



Engineering, Operations, & Technology Committee

Lake Mathews Pressure Control Structure and Electrical Upgrades – Owner’s Advisor

Item 7-2

August 19, 2024

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Lake Mathews Pressure Control Structure and Electrical Upgrades

Subject

Authorize an agreement with Carollo Engineers Inc. in an amount not to exceed \$1.3 million for owner's advisor services to assist with progressive design-build project delivery on the Lake Mathews Pressure Control Structure and Electrical System Upgrades

Purpose

Utilize progressive design-build for new pressure control and electrical facilities to replace 85-year-old equipment and enhance system resiliency

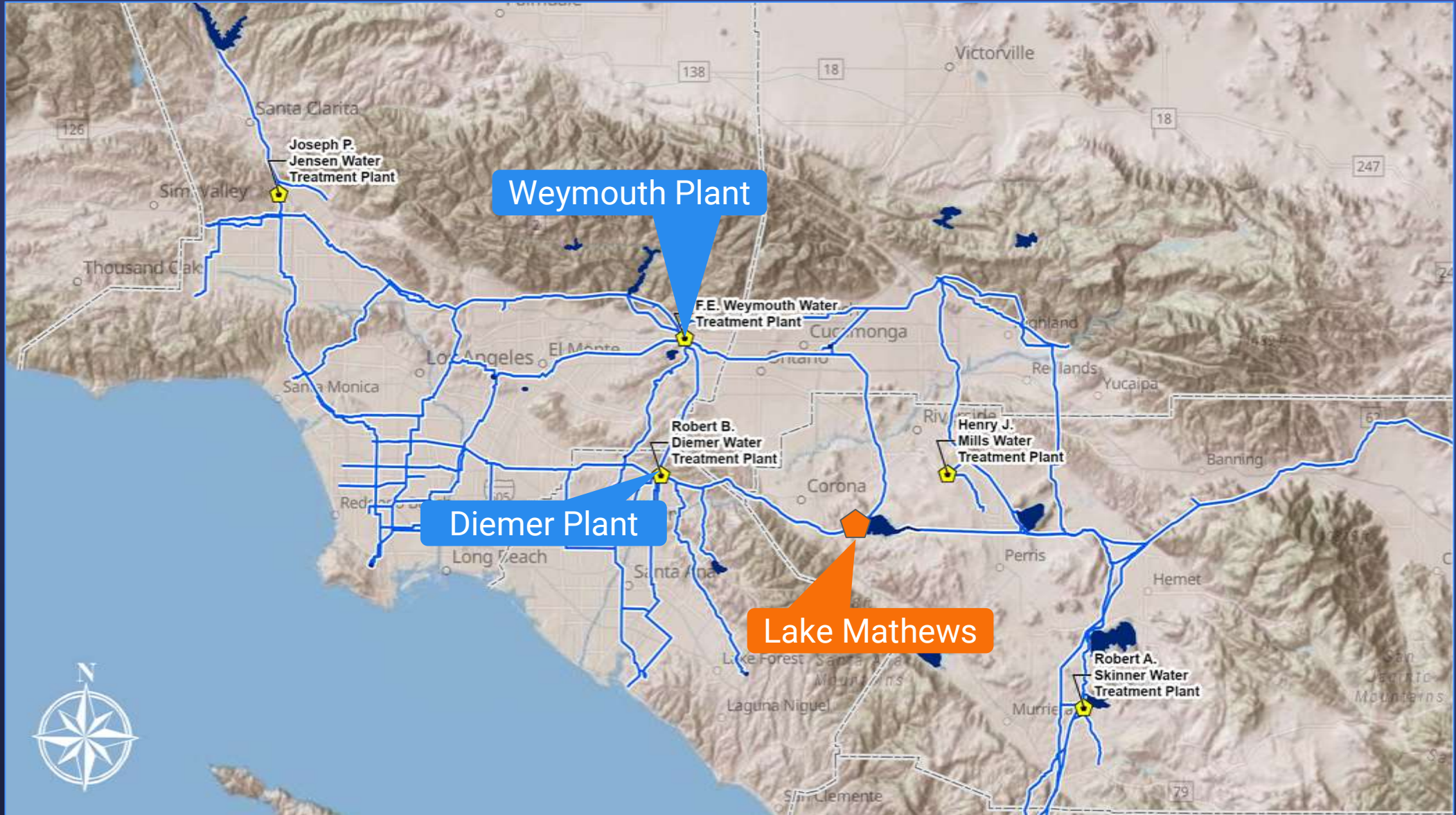
Recommendation and Fiscal Impact

Authorize an agreement for owner's advisor services to assist with progressive design-build project delivery

