THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Engineering Services Group

- **Engineering Services Monthly Activities Report for January 2025**

Summary

This monthly report provides a summary of Engineering Services Group activities for January 2025 in the following key areas:

- Colorado River Aqueduct (CRA) Program
- Dams & Reservoirs Program
- Distribution System Program
- Information Technology and Control Systems Program
- Additional Facilities and Systems Program
- Prestressed Concrete Cylinder Pipe (PCCP) Program
- Water Treatment Plants Program
- Pure Water Southern California
- Drought Mitigation – State Water Project Dependent Areas Program

Purpose

Informational

Attachments

Attachment 1: Detailed Report - Engineering Services Group's Monthly Activities for January 2025

Date of Report: February 10, 2025

Engineering Services Key Activities Report for January 2025

Engineering Services manages and executes projects within the Capital Investment Plan (CIP) to maintain infrastructure resiliency, ensure regulatory compliance, enhance sustainability, and provide flexibility in system operations to address uncertain water supply conditions. In addition, Engineering Services provides technical services to enhance reliable system operation and real property planning, valuation, acquisition, and disposition services to protect Metropolitan's assets. Engineering Services empowers our staff and partners with our business partners and the communities we serve to accomplish Metropolitan's mission.

Recent activities on CIP programs and other key engineering functions are described below.

Protect public health, the regional economy, and Metropolitan's assets

Colorado River Aqueduct (CRA) Program

The CRA program is composed of CIP projects to replace or refurbish facilities and components of the CRA system to reliably convey water from the Colorado River to Southern California.

- Solar Level Sensor Installation—This project installs 11 water level gauging stations at remote sites along the Colorado River Aqueduct and raises five accessways on Sand Hill Conduit. The contractor is preparing for the antenna pole installation. Construction is 94 percent complete and is scheduled to be completed in February 2025.
- Gene Communications Upgrades—This project constructed a new fiber optic cable line from Parker Dam to Gene Pumping Plant. The new line is predominantly located within the Metropolitan fee property on new power poles with a small underground portion of the alignment within the Bureau of Reclamation's property. Construction was completed in December 2024.
- Black Metal Mountain Electrical Upgrades—This project replaces the existing single-phase 2.4 kV power line delivering power to the Black Metal Mountain communication site with a more robust three-phase power line rated for 4.16 kV usage. The project will also improve the steep main access road to the communications sites. Final design is 25 percent complete and is scheduled to be completed in August 2025.

- Cabazon Radial Gate Replacement—This project will replace an inline and wasteway radial gate and install security, electrical, and safety upgrades. Final design is 93 percent complete and is scheduled to be completed in March 2025.

Gene Communications Upgrades—
Placement of approximately 50 cu yd concrete for an electrical ductbank

Dams & Reservoirs Program

The Dams & Reservoirs Program is composed of CIP projects to upgrade or refurbish Metropolitan's dams, reservoirs, and appurtenant facilities to reliably meet water storage needs and regulatory compliance.

- Garvey Reservoir Rehabilitation—This project will replace the aging reservoir floating cover and liner, structurally strengthen the outlet tower, upgrade the on-site water quality laboratory building, rehabilitate the junction structure, and replace the existing standby generator and a portion of the security perimeter fence. Final design is approximately 65 percent complete and is scheduled to be completed in September 2025.
- Lake Mathews Pressure Control Structure (PCS) and Electrical System Upgrades—This project will replace the aging Lake Mathews discharge facility and electrical system. The project includes the construction of a new PCS with a bypass pipeline alongside the existing forebay and upgrading the electrical system to accommodate future power needs. This project uses a progressive design-build

(PDB) project delivery method. The conceptual design (PDB procurement document) phase is 20 percent complete. It is anticipated that an RFQ for Phase 1 design-build services will be advertised in spring 2025, and the selection of a design-build entity made in fall 2025. The project is anticipated to be complete by 2031.

Distribution System Program

The Distribution System Program is composed of CIP projects to replace, upgrade, or refurbish existing facilities within Metropolitan's distribution system, including pressure control structures, hydroelectric power plants, and pipelines, to reliably meet water demands.

