



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

2/11/2025 Board Meeting

7-1

Subject

Award a \$2,556,478.19 construction contract to MasTec Network Solutions LLC for upgrades to the desert microwave communications system; award a \$1,531,044 procurement contract to Logicalis Inc. for communications sites network equipment; authorize an increase of \$591,000 to an existing agreement with Nokia of America Corporation, for a new not-to-exceed amount of \$5,888,000 for network materials and manufacturer's field services; and authorize an increase of \$680,000 to an existing agreement with Hatfield & Dawson Consulting Engineers LLC, for a new not-to-exceed amount of \$1,410,000 to provide technical support during construction; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Metropolitan's desert region microwave radio communications system spans over 300 miles. It transmits voice, data, video, and supervisory control and data acquisition (SCADA) data between the desert facilities and all other Metropolitan facilities. The existing microwave radios have reliability issues that cause intermittent network communication failures and shortcomings that limit the amount of data reliably transmitted through the communication system.

This action awards a construction contract for upgrades to the desert microwave communications system and a procurement contract for network equipment in support of the microwave system upgrades. This action also amends two existing agreements to provide manufacturer's field services during construction and specialized technical support during construction. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the Subcontractors for Low Bidder, and **Attachment 4** for the Location Map.

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

Staff Recommendation: Option #1

Option #1

- a. Award a \$2,556,478.19 construction contract to MasTec Network Solutions LLC for upgrades to the desert microwave communication tower sites;
- b. Award a \$1,531,044 procurement contract to Logicalis Inc. for communications site network equipment;
- c. Authorize an increase of \$591,000 to the agreement with Nokia of America Corporation for a new not-to-exceed amount of \$5,888,000 for network materials and manufacturer's field services; and
- d. Authorize an increase of \$680,000 to the agreement with Hatfield & Dawson Consulting Engineers LLC for a new not-to-exceed amount of \$1,410,000 to provide specialized technical support during construction and commissioning.

Fiscal Impact: Expenditure of \$8.3 million in capital funds. All costs will be incurred in the current biennium and have been previously authorized. (The not-to-exceed contract amount for the agreement with Nokia of America

Corporation includes a previously board-authorized amount of \$5.297 million for microwave radio equipment.)

Business Analysis: This option will enhance the reliability of the desert region's communications system, which serves the Colorado River Aqueduct (CRA) facilities and power transmission protection systems.

Option #2

Do not proceed with this project at this time.

Fiscal Impact: None

Business Analysis: This option would extend the present risk of communications failures in the desert region, including the SCADA system. Depending on the failure type, the results can vary from minor communication issues to the inability to monitor or control the flow of water, pumps, valves, and flowmeters, which could result in system damage or unplanned CRA outages.

Alternatives Considered

During this project's planning phase, staff examined an alternative of undertaking an in-place rehabilitation of the existing desert microwave radio wireless wide area network (WAN) sites. This alternative would include removing and replacing individual components of the system to upgrade as many of the existing components as possible while leaving in place some of the critical structural elements of the existing systems. Staff determined that the replacement of key components may extend the life of the WAN system for a limited time but would not achieve the long-term rehabilitation goals of the project because many of the 17-year-old components would remain in place. Replacement of the microwave radio WAN equipment also allows for standardizing the systems across the desert region, thus minimizing the capital cost, simplifying maintenance, and improving the interchangeability of parts. It also increases the system's overall reliability, reduces the risk of communications interruptions, and streamlines future system maintenance and operational requirements.

Applicable Policy

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

Metropolitan Administrative Code Section 8140: Competitive Procurement

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

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

By Minute Item 52438, dated July 13, 2021, the Board authorized the procurement of equipment and specialized technical and design support services to upgrade the wide area network for Metropolitan's desert region facilities.

By Minute Item 53598, dated April 9, 2024, the Board appropriated a total of \$636.6 million for projects identified in the Capital Investment Plan for Fiscal Years 2024/2025 and 2025/2026.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is exempt from CEQA because it involves the operation, repair, and maintenance of existing public structures, facilities, and mechanical equipment involving negligible or no expansion of existing or former use and no possibility of significantly impacting the physical environment. In addition, the proposed action is exempt from CEQA because it consists of 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. Finally, the proposed action is exempt from CEQA because it consists of minor public or private alterations in the condition of land, water, and/or vegetation that do not involve the removal of healthy, mature, scenic trees except for forestry or agricultural purposes. (State CEQA Guidelines Sections 15301, 15302, and 15304.)

CEQA determination for Option #2:

None required

Details and Background

Background

Metropolitan's microwave WAN was constructed in the late 1990s and transmits telephone, voice, data, and video communication between all Metropolitan facilities. Critical system data transmitted over the WAN include automated meter readings, security camera video and alarms, high-voltage transmission line tele-protection system communications, and SCADA system data. The WAN also provides staff at remote sites access to email, geographical information systems, Oracle financials, timekeeping, PeopleSoft, and other applications. Many of these systems run 24 hours per day, 7 days per week, as system operators rely on real-time communications to monitor and control Metropolitan's water delivery system.

The WAN presently comprises a network of 72 transmission tower sites throughout Southern California, including 22 in Metropolitan's desert region that support the CRA and its 230 kV electrical power transmission system. Along the CRA, microwave transmission towers are typically located on hilltops 20 to 50 miles apart. Microwave radio relays transmit signals between two locations on a line-of-sight radio path to provide point-to-point communication links along a network of paths that extend nearly 300 miles. Each transmission site typically has a steel lattice tower and a small communication building nearby. Directional antennas, which receive and transmit signals, are mounted on the tower and feed signals to the microwave radio and network equipment housed in the communication building. Fiber optic cables carry signals between the network equipment in the communication building and a nearby worksite or facility.

Metropolitan's microwave radio WAN is approaching the end of its useful service life. Typical life expectancy for microwave radios ranges from 12 to 15 years, and Metropolitan's equipment was last updated in 2007. Reliability issues are causing intermittent network communication failures in the desert portion of the radio WAN system. Additionally, the existing microwave radio WAN does not provide carrier-grade transmission capabilities, a shortcoming that limits the amount of data reliably transmitted through the communication system. Finally, given the lack of private internet service providers along the CRA's remote and isolated facilities, Metropolitan's WAN is this region's primary, and in some cases, the sole data transmission and electronic communications system. A malfunction of a single tower along the desert region WAN can disrupt communications to all desert facilities.

The Desert Microwave Tower Sites Upgrade project will not only replace outdated and obsolete microwave radio equipment with higher capacity ones but will also upgrade the system with a connection to a privately-owned communications site in Las Vegas, Nevada (the SUPERNAP site), that will tie the northeastern end of the WAN system to commercial internet service, thereby providing system redundancy. In addition, all desert region microwave towers will be upgraded with two antennas instead of one, providing additional signal strength. Metropolitan has reserved a radio frequency license from the Federal Communications Commission; the license requires that the system be brought online by April 2026. Design for this project is complete, Metropolitan-furnished equipment that will be installed by the contractor has been fabricated, and staff recommends upgrading the desert microwave system at this time.

Desert Microwave Tower Sites Upgrade – Construction

This project will upgrade microwave radio and network equipment at 22 existing communications sites throughout the desert for increased system reliability and extend the WAN to one new communication site in Las Vegas, Nevada, for system redundancy. Contractor work entails upgrades at the 22 existing communications sites, including demolition of existing equipment and installation of Metropolitan-furnished microwave radios, antennas, feedhorns, and waveguides; and installation of a Metropolitan-furnished standby generator at the Camino communications site. Metropolitan forces will install microwave radio equipment at two sites: the new SUPERNAP site and one of the existing communications sites. They will also install new network equipment, such as routers and switches, at all 23 communications sites to interface the new radio equipment with existing communications lines.

A total of \$8.3 million is allocated for this work. Allocated contract work includes \$2,556,478.19 for installation of network equipment; \$1,531,044 for Logicalis Inc. for furnishing network equipment, including estimated sales tax; \$591,000 for Nokia of America Corporation (Nokia) for equipment and manufacturer's field services, and \$680,000 for Hatfield & Dawson Consulting Engineers LLC (H&D), for technical support during construction, as described below; and \$253,000 for Lee & Ro Inc. under an existing board-authorized on-call agreement for engineering support during construction and preparation of record drawings. Allocated funds for work by Metropolitan staff include: \$1,049,000 for Metropolitan force work; \$478,000 for submittal review and preparation of record drawings; \$451,000 for construction management and inspection; \$628,000 for contract administration, environmental support, and project management, and \$82,477.81 for remaining budget.

Attachment 1 shows the allocation of the required funds.

Award of Construction Contract (MasTec Network Solutions LLC)

Specification No. 2062 to upgrade the Desert microwave communication tower sites was advertised for bids on October 17, 2024. As shown in **Attachment 2**, one bid was received and opened on January 14, 2025. The sole bid from MasTec Network Solutions LLC, in the amount of \$2,556,478.19, complies with the requirements of the specifications. The engineer's estimate for this project was approximately \$3,160,000. Staff attributes the lone bid to a limited pool of qualified contractors, the remote location, and the need for contractor licenses from multiple states. For this contract, Metropolitan established a Small Business Enterprise participation level of 20 percent of the bid amount. MasTec Network Solutions LLC has agreed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**.

This action awards a \$2,556,478.19 contract to MasTec Network Solutions LLC for the installation of new Metropolitan-furnished microwave radio equipment at 22 communications sites throughout the desert region; installation of a new Metropolitan-furnished 36 kW standby generator; and a new contractor-furnished 1,000-gallon propane tank at the Camino communications site. As mentioned above, Metropolitan staff will perform construction management and inspection. Engineering Services' performance metric target range for construction management and inspection of projects with construction costs greater than \$3 million is 15 percent. For this project, the performance metric for inspection is 4.7 percent. The total construction cost (\$9,642,398), includes the network equipment installation contract (\$2,556,478), communications site network equipment (\$1,531,044), Metropolitan force construction (\$1,049,000), and previously procured microwave equipment (\$4,505,876).

Award of Procurement Contract (Logicalis Inc.)

Metropolitan initiated the procurement for the network equipment under Metropolitan Administrative Code Section 8140(1)(I), which allows Metropolitan to "piggyback" (i.e., gain access to) contracts established by other public agencies that substantially follow Metropolitan's own competitive procurement process. As the lead agency in 2019, the State of Utah Division of Purchasing & General Services completed a competitive request for proposals for Data Communications Products & Services. Currently, 32 states participate in this cooperative purchasing program, known as the National Association of State Procurement Officials (NASPO) ValuePoint Cooperative Purchasing Program for Data Communications Products & Services (Master Contract Number AR3227), including the State of California. Metropolitan's Office of the General Counsel has determined that the competitive process under which this contract was established substantially complies with Metropolitan's competitive procurement process.

Metropolitan utilized the NASPO contract to obtain discounts for network equipment through further competition by soliciting pricing from six authorized distributors identified in Master Contract Number AR3227. Out of the six firms invited to participate, two responses were received: from ConvergeOne Inc. and from Logicalis Inc. Staff has compared the submitted prices under this contract and determined Logicalis Inc. provided the best pricing.

This action authorizes a \$1,531,044 procurement contract, including estimated sales tax, to Logicalis Inc. under the State of California Participating Addendum Number 7-20-70-47-01 Utah NASPO ValuePoint Master

Agreement Number AR3227 to furnish Cisco network equipment including, but not limited to, routers, switches, and software licenses for communications system upgrades to all 23 desert region WAN communications sites.

Manufacturer's Field Services (Nokia of America Corporation) – Amendment to Existing Agreement

In July 2021, Metropolitan's Board awarded a \$5.297 million procurement and design support agreement with Nokia for new microwave radio equipment and design support for the desert WAN. Nokia equipment and services were procured under Metropolitan Administrative Code Section 8140(1)(l), allowing Metropolitan to access contracts established by other public agencies that substantially follow Metropolitan's competitive procurement process. The new equipment has been delivered, and services have been provided per the original agreement. Staff recommends amending the agreement with Nokia to cover manufacturer's field services during installation.