Fiscal Impact of \$2.8 M

Budgeted

Location Map



Current Operation



Background – Forebay and Headworks

- Constructed in the 1930s
 - Ten 32-inch Howell-Bunger valves
 - Five 54-inch butterfly valves
 - Four outlet tower slide gates
- Repairs required
 - Valves and slide gates deteriorated
 - Concrete cracked and spalling
 - Corroded steel reinforcement and platforms
- Unable to schedule lengthy shutdowns needed to perform rehabilitation



Working on Outlet Tower
while Forebay in Service

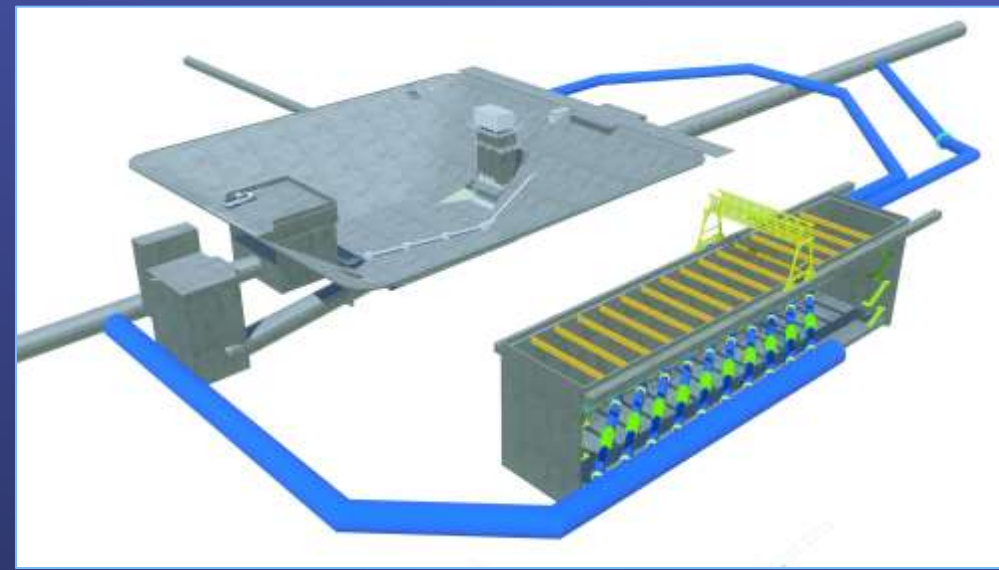
Background – Electrical Upgrades

- Constructed in the 1930s
 - Expanded in the 1960s
 - Aging distribution system at capacity
- Upgrades required
 - Ability to serve all existing and future loads
 - Provide safer, more reliable and maintainable electrical system
 - Provide redundancy and operational flexibility
- Work located in close proximity to headworks and forebay



Combined Projects

- Construct new Pressure Control Structure (PCS) alongside existing forebay
 - Allows shutdowns for maintenance
 - Eliminates single point of failure in critical part of system
- Combine new PCS and electrical upgrade projects
 - Avoid conflict between two separate contractors
 - Utilize alternate delivery
 - Potential early procurement could expedite project schedule



3D View of new PCS next to existing forebay



Combine new PCS and Electrical Upgrades

Progressive Design Build

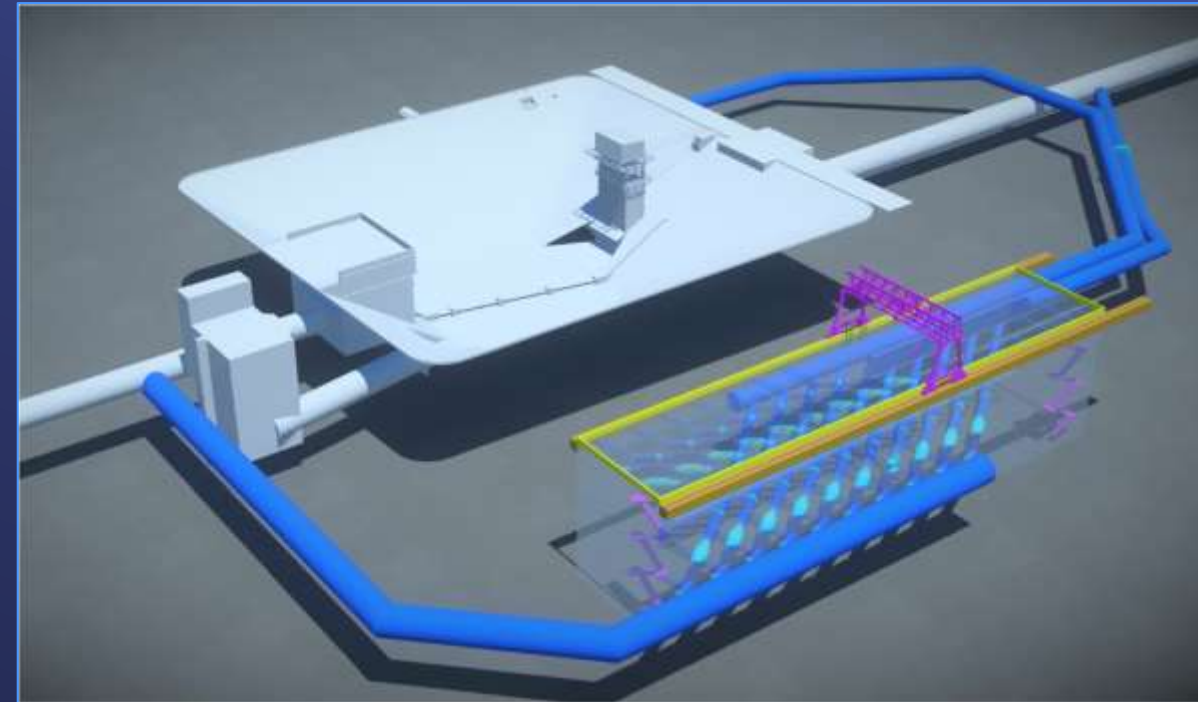
- Senate Bill 991 allows water agencies to utilize Progressive Design Build (PDB) for projects over \$5 M
- PDB model utilizes a two-phase process
 - Qualifications-based selection
 - Owner has a single contract with the Design-Build firm
 - Phase 1: Design-Builder will progress the design collaboratively with Metropolitan to about 70% complete and propose a Guaranteed Maximum Price (GMP)
 - Phase 2: Once GMP is negotiated and upon board approval, Design-Builder will complete design and begin construction

Alternatives Considered

- Utilize in-house staff to prepare Progressive Design-Build (PDB) solicitation
 - Requires specialized expertise
 - Metropolitan has only limited PDB experience
 - Anticipate large contract with combined projects
- Selected Alternative
 - Engage consultant as Owner's Advisor
 - Similar approach successful for Sepulveda Feeder Pump Stations

Planned Work

- New Pressure Control Facility
 - Large-diam. control valves and isolation valves
 - Bldg. with stairs, lighting, HVAC, bridge crane and access hatches
- Pipeline bypassing the existing forebay
 - Tunneling and tunnel shaft
 - Open cut and tie-in at depth
- Facility-wide Electrical Upgrades
 - Replace distribution lines
 - Replace & add unit power centers
- Use PDB Delivery Model



3D View of new PCS

Lake Mathews
Pressure Control
Structure and
Electrical
Upgrades
Owner's Advisor
Services

Carollo Engineers Inc. – Agreement

- Competitively selected under RFP No. 1364
 - Expertise in design-build contracts
- Scope of Work
 - Prepare conceptual design report
 - Procurement planning and document support
 - Develop cost estimates
 - Provide constructability analysis
- NTE amount: \$1.3 million
- SBE participation level: 10%

Lake Mathews
Pressure Control
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Metropolitan Scope of Work