- Service Connection OC -88 Chillers Replacement—This project replaces deteriorated cooling equipment including three chillers and two chilled water pumps that provide cooling for the pump station's pump motors and air conditioning system. The contractor has completed the installation of the first chiller and the stainless-steel chilled water piping and has begun the installation of the second chiller. Construction is approximately 90 percent complete and is scheduled to be completed in February 2025.
- Foothill Hydroelectric Plant and Control Building Seismic Upgrade—This project strengthens the Foothill Hydroelectric Plant and Control Building to withstand a significant earthquake by removing and replacing the roofing system, adding encasements to enlarge and strengthen concrete columns, and reinforcing shallow foundations. The contractor has completed installing the building's roof and placing concrete around the lower half of the existing concrete columns. Construction is approximately 97 percent complete and is scheduled to be completed in February 2025.
- Rialto Pipeline Rehabilitation—This project replaces a 35-foot-long, 121.5-inch diameter section of welded steel pipe on the Rialto Pipeline in the city of Upland where the mortar lining has failed. This project also replaces the deteriorating pipe spool and isolation valve at the CB-11 service connection. The contractor is working on submittals to procure the 121.5-inch-diameter section of steel pipe and has begun mobilization of field offices. Construction is approximately 15 percent complete and the shutdown to do the work is scheduled for February 2025.
- Lakeview Pipeline Procurement—This project will procure 12,500 feet of steel liner pipe segments with diameters ranging from 114 inches to 117 inches. This initial quantity of Metropolitan-furnished pipe will allow the future contractor for the Lakeview Pipeline Stage 2 project to quickly start field installation while they procure the remaining pipe. Fabrication is approximately 50 percent complete and is scheduled to be completed in May 2025.

Service Connection OC-88—Replacement of two chillers

Lakeview Pipeline Procurement—Inspection of 117-inch Diameter Pipe Fabrication

Information Technology and Control Systems Program

The Information Technology and Control Systems Program is composed of projects to replace, upgrade, or provide new facilities, software applications, or technology that will enhance cybersecurity, reliability, flexibility, and capability of information, communication, and control systems.

- Supervisory Control and Data Acquisition (SCADA) System Upgrades—This project will upgrade Metropolitan's entire control system in incremental stages, spanning the Colorado River Aqueduct, the five water treatment plants and the conveyance and distribution system. The first stage of this project replaces the control system at the Mills plant, starting with a pilot effort on one of the plant's remote terminal units to demonstrate the proposed technology and the consultant's approach for the plant and the overall project. The pilot phase is 100 percent complete. Staff continued evaluating the results of the recently installed pilot equipment to determine the criteria for equipment implementation. The system upgrades at the Mills plant are scheduled to be completed in October 2026.

Additional Facilities and Systems Program

The Additional Facilities and Systems Program is composed of CIP projects to refurbish, replace, upgrade, or provide new facilities and systems that support Metropolitan's business and district-wide operations.

- Lake Mathews AST Replacement—This project will install a new 7,500-gallon diesel fuel tank and dispensing system at the existing fuel island at the Lake Mathews facility. Final design is approximately 99 percent complete and is scheduled to be completed in February 2025.
- La Verne Warehouse—Metropolitan's Central Stores and warehouses are located at the Weymouth Treatment Plant site in the city of La Verne. This project replaces the current main warehouse and annex building with a new warehouse building of 55,000 sf and outdoor canopies of 30,000 sf. Preliminary design is approximately 15 percent complete and is scheduled to be completed by December 2025.

Prestressed Concrete Cylinder Pipe (PCCP) Program

The PCCP Program is composed of CIP projects to refurbish or upgrade Metropolitan's PCCP feeders to maintain water deliveries without unplanned shutdowns.

- Second Lower Feeder Valve Procurement—This project will procure 13 long-lead-time, 48-inch and 54--inch diameter conical plug sectionalizing valves for the Second Lower Feeder. As PCCP portions of the Second Lower Feeder are rehabilitated, aging sectionalizing valves are being replaced with valves procured under this project. All 13 valves have been received. The thirteenth and last valve was delivered to Metropolitan's Lake Mathews facility on December 20, 2024.
- Allen-McColloch Pipeline Urgent Relining—This project will perform urgent relining of approximately three miles of distressed PCCP segments of the Allen-McColloch Pipeline (AMP) that were discovered during an inspection in 2023. The urgent relining of the AMP is being performed in stages. Stage 1 includes carbon fiber-reinforced polymer lining of four segments and steel relining of approximately 4,500 feet of pipeline. Stage 1 upstream of OC-88 is complete. Downstream of OC-88, pipe installation and backfill is complete and site restoration will be completed in February 2025. Stage 2 work

consists of 12,600 feet of steel liner installation and appurtenant work. Pipe installation at all sites is complete. Backfill of the last site will be completed in January 2024. The Stage 2 work is approximately 97 percent complete. Bulkhead removal downstream of OC-88 was completed in January 2025, all work within the pipeline is complete, and the pipeline has been returned to service. Site restoration, paving, and striping are expected to be complete by March 2025.

