THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Engineering Services Group

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

Summary

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

- Colorado River Aqueduct (CRA) Program
- Dams & Reservoirs Program
- Distribution System 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
- ESG Management Mentoring Program
- American Society of Civil Engineers (ASCE) Engineers Week – Girl Day

Purpose

Informational

Attachments

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

Date of Report: March 10, 2025

Engineering Services Group's Monthly Activities for February 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 key 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.

- CRA Domestic Water Treatment System — This project upgrades the domestic water treatment systems at all five CRA pumping plants, including the replacement of the water treatment units. The contractor has installed the temporary treatment skid system at Intake Pumping Plant and water quality testing is underway. The temporary skid will remain in operation until installation, testing, and commissioning of the new system is complete. Demolition of the existing system will start in February 2026. Construction is 43 percent complete and is scheduled to be completed in March 2026.
- CRA Storage Buildings — This project furnishes and installs pre-engineered storage buildings at Hinds, Eagle Mountain, and Iron Mountain pumping plants and constructs associated site improvements. The contractor is currently completing the interior work on the new storage buildings at Eagle Mountain Pumping Plant, constructing the building at Hinds Pumping Plant, and receiving the building structural components at Iron Mountain Pumping Plant. Construction is 60 percent complete and is scheduled to be completed in April 2026.

- Erosion Control Improvements — This project will install erosion control features along the CRA conveyance system at 23 conduit locations that are vulnerable to major erosion damage during storm events. Final design is 5 percent complete and is scheduled to be completed in September 2027.
- Hinds Discharge Valve Platform — This project will replace corroded steel members, such as ladders and floor grates at all nine discharge valve pits at the Hinds Pumping Plant. Preliminary design is completed and consultants are being solicited to develop the final design.

CRA Domestic Water Treatment System — Installing underground ductbank and precast accessways at Hinds

Eagle Mtn. Storage Building — Contractor Installation of Roof Paneling on New Building

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 complete in November 2025.

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.

- Perris Valley Pipeline Tunnels — This project will complete construction of the Perris Valley Pipeline and provide service connections to Eastern and Western Municipal Water Districts. This project installs 3,000 linear feet of tunnel that crosses the Interstate 215 freeway. The Contractor has completed all tunneling and is preparing to make the final connection during a planned April 2025 shutdown. Overall construction is 95 percent complete and is scheduled to be complete in mid-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 the work on the building's roof and the concrete columns and will continue installing the walkway on the south side of the hydroelectric building. Construction is approximately 95 percent complete and is scheduled to be completed in March 2025.
- Auld Valley PCS Valve Replacement — This project will rehabilitate a 42-inch sleeve valve and procure a 42-inch sleeve valve for the Red Mountain Pressure Control Structure and rehabilitate two 42-inch sleeve valves for the Auld Valley Pressure Control Structure. One valve at the Auld Valley PCS has been rehabilitated and the second one is currently at the Metropolitan shop being rehabilitated. The valve will be installed during an April 2025 shutdown. Metropolitan is currently reviewing the submittals provided by the vendor to procure the new 42-inch sleeve valve for Red Mountain.
- Santa Monica Feeder Cathodic Protection — This project will install cathodic protection for a steel portion of the Santa Monica Feeder to address corrosion detected during a 2018 inspection of the pipeline. This project will install two 400-foot-deep anode wells along with rectifiers and remote monitoring equipment along the feeder. The Contractor is securing all necessary permits and plans to mobilize onsite in February 2025. Construction is scheduled to be completed by June 2025.
- Yorba Linda PCS Valve Replacement — This project will rehabilitate five 54-inch sleeve valves and five 54-inch butterfly valves in the pressure control structure. Prior to rehabilitation of the sleeve valves, the project will also rehabilitate five 54-inch butterfly valves needed for isolation of the sleeve valves. The

shutdown for the butterfly valve rehabilitation has been scheduled for April 2025. Currently, materials for the shutdown are being procured.

- Hollywood Tunnel North Portal Valve Replacement — The project will replace two 24-inch sleeve valves operated by electric actuators for pressure control and two 24-inch bonneted knife gate valves for flow isolation at the Hollywood Tunnel North Portal along the Santa Monica Feeder. The valve procurement contract is scheduled to be awarded at the March 2025 board. Final design for the valve installation is 30 percent complete and scheduled to be completed by December 2025.