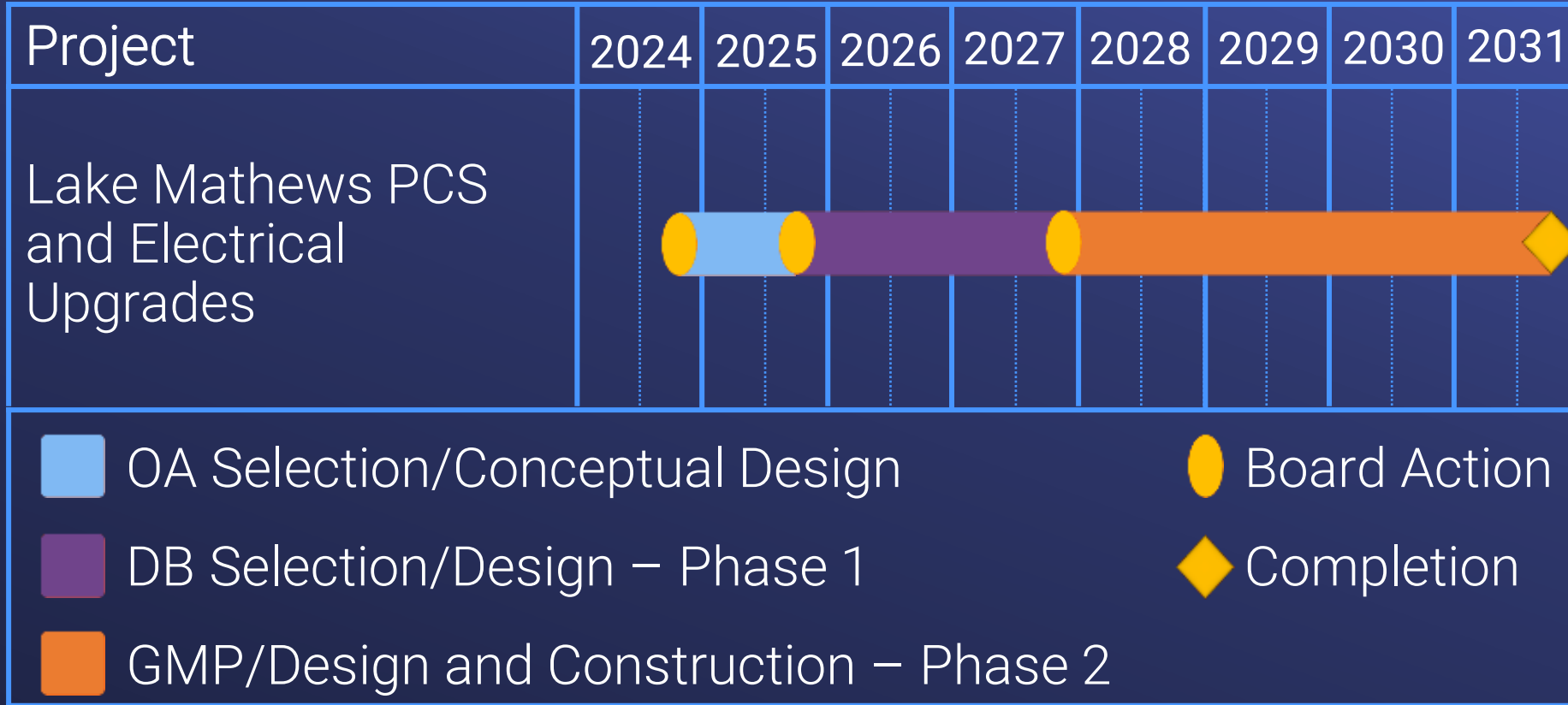
- Develop design and operational criteria
- Prepare procurement documents
- Provide technical oversight
- Environmental analysis
- Conduct project management

Allocation of Funds

Lake Mathews Pressure Control Structure & Electrical Upgrades

Metropolitan Labor	
Studies & Investigations	\$ 509,000
Owner Costs (Proj. Mgmt. & Envir. Support)	766,000
Professional/Technical Services	
Carollo Engineers Inc.	1,300,000
Remaining Budget	225,000
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	Total \$ 2,800,000

Project Schedule



Board Options

- Option #1

Authorize an agreement with Carollo Engineers Inc. for a not-to-exceed amount of \$1.3 million to perform owner's advisor services for progressive design-build delivery of the Lake Mathews Pressure Control Structure and Electrical System Upgrades.

- Option #2

Do not authorize the agreement at this time.

Staff Recommendation

- Option #1