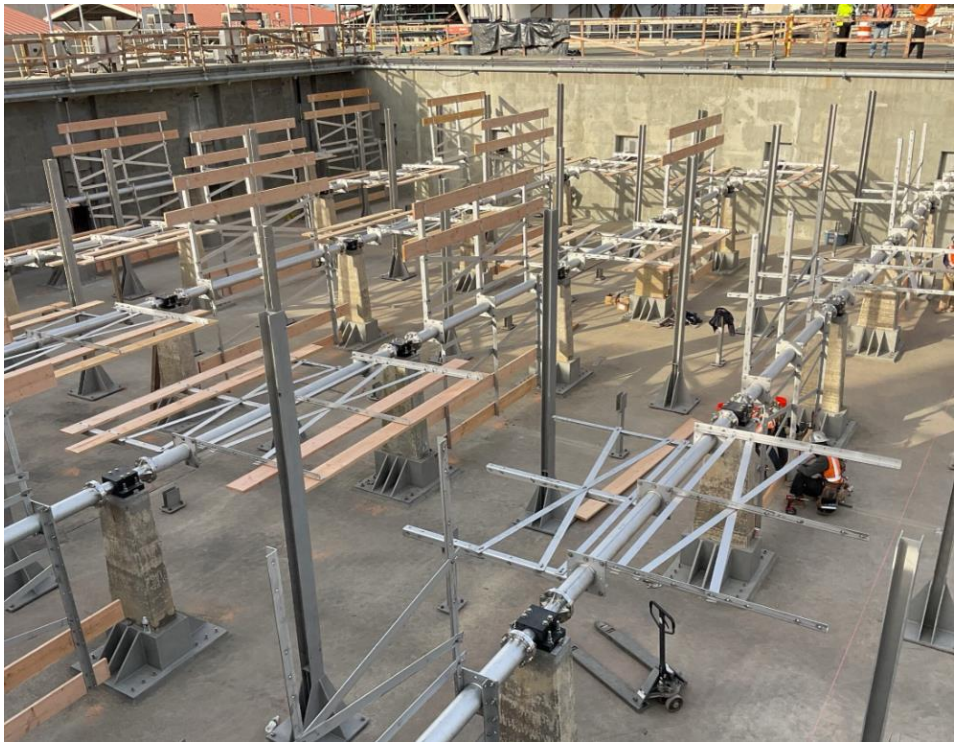
- Sepulveda Feeder North Reach— This PCCP rehabilitation project was re-prioritized to support the West Area Water Supply Reliability Improvements. The North Reach project, in conjunction with the Sepulveda Feeder Pump Stations, will allow the reversal of normal flow in the Sepulveda Feeder to augment treated water deliveries to the west service area. Utility potholing and geotechnical boring have been completed. The North Reach preliminary design is approximately 80 percent complete and is scheduled to be completed in April 2025.
- Electromagnetic Inspections—Regular inspections of the PCCP feeders are a critical step in evaluating the condition of each pipeline and assisting staff in prioritizing the relining work on each feeder. This project conducts the fifth cycle of electromagnetic and visual inspections of Metropolitan's approximate 146.4 miles of PCCP pipelines. Inspection of the East Lake Skinner Bypass, San Diego Pipeline No. 5, and Auld Valley Pipeline were completed in December 2024.

Water Treatment Plants Program

The Water Treatment Plants Program is composed of CIP projects to replace or refurbish facilities and components at Metropolitan's five water treatment plants and the Chemical Unloading Facility to continue to reliably meet treated water demands.

- Weymouth Basins 5–8 and Filter Building No. 2 Rehabilitation—This project rehabilitates major mechanical and structural components of Basins 5–8 and Filter Building No. 2 at the Weymouth plant, including the flocculation/sedimentation equipment, sludge pumps, baffle boards and walls, launders, inlet gates, and outlet drop gates. Rehabilitation work also includes seismic upgrades of basin walls and inlet channel, hazardous material abatement, and replacement of filter valves and actuators in Filter Building No. 2. The contractor completed all rehabilitation work in Basins 7 and 8, and continued construction activities including structural wall modifications, mechanical piping, and equipment installation in Basins 5 and 6 and Filter Building No. 2. Construction is approximately 87 percent complete and is scheduled to be completed in September 2025.
- Weymouth Administration Building Upgrades—This project upgrades the Weymouth Administration Building to withstand a significant earthquake. The planned upgrades include structural strengthening consistent with current seismic standards for essential facilities as well as accessibility and fire/life safety improvements, architectural modifications near the areas of structural upgrades, and improvements associated with the preservation of historic architectural features. Final design is approximately 92 percent complete and is scheduled to be completed in May 2025.
- Weymouth Real Property Acquisition—This project was to purchase a single-family residence and guest house situated on 0.33 acres directly adjacent and keyed into the Weymouth plant through a voluntary sale authorized by the Board in October 2024. The acquisition improves physical security and provides flexibility for ongoing operations or future projects. The purchase was completed in December 2024.