Perris Valley Pipeline Tunnels — Open Cut Excavation at Shaft 1;
Lowering Mini Excavator into Trench

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.

- La Verne Shops Improvements — This project improves the La Verne Shops building and installs Metropolitan-furnished shop equipment. The contractor continued installing electrical conduits for

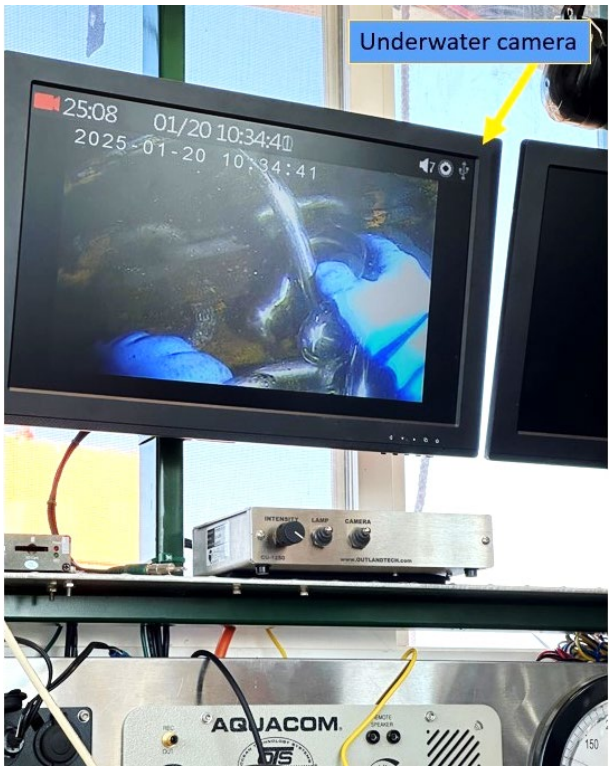
branch circuits, began installing reinforcing steel for the new blast booth foundation, continued installing maintenance holes for the new electrical ductbank, began installing concrete formwork for the blast booth pit walls, and are installing new underground natural gas lines. Construction is approximately 96 percent complete and is scheduled to be completed in April 2025

- Diamond Valley Lake Wave Attenuator Replacement – This project adds a second attenuator to the existing wave attenuating system at the East Marina in Diamond Valley Lake. The second attenuator will protect the boats and launch ramp from excessive wave action. As part of the improvements, the existing wave attenuator will be relocated to a new location and the new attenuator will be installed in its place. Additional anchors will be placed on the bottom of the reservoir to provide anchorage for the new longer attenuator. The contractor is installing the concrete anchors on the North side, has begun removal of existing anchor cables and chains, and has begun installation of interconnecting chains for tying the existing anchor blocks to the new anchor blocks for the new wave attenuator. The project is 45 percent complete and construction is scheduled to be complete in May 2026.
- Colorado River Aqueduct Kitchens and Lodging Replacement — This project will replace the existing kitchens and lodges at Eagle and Iron Mountain pumping plants and construct a second lodge at the Gene Pumping Plant. Conceptual design is 10 percent complete and is scheduled to be completed in July 2025.

La Verne Shops Improvements — New Unit Substation Transformer Installation

Diamond Valley Lake Wave Attenuator Replacement — Hoisting Anchor Blocks into Water

Diamond Valley Lake Wave Attenuator Replacement — Diver Entering Water for Block Installation



Diamond Valley Lake Wave Attenuator Replacement — Images of Diver Installing Anchor Chains

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 Reach 3B — This project installs 3.7 miles of steel lining and three conical plug valves along a portion of the Second Lower Feeder (Feeder) that traverses the cities of Lomita, Los Angeles, and Torrance. The second shutdown to complete the relining and replace the three 42-inch valves with three 48-inch valves commenced on December 2, 2024. The Reach 3B portion of the Feeder and the bypass line serving two service connections at Palos Verdes Reservoir are out of service. The interiors of the three sectionalizing structures have been demolished, the three existing 42-inch valves have been removed, and two pipe access portals have been completed. Installation of the new 48-inch valves and the steel liner and construction activities for the rehabilitation of this portion of the Feeder is underway. Construction is 81 percent complete and is scheduled to be completed in September 2025.
- Allen-McColloch Pipeline (AMP) 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 (CFRP) 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 complete 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 was completed in January 2025. The Stage 2 work is approximately 95 percent complete. Bulkhead removal, disinfection, installation of flanges, and rewatering of the pipeline downstream of OC-88 were completed in January 2025. Site restoration, paving, and striping are expected to be completed in March 2025.

