THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Action

- **Board of Directors**
  Engineering, Operations, and Technology Committee

8/18/2026 Board Meeting

8-1

Subject

Authorize a $29,214,000 agreement with PCL Construction West Coast Inc. for Phase 1 progressive design-build services for the Lake Mathews Pressure Control Structure and Electrical System Upgrades Project; and an increase of $3.1 million to an existing agreement with Carollo Engineers Inc. for a new not-to-exceed amount of $4.4 million to serve as the owner's advisor for the Phase 1 design-build agreement; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Lake Mathews is the terminus of the Colorado River Aqueduct (CRA). The Lake Mathews facilities, including the forebay discharge facility and electrical distribution network, were constructed in the 1930s. These key structures and a majority of the related equipment are original and in need of rehabilitation. As all CRA water to both the Upper and Lower Feeders flows through this critical facility, staff recommend that a new bypass facility be constructed around the existing forebay. The bypass facility includes piping and a pressure control structure (PCS) that will allow staff to regulate flow leaving the lake into the Upper and Lower Feeders. The new facilities would be constructed to replace the existing aging structure/equipment and eliminate this potential system vulnerability. Additionally, the aging electrical distribution system requires an upgrade to meet current and future demands and provide system redundancy. A new chemical addition facility is also needed for control of invasive mussels. Collectively, these improvements will ensure overall system reliability and resiliency of the Lake Mathews facilities.

This action authorizes an agreement with PCL Construction West Coast Inc. (PCL) to develop the Lake Mathews PCS and Electrical System Upgrades Project under a Progressive Design-Build (PDB) project delivery approach. Under this PDB approach, PCL will provide both design and construction services related to this project. The current action requests authorization of the Phase 1 design-build agreement, which will primarily include the design services for the project. Staff will return to the board at a future date(s) to authorize the construction portions of this project. This action also authorizes an increase to an existing agreement with Carollo Engineers Inc. to serve as the owner's advisor for the Phase 1 design-build agreement. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the List of Subconsultants, **Attachment 3** for the Key Agreement Terms, and **Attachment 4** for the Location Map.

Proposed Action(s)/Recommendation(s) and Options

Staff Recommendation: Option #1

Option #1

a. Authorize a $29,214,000 agreement with PCL Construction West Coast Inc. for Phase 1 progressive design-build services for the Lake Mathews Pressure Control Structure and Electrical System Upgrades Project; and

b. Authorize an increase of $3.1 million to an existing agreement with Carollo Engineers Inc. for a new not-to-exceed amount of $4.4 million to serve as the owner's advisor for the Phase 1 design-build agreement.

Fiscal Impact: Expenditure of $41 million in capital funds. Approximately $37 million will be incurred in the current biennium and has been previously authorized. The remaining funds from this action will be accounted for in the next biennial budget.

Business Analysis: This option will replace aging infrastructure and enhance the reliability of water deliveries from Lake Mathews to the Weymouth and Diemer plants.

Option #2

Do not authorize the agreement at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to reduce the risk of unplanned electrical outages and interruption of water deliveries from Lake Mathews. This option could lead to higher repair costs, more extensive repairs, and unplanned shutdowns. Under this option, staff would continue to pursue the two projects separately utilizing a traditional design-bid-build delivery method.

Alternatives Considered

Alternatives considered for the Lake Mathews PCS and Electrical Upgrades included using a traditional design-bid-build project delivery process in which drawings and specifications would be developed for advertisement for competitive bidding. It was determined that this traditional project delivery approach would delay completion of the project by two years when compared to the PDB method. An expected completion date for a typical design-bid-build method would be mid-2035, whereas with design-build, completion would be expected by mid-2033. Due to the critical nature of these facilities, it was determined that Metropolitan should utilize PDB delivery to expedite construction of the Lake Mathews Pressure Control Structure and Electrical Upgrades Project. This selected alternative is expected to provide the earliest possible completion of the project.

Applicable Policy

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 8148: Alternative Project Delivery

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

Related Board Action(s)/Future Action(s)

By Minute Item 49672, dated February 11, 2014, the Board authorized preliminary design phase activities to perform repairs and replace the Howell-Bunger valves at the Lake Mathews forebay facility.