- Diemer Filter Rehabilitation—This project rehabilitates the 48 filters at the Diemer plant to enhance filter performance, minimize filter media loss, and rehabilitate or replace aging components. Planned upgrades include replacing filter media, filter valve actuators, and instruments; modifying the filter upstream influent weir and surface wash laterals; and improving the coal grit removal facilities for the east and west sides of the plant. Final design is approximately 96 percent complete and is scheduled to be completed in February 2025.
- Mills Electrical Upgrades, Stage 2—This project upgrades the electrical system with dual-power feeds to key process equipment to comply with current codes and industry practice, improve plant reliability, and enhance worker safety. Stage 1 construction is complete. Stage 2 improvements will add a second incoming 12 kV service from Riverside Public Utilities, reconfigure the existing 4.16 kV switchgear, and replace the standby generator switchgear and the emergency generator programmable logic controller. The contractor completed installation of the new electrical gear components inside the Ozone Switchgear Building and is preparing to upgrade the SGE emergency switchgear inside the Standby Generator building. Construction is approximately 80 percent complete and is scheduled to be completed in August 2025.



Weymouth Basins 5–8 and Filter Building No. 2 Rehabilitation—
Installing the baffle boards at Basin 5, view to the Southwest

Mills Electrical Upgrades, Stage 2—New Control Panels Installed in the Engine Generator Building

Adapt to changing climate and water resources

Pure Water Southern California

The Pure Water Southern California (PWSC) Program is a large regional recycled water program that will provide a new local source of safe and reliable drinking water for Southern California. PWSC currently focuses on four areas: demonstration testing, environmental planning, technical studies, and preliminary design of initial pipeline reaches. PWSC will produce up to 150 million gallons per day of purified water from the Advanced Water Purification Facility (AWPF) in Carson, for indirect potable reuse and direct potable reuse applications.

- Environmental Planning—The environmental planning phase began in 2020. Technical studies have been completed to support the effort. The draft EIR is currently scheduled for publication in early 2025, with board certification of the document in early 2026.
- Program Management—PWSC program management efforts lead the planning for the PWSC Program, including project controls, scheduling, budget development, risk management, coordination

with program partners and stakeholders, grants and funding, and preparation of various plans and studies.

  - In December 2024, the Board authorized entering into an agreement with USBR to accept up to $125,472,855 in grant funding. The final agreement was executed on January 10, 2025.
  - Program internal governance and program plans are currently being developed. The first workshop was held on October 29, 2024. Technical studies are underway to support planning of direct potable reuse implementation, EIR analysis on per- and polyfluoroalkyl substances compounds, and development of program starting options, including treated water augmentation.
  - Metropolitan and LACSD are developing a work plan and gathering information to pursue certification for PWSC under State Senate Bill 149. This certification makes critical projects, which are necessary for the State to meet its climate and clean energy goals, eligible for expedited judicial review.

- Advanced Water Purification Facility—The AWPF will purify treated wastewater from LACSD's A.K. Warren Water Resource Facility using membrane bioreactors (MBRs), reverse osmosis, and ultraviolet/advanced oxidation. With its expertise in biological wastewater treatment, LACSD will assume the responsibility of implementing the AWPF pretreatment, including the MBR facilities.
  - A draft conceptual facilities plan has been prepared to document key assumptions of AWPF components. The final draft plan is currently being prepared.
  - Southern California Edison has completed the Method of Services (MOS) study to identify infrastructure needed to meet AWPF power requirements.
  - Staff is preparing a Request for Qualification document for the procurement of a Progressive Design Build (PDB) entity to progress the design of the AWPF.
- Direct Potable Reuse (DPR)—The California Division of Drinking Water (DDW) published the final DPR regulations in December 2023. On August 6, 2024, the California Office of Administrative Law approved these DPR regulations, which took effect on October 1, 2024. Metropolitan has completed bench-scale testing to screen the potential DPR treatment processes that could be used for the program. Planning of pilot-scale and demonstration-scale testing is in progress. Key testing equipment will be procured in early 2025 to facilitate design of the pilot/demonstration system.
- Conveyance Pipeline System—The PWSC conveyance system consists of the backbone pipeline, which extends over 40 miles from the AWPF in the city of Carson to as far north as the city of Azusa; repurposing an existing pipeline owned by the San Gabriel Valley Municipal Water District; and a new DPR pipeline to convey water from the backbone eastward for raw water augmentation at Metropolitan's Weymouth plant in the city of La Verne. It also includes several pump stations, service connections, isolation valves, and other pipeline appurtenances. As part of the current environmental planning phase efforts, the project team is preparing the Conveyance Facilities Conceptual Design Report to support the environmental studies and permitting processes required by CEQA. The final report is anticipated to be complete early this year. In addition, Metropolitan's Board authorized two consulting agreements for preliminary design of the first two pipeline reaches in March 2023, and