During construction, Nokia will provide start-up, cutover, and commissioning services for Nokia network router devices. This action authorizes an increase of \$591,000 (\$150,000 for additional network materials and \$441,000 for manufacturer's field support services) to an existing agreement with Nokia for a new not-to-exceed total of \$5,888,000. For this agreement, Metropolitan has not established a Small Business Enterprise participation level. There are no subconsultants planned for this work.

Specialized Technical Support (Hatfield & Dawson Consulting Engineers LLC) – Amendment to Existing Agreement

This action authorizes an increase of \$680,000 to an existing agreement with H&D for a new not-to-exceed total of \$1,410,000 to provide technical support services during construction. H&D was initially selected through a competitive process via Request for Proposals (RFP) No. 1179. An agreement with H&D was authorized by Metropolitan's Board in January 2019 for an amount not to exceed \$480,000 to assist with design of the desert region microwave radio WAN system upgrades. In July of 2021, Metropolitan's Board authorized an increase to the amount not to exceed from \$480,000 to \$730,000 for specialized technical support during the procurement and initial development phase. Amending H&D's contract to provide technical support during construction is consistent with the scope of the original RFP.

During construction, H&D will oversee the installation and review final microwave performance tests by the contractor, perform quality assurance tasks, and provide recommendations to resolve problems and field test failures. This work is highly specialized, and Metropolitan has insufficient technical staff in-house to perform this work. For this agreement, Metropolitan has not established a Small Business Enterprise participation level.

Project Milestone

February 2026 – Completion of construction



Mai Hattar
Interim Chief Engineer
Engineering Services

2/3/2025

Date



Deven Upadhyay
General Manager

2/3/2025

Date

Attachment 1 – Allocation of Funds**Attachment 2 – Abstract of Bids****Attachment 3 – Subcontractors for Low Bidder****Attachment 4 – Location Map**

Ref# es12699201

Allocation of Funds for Desert Microwave Tower Sites Upgrade

	Current Board Action (Feb. 2025)
Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	523,000
Submittals Review & Record Drwgs.	478,000
Construction Inspection & Support	451,000
Metropolitan Force Construction	1,049,000
Incidental Expenses	58,000
Professional/Technical Services	
Nokia of America Corporation	591,000
Hatfield & Dawson Consulting Engineers LLC	680,000
Environmental Consultant	47,000
Lee & Ro Inc.	253,000
Contract	
MasTec Network Solutions LLC	2,556,478.19
Logicalis Inc.	1,531,044
Remaining Budget	82,478
Total	\$ 8,300,000.00

The total amount expended to date is approximately \$8.4 million. The total estimated cost to complete the upgrades, including the amount appropriated to date and funds allocated for the work described in this action, is \$16.7 million.

The Metropolitan Water District of Southern California**Abstract of Bids Received on January 14, 2025, at 2:00 P.M.****Specifications No. 2062
Desert Microwave Tower Sites Upgrade**

The work includes the installation and testing of Metropolitan-furnished microwave radios, antennas, feedhorns, mounts, waveguides, and outdoor enclosures at 23 locations spread across 330 miles; furnishing and installing a power distribution system, a standby generator, 1,000-gallon propane tank, foundation, and fencing; and abatement of materials containing lead and asbestos.

Engineer's estimate: \$3,160,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
MasTec Network Solutions LLC Coral Gables, FL	\$2,556,478.19	\$1,010,000	40%	Yes

¹ Small Business Enterprise (SBE) participation level established at 20 percent for this contract.

The Metropolitan Water District of Southern California**Subcontractors for Low Bidder****Specifications No. 2062
Desert Microwave Tower Sites Upgrade****Low bidder: MasTec Network Solutions LLC**

Subcontractor	Service Category; Specialty
JJ&S Environmental Services Vista, CA	Asbestos Abatement
RBI Phelan, CA	Civil Work

Location Map