By Minute Item 50756, dated March 14, 2017, the Board authorized preliminary design phase activities for upgrades to the Lake Mathews electrical system.

By Minute Item 53188, dated March 14, 2023, the Board authorized amendments to the Metropolitan Water District Administrative Code to provide for the implementation of new legislation authorizing the use of alternative project delivery methods.

By Minute Item 53745, dated August 20, 2024, the Board authorized an agreement with Carollo Engineers Inc. to perform owner's advisor services for progressive design-build delivery of the Lake Mathews Pressure Control Structure and Electrical System Upgrades.

By Minute Item 54446, dated April 14, 2026, the Board appropriated a total of $1.025 billion for projects identified in the Capital Investment Plan for Fiscal Years 2026/27 and 2027/28.

Summary of Outreach Completed

Metropolitan highlighted this project at a September 2023 MetWorks event during the Inland Empire Utilities Agency Inland Empire Industry Day to allow adequate time for interested design-build entities to form in advance and prepare to submit proposals.

On March 12, 2025, Metropolitan hosted an outreach event and site tour ahead of the Request for Qualifications release to provide prospective design-builders with more information about the project.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action consists of basic data collection, research, experimental management, and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines). Additionally, the proposed action is statutorily exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action involves feasibility or planning studies for possible future actions which the agency, commission or board has not yet approved, adopted or funded (Section 15262 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Details and Background

Background

Lake Mathews is the terminus of the CRA. The Lake Mathews facilities were initially constructed in 1938 and expanded to their current capacity in 1961. The original facilities included the main dam embankment, the lake's first outlet tower, discharge facilities, and the forebay, which has its own outlet tower. In 1961, the main dam embankment was raised, and two dikes were constructed, increasing the lake's volume to its current capacity of 182,000 acre-feet.

The Lake Mathews discharge facility is used to convey all of the water from the lake to the Upper and Lower Feeders to supply the Weymouth and Diemer plants. The facility includes the forebay, its outlet tower, and ten 32-inch-diameter Howell-Bunger fixed-cone valves that control flow from the lake into the forebay to dissipate the excess energy. The forebay is a reinforced concrete reservoir with a storage capacity of 31 acre-feet and includes a 60-foot-tall rectangular concrete outlet tower with steel slide gates. The design and configuration of the forebay and appurtenant structures/equipment reflects the state-of-the-art facility design from the late 1930s.

The ten original Howell-Bunger valves have gradually deteriorated through continuous use and must be replaced. In addition, five 54-inch-diameter butterfly valves within the headworks structure and four large slide gates on the forebay outlet tower need to be refurbished or replaced. The facility's design makes it difficult to safely access the fixed-cone valves for maintenance or repairs while the facility is in operation. The entire discharge facility and forebay must be shut down and dewatered before work can be performed on the outlet slide gates. All CRA water deliveries serving the Central Pool portion of the distribution system are funneled through these 88-year-old outlet facilities. The lack of redundancy in the current system increases operational risk, and scheduling shutdowns for routine maintenance and repairs has become challenging due to Metropolitan's heavy reliance on these facilities.

Due to the critical nature of this facility and the difficulty getting an adequate shutdown duration to perform the work, staff recommends the construction of a new bypass facility. The bypass facility would include modern pressure/flow control equipment in the form of a new PCS structure to replace the existing Howell-Bunger valves and forebay. The configuration of the recommended PCS at Lake Mathews would be similar to existing installations at the Foothill Feeder and Inland Feeder PC-1. Metropolitan staff is very familiar with operating and

maintaining this type of equipment. The bypass piping and the PCS structure would be constructed while the existing forebay remains in service, with a short-duration shutdown to perform the final tie-in. Once completed, the bypass would provide system redundancy and allow routine maintenance or rehabilitation work that would otherwise be limited by the short shutdown window.

The Lake Mathews power distribution system has undergone numerous modifications and upgrades over the years. The incoming electrical service is 480-volt (V) AC, three-phase from Southern California Edison. The incoming service voltage is stepped up from 480V to 2.4 kilovolts (kV) and distributed to outlying loads through a radial network of overhead and underground cables. Unit power centers with step-down transformers convert the 2.4kV back to 480V to power the loads. The loads consist of office buildings, maintenance and repair shops, reservoir outlet structures, outlet headworks, fire pumps, dam seepage pump structures, a chlorination structure, a hydroelectric power plant, and a Communication/Disaster Recovery Building, which is considered a critical facility for Metropolitan operations.