preliminary design of these two reaches is anticipated to be completed later this year. Additional progress updates are provided below.

- Reach 1—This reach is approximately 6.3 miles long, primarily within public rights of way in the city of Carson, with service connections for LADWP and West Basin MWD. Current work includes utility field investigation and geotechnical work, incorporating value engineering comments and designing for more tunneling to minimize project risks. Additional investigations and staging coordination for additional tunneling will advance in the first half of 2025.
- Reach 2—This reach is approximately 7.5 miles long, primarily within public rights of way in the cities of Long Beach and Lakewood, with a service connection for Long Beach Utilities. Current work includes utility field investigation and geotechnical work, development of preliminary design reports and drawings, as well as coordination with the City of Long Beach, Long Beach Utilities, Caltrans, and other permitting entities for the major tunnel crossing of the I-710 and Los Angeles River.

Drought Mitigation—State Water Project Dependent Areas Program

The Drought Mitigation—State Water Project Dependent Areas Program is composed of CIP projects to replace, refurbish, upgrade, or construct new facilities, which are identified to mitigate the vulnerability experienced by specific member agencies that are affected during shortages of State Water Project supplies.

- Wadsworth Bypass—This project installs a bypass pipeline and an isolation valve to interconnect the Wadsworth Pumping Plant with the Eastside Pipeline. This is one of four projects needed to deliver water from Diamond Valley Lake (DVL) to the Rialto Pipeline. The contractor completed installation of all piping during the April 2024 shutdown and is currently awaiting delivery of long-lead electrical equipment. The 84-inch butterfly valve will be installed during the April 2025 shutdown. Construction is approximately 95 percent complete and is scheduled to be completed in July 2025.
- Inland Feeder Rialto-Pipeline Intertie—This project installs an interconnection pipeline and isolation valve structure between the Inland Feeder and Rialto Pipeline so that water can be delivered from DVL to the Rialto Pipeline. The contractor has completed construction of the isolation valve vault structure, installed the 96-inch pipe from the valve vault to the Rialto Pipeline and Inland Feeder, and constructed most of the pipe incasement. Installation of the pipe inside the valve vault is nearly complete. Construction is approximately 70 percent complete and is scheduled to be completed in July 2025.
- Inland Feeder-Badlands Tunnel Surge Protection—This project installs a new open-to-atmosphere surge tank at the south portal of the Badlands Tunnel, which will protect the Inland Feeder from hydraulic transients when pumping water from Diamond Valley Lake to the Rialto Pipeline. The contractor has completed the valve vault structure and the surge tank foundations. Currently, the contractor is installing the 96-inch pipe from the isolation valve vault to the surge tank. Construction is approximately 50 percent complete and is scheduled to be completed in August 2025.
- Sepulveda Feeder Pump Stations—This project installs new pump stations at the existing Venice and Sepulveda Canyon pressure control facilities, providing the ability to reverse flow in the Sepulveda Feeder and deliver 30 cubic feet per second from the Central Pool to portions of the Jensen Plant exclusive area. This project utilizes a progressive design-build (PDB) project delivery method. The Board awarded a Phase 1 PDB agreement in September 2023. Phase 1 includes preliminary design

and development of a Guaranteed Maximum Price (GMP) for completion. The contractor is proceeding with the purchase of authorized long lead items, including pumps, large valves, and electrical switchgear and transformers, and has submitted the 70 percent complete design package for Metropolitan's review. Authorization of Phase 2 final design and construction is anticipated in spring 2025.

Inland Feeder Rialto-Pipeline Intertie—East 96 Inch Pipe to Inland Feeder—Looking West

Inland Feeder-Badlands Tunnel Surge Protection—False Work Installation at Valve Vault