- Sepulveda Feeder Reach 9 —This project will rehabilitate approximately 19,400 linear feet of 120-inch to 96-inch diameter PCCP with a combination of solid steel and coiled steel liner systems. Reach 9 is located on Havenhurst Avenue from about State Route 118 to just north of the Van Nuys Airport in the city of Los Angeles. Additionally, a new 54-inch sectionalizing valve and valve structure will be installed on the Sepulveda Feeder at approximately station 220 near the intersection of Havenhurst and Chatsworth Street. Final design for Reach 9 is 50 percent complete and is scheduled to be completed in December 2025.

Second Lower Feeder Reach 3B— Contractor Installing Steel Liner in Portal

Second Lower Feeder Reach 3B— Removing Old Valve from Vault

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 90 percent complete and is scheduled to be complete 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 95 percent complete and is scheduled to be completed in May 2025.

- 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 97 percent complete and is scheduled to be complete in April 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. Riverside Public Utilities energized the second incoming service to the plant. The contractor completed the SGN-1B switchgear upgrades 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 — Basin 5 Clarifier Testing

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 (mgd) of purified water from the Advanced Water Purification Facility (AWPF) in Carson, for indirect potable reuse (IPR) and direct potable reuse (DPR) 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 May 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 funding under the U.S. Bureau of Reclamation (USBR) Large-Scale Water Recycling Program (LSWRP) grant. The 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. Technical studies are underway to support planning of DPR implementation, EIR analysis on per- and polyfluoroalkyl substances compounds, and development of program phasing 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. A meeting with the State on January 23, 2025, further identified the next steps to pursue the certification.
    - In January 2025, staff presented potential Program staging options to the Subcommittee on Pure Water Southern California and Regional Conveyance and information on regional benefits.
- 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 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 in March. In addition, preliminary design of the first two pipeline reaches is currently underway and is anticipated to be complete by the end of the year. Staff is also preparing a market-sounding brief for conveyance projects in March, with plans to advertise for Construction Management / General Contractor (CM/GC) alternative delivery pre-construction services for Reaches 1 and 2 as early as July 2025.

  In January, the Southern California Edison (SCE) executive council authorized their staff to move forward with drafting a lease agreement for Metropolitan's usage of SCE right-of-way, effectively allowing us to co-locate our pure water backbone pipeline within their transmission corridor along the San Gabriel River. This, in turn, minimizes the overall impact on cities and communities along the backbone alignment. 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 report and drawings, as well as coordination with 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

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.

- Foothill Pump Station – This project will connect Metropolitan's Inland Feeder to San Bernardino Valley Municipal Water District's (SBVMWD) Foothill Pump Station. The project is one of four Rialto Pipeline service area supply reliability improvement projects. Foothill Pump Station will provide the hydraulic lift needed for direct water delivery from Diamond Valley Lake to Rialto Pipeline. The project will install supply and discharge bypass pipelines, isolation valves, and their vault, and a surge protection system. Final design for the project is 60 percent complete and is scheduled to be complete by early 2025. The project requires permits from CA Fish and Wildlife and the U.S. Fish and Wildlife Service to address impacts on endangered species found at the project site; permit acquisition is underway.
- 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 uses 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 has submitted the 70 percent cost estimate. Staff is currently negotiating terms and conditions. Authorization of Phase 2 final design and construction is anticipated in spring 2025.

Empower the workforce and promote diversity, equity, and inclusion

ESG Management Mentoring Program

As a part of Metropolitan's workforce development initiative, Engineering rolled out a series of modules for Engineering's Management Mentoring Program that focused on providing additional guidance and tools to new team managers as they navigate the complexities of management. The Engineering Management Mentoring Program seeks to provide increased support for these highly motivated leaders. With 13 employees promoted to team managers, the program seeks to channel the diverse backgrounds and areas of expertise of these individuals to collaboratively develop solutions to their common challenges. While the conclusion of the series was completed in February 2025, Engineering will continue its support of these managers with regular, targeted discussions and meetings as they develop their leadership skills. Engineering plans to continue management mentoring as new managers come on board each year.

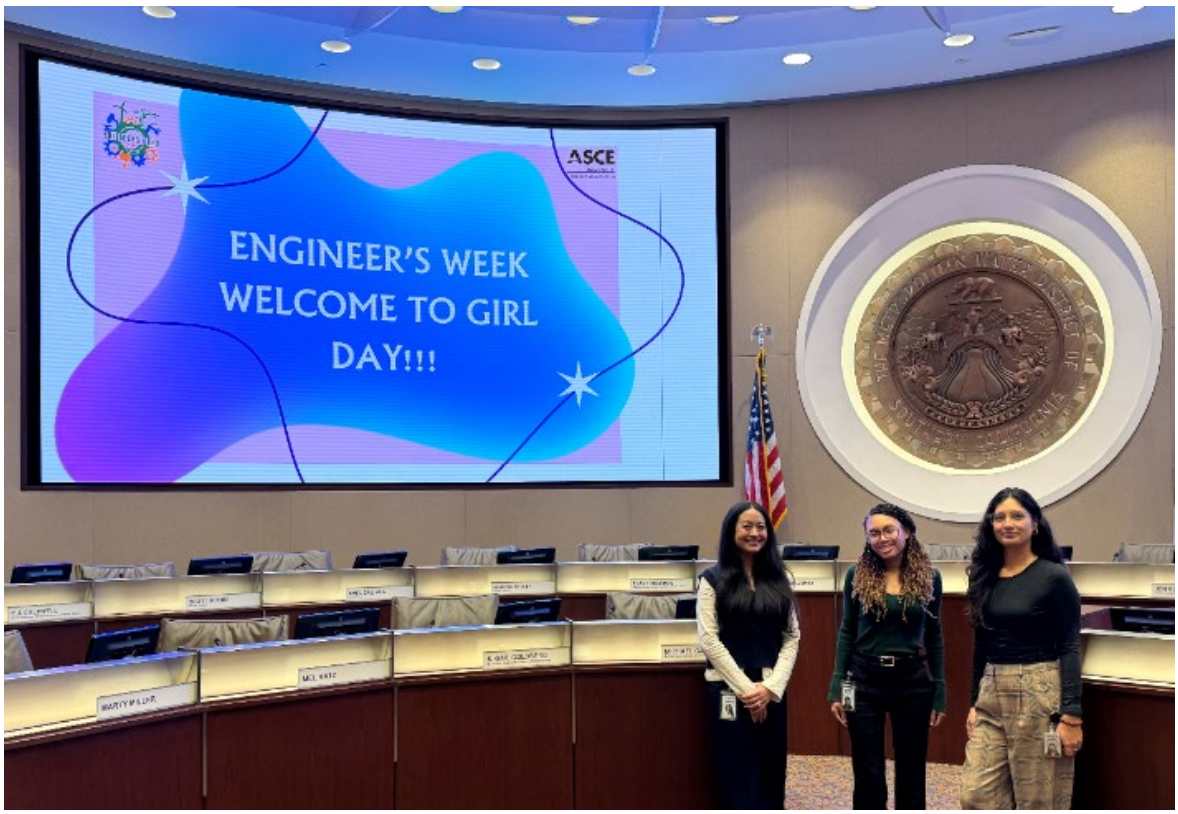
Management Mentees and Mentors at Culmination Meeting

Management Mentees and Mentors Engaging in Discussions

Partner with interested parties and the communities we serve

American Society of Civil Engineers (ASCE) Engineers Week – Girl Day

Staff participated in the 12th Annual ASCE Engineers Week – Girl Day event at Metropolitan's Headquarters Building on February 20, 2025. This event represents one of several events that ASCE rolls out each year to strive to inspire future generations of female engineers from disadvantaged and underrepresented backgrounds. These events help provide opportunities for 6th graders through 12th graders to learn about science, technology, engineering, and mathematics through professional panels and various engineering craft activities to explore the world of engineering together. With the overarching theme this year - "Design Your Future," interim Chief Engineer Mai Hattar welcomed the next generation of students along with engineering staff (Jennifer Thompson and Marylin Duarte) and a college student intern (Avianah Butler) who shared their academic and career paths, including their motivations and challenges. They also spoke about their role and contributions to significant projects that included the Badlands Tunnel Surge Protection Facility and Water Quality Lab Seismic Retrofit and Expansion. Other activities included students engaging in a hands-on activity to design and build a structure, scholarship opportunities, and a special presentation by the City of Los Angeles Bureau of Engineering.



Presenters from left to right:
Jennifer Thompson (Engineer), Avianah Butler (College Student Intern), and Marylin Duarte (Engineer)

Girl Day Event Group Photo