The current electrical system is at capacity and cannot support new equipment loads. The components have also reached the end of their useful life and need replacement. The new system will be upgraded to a 4.16 kV distribution network which will match other upgraded, high-voltage systems at Metropolitan. A significant portion of the electrical system upgrade work is located near the planned PCS structure. Since electrical system upgrades are necessary to supply the new PCS structure, successive design-bid-build contracts, with the electrical system upgrades performed first, would be needed to avoid conflict between the two contractors. To reduce the schedule without risking conflict between the two contractors, staff recommends combining the new bypass, PCS, and electrical system upgrades into a single PDB contract.

Lake Mathews Pressure Control Structure and Electrical Upgrades – Progressive Design-Build

With the passage of SB 991 in August 2022, Metropolitan was granted authority to utilize PDB delivery for projects over $5 million. The PDB model utilizes a two-phase process. Under Phase 1, a design-build entity would be selected based on qualifications in response to a Request for Qualifications (RFQ). The selected design-build entity would then progress the design to the point where a guaranteed maximum price (GMP) could be estimated. Metropolitan would negotiate the GMP with the selected design-build entity before entering Phase 2 for completion of design and construction. If unable to reach an agreement or if Metropolitan elects not to proceed with the PDB agreement, Metropolitan would discontinue negotiations and select a different design-build entity for negotiations. Metropolitan will utilize a third party to develop an independent cost estimate to support cost reconciliation and negotiations with PCL to achieve the best overall value for Metropolitan.

This project will construct a new bypass facility, which includes a new PCS and associated piping, a new chemical addition facility for invasive mussel control, and facility-wide electrical upgrades. Major items include large-diameter control valves, isolation valves to allow maintenance while the facility remains in service, and control systems. The PCS will reside inside an enclosed building with heating and air conditioning, a bridge crane, and access hatches. The facility-wide electrical system upgrades include replacing the underground and overhead distribution lines; replacing the existing unit power centers and adding unit power centers where needed; and integrating the new electrical system with Metropolitan's supervisory control and data acquisition system.

The planned activities for the Phase 1 PDB agreement will include geotechnical investigation, survey, site planning to accommodate current water delivery operations, preliminary design, performing pre-construction services, development of design-build procurement documents, final design to approximately the 70 percent level of completion, equipment design and preparation of submittal documents for key long-lead equipment, and development of a GMP proposal. Metropolitan force activities include field staff participation and review of the operational aspects of the design.

A total of $41 million is allocated for this work. Allocated funds include $29,214,000 for Phase 1 design-build services by PCL; and $3.1 million for owner's advisor services throughout Phase 1 by Carollo Engineers Inc. Allocated funds for Metropolitan staff include $3.653 million for technical oversight, review of the design-builder's work, and identification of technical requirements; $2.235 million for project management, preparation of environmental documentation, contract administration and construction management, and other owner's costs; $524,000 for submittals review and responding to requests for information; $100,000 for Project Labor

Agreement (PLA) administration services by Parsons Constructors Inc. under an existing board-authorized agreement; $150,000 for preparation of CEQA documentation and supporting technical studies using an existing board-authorized agreement; and $2.024 million for remaining budget. **Attachment 1** provides the allocation of the required funds.

Design will be performed by PCL Construction West Coast Inc. as part of the Phase 1 design-build services to approximately 70 percent level of completion; the metric below will be reviewed at the start of Phase 2. Engineering Services' performance metric target range for construction management and inspection of projects with construction more than $3 million is 9 to 12 percent. For this project, the performance metric goal for Phase 1 design is estimated to be 7.7 percent of the total construction cost, which includes $20.5 million for PCL Construction West Coast Inc. and $2.6 million for Metropolitan staff; both sums represent the final design portion of the budgets noted above.

The estimated construction value for this project is anticipated to range from $300 million to $310 million. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from $350 million to $370 million.

