Ranch Water District Proposal**
System Integrator Services – Syphon Reservoir Improvement Project

Reference: IRWD Request for Proposals for System Integrator Services
Syphon Reservoir Improvement Project (PR 03808)
dated September 3, 2026

Thank you for this opportunity for *Prime Systems Industrial Automation, Inc.* (Prime Systems) to present the following proposal to provide System Integrator (SI) Services for the Irvine Ranch Water District (IRWD) Syphon Reservoir Improvement Project. Our fee proposal is submitted separately, as required by the RFP.

Company Information

Prime Systems Industrial Automation, Inc.
6236 River Crest Drive, Suite B
Riverside, CA 92507

Phone:	951-656-7139
FAX:	951-656-8139
Website:	www.psia.biz
Federal Tax ID:	20-4208685
Business Type:	C Corporation
Years in Business:	28 Years
Authorized Officer:	Marc Smith, President
	951-237-7916

Sincerely,

Marc Smith
President
Prime Systems Industrial Automation, Inc.

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Section 1 – Project Understanding, Approach, and Scope

1. Project Understanding

IRWD is replacing the existing 1949 Syphon Dam with a new, approximately 138-foot-high earth embankment dam, increasing seasonal recycled water storage from approximately 535 acre-feet to approximately 5,000 acre-feet. Because Syphon Dam is under the jurisdiction of the California Department of Water Resources, Division of Safety of Dams (DSOD), the instrumentation and control systems supporting the dam must be dependable, well documented, and fully tested before they are placed into service.

From a system integration standpoint, the Project consists of two distinct facilities, each with its own construction timeline:

- **Dam Control Building (2028)** – houses PLC-200 (control panel CP-200), the reservoir aeration system, the automatic data acquisition system (ADAS), and the pneumatic systems that operate the reservoir inlet/outlet facilities. PLC-200 programming must address control of the seven pneumatically actuated inlet/outlet fish screen valves through the PAS-CP panel, monitoring and remote control of the aeration compressors, permissives and interlocks, alarming, and the transfer of operating data to IRWD SCADA.
- **Water Treatment Facility (2029 – 2030)** – located at the downstream toe of the dam and consisting of fourteen (14) filters, dechlorination, chlorination, backwash, and associated mechanical and electrical systems. This facility includes vendor-provided control systems that must be integrated with PLC-100 (control panel CP-100), the operator interface, the Project communications network, and IRWD's existing SCADA system.

IRWD is looking for an SI that will (1) find and resolve conflicts in the contract documents before they become field problems, (2) deliver PLC, HMI, and SCADA applications that comply with IRWD Automation standards, (3) work cooperatively with IRWD, the Construction Management Team (CMT), AECOM, Sukut, the electrical subcontractor, and equipment vendors, (4) follow IRWD's Workflow Sequence for System Integrator Software Development and Testing (Exhibit A) and the start-up process in Section 01510, and (5) remain available and flexible across a multi-year construction schedule that will change as the work progresses. Prime Systems has delivered this type of construction-phase integration for Southern California water and wastewater agencies for more than twenty-eight (28) years.

2. Control System Overview

Based on our review of the conformed Project Drawings (Exhibit C) and Project Manual (Exhibit B), the instrumentation and control system is organized around two PLC control panels connected by fiber optic cable (Drawing I-002):

- **CP-100, Treatment Building** – PLC-100 with a local I/O rack and an expansion I/O rack, a panel-mounted OIT, a remote OIT in the chemical area hallway, Ethernet Switch 100, and the GE MDS Orbit MCR 900 MHz licensed radio (RAD-A) that provides the Project's link to IRWD SCADA.
- **CP-200, Dam Control Building** – PLC-200 with a local I/O rack, a panel-mounted OIT, and Ethernet Switch 200, connected to CP-100 through fiber patch panels over a 12-fiber cable.

Section 17300 specifies **Schneider Electric Modicon M580** PLCs (BMEP581020 controllers with BMENOC0311 Ethernet modules and X80/M340 I/O, Modicon "no equal") and **Maple Systems OMI6815B** operator interface terminals running **AVEVA Edge** (1,500-tag runtime). Networking uses Hirschmann BRS20 managed Ethernet switches and a Lantronix serial-to-Ethernet bridge (Section 17350). The I/O list in Section 17305 identifies approximately 400 hardwired I/O points: about 345 at PLC-100 (230 DI, 59 DO, 43 AI, 15 AO) and about 55 at PLC-200 (37 DI, 15 DO, 3 AI). Section 17000 confirms that IRWD, through its System Integrator, will provide the PLC, local HMI, and SCADA programming, while each vendor package system is delivered fully programmed by its vendor. IRWD SCADA development uses AVEVA System Platform (ArchestrA) with the District's standard templates and objects. Prime Systems has programmed this same M580, AVEVA Edge, and System Platform combination to IRWD standards on prior IRWD projects, including the Fleming Zone 8 Tank and Booster Pump Station (see Section 3).

Prime Systems' scope is the integration of PLC-100, PLC-200, the OITs, and IRWD SCADA. The table below summarizes the equipment and vendor systems that will be integrated with the PLCs, OITs, and SCADA.

System	Panel / Drawings	PLC / OIT / SCADA Integration
Algae filtration system, filters FLT-401 to FLT-414	Amiad package with vendor-programmed Modicon M580 PLC in CP-400 (I-101, I-102; Sections 11904, 17101)	PLC-100 Ethernet data exchange with the Amiad PLC: backwash call/stop/inhibit, filter bypass, remote reset, backwash fail, filtration capacity, PIT-435 pressure, power and valve fault alarms; OIT and SCADA displays
Backwash supply and return pumps	VMP-400; VFDs PMP-431 and PMP-432 (I-104, I-105)	PLC-100 logic for duty pump selection and speed reference per Section 17101; Modbus TCP status and alarm data from the VFDs to the OIT and SCADA
Sodium hypochlorite and sodium bisulfite feed	Metering pump VFDs PMP-310 to PMP-350 and PMP-210 to PMP-240 (I-106 to I-109)	PLC-100 logic for chlorination and dechlorination per Section 17101; tank levels, pump status, and alarms on the OIT and SCADA
Power monitoring	PM-MSB-100, PM-MCC-010, -020, -030 (I-002)	Modbus TCP power meter data read by PLC-100 and displayed on the OIT and SCADA
Reservoir inlet/outlet	Pneumatic Air System Control Panel PAS-CP; fish screen valves BFV-600 to BFV-660; VCP-600 (I-200)	PLC-200 open/close commands and open/closed/remote status for seven valves; CMP-600 run/fail and pressure alarms; reservoir level LT-600
Reservoir aeration (24/7 operation)	Rotary screw compressors with vendor controllers; receiver T-700 (I-201; Sections 11371, 17101)	PLC-200 Ethernet monitoring, alarming, and remote start/stop of each compressor; header pressure, high/low pressure alarm, receiver drain valve
Weather station	RS-485 through Lantronix serial/Ethernet bridge in CP-200 (I-002)	Weather data read by PLC-200 and displayed on the OIT and SCADA
ADAS dam monitoring	Campbell Scientific CR6-based system with RF452 radios and cellular modem (I-017; Section 17011)	None; autonomous system with no SCADA connection per Section 17011 (see review items)
Security and panel status	Hatch and door intrusion switches; UPS status (I-110, I-111, I-202)	Intrusion and UPS alarms to PLC, OIT, and SCADA

Programming, configuration, and parameter setup of the vendor equipment listed above, including the Amiad filtration PLC, VFDs, metering pumps, compressor controllers, the PAS-CP and VCP-600 panels, power meters, analyzers, and the ADAS, are by the Contractor and equipment vendors and are not part of Prime Systems' scope.

3. Preliminary Review of the Project Drawings

Our initial review of the drawings and specifications identified several items that we would raise for clarification early in Task 1. They are typical of what our contract document review is designed to find before programming begins.

- **SCADA communications during the 2028 Dam Control Building startup.** The only path from PLC-200 to IRWD SCADA is the fiber link to CP-100 and the RAD-A radio in the Treatment Building (I-002). Section 01510 requires Operational Train Testing and System Acceptance Testing to be performed "end to end" from the field device through SCADA. If CP-100, the fiber, or the radio is not in service when the Dam Control Building is started up in 2028, an interim communication path will be needed to complete those tests.
- **Aeration compressor tags.** The communication block diagram (I-002) and the CP-200 signal conduit schedule (S-202, S-203) identify the compressors as CMP-701 and CMP-702, while the aeration P&ID (I-201) and the power conduit schedule (P-203, P-204) identify them as CMP-710 and CMP-720 with vendor panels CP-710 and CP-720. Tag numbers should be reconciled before the I/O list and SCADA database are built.
- **ADAS programming responsibility.** Section 17011 states that the ADAS will be functionally autonomous, will not connect to IRWD SCADA, and that the District will be responsible for all ADAS programming and software configuration after acceptance. The RFP scope does not include ADAS programming, so Prime Systems has excluded it; we can provide it as an additional service if IRWD wishes.
- **Vendor data exchange definitions.** Section 17101 states that the aeration compressor data points will be determined from the data available from the compressor manufacturer, and the Amiad filtration PLC exchanges several control and alarm signals with PLC-100 over Ethernet. The protocol, addressing, and data map for each vendor interface will be confirmed in writing with the vendors before programming.

4. Approach

Prime Systems will perform the work in accordance with IRWD Automation Department's Workflow Sequence for System Integrator Software Development and Testing (Exhibit A), the Project Manual (Exhibit B), and the Project Drawings (Exhibit C). Our approach is organized around the following principles.

Resolve issues on paper first

Before any programming begins, we will review the P&IDs, I/O lists, control strategies, panel drawings, network drawings, electrical schematics, and IRWD-approved submittals together. We will build a consolidated I/O and communications register for each facility and compare it against the control strategies and the vendor submittals. Conflicts, missing information, and interface issues will be submitted to IRWD in a tracked issues log so that they can be resolved through the Project RFI process while there is still time in the schedule.

Program to IRWD standards

All PLC, HMI/OIT, and SCADA development will follow the programming, SCADA, communications, cybersecurity, and configuration standards furnished by IRWD Automation staff. Using IRWD's standard templates, tag naming, alarm philosophy, and display conventions gives IRWD Operations a system that looks and behaves like the rest of the District's facilities and is maintainable by IRWD Automation staff after the Project is closed out.