Phase 1 Design-Build Services Agreement (PCL Construction West Coast Inc.)

In August 2025, Metropolitan issued RFQ No. 1384 to select the entity to provide PDB services for the Lake Mathews Pressure Control Structure and Electrical System Upgrades Project. Six firms submitted a Statement of Qualifications. All six firms met the mandatory minimum qualifications for bonding capacity, insurance coverage, safety record, and other statutory requirements. The firms were then evaluated based on the qualifications of the project team and key personnel, experience related to similar design-build projects, project understanding and delivery approach, and construction planning and scheduling. PCL Construction West Coast Inc. was the top-ranked DBE with the highest evaluation scores based on the evaluation criteria described above.

Staff recommends authorizing an agreement with PCL Construction West Coast Inc. for Phase 1 design-build services for the Lake Mathews Pressure Control Structure and Electrical Upgrades for a not-to-exceed amount of $29,214,000. While the agreement will need to be amended for Phase 2 work once the GMP is established, the agreement contains the negotiated terms and conditions for both Phases 1 and 2. Key terms and conditions are summarized in **Attachment 3**. Metropolitan staff, with assistance from specialized consultants, successfully negotiated an eight percent reduction of the Phase 1 GMP with PCL that is described herein. The approach to the negotiations and resultant design fee for Phase 1 work are consistent with staff's prior experience on PDB projects and reflect the nature of the Phase 1 work to be completed by PCL. Staff is confident that the agreement price is a fair and equitable negotiated outcome. Staff will return to the Board at a future date to procure long-lead equipment and, if Metropolitan and PCL are able to negotiate a GMP, to amend the agreement to cover Phase 2 work, which includes completion of design and construction.

The Phase 1 activities will include: (1) review of existing project documentation, (2) development of the project schedule, (3) preparation of a Basis of Design Report, procurement plan, and preliminary design deliverables, (4) site investigations including geotechnical investigations, potholing, and survey, (5) performance of pre-construction services including but not limited to environmental planning support, permitting, and constructability reviews, (6) development of final design to the 70 percent level, (7) preparation of procurement documents and design for key, long-lead equipment, and (8) development of a GMP proposal for Phase 2 services.

This action authorizes an agreement with PCL Construction West Coast Inc. for a not-to-exceed amount of $29,214,000 for Phase 1 PDB services for the Lake Mathews PCS and Electrical System Upgrades. This PDB agreement is being conducted under the terms of Metropolitan's PLA. Metropolitan has established a Small Business Enterprise and Disabled Veteran Business Enterprise participation level of 15 percent. PCL Construction West Coast Inc. has agreed to meet this level of participation. The lead designer is Stantec Consulting Services, and other planned subconsultants are identified in **Attachment 2.**

Owner's Advisor Services – Carollo Engineers Inc.

In August 2024, Metropolitan's Board authorized an agreement with Carollo Engineers Inc. to provide owner's advisor services to assist with progressive design-build project delivery. Carollo was selected to provide owner's advisor services based on the firm's expertise in progressive design-build contracts and its familiarity with the Lake Mathews PCS and Electrical System Upgrades Project. Carollo completed the conceptual study for this project and assisted with development of the PDB request for qualifications documents.

The planned owner's advisor services will include: (1) development of a formal partnering approach to identify and resolve issues; (2) facilitating project meetings and progress reviews; (3) reviewing proposed plans, invoices, technical plans, procedures, schedules, guidelines, and submittals; (4) advising staff throughout the first phase of the project; (5) developing Phase 1 cost estimate and schedule, (6) engaging the services of an independent construction cost estimator to be used as a basis of negotiating the GMP with the DBE.

This action authorizes an increase of $3.1 million to an existing board-authorized agreement with Carollo Engineers Inc. for a new not-to-exceed amount of $4.4 million for owner's advisor services during Phase 1 of PDB for the Lake Mathews PCS and Electrical System Upgrades. Metropolitan has established a Small Business Enterprise participation level of 10 percent. Carollo Engineers Inc. has agreed to meet this level of participation. See **Attachment 2** for a listing of subconsultants.

Project Milestone

April 2029 – Board award of a Phase 2 agreement for construction

Mai M. Hattar 7/29/2026
Mai M. Hattar *Date*
Chief Engineer
Engineering Services

John V. Bednarski 7/29/2026
John V. Bednarski *Date*
Assistant General Manager

Attachment 1 – Allocation of Funds

Attachment 2 – List of Subconsultants

Attachment 3 – Key Term Agreements

Attachment 4 – Location Map

Ref# es12712434

Allocation of Funds for Lake Mathews Pressure Control Structure and Electrical System Upgrades – Phase 1

	Current Board Action (Aug. 2026)
Labor	
Studies & Investigations	$ 1,094,000
Final Design	2,559,000
Owner Costs (Program mgmt., envir. monitoring)	2,155,000
Submittals Review & Record Drwgs.	524,000
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	80,000
Professional/Technical Services	
Carollo Engineers Inc.	3,100,000
Parsons Constructors Inc.	100,000
Environmental Consultant	150,000
Right-of-Way	-
Contracts	
PCL Construction West Coast Inc.	29,214,000
Remaining Budget	2,024,000
Total	**$ 41,000,000**

The total amount expended for the Lake Mathews Pressure Control Structure and Electrical System Upgrades is approximately $8.9 million. The total cost to complete this project, including funds allocated for the work described in this action, and future actions is anticipated to range from $350 million to $370 million.

The Metropolitan Water District of Southern California

Subconsultants for Agreement with Carollo Engineers Inc.
Lake Mathews PCS and Electrical Upgrades

Subconsultant and Location	Service Category; Specialty
Schnabel Engineering Boise, ID	Mechanical
ProjectLine Technical Services Costa Mesa, CA	Electrical
SubTerra Inc. North Bend, WA	Tunneling and underground engineering

The Metropolitan Water District of Southern California

Subconsultants for Agreement with PCL Construction West Coast Inc.
Lake Mathews PCS and Electrical Upgrades