Lock down vendor interfaces early

Vendor-provided control systems (the CP-400 filter control panel, VMP-400, the VCP-600 and aeration compressor panels, the PAS-CP pneumatic actuation panel, and the VFDs) are a common source of late-stage integration problems. We will contact each vendor early to obtain communication data maps, protocol and addressing details, and command and status definitions, and we will confirm them in writing before programming the interfaces.

Test thoroughly before the field

Each PLC and OIT application will be developed and bench tested at our Riverside facility before field deployment, using simulated I/O to exercise control sequences, permissives, interlocks, alarms, and setpoints. We will invite IRWD Automation and Operations staff to review HMI/SCADA displays during bench testing so that comments are incorporated before loop checks begin.

Follow the Section 01510 start-up process

Prime Systems understands that the SI is integral to the testing and start-up process in IRWD General Requirements Section 01510 (Figure 1). We will participate in and support each step of that process for both the Dam Control Building and the Treatment Building:

- Development and bench testing of the PLC program before field deployment to the PLC and Operator Interface Terminal (OIT)

- Loop Check Test 1 (Unwitnessed) and Loop Check Test 2 (Witnessed)
- Operational Train Testing 1 (Unwitnessed) and Operational Train Testing 2 (Witnessed)
- System Acceptance Testing
- Reliability Acceptance Testing

Plan for two phases

Because the Dam Control Building will be placed into service roughly a year before the Treatment Building, we will structure the PLC-200 and SCADA applications so that the dam facilities can operate and report to IRWD SCADA on their own in 2028, and PLC-100 and the treatment facility can then be added in 2029 without re-testing or disrupting the dam controls already in service. Because PLC-200 reaches IRWD SCADA through CP-100 and the RAD-A radio, we will work with IRWD and Sukut early to confirm that this communication path, or an interim alternative, is available for the 2028 startup.

Protect IRWD's systems

Prime Systems will comply with IRWD's cybersecurity standards and the Data Protection and Security Addendum. Access to existing IRWD systems will be coordinated through IRWD Automation staff, only IRWD-approved and maintained engineering laptops will be connected to Project networks, and all program files will be kept under revision control with a documented change log that supports the Task 5 closeout deliverables.

5. Scope of Services

Prime Systems confirms the Scope of Services described in Section C of the RFP. Our scope is the integration of the Project PLCs (PLC-100 and PLC-200), OITs, and IRWD SCADA, and we will provide the following.

Task 1 – Project Coordination and Contract Document Review

- Review the Contract Documents and IRWD-approved I&C submittals, including drawings, specifications, P&IDs, I/O lists, control strategies, panel drawings, and electrical schematics.
- Identify conflicts, discrepancies, missing information, and interface issues, and submit them to IRWD for resolution through a tracked issues log.
- Participate in Project progress and system integration meetings (up to forty (40) hours over the duration of the assignment), including preparation and follow-up for each meeting.

Task 2 – PLC, HMI, and SCADA Programming

- Program the Project PLCs to implement the approved control strategies, including control sequences, equipment controls, permissives, interlocks, alarms, setpoints, and equipment status.
- Develop the HMI/OIT and SCADA displays required for operation and monitoring of the Dam Control Building and the Treatment Facility.
- Coordinate with equipment vendors to obtain the communication information needed for vendor system interfaces, and program the interfaces between vendor control systems and the Project PLC and SCADA systems, including commands, status, alarms, and process data.

Task 3 – System Integration Testing

- Bench test and field test I/O functionality, control logic and operating sequences, HMI and SCADA functionality, and communications with vendor-provided control systems.
- Correct and retest programming and configuration issues identified during testing.
- Participate in each step of the Section 01510 testing and start-up process described above.

Task 4 – Startup and Commissioning Support

- Provide on-site system integration support during startup and commissioning, troubleshoot control system and communication issues, modify programming as required, and retest affected functions.
- Coordinate with IRWD, AECOM, the CMT, Sukut, the electrical subcontractor, and equipment vendors to resolve system integration issues.

- Include the $20,000 allowance for as-needed on-site startup and commissioning support, to be used only as authorized by IRWD.

Task 5 – Documentation and Closeout

- Incorporate all changes made during testing, startup, and commissioning into the final programs.
- Provide IRWD with final PLC programs, HMI and SCADA applications, configuration files, and backups.
- Provide documentation of programming and configuration changes made during the Project.
- Provide one (1) 4-hour training session for IRWD Operations and Automation staff covering HMI/SCADA displays, operating modes, control sequences, alarms, interlocks, and operator-adjustable setpoints.

6. Assumptions, Exclusions, and Recommendations

Assumptions

- IRWD Automation staff will provide applicable programming, SCADA, communications, cybersecurity, and system configuration standards, and will coordinate all activities requiring access to existing IRWD systems.
- The Contractor will furnish and install all instrumentation, control panels, PLC and OIT hardware, network equipment, conduit, and wiring, and will perform instrument calibration, consistent with Section F of the RFP.
- OIT runtime licenses (AVEVA Edge, 1,500 tags) are furnished with the OIT hardware under Section 17300. Prime Systems retains active Modicon EcoStruxure Control Expert and AVEVA Edge development licenses and will use them for this Project at no additional cost to IRWD.
- In accordance with Section 17000, vendor package systems (including the Amiad filtration system, the aeration and inlet/outlet compressor controls, and the PAS-CP pneumatic actuation panel) will be delivered with their PLC and HMI programming complete, and VFDs, metering pumps, power meters, and instruments will be configured by the Contractor and vendors, including their communication settings. Prime Systems will program and test the PLC, OIT, and SCADA side of the interfaces to that equipment.
- ADAS programming and configuration (Section 17011) are excluded, as described in the review items above.
- Control strategies, I/O lists, and vendor communication data maps will be provided in the Contract Documents and approved submittals. Significant changes to approved control strategies after programming is complete will be reviewed with IRWD before additional work is performed.
- Field testing will be scheduled in coordination with the Contractor's readiness. Additional site visits caused by incomplete installation or Contractor-driven schedule changes may be charged against the Task 4 allowance with IRWD's prior authorization.
- Billing rates will remain fixed for the duration of the contract, as required by the RFP.

Exclusions

- Programming, configuration, or parameter setup of vendor equipment and packaged systems, including VFDs, metering pumps, the Amiad filtration PLC, compressor controllers, the PAS-CP and VCP-600 panels, power meters, analyzers, instruments, and the ADAS.
- Furnishing of hardware, panels, instruments, network equipment, or software licenses.
- Field installation, wiring, terminations, and instrument calibration (by the Contractor).

- Network or IT infrastructure design, and cybersecurity assessments beyond compliance with IRWD standards.

Recommendations

Prime Systems recommends one modification to the Scope of Services. The RFP assumes up to twenty (20) hours of Project meetings. Because system integration will span two facilities and several years of construction (2028 through early 2030), with coordination among IRWD, the CMT, AECOM, Sukut, the electrical subcontractor, and multiple equipment vendors, Prime Systems has included up to forty (40) hours for Project and system integration meetings in Task 1.

Within the proposed scope, we also recommend the following practices, which we have found reduce field rework:

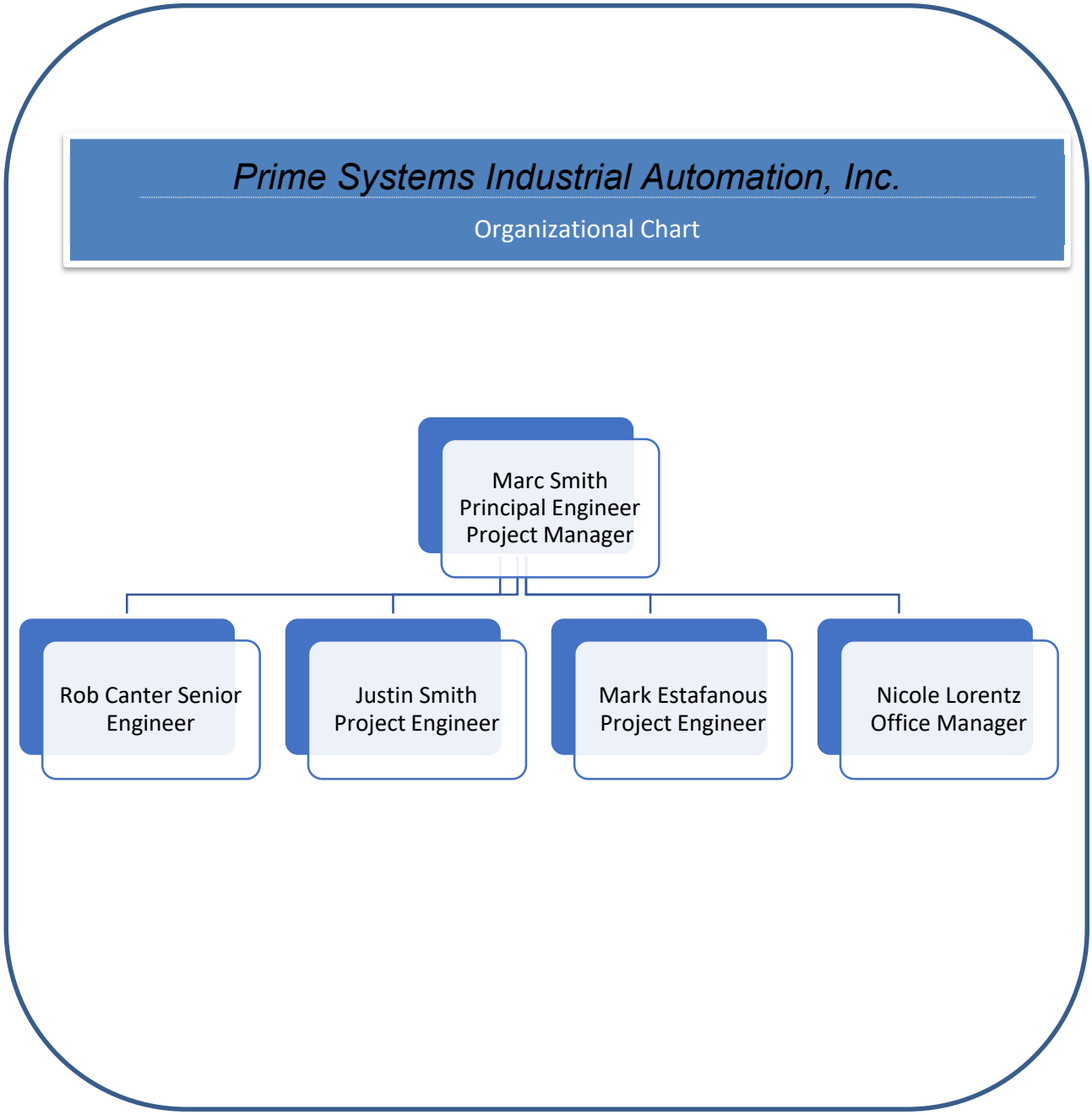
- A vendor communications coordination meeting early in each phase to confirm data maps and protocols.
- IRWD Operations review of HMI/SCADA displays during bench testing, before Loop Check Test 1.
- A short interim-operation narrative for the Dam Control Building describing how the dam facilities operate and report to SCADA before the Treatment Facility is placed into service.

Additional Services Available

If requested by IRWD, Prime Systems can also provide control panel design and fabrication, instrument calibration and verification, additional operator training, and post-commissioning SCADA support.

Section 2 – Team

1. Organizational Chart



2. Firm Overview

Prime Systems Industrial Automation, Inc. is a Riverside, California systems integration firm founded in 1998 and incorporated as a "C" Corporation in January 2006. Prime Systems provides engineering services for control system design, PLC and SCADA programming, PLC control panel design and fabrication, field services, testing, startup, and training. Our customer base is primarily water and wastewater agencies, and we have supported more than 400 customers across water, wastewater, and industrial markets.

Prime Systems operates from its own commercial office and shop at 6236 River Crest Drive, Suite B, Riverside, California, approximately one hour from the Project site. The firm has been financially stable since its inception, has never been removed from a project, and has never failed to complete its commitments on a project. Our engineers maintain active Systems Integrator program enrollment and licensing for the major PLC and SCADA platforms used in the water industry, including Schneider Electric Modicon (the M580/M340 platform specified for this Project), Allen-Bradley (Rockwell Automation), and AVEVA (Wonderware) software, and each engineer is equipped with the laptops, software, and communication equipment needed to support the Project. Prime Systems currently employs seven (7) full-time and two (2) part-time staff.

3. Key Personnel

The following table summarizes each team member's role on the Project. Brief biographical sketches follow, and full resumes are included in Appendix A.

Team Member	Project Role	Primary Responsibilities
Marc Smith, Principal Engineer	Project Manager / System Integrator	Single point of contact for IRWD; meetings and coordination; contract document review; QA/QC of all deliverables; schedule and staffing
Robert Canter, Senior Engineer	Assistant Project Manager / Lead PLC Engineer	PLC programming for the Dam Control Building and Treatment Facility; vendor interfaces; bench and field testing
Justin Smith, Project Engineer	HMI / SCADA Lead	HMI/OIT and SCADA displays; integration with IRWD SCADA; communications; documentation and training
Mark Estafanous, Project Engineer	PLC Programming and Field Testing	PLC programming support under the lead PLC engineer; field installation testing, I/O verification, and loop checks

Marc Smith, Principal Engineer – Project Manager / System Integrator

Marc Smith received his Bachelor of Science in Electrical Engineering, with an emphasis in Control Systems, from California State University, Fullerton in 1992 and completed his Master of Science in Computer Engineering there in 1995. During his graduate program he began working as a Control Systems Engineer developing PLC and SCADA applications, and in 1998 he founded Prime Systems. Marc has more than thirty-three (33) years of experience in the design, programming, testing, and startup of control systems at more than one hundred (100) water and wastewater facilities.

Marc will serve as Project Manager and System Integrator for the Syphon Reservoir Improvement Project. He will be IRWD's single point of contact, lead the contract document review and Project meetings, and review all programming and test documentation before it is submitted to IRWD.

Robert Canter, Senior Engineer – Assistant Project Manager / Lead PLC Engineer

Rob Canter graduated from the Georgia Institute of Technology in 1997 with a Bachelor of Science in Chemical Engineering. After working as an applications engineer for scrubber systems and as a project engineer performing control system design, Rob joined Prime Systems, where he has more than twenty-six (26) years of combined control systems experience. Rob is fluent in all Modicon PLC programming packages (ProWorx, Concept, and Unity Pro/EcoStruxure Control Expert) and in Allen-Bradley Logix programming. He programmed the Modicon M340 PLC upgrades and programming for approximately 175 remote sites at Rancho California Water District and has led PLC programming, I/O checkout, and functional testing on treatment plant projects.

Rob will serve as Assistant Project Manager and lead PLC engineer, responsible for the Dam Control Building and Treatment Facility PLC programs, vendor system interfaces, and bench and field testing.

Justin Smith, Project Engineer – HMI / SCADA Lead

Justin Smith studied Computer Engineering at California Polytechnic State University, San Luis Obispo, and joined Prime Systems full time after graduating in 2012, following eight (8) years of part-time work with the firm. Justin has more than fourteen (14) years of full-time experience in PLC and SCADA application development, with a primary focus on Wonderware/AVEVA System Platform, historian and reporting applications, and Ethernet and radio communication networks for water and wastewater systems.

Justin will lead development of the AVEVA Edge OIT applications and SCADA displays, integration with IRWD's existing SCADA system, program documentation, and the operator training session.

Mark Estafanous, Project Engineer – PLC Programming and Field Testing

Mark Estafanous received his Bachelor of Science in Bioengineering from the University of California, Riverside in 2019 and has more than five (5) years of controls experience. Before joining Prime Systems as a Project Engineer in March 2026, he was an Instrumentation & Controls Engineer at Sulzer EMS USA, where he configured and programmed Schneider Electric Modicon M340 and M580 PLCs in Control Expert, designed control panels, and performed point-to-point I/O verification and on-site testing and commissioning. Earlier, he designed and programmed PLC and HMI controls for reverse osmosis water treatment systems at Ampac USA.

Mark will support PLC programming under Rob Canter's direction, and will support field installation testing, including I/O verification and loop checks, for both the Dam Control Building and the Treatment Facility.

Section 3 – Relevant Experience

Prime Systems has been the primary systems integrator on numerous water and wastewater projects similar to the Syphon Reservoir Improvement Project. The three projects below were selected because together they cover treatment facility PLC and SCADA integration, vendor control system interfaces, the Modicon PLC platform specified for this Project, and construction-phase testing and startup.

Prior Work for IRWD

Prime Systems has also performed work for IRWD on the following projects:

- **Desalter Shallow Groundwater Unit (SGU) Optimization for PFAS Treatment**, Project No. 11834
- **Fleming Zone 8 Tank and Zone 8 to 9 Booster Pump Station**, PR 10101 – Modicon M580, AVEVA System Platform SCADA, and AVEVA Edge OIT programming to IRWD standards
- **Turtle Rock Zone 3 Reservoir Chloramine Booster Station**, Project No. 11840 – Modicon M580 PLC, OIT, and SCADA programming for chemical dosing control

1. Adelanto PUA – Wastewater Treatment Plant Improvement

19101 Jonathan Street, Adelanto, CA 92301

Contact: Tristan (Dutch) Hause, Lead Operator, Woodard & Curran, Inc.
(760) 669-7441
tristan.hause@woodardcurran.com

Project: Wastewater Treatment Plant Rehabilitation and Upgrade (2012 – 2013)

Woodard & Curran, Inc. contracted with Prime Systems to design, install, and commission the instrumentation and control systems for the City of Adelanto's wastewater treatment plant upgrade, which had two separate legacy PLC and SCADA systems (GE Fanuc and Innotech) serving the headworks through the tertiary filters, chemical feed, chlorine disinfection, and effluent reuse pump station.

Prime Systems provided PLC control panel design and fabrication, Allen-Bradley CompactLogix PLCs, instrumentation, integration of OEM equipment control systems, and a new Wonderware SCADA system that unified all three control systems into a single SCADA system at the plant operations building, followed by testing and commissioning while the plant remained in service.

Role of Proposed Key Personnel

- Marc Smith – Project Manager; control system design and QA/QC
- Robert Canter – PLC programming, OEM interfaces, testing, commissioning
- Justin Smith – SCADA development, testing, and training

2. Rancho California Water District – Modicon M340 PLC and SCADA Upgrades

42135 Winchester Road, Temecula, CA 92590

Contact: Lance Vess, Electrical Services Supervisor
Office: (951) 296-6966 | Cell: (909) 841-7373
vessl@ranchowater.com

Project: PLC Control Panel and SCADA System Upgrades (2012 – Current)

Rancho California Water District is upgrading approximately 175 remote sites, including wells, booster stations, reservoirs, turnouts, and spreading grounds, together with its SCADA system. The upgrades include complete PLC control panel replacements, conversion of the existing Modicon PLCs to Modicon M340 PLCs programmed to the District's new programming standards, Modicon Magelis OIT programming, and migration of the SCADA software from RSView32 to Citect.

Prime Systems supports the District with system integration for these sites, new capital projects, and SCADA upgrades. Working directly with the District and its electrical contractors, Prime Systems performs I/O checkout, PLC programming, OIT programming, SCADA programming, software installation, and system functional testing to the District's Modicon programming standards.

Role of Proposed Key Personnel

- Marc Smith – Project Manager; coordination with District staff and contractors
- Robert Canter – Modicon M340 PLC and OIT programming, I/O checkout, testing
- Justin Smith – SCADA programming and communications

3. Three Valleys MWD – Treatment Plant PLC and SCADA Upgrade

1021 E. Miramar Avenue, Claremont, CA 91711

Contact: Stephen Lang, Chief Operations Officer
Office: (909) 621-5568
Mobile: (909) 477-9698

Project: Treatment Plant and SCADA Upgrades and Support (2001 – Current)

Three Valleys Municipal Water District operates a water treatment plant and approximately thirty (30) remote sites. The treatment plant uses a Modbus TCP Ethernet network connecting six (6) local PLCs to the SCADA system. Prime Systems designed, fabricated, programmed, and installed a new Modicon Quantum main PLC, replacing an undersized controller, together with new Wonderware InTouch SCADA software. The cutover was bench tested in advance and completed during a one (1) week annual scheduled shutdown, on schedule and with no impact to plant operations.

Role of Proposed Key Personnel

- Marc Smith – Project Manager; system design and cutover planning
- Robert Canter – PLC and OIT programming, testing, and support
- Justin Smith – SCADA programming and communications

Section 4 – Schedule and Availability

1. Proposed Schedule

Prime Systems will perform its services in coordination with the Project construction schedule and will adjust the timing of its work as the Contractor's schedule changes. Based on the current baseline schedule, we anticipate the following:

Phase	Anticipated Timing	Prime Systems Activities
Contract award and document review	Upon Notice to Proceed	Task 1 review of Contract Documents and submittals; issues log; vendor contact list; Project meetings
Dam Control Building	2028	PLC and OIT programming; SCADA displays; bench testing; Loop Check Tests 1 and 2; Operational Train Testing; System and Reliability Acceptance Testing; startup
Treatment Building programming and integration	2029	PLC, HMI, and SCADA programming; vendor control system interfaces; integration with IRWD SCADA; bench testing
Treatment Building integration testing	2029	Loop Check Tests 1 and 2; Operational Train Testing 1 and 2; correction and retesting
Startup and commissioning	Late 2029 – early 2030	System and Reliability Acceptance Testing; on-site startup and commissioning support; allowance work as authorized
Documentation and closeout	Following commissioning	Final programs, applications, configuration files, and backups; change documentation; 4-hour training session

2. Availability

The proposed team is available to support the Project through programming, testing, startup, and commissioning from contract award through closeout. Prime Systems' workload is managed so that key personnel are not reassigned during active project phases, and Marc Smith, as owner and Principal Engineer, controls staff scheduling directly. Our core project team (Marc Smith, Rob Canter, and Justin Smith) has worked together for many years, which allows any team member to cover for another without loss of continuity.

Our Riverside office is approximately one hour from the Project site, allowing staff to respond to field requests on short notice. Prime Systems has always provided 24x7 on-call support to its water and wastewater clients and will make that same support available during startup and commissioning.

Section 5 – Fee Proposal

In accordance with Section D.5 of the RFP, Prime Systems' not-to-exceed fee proposal, broken down by task and team member with estimated labor hours, billing rates, and other direct costs, is submitted separately from this technical proposal. The fee proposal includes the $20,000 Task 4 allowance, and the billing rates will remain fixed for the duration of the contract.

Section 6 – Conflict of Interest

Prime Systems certifies that no personal or organizational conflicts of interest prohibited by law exist with respect to this assignment. Neither Prime Systems nor any member of the proposed team has a financial interest that would be affected by the performance of these services. Prime Systems has no current work with Sukut, the Project's construction contractor.

Section 7 – Insurance

Prime Systems maintains insurance coverage that meets or exceeds IRWD's requirements. A certificate from our insurance producer is included in Appendix B, and current coverage limits are summarized below. Any additional premium required for this coverage is included in the proposed fee, and IRWD will not be charged a separate insurance surcharge.

Coverage	IRWD Minimum	Prime Systems Coverage
Professional Liability (Errors & Omissions)	$1,000,000	$2,000,000 each claim / $2,000,000 aggregate (Professional Liability & Cyber Liability)
Commercial General Liability	$1,000,000 per occurrence / $2,000,000 aggregate	$2,000,000 each occurrence / $4,000,000 general aggregate
Automobile Liability	—	$1,000,000 combined single limit
Umbrella Liability	—	$1,000,000 each occurrence / $1,000,000 aggregate
Workers' Compensation / Employers' Liability	—	Statutory / $1,000,000

Section 8 – Contract

Prime Systems has reviewed IRWD's sample Professional Services Agreement (Exhibit D), including the Data Protection and Security Addendum, and does not propose any modifications to the standard terms and conditions.

Appendix A – Resumes

Prime Systems Industrial Automation, Inc.

Staff Resumes

Marc Smith, Principal Engineer

Education:

Bachelor of Science, Electrical Engineering (BSEE), Cal State Fullerton, 1992
Master of Science, Computer Engineering (MSCE), Cal State Fullerton, 1995
Numerous Programming Certificates (Basic, Visual Basic, C, SQL, Intellution Fix32, Wonderware)

Level of Experience:

Over thirty-three (33) years of engineering design, development, implementation, and support of industrial control systems. Control systems services include electrical, instrumentation, programming, PLC, SCADA, database, radio, communication networks for commercial and municipal water/wastewater systems. Principal Engineer, owner, and President of *Prime Systems Industrial Automation, Inc.* a Riverside based Systems Integration firm for twenty-eight (28) years.

Relevant Experience:

- Complete SCADA System upgrade for Modicon Compact PLC to Modicon Quantum PLC with upgrade of Lookout SCADA Software to Wonderware SCADA Software. Upgrade and expand system capability and functionality. Custom control panel design, fabrication, and installation. Field installation and testing completed during scheduled one week annual Treatment Plant downtime.
- Complete SCADA System upgrade and expansion for Wastewater Treatment Facility. SCADA System upgrade included consolidation of GE Cimplicity and Innotech SCADA Systems into new Wonderware SCADA System with radio communication network.
- Complete SCADA System radio network upgrade to comply with new FCC Narrow banding requirements. Radio network upgrade consisted of twenty (20) remote sites.
- Complete SCADA System design, programming, installation and testing for Municipal Water District potable water system. SCADA System design included electrical panel design, AutoCAD, hardware specification, Allen Bradley PLC Programming, RSView32 Programming, Allen Bradley PanelView programming, RSView Messenger, Data Collection, Daily and Shift Reporting. The SCADA System Data Collection PLC was an Allen Bradley 64K SLC 5/05 communicating to RSView32. Rockwell Software RAD Server and Clients provided Water District Management personnel with remote monitoring capabilities of district wide system status. The SCADA System consisted of 43 remote monitoring and control sites with point-to-point radio communications.
- SCADA, PLC, Radio, Controls and Automation projects at more than one hundred (100) Water and Wastewater facilities.

Professional Affiliations and Certificates:

- Instrumentation Society of America, Senior Member
- Wonderware Certified, Application Developer, InTouch
- Wonderware Certified, Application Developer, SCADAlarm

- Intellution, Advanced FIX SCADA Software

Robert Canter, Senior Engineer

Education:

Bachelor of Science, Chemical Engineering (BSCE), Georgia Institute of Technology, 1997

Level of Experience:

Over twenty-six (26) years of control systems engineering design, programming, and support services across multiple disciplines. Project experience includes project management, design, procurement, fabrication, implementation, programming, installation, and testing.

Relevant Experience:

- Implemented site specific security system into existing Water District SCADA System. Project included mechanical and electrical installation of security hardware, integration of security hardware into remote site PLCs, and SCADA System programming and alarming.
- Completed water treatment facility filter system Allen Bradley CompactLogix programming and Operator Interface program development. Project included PLC control panel design, AutoCAD, panel fabrication/wiring, field electrical terminations, I/O checkout, Allen Bradley CompactLogix program development and testing, Allen Bradley PanelView + program development and testing.
- Water Treatment and Distribution System ongoing support contract for Municipal Water District SCADA System. Project tasks include Modicon Quantum PLC, Modicon M340 PLC, Modicon Magelis OIT, Wonderware SCADA, Computer Systems, network systems, MDS Radio programming, instrumentation, electrical troubleshooting and support.
- Ongoing remote site control upgrades for Municipal Water District. Project includes complete control panel replacement, Modicon Compact PLC upgrade to Modicon M340 PLCs, Modicon Magelis OIT programming, RSView32 SCADA programming, software installation and testing for 175 remote sites.
- Provided complete take-over service and support for Wastewater Treatment facility Fuel Cell system following removal of previous Systems Integrator. Tasked to complete punch list items and ongoing continued support for new system. Project support consisted of Allen Bradley ControlLogix, CompactLogix, PanelView Plus, RSView32 SCADA System, Electrical and Controls service and support.
- Control System design, development, installation, and testing for numerous projects across multiple disciplines including Water/Wastewater, Mining, Foods, Packaging, Conveying Systems, Batching Systems.

Professional Affiliations and Certificates:

- Wonderware Certified, Application Developer, InTouch
- Rockwell Automation, Fundamentals of Programmable Controllers using RSLogix5/RSLogix500

- Rockwell Automation, RSLogix5000 Training
- Rockwell Automation, PLC5 Programming
- Rockwell Automation, PLC5 Advanced Programming

Areas of Expertise:

- SCADA System Design, Programming, Implementation, Testing, and Support
- Allen Bradley Programming for PLCs, PACs, OIT, VFDs, DeviceNet, ControlNet, Ethernet
- Modicon PLC Programming utilizing ProWorx, Concept, and Unity Pro/EcoStruxure Control Expert
- Modicon Magelis Operator Interface Program Design and Implementation
- Radio Systems design, programming, installation, integration and troubleshooting
- Control Panel Design, AutoCAD, Fabrication, Installation and Testing
- Electrical and Controls Testing and Troubleshooting
- Water/Wastewater Industry Process Automation and Controls
- Process Instrumentation Calibration

Justin Smith, Project Engineer

Education:

Bachelor of Science, Computer Engineering (BSCE), Cal Poly San Luis Obispo, 2012

Level of Experience:

Eight (8) years of continuous part time work followed by fourteen (14) years of full time Project Engineering work following graduation from Cal Poly San Luis Obispo with BSCE. Work experience includes Allen Bradley PLC programming, Modicon ProWorx, Modicon Concept, Modicon Unity Pro/EcoStruxure Control Expert, SCADA System programming and support, radio system installation, programming and support.

Relevant Experience:

- Complete SCADA System radio network upgrade to comply with new FCC Narrow banding requirements. Radio network upgrade consisted of twenty (20) remote sites.
- Completed advanced SCADA System upgrade for Wonderware System Platform applications. Project included extended programming and service support consisting of Wonderware InTouch, Wonderware Historian, Reporting, Allen Bradley CompactLogix PLC programming, and MDS Radio support.
- Completed SCADA System development for Wastewater Treatment Facility expansion. Project consisted of complete SCADA system design, development, installation, testing, and training.
- Provided Ethernet network design, implementation, and testing to bridge multiple networks into one cross connected network for radio system communication across the Water District SCADA System.

Professional Affiliations and Certificates:

- Wonderware Certified, Application Developer, InTouch

Areas of Expertise:

- SCADA System Programming, Implementation, Testing, and Support
- Wonderware System Platform SCADA System Programming
- Allen Bradley Programming for PLCs, PACs, Operator Interfaces
- Radio Systems programming, installation, implementation, integration and troubleshooting
- Control Panel Fabrication, Installation and Testing
- Electrical and Controls Testing and Troubleshooting
- Water/Wastewater Industry Process Automation and Controls
- Process Instrumentation Calibration
- Ethernet Network Systems
- Historical Database (SQL) Programming and Implementation

Mark Estafanous, Project Engineer

Education:

Bachelor of Science, Bioengineering, UC Riverside, 2019
Associate of Science, Math & Science, Mt. San Antonio College, 2016

Level of Experience:

Over five (5) years of control system design, PLC/HMI programming, control panel design, I/O verification, and commissioning, including Schneider Electric Modicon M340/M580 programming in Unity Pro/EcoStruxure Control Expert. Project Engineer with Prime Systems since March 2026.

Relevant Experience:

- Prime Systems Industrial Automation (2026 – Present): Programs, troubleshoots, and modifies Schneider Electric, Allen-Bradley, and Automation Direct PLC/HMI systems; performs control system upgrades, I/O verification, functional testing, and startup; commissioned and verified automated water treatment systems.
- Sulzer EMS USA, Instrumentation & Controls Engineer (2023 – 2026): Configured and programmed Schneider Electric Modicon M340 and M580 PLCs using Unity Pro/EcoStruxure Control Expert, including processor, digital I/O, and analog I/O configuration; engineered PLC, MCC, and RTU control systems and custom control panels; performed point-to-point I/O verification and on-site PLC testing, troubleshooting, and commissioning support.
- Ampac USA, Project Manager (2021 – 2023): Designed and built custom reverse osmosis water treatment systems; programmed PLC logic in ladder logic, structured text, and sequential function chart; developed HMI/SCADA applications; rebuilt and replaced PLC and HMI systems.

Areas of Expertise:

- Schneider Electric Modicon M340/M580 PLC Programming (Unity Pro/EcoStruxure Control Expert)
- Allen-Bradley PLC Programming (Studio 5000, RSLinx) and FactoryTalk View ME HMI
- Ladder Logic, Structured Text, and Sequential Function Chart
- PLC I/O Verification, Functional Testing, and Commissioning
- Control Panel Design, Electrical Schematics, and MCC Design
- Instrumentation, VFDs, and Soft Starters
- AutoCAD and SOLIDWORKS

PRIME SYSTEMS
INDUSTRIAL AUTOMATION, INC.

October 12, 2026 Letter: 2026-10 IRWD Syphon Fee Proposal.docx

Subject: **Irvine Ranch Water District Proposal**
System Integrator Services – Syphon Reservoir Improvement Project

Reference: IRWD Request for Proposals for System Integrator Services
Syphon Reservoir Improvement Project (PR 03808)
dated September 3, 2026

Fee Proposal

The following Fee Proposal is submitted separately from, and in conjunction with, the *Prime Systems Industrial Automation, Inc.* Technical Proposal dated October 12, 2026 for System Integrator Services for the Irvine Ranch Water District Syphon Reservoir Improvement Project, as required by Section D.5 of the RFP. The fee is a not-to-exceed amount broken down by task and year, including estimated labor hours and labor rates by year.

Labor Cost Breakdown

Task	Description	Year	Hours	Labor Rate (per hour)	Total
1	**Task 1 – Project Coordination and Contract Document Review**		**200**		**$49,920**
	Labor – 2027	2027	80	$240	$19,200
	Labor – 2028	2028	40	$248	$9,920
	Labor – 2029	2029	40	$256	$10,240
	Labor – 2030	2030	40	$264	$10,560
2	**Task 2 – PLC, HMI, and SCADA Programming**		**806**		**$202,240**
	Labor – 2027	2027	106	$240	$25,440
	Labor – 2028	2028	400	$248	$99,200
	Labor – 2029	2029	200	$256	$51,200
	Labor – 2030	2030	100	$264	$26,400
3	**Task 3 – System Integration Testing**		**480**		**$122,880**
	Labor – 2028	2028	160	$248	$39,680
	Labor – 2029	2029	160	$256	$40,960
	Labor – 2030	2030	160	$264	$42,240
4	**Task 4 – Startup and Commissioning Support**		**-**		**$20,000**
	As-needed on-site startup and commissioning support allowance (only as authorized by IRWD)		-	-	$20,000
5	**Task 5 – Documentation and Closeout**		**80**		**$20,800**
	Labor – 2029	2029	40	$256	$10,240
	Labor – 2030	2030	40	$264	$10,560
	Total (Labor plus Task 4 Allowance)		**1,566**		**$415,840**

Fee Summary

Fee Summary	Basis	Total
Labor – Tasks 1, 2, 3, and 5	1,566 hours @ annual labor rates	$395,840
Task 4 – as-needed startup and commissioning allowance (only as authorized by IRWD)	Per RFP	$20,000
Total Not-to-Exceed Fee		**$415,840**

Labor Rates:

Prime Systems Industrial Automation, Inc. labor rates for this Project apply to all personnel and are based on the year in which the work is performed:

Labor rates by year are shown in the table below. Travel time is billable at the labor rate for the year in which the travel occurs.

Labor by Year

Year	Labor Rate (per hour)	Labor Hours	Labor Total
2027	$240.00	186	$44,640
2028	$248.00	600	$148,800
2029	$256.00	440	$112,640
2030	$264.00	340	$89,760
Total		**1,566**	**$395,840**

All invoices are due and payable on net 30-day terms.

General Billing Terms and Conditions:

1. Work will be invoiced monthly as Time and Material (T&M) based on the *Prime Systems Industrial Automation, Inc.* labor rates for the year in which the work is performed, as detailed above, not to exceed the total fee without IRWD's written authorization.
2. Travel time is billable at the labor rates detailed above.
3. Travel Mileage is billable at the IRS Mileage Rate.
4. Travel time and mileage is calculated door-to-door from the *Prime Systems Industrial Automation, Inc.* office in Riverside, CA.
5. The Task 4 startup and commissioning allowance will be used only as authorized in advance by IRWD.
6. No equipment, computer, phone, software license, or insurance surcharges will be billed.

I hope this Fee Proposal is responsive to your needs, and I look forward to working with the Irvine Ranch Water District on the Syphon Reservoir Improvement Project. If you have any questions, please don't hesitate to call me at our office, 951-656-7139.

Sincerely,

Marc Smith

Marc Smith
President
Prime Systems Industrial Automation, Inc.

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CONSULTANT SELECTION MATRIX

Syphon Reservoir Improvement Project System Integrator Services Evaluation Matrix						
Item	Description	Weights	**Prime Systems Industrial Automation, Inc.**		**Advanced Integration and Controls**	
A	TECHNICAL APPROACH					
1	Project Understanding & Approach	40%	1		2	
2	Project Experience	30%	1		2	
3	Project Team	30%	1		2	
	Weighted Score		1.0		2.0	
	Ranking of Consultants		**1**		**2**	
B	SCOPE OF WORK					
TASK			Task Hours	Fee	Task Hours	Fee
1	Project Management		200	$49,920	170	$34,691
2	PLC, HMI, and SCADA Programming		806	$202,240	1,165	$236,054
3	System Integration Testing		480	$122,880	471	$96,795
4	Startup and Commissioning Support (Include $20,000 Allowance)		-	$20,000	78	$16,402
5	Documentation and Closeout		80	$20,800	60	$13,113
					Additional	$20,000
	Total Engineering Services Fee		1,566	**$415,840**	1,944	**$417,055**
C	Key Personnel		Roles	Years Experience	Roles	Years Experience
			Project Manager/ System Integrator	33	Project Manager	20
			Assistant Project Manager/ Lead PLC Engineer	26	Technical Lead	8
			HMI / SCADA Lead	14	Automation Engineer	2
			PLC Programming and Field Testing	5	Autmation Engineer	2
	Insurance (Professional & General Liability)		Yes		Yes	
D	Relevant Experience					
			Desalter Shallow Groundwater Unit Optimization for PFAS Treatment		Michelson WRP Tertiary Filter Improvements	
			Fleming Zone 8 Tank and Zone 8 to 9 Booster Pump Station		On-Call Control Systems Integrator Services	
			Turtle Rock Zone 3 Reservoir Chloramine Booster Station		SCADA & Field Site RTU Programming	
			Adelanto PUA - Wastewater Treatment Plant Improvement			
			Rancho California Water District- Modicon M340 PLC & SCADA Upgrades			
			Three Valleys MWD- Treatment Plant PLC and SCADA Upgrade			

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November 23, 2026
Prepared by: S. Choi
Submitted by: K. Burton
Approved by: Paul A. Cook

CONSENT CALENDAR

SECURITY SERVICES AGREEMENT TWO-YEAR CONTRACT EXTENSION

SUMMARY:

The safety and security of IRWD properties and people is critical for the continuity of operations of the District. The current security services agreement for security guard and patrol services is set to expire, and staff recommends that the Board authorize the General Manager to execute a two-year extension of the current contract with Securitas Security Services, Inc. (Securitas) in the amount of $2,128,651.

BACKGROUND:

IRWD takes a multi-layered security approach for protecting the District from malevolent acts including: 1) access control to facilities; 2) perimeter fencing and gates; 3) CCTV monitoring; and 4) security guard and patrol services. Security guard and patrol services include a lobby security presence at Sand Canyon Headquarters and Michelson Operations Center, special event support, employee security escort, and 24/7 incident response and mobile patrols of District facilities.

In October 2023, the Board authorized a three-year contract with Securitas with an option for two, one-year extensions. Due to the Securitas' exceptional service and familiarity with the District's service area, along with a high level of customer service toward IRWD employees, staff is recommending a two-year contract extension to avoid interruptions to this critical service and maintain continuity of operations.

The proposed fourth year extension of $1,044,885 reflects a 4.01% increase from the current year. The proposed fifth year extension of $1,083,766 reflects a 3.7% increase from the fourth year. The adjustments take into consideration the security officers' pay rates, as well as the current security market and Orange County wage benchmarks for Securitas to remain competitive and continue attracting and retaining quality officers.

FISCAL IMPACTS:

Funding for Security Services is included in the annual Operating Budget.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

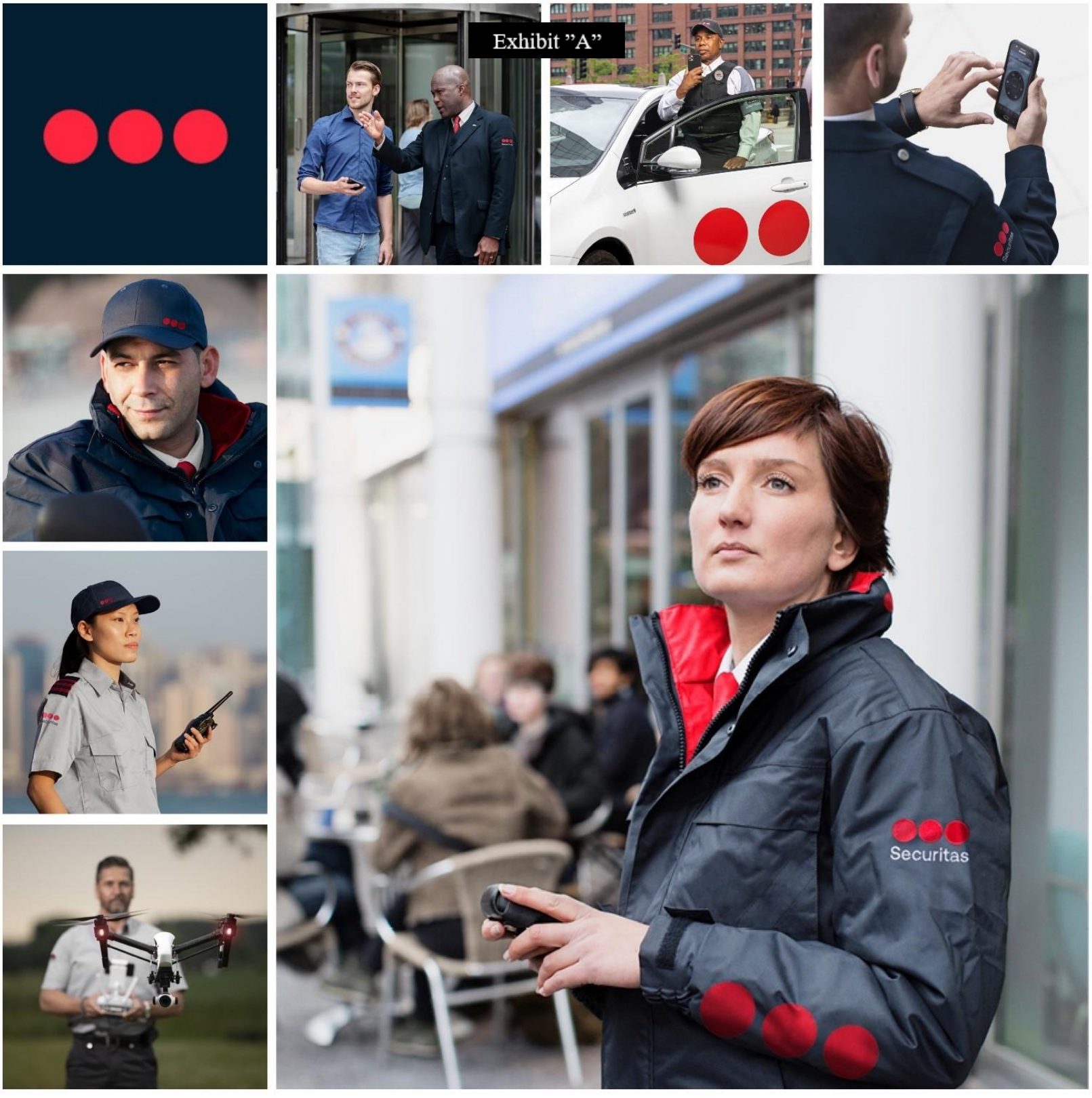
This item was not reviewed by a Committee.

RECOMMENDATION:

THAT THE BOARD AUTHORIZE THE GENERAL MANAGER TO EXECUTE A TWO-YEAR CONTRACT EXTENSION FOR SECURITY SERVICES WITH SECURITAS SERVICES, INC. FOR $2,128,651.

LIST OF EXHIBITS:

Exhibit “A” – Securitas Security Services, Inc. Proposal for Two-Year Contract Extension



A Security Services Proposal

for

Irvine Ranch Water District

Securitas Security Services USA, Inc.
2099 S. State College Bl. #100, Anaheim, CA 92806

Jorge Moreno, Sr. District Manager
714-739-5900 | Jorge.Moreno@securitasinc.com

November 9, 2026

Mr. Shane Martin
Irvine Ranch Water District
3512 Michelson Dr.
Irvine, CA 92612

Re: Uniformed Security Coverage- IRWD- Years 4 and 5 of GSA

Dear Shane and IRWD Team,

Thank you for the opportunity to submit our proposal for Years 4 and 5 of our existing General Services Agreement.

We appreciate the relationship we have built with IRWD over the past years and look forward to the opportunity to continue providing security services.

As part of this proposal, we have included updated pricing for the additional two years, which reflects an adjustment to our security officers' pay rates. With the current security market and Orange County wage benchmarks in mind, we believe this adjustment is necessary to remain competitive and continue attracting and retaining quality officers.

Our goal is to maintain the level of service IRWD has come to expect while ensuring our officers are fairly compensated for the work they do. We value the consistency of having experienced personnel on site and want to continue building on the working relationship we have established.

Thank you again for your continued business and consideration. We look forward to working with IRWD for years to come.

Sincerely,

Jorge Moreno

Jorge Moreno
Sr. District Manager
714-935-5900

Will Fuller

Will Fuller
Area Vice President
714-397-5574

Securitas Security Services USA, Inc.
2099 S. State College Bl. #100, Anaheim, CA 92806
714-935-5900
www.securitasinc.com
PPO# 14827

Introduction

- Securitas is the industry leader in Protective Services.
- Local Focus - Securitas USA has nearly 700 local District Managers throughout the United States. Each District Manager offers the commitment of a small business owner, with P&L responsibility for his/her local business operation. Every client is equally important.
- Global Presence - Securitas is the world's largest provider of security officers and related services. We are established in 57 countries including the U.S., Canada, Mexico, Europe, South America, and Asia. We have a network of partners in many other areas of the world as well and provide security services in over 105 countries.
- World Class: It is Securitas USA's ongoing goal to set the industry standard and continually raise the bar. To this end, we have implemented a comprehensive Total Quality Management approach to doing business.
- Securitas USA has nearly 750 branch portfolios in Guarding, Government, Critical Infrastructure and Corporate Risk Management services.
- Securitas has approximately 90,000 U.S. security officers and 370,000 employees worldwide.
- Securitas has three business segments: Security Services North America, Security Services Europe, and Security Services Ibero-America.

Department of Homeland Security Certification and Designation - SAFETY Act

After an extensive review by the Department of Homeland Security (DHS) of the service standards adopted and followed by Securitas Security Services USA, the DHS has awarded Securitas USA, and its customers, the highest level of liability protection afforded by the SAFETY Act. This entitles Securitas USA to the Government Contractor Defense, which can eliminate liability for claims arising from designated acts of terrorism.

Company History

- Securitas acquired Pinkerton in 1999, providing a rich history dating back to 1850.
- Securitas acquired Burns International and smaller companies in 2000.
- In July 2003, all U.S. operations united under the single name of Securitas Security Services USA, Inc.
- Global revenues in 2014 were over $10.06 billion.
- In 2015, Securitas AB acquired the electronic assets of Diebold, becoming a leading provider of electronic security solutions and services to business customers.

Capabilities Overview

Securitas Security Services USA, Inc. provides Securitas Protective Services including *On-site, Mobile and Remote Guarding; Electronic Security; Fire & Safety; and Corporate Risk Management* through our parent company, Securitas AB.

People

Selection and Hiring

Recruiting sources include:

- Career Builder's *The Talent Network*
- Securitas' web page (www.securitasinc.com), local newspapers, college campus placement centers, state employment commissions/development departments, veterans' groups, senior organizations, city and county social service agencies, private industry councils, JTPA programs, vocational centers, military and law enforcement organizations, job fairs, employee referrals (referral bonuses)

Minimum Hiring Standards:

- At least 18 years of age
- Reliable means of communication
- Reliable means of transportation
- Legal right to work in the United States
- Ability to effectively speak, read and write English
- High school diploma or GED
- Willingness to participate in the company's stringent pre-employment screening process
- Ability to qualify for and obtain a state security officer license, where applicable

Eight Step Hiring Process:

1. Comprehensive job application
2. Securitas Employment Assessment Tool (SEAT)
3. Multiple interviews
4. Drug screening
5. Background verification – including 7-year history of felony and misdemeanors
6. Assignment/scheduling meeting
7. Site introduction with client
8. Security officer introduction/questionnaire/exam

Benefits/Incentive Plans

- Affordable Care Act compliant plans
- Dental plans
- Vision care
- 401(k) savings plan
- Life and accident insurance
- Voluntary supplemental life insurance
- Employee assistance program
- Local services—discount programs
- Holiday pay
- Paid vacations
- Free uniforms
- Weekly direct deposit
- Sons and Daughters Scholarship Program
- Awards and recognition P-programs

Enhanced Benefits for our Employees' Personal & Professional Wellness

- Associate & Bachelor Degree Programs (Purdue University Global)
- Health & Weight Management Program (Omada)
- Diabetes Management Program (Livongo)
- Mental Health Management (Life Matters)
- Financial Wellness Program (SmartDollar)
- Employee Assistance Program (LEAD)

Procedures

Account Management

- Site Supervision: Site Manager, Shift Supervisors, Field Supervisors, Flex Force
- Branch Supervision: Area Vice President, District Manager, Human Resource Manager, Recruiter, Training Manager, Scheduling Manager, Accounts Payable/Receivable
- Regional Support Teams: Region President, Region Vice President, Vice President of Human Resources and Training, Regional Controller

Post Orders Document System (PODS)

PODS is a proprietary software program that ensures all of the client's requirements are being met in the post orders. This template ensures consistency and provides our officers with the detailed information needed to perform their jobs to your expectations.

Transition Plan

- Detailed transition schedule with timelines and action plans
- Transitions are typically completed within thirty (30) days of an agreement
- Implementation Plan within the first 60 days of account start up (calls for enhanced management presence on site)

Training

- Level 1 Training: Introduction to Security
- Level 2 Training: Career Development, Site Specific Training and Advanced Certification Training (ACT)
- Level 3 Training: Specialized Training
- E-Learning and the Securitas On-line Academy
- Ongoing professional development
- Annual refresher training
- Value-added training solutions
- Additional specialized training programs per industry/market
- Supervisor training

Tools

- Workforce Management (WFM) – Stand alone, proprietary scheduling system that gathers data from all branch locations, uploads weekly, and generates electronic time keeping and scheduling, all payroll, billing, accounts receivable, accounts payable and financial records.
- SecuritasVision – a secure scalable web-based application that helps us bring innovation, accountability, and efficiency to your facility. It can be deployed at a single property or across your entire organization, and combines incident management, tour verification, task scheduling and incident alert notification in one easy-to-use application.
- My Securitas – A customizable, secure client portal that gives instant access to your facility's critical information in real time. You have the capability to access this data 24 hours a day, 365 days a year.
- Post Confirmation System – electronic, proprietary officer check-in system that verifies posts are staffed.
- Proof of Visit System – documents supervisor inspections.
- National Communications Center – 24/7 call center for clients and security officers.

Feedback

- Excellence in Service Program.
- Client Service Plan – primary tool used to measure and monitor client security goals.
- Service Enhancement Plan – used to implement and monitor improvement actions.
- Service Delivery History – documents meetings/communications between client and Securitas management.
- Client Service Review – our monthly 'report card.' Clients help rate and define a variety of performance categories to help ensure we consistently meet or exceed your expectations.

Service Offerings

Our strategy is to be an intelligent protective services partner. We offer Global Expertise, Local Presence, and Tailored Solutions.

At Securitas, we are leading the transformation of the security industry by putting our clients at the heart of our business. We solve our clients' security needs by offering highly qualified and engaged people, in-depth expertise, and innovation within our protective services. We have an exceptional ability to combine services into solutions and use data to add further intelligence. We call this being client-centric, people-focused, and data-driven.

Six Pillars of Protective Services

- **Onsite Guarding**
  - Site & Industry Specific Training
  - Customized Site-Specific Tasks
- **Remote Guarding**
  - Alarm Verification
  - Employee Escort
  - Entry/Exit Management
  - Perimeter Protection
  - Remote Patrol
- **Mobile Guarding**
  - Mobile Patrol Tours
  - Alarm Response
  - Tour Confirmation
- **Electronic Security**
  - Consultation, Design, Installation
  - Video Surveillance & Access Control
  - Service & Maintenance
- **Fire & Safety**
  - Incident Response
  - Fire Prevention
- **Corporate Risk Management**
  - Investigations & Consultations
  - Employment Screenings
  - Information & Intelligence Services
  - Brand Protection & Intellectual Property

Special Projects Group (SPG)

Securitas' Special Projects Group (SPG) is comprised of active off-duty law enforcement officers, retired law enforcement officers and other individuals who have years of law enforcement experience. SPG assignments include Executive Protection, Workplace Violence Prevention, Termination Situations, and many other highly skilled security needs.

Investment Proposal- Irvine Ranch Water District

Onsite Guarding Services – Uniformed Security Protection

Scope— 7 days per week - 24 hours per day - Dedicated Vehicle and Foot Patrol and General Site Security. Vehicle patrols of site grounds along with offsite locations. Armed or unarmed security personnel to conduct access control and property protection.

CURRENT

POSITION	BC	Monthly Hours	Pay Rate	Bill Rate	Split	MU	Monthly Cost
Armed Officer	BC 15	520	$25.00	$45.75	56.1	1.83	$23,790.00
Account Manager	BC 17	173	$33.50	$60.97	56.4	1.82	$10,547.81
Armed Officer II	BC 22	416	$27.50	$50.33	56.1	1.83	$20,937.28
Unarmed Officer	BC 13	554	$22.00	$35.42	65.4	1.61	$19,622.68
Shift Supervisor	BC 20	173	$28.00	$50.96	56.4	1.82	$8,816.08
							$83,713.85

	Annual	YOY% Increase
Current	$ 1,004,566	
Year 4	$ 1,044,885	4.01%
Year 5	$ 1,083,766	3.72%

YEAR 4

POSITION	BC	onthly Hou	Pay Rate	Bill Rate	Split	MU	Monthly Cost
Armed Officer	BC 15	520	$26.00	$47.58	0.55	1.83	$24,741.60
Account Manager	BC 17	173	$34.50	$62.79	0.55	1.82	$10,862.67
Armed Officer II	BC 22	416	$28.50	$52.16	0.55	1.83	$21,696.48
Unarmed Officer	BC 13	554	$23.00	$37.26	0.62	1.62	$20,642.04
Shift Supervisor	BC 20	173	$29.00	$52.78	0.55	1.82	$9,130.94
							$87,073.73

$1,044,884.76 Annual

YEAR 5

POSITION	BC	onthly Hou	Pay Rate	Bill Rate	Split	MU	Monthly Cost
Armed Officer	BC 15	520	$27.00	$49.41	0.55	1.83	$25,693.20
Account Manager	BC 17	173	$35.50	$64.61	0.55	1.82	$11,177.53
Armed Officer II	BC 22	416	$29.50	$53.99	0.55	1.83	$22,457.76
Unarmed Officer	BC 13	554	$24.00	$38.88	0.62	1.62	$21,539.52
Shift Supervisor	BC 20	173	$30.00	$54.60	0.55	1.82	$9,445.80
							$90,313.81

$1,083,765.72 Annual

* All Holiday Pay is included in the bill rates.

* All fuel to be billed monthly as incurred

**SecuritasVision Technology – a secure scalable web-based application that helps us bring innovation, accountability, and efficiency to your facility. It can be deployed at a single property or across your entire organization, and combines incident management, tour verification, task scheduling and incident alert notification in one easy- to-use application.*

My Securitas – A customizable, secure client portal that gives instant access to your facility's critical information in real time. You have the capability to access this data 24 hours a day, 365 days a year.

Wages

Wages shall remain in full compliance with all applicable Minimum Wage Ordinances and remain competitively based on service currently provided in the respective areas.

Tools

Proposed rates include SecuritasVision technology. As detailed within the Tools section of the proposal, system offers: Paperless Reporting, Mobile Event Alerts, Tour Confirmation, and GPS location verification with real time notifications via SecuritasConnect online client portal, SMS, or email.

Overtime / Holidays / PTO

Sick Time is included. Overtime rates (1.5 straight time bill rate) will apply to the following: extended shifts or hours performed beyond 8 hours per shift and/or 40 hours per week at the request of Client; additional personnel or hours requested by Client with less than 72 hours' notice, but only for the first 72 hours.

Holiday premiums apply on the following recognized holidays and are ***included*** in the bill rate:

New Year's Day	Memorial Day	Thanksgiving Day
Labor Day	Christmas Day	Independence Day

Site-Dedicated Golf Cart (optional)

On-site all-weather golf cart, not included in aforementioned bill rates, to be direct billed at $600 per month, per location. Cart equipped with light bar. Maintenance to be direct billed as incurred. This is an optional service enhancement to be approved by Client.

Emergency/Disaster Coverage

In the event of flood, earthquake, or other region-wide emergency, Securitas shall supply additional resources, if required, to satisfy site-specific requirements. Rates for such additional services, which shall be determined in advance upon mutual written consent of the parties, may include premium wage rates, travel, lodging, and meal allowances.

Service Cost Increases

Securitas may make bill rate adjustments for any unforeseen increases in costs for health care benefits, labor costs, costs arising from changes to laws, collective bargaining agreements (where applicable), regulations, SUI, or similar government taxes. Our intent is only to have the ability to discuss unforeseeable and legally mandated cost changes.

Proposed investment includes:

- District Manager, Scheduling Manager, After-Hours Dispatch, and Field Supervision to oversee day-to-day operations of service for Client
- SecuritasVision handheld technology with MySecuritas client portal
- In accordance with the Affordable Care Act, the opportunity for all eligible Security Officers to enroll in a subsidized ACA compliant Bronze medical plan
- Recruitment, background screening and hiring costs
- Employee wages, payroll taxes and insurance
- Enhanced Personal & Professional Wellness Benefits
- Free life insurance
- Complete uniforms including replacements as needed
- Personal Protective Equipment (PPE) for each security officer (ex. facemasks, gloves) with replacements as needed per Securitas COVID-19 guidelines and protocol
- Introductory, pre-assignment and paid on-site training
- Advanced Certification Training I, II, III with e-learning technology
- Learning Management System to track completed courses and test scores
- Monthly service review and planning meetings with local District Manager
- Computer-based post orders, including client emergency response procedures
- Site-specific written test based on post orders and client policies
- 24-hour National Communications Center
- Department of Homeland Security SAFETY Act Designation

Competitive Comparison Survey

	Securitas USA	Current Provider
Officer Recruitment & Screening		
Online Hiring Management System (HMS)	X	
Securitas Employment Assessment Tool (SEAT)	X	
Read, write, & speak English	X	
Drug screen	X	
Criminal check – misdemeanors & felonies	X	
7-year reference check	X	
High school diploma or GED	X	
Two personal interviews	X	
Officer Training		
Online Learning Management System (LMS)	X	
Pre-assignment	X	
On-site	X	
Advanced programs	X	
Specialized: logistics, HOA, healthcare, etc.	X	
Uniforms		
Multiple client uniform options	X	
Free new and replacements for officers	X	
Benefit Package		
Medical, Dental, Vision	X	
Life insurance	X	
401k	X	
Paid Vacation	X	
Paid sick leave per City, State, Federal mandate	X	
Enhanced Benefits for Employee's Personal and Professional Wellness	X	
Financial Stability		
$15 billion in annual revenue	X	
Service Quality Audits		
Monthly	X	
Technology		
Online post management system–SecuritasVision	X	
Client portal access–SecuritasConnect	X	
Tour confirmation system–SecuritasVision	X	
Security incident reporting system–SecuritasVision	X	
AlertLine – anonymous employee call line	X	
24-hour National Communication Center (NCC)	X	
Local Office		
250 Offices in Securitas USA	X	
40 Offices – Pacific Region	X	
Additional Resources		
Patrol service	X	
Alarm response	X	
Consulting & Investigations (Pinkerton)	X	
Executive protection	X	
Armed Coverage	X	
Workplace Violence Prevention & Training	X	
Transportation & supply chain expertise	X	
Business continuity planning	X	
Enterprise risk management	X	
Strike coverage	X	
SAFETY Act certified	X	

Certificate of Insurance

Please note, the following Certificate of Insurance is a SAMPLE. Upon award of a contract, we will issue an actual certificate of insurance in accordance with the executed service agreement.

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/08/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:
Marsh Risk & Insurance Services CA License #0437153 777 South Figueroa Street Los Angeles, CA 90017 Attn: Securitas.Certrequest@marsh.com 502375-ALL*-CAS-17-18	PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : XL Insurance America Inc.	24554
INSURER B : ACE American Insurance Company	22667
INSURER C : Indemnity Ins Co Of North America	43575
INSURER D : ACE Fire Underwriters Co	20702
INSURER E :	
INSURER F :	

INSURED: Securitas Holdings, Inc.
(See Page 2 for Additional Named Insureds)
4330 Park Terrace Drive
Westlake Village, CA 91361

COVERAGES **CERTIFICATE NUMBER:** LOS-001987097-76 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			U500005451LI17A	01/01/2017	01/01/2018	EACH OCCURRENCE	$ 2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
	X Excess of $500,000 SIR						MED EXP (Any one person)	$ N/A
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$ 2,000,000
	X POLICY PRO-JECT LOC						GENERAL AGGREGATE	$ 2,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
B	AUTOMOBILE LIABILITY			ISAH09053463	01/01/2017	01/01/2018	COMBINED SINGLE LIMIT (Ea accident)	$ 2,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			WLRC49107158 (AOS)	01/01/2017	01/01/2018	X PER STATUTE OTH-ER	
D	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N	N/A		SCFC49107195 (WI)	01/01/2017	01/01/2018	E.L. EACH ACCIDENT	$ 1,000,000
B	(Mandatory in NH)			WLRC49107110 (MA)	01/01/2017	01/01/2018	E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
B	If yes, describe under DESCRIPTION OF OPERATIONS below			WCU C49107079 (CA,OH,WA) $1M SIR	01/01/2017	01/01/2018	E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Evidence of Insurance only.

Certificate Holder: Securitas Security Services USA, Inc.; Pinkerton Consulting & Investigations; Burns Int'l Services Company, LLC; Securitas Critical Infrastructure Services, Inc.; Securitas Electronic Security, Inc., a Delaware corporation; Securitas Electronic Security (Canada), Inc.

CERTIFICATE HOLDER

Securitas Holdings, Inc. Including:
(See Complete Certificate Holder in Description)
4330 Park Terrace Drive
Westlake Village, CA 91361

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE of Marsh Risk & Insurance Services
Cynthia Gilst

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November 23, 2026
Prepared by: T. Foo / B. Waite
Submitted by: K. Burton
Approved by: Paul A. Cook

ACTION CALENDAR

SAND CANYON HEADQUARTERS AND OPERATIONS CENTER HVAC UPGRADES CONSTRUCTION AWARD

SUMMARY:

The Sand Canyon Headquarters and Operations Center HVAC Upgrades project improves and modernizes the heating, ventilation, and air conditioning (HVAC) system at both facilities for long term reliability. Staff recommends that the Board:

- Authorize a budget increase in the amount of $985,000, from $2,294,000 to $3,279,000 for Project 12550;
- Authorize a budget increase in the amount of $985,000, from $2,294,000 to $3,279,000 for Project 12551; and
- Authorize the General Manager to execute a construction contract with Anderson Air Conditioning LP in the amount of $4,525,000 for the Sand Canyon Headquarters and Operations Center HVAC Upgrades project.

BACKGROUND:

The existing HVAC system at both the Sand Canyon Headquarters and Operations Center is obsolete, unreliable, and has aged beyond its useful service life. The air-cooled chillers, which are around 15 and 20 years old, respectively, use ethylene glycol, a hazardous waste material, to operate. In addition, the ice bank systems no longer provide the same energy cost savings compared to running a chiller during normal business hours because the Time-of-Use schedule has shifted its on-peak hours to the evening. Both the heating and cooling systems are controlled by a Johnson Controls system that is no longer supported by the supplier.

The project includes the removal of the ice bank system, replacement of the chillers and boilers, and complete replacement of the HVAC controls system at both the Sand Canyon Headquarters and Operations Center. A temporary chiller will be installed at each facility to maintain stable office temperatures while a temporary boiler will be provided at the Operations Center to protect sensitive laboratory equipment from high humidity levels. Because the HVAC systems run throughout the facilities and modifying the systems will require planned power outages, approximately 30 percent of the construction days will occur during non-normal business hours to maintain comfortable temperatures during normal business hours.

Construction Bid Process:

The project was advertised to a select list of six prequalified HVAC contractors on September 30, 2026. The bid opening occurred on October 28, 2026, with three bids received as summarized in following table.

Bidder	Bid Amount
Anderson Air Conditioning LP an AMS Company	$4,525,000
ACCO Engineered Systems, Inc.	$4,574,815
EMCOR Services Mesa Energy	$4,940,255
Engineer's Estimate	*$5,750,000*

Anderson Air Conditioning is the apparent low bidder with a bid of $4,525,000. All three bids were lower than the engineer's estimate, and the bid results are shown in Exhibit "A". Anderson Air Conditioning has completed numerous HVAC upgrade projects in the Southern California area and is well qualified to construct this project.

FISCAL IMPACTS:

Projects 12550 and 12551 are included in the Fiscal Year 2026-27 Capital Budget and require budget increases as follows:

Project No.	Current Budget	Addition <Reduction>	Total Budget
12550	$2,294,000	$985,000	$3,279,000
12551	$2,294,000	$985,000	$3,279,000
Total	$4,588,000	$1,970,000	$6,558,000

ENVIRONMENTAL COMPLIANCE:

The project is exempt from California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15301 (Class 1 "Existing Facilities") and Section 15302 (Class 2 "Replacement or Reconstruction"). Class 1 exempts the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use, such as existing facilities of publicly owned utilities used to provide public utility services. Class 2 exempts the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced, such as the replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.

COMMITTEE STATUS:

This item was not reviewed by a Committee.

RECOMMENDATION:

THAT THE BOARD AUTHORIZE BUDGET INCREASES FOR PROJECT 12550 IN THE AMOUNT OF $985,000, FROM $2,294,000 TO $3,279,000, AND FOR PROJECT 12551 IN THE AMOUNT OF $985,000, FROM $2,294,000 TO $3,279,000, AND AUTHORIZE THE GENERAL MANAGER TO EXECUTE A CONSTRUCTION CONTRACT WITH ANDERSON AIR CONDITIONING LP, IN THE AMOUNT OF $4,525,000 FOR THE SAND CANYON HEADQUARTERS AND OPERATIONS CENTER HVAC UPGRADES PROJECTS 12550 AND 12551.

LIST OF EXHIBITS:

Exhibit “A” – Bid Results – Anderson Air Conditioning LP

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Exhibit "A"

Submission

Bidder Details

Vendor Name	Anderson Air Conditioning LP
Address	2100 E. Walnut Ave Fullerton, California 92831 United States
Respondee	Mitchell Haynam
Respondee Title	Vice President / General Manager
Phone	714-920-5169
Email	mhaynam@amsofusa.com
Vendor Type	CADIR
License #	1075333
CADIR	1000765095

Submission Detail

Submission Format	Electronic
Submitted	10/28/2026 1:52 PM (PDT)
Delivery Method	
Responsive	
Submission Status	Submitted
Confirmation #	515081

Respondee Comment

Buyer Comment

Attachments

File Title	File Name	File Type
DOC102826-10282026141851.pdf	DOC102826-10282026141851.pdf	Bid Form
Carb Letter combine.pdf	Carb Letter combine.pdf	CARB Certificate(s)

Subcontractors

Showing 6 Subcontractors

Name & Address	Desc	License Num	CADIR	Amount	Type
Associated Air Balance **927 E. Covina Blvd** **Covina, California 91724**	**TAB**	**851730**	**1000014204**	**$60,000.00**	
Baker Electric **1298 Pacific Oaks Place** **Escondido, California 92029**	**Electrical**	**161756**	**1000000466**	**$424,084.00**	**CADIR**
Clean Harbors Environmental Services **47 Longwater Drive Norwell** **Norwell, Maryland 02061**	**Hazardous Waste Removal**	**720298**	**1000013713**	**$106,872.00**	
DSC CONSTRUCTION INC **24441 HWY 74** **PERRIS, California 92570**	**Concrete**	**983303**	**1000014165**	**$35,000.00**	
Karcher Insulation **2300 East Orangethorpe** **Anaheim, California 92806**	**Insulation**	**309141**	**1000006996**	**$130,650.00**	
Retrofit Technology LLC **3351 S Riverside Ave.** **Bloomington, California 92316**	**Piping**	**1109970**	**1001108867**	**$714,000.00**	**CADIR**

Plane ids

Line Items

Discount Terms No Discount

Item #	Item Code	Type	Item Description	UOM	QTY	Unit Price	Line Total	Response	Comment
BASE BID ITEMS							$4,525,000.00		
1			Payment and Performance Bonds and Insurance	LS	1	$46,000.00	$46,000.00	Yes	
2			Mobilization, Demobilization, and Cleanup at Sand Canyon Headquarters	LS	1	$50,000.00	$50,000.00	Yes	
3			Mobilization, Demobilization, and Cleanup at Operations Center	LS	1	$50,000.00	$50,000.00	Yes	
4			Sand Canyon Headquarters HVAC Upgrades	LS	1	$1,664,128.00	$1,664,128.00	Yes	
5			Operations Center HVAC Upgrades	LS	1	$1,659,000.00	$1,659,000.00	Yes	
6			Control Wiring Replacement	LF	2000	$13.00	$26,000.00	Yes	
7			Sand Canyon Headquarters Control System Upgrade	LS	1	$393,000.00	$393,000.00	Yes	
8			Operations Center Control System Upgrade	LS	1	$402,000.00	$402,000.00	Yes	
9			T8 Substation Work	LS	1	$60,000.00	$60,000.00	Yes	
10			Ethylene Glycol Disposal	LS	1	$106,872.00	$106,872.00	Yes	
11			System Balancing	LS	1	$48,000.00	$48,000.00	Yes	
12			Equipment Service Manuals	LS	1	$10,000.00	$10,000.00	Yes	
13			Prepare and Maintain Record Drawings	LS	1	$10,000.00	$10,000.00	Yes	
ADDITIVE AND DEDUCTIVE BID ITEMS							$0.00		
14			ADDITION (+) OR DEDUCTION (-)	LS	1	$0.00	$0.00	Yes	

Line Item Subtotals

Section Title	Line Total
BASE BID ITEMS	$4,525,000.00
ADDITIVE AND DEDUCTIVE BID ITEMS	$0.00
Grand Total	$4,525,000.00