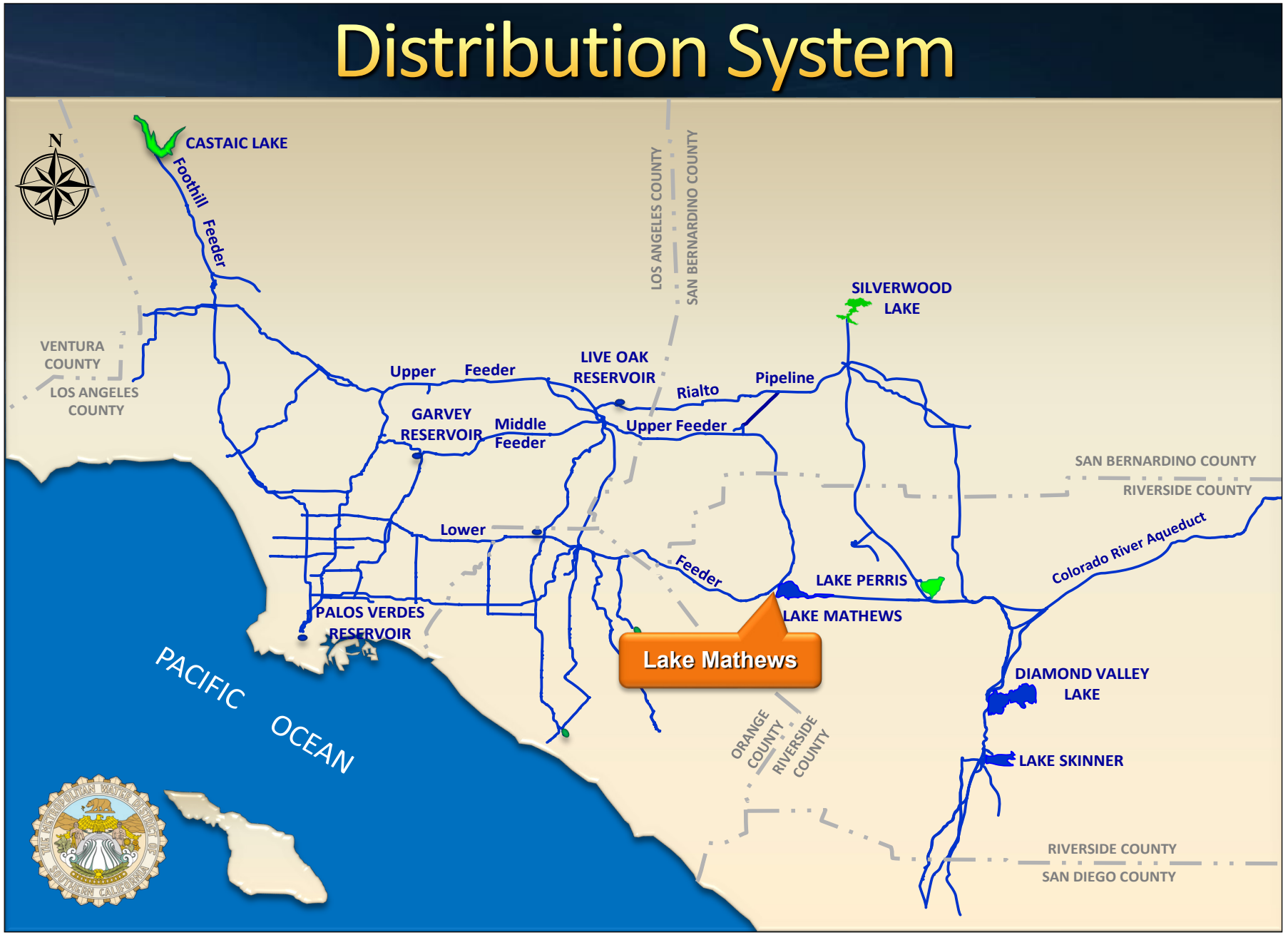
Subconsultant and Location	Service Category; Specialty
Stantec Consulting Services Inc. Pasadena, CA	Lead Designer
Drill Tech Antioch, CA	Drilling Plans, Engineering, and Design Approach
Infixa Consulting Inc. Irvine, CA	Scheduling
Guida Inc. Irvine, CA	Survey
Gregg Drilling LLC Signal Hill, CA	Geotechnical Boring
GeoVision Geophysical Services Inc. Corona, CA	Geophysical Testing
DRP Engineering, Inc. Monterey Park, CA	CADD Services
Cooper Testing Laboratories Inc. Palo Alto, CA	Geotechnical Laboratory Testing
MicroTest Laboratories Inc. Folsom, CA	Environmental Laboratory Testing
OrgMetrics Livermore, CA	Partnering Workshops
RHA Glendale, AZ	Certified Value Specialist
Erock Associates, LLC Grass Valley, CA	Photogrammetry Services for Outlet and Feeder Tunnels
Integrity Inspections Esparto, CA	Ultrasonic Testing Services for Outlet and Feeder Tunnels

The Metropolitan Water District of Southern California

Lake Mathews Pressure Control Structure and Electrical Upgrades

Progressive Design-Build Project Key Agreement Terms

1.	Phase 1 Progressive Design-Build Agreement: Not to exceed $29,214,000 million, includes engineering design and related field investigations to achieve 70 percent complete design package, design allowances, payment for key submittals on critical path equipment, and site investigations. 1. Approximately $25.3 million for investigations, design, and cost estimates 2. Approximately $1.5 million for critical path equipment submittals 3. Approximately $2.414 million for further investigations, design and submittal allowance
2.	Phase 2 Design-Builders Fee: 11.5 percent, includes design-builder's overhead (G&A), and profit.
3.	Procurement of critical path equipment: In the event that prior to 70 percent GMP negotiations, the need to commence procurement of key critical path equipment is identified, staff will return to the Board for procurement of long-lead equipment.
4.	Design-Build Entity agrees to terms and conditions of Metropolitan's draft construction contract that was part of RFQ No. 1384.


Distribution System
N
CASTAIC LAKE
Foothill Feeder
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
Upper Feeder
LIVE OAK RESERVOIR
Rialto Pipeline
GARVEY RESERVOIR
Middle Feeder
Upper Feeder
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
Lower Feeder
Colorado River Aqueduct
LAKE PERRIS
LAKE MATHEWS
PALOS VERDES RESERVOIR
Lake Mathews
PACIFIC OCEAN
DIAMOND VALLEY LAKE
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY