



- **Board of Directors**

Organization, Personnel and Technology Committee

12/13/2022 Board Meeting

7-10

Subject

Authorize an agreement with Voyageur Security Inc. doing business as Access Technologies in an amount not to exceed \$860,000 for procurement of radio equipment for Metropolitan's Automatic Meter Reading System; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

The 900-MHz licensed serial radios and master stations provide the majority of network connections comprising the Automatic Meter Reading (AMR) system. The current radios used in this licensed band are older model GE MDS radios that are currently near their end of life with limited availability.

Timing and Urgency

Replacement parts for the existing radio equipment (radio modems and master stations) for the AMR system are not available.

Details

Background

The existing AMR system is configured as a traditional Supervisory Control and Data Acquisition system, with hardware and software commonly used for this type of application. The current AMR system was last replaced in 2008 and is comprised of several hundred endpoints, five master radio sites, various communications equipment, and redundant servers.

The system is designed to be able to tolerate intermittent communications interruptions as long as the endpoint is able to communicate with the servers eventually. This increases reliability but makes troubleshooting of sporadic issues more difficult.

The primary drivers for replacement of the AMR radio modems and master stations are to maintain reliability and address equipment obsolescence. Over the last few years, several intermittent service interruptions have occurred within the licensed radio system.

Metropolitan's Board authorized preliminary investigations and conceptual design activities for the System-wide Control System Upgrade in 2017. As a part of those activities, it was recommended that replacement of the AMR controllers and software be coordinated with the System-wide Control System Upgrade, potentially using hardware and software from the same product line to reduce the long-term needs for training on two separate platforms. However, replacement of the communications layer is possible in the interim as a parallel activity.

Planning level cost estimates, as well as advantages and disadvantages for each alternative, were developed as a part of and subsequent to the analysis.

Part of the complexity of piloting this technology is balancing the criticality of the AMR system and the monthly billing cycle, the use of a limited number of licensed frequencies, and the large number of endpoints served by the master radio sites.

During the previous phase of this project, staff tested four proposed replacement communications technologies to ascertain the impact on communications reliability and prepare procurement documentation for the selected

technology. During that phase, the entirety of one of the master radio sites (Garvey) and its associated endpoints was upgraded to the currently supported GE Orbit radio platform. Metropolitan staff conducted the installation of the radio modems. At a handful of specific sites, interference assumed to be from nearby cellular communications towers precluded the use of the replacement radios. Despite the installation difficulties, Metropolitan experienced a noticeable reduction in the overall number of radios experiencing unexplained or intermittent communications failures following this upgrade. Metropolitan staff led the installation activities and plan to do so for the next phase of the project as well.

In addition to the purchase of the radio equipment, this next phase of the project will also include the procurement of several additional items under the General Manager's authority. This includes the procurement of firewalls, switches, controllers, and an agreement to configure existing AMR functionality within new controllers.

Award of Contract (Access Technologies \$860,000)

This action will authorize the purchase of five master radios, 350 radio modems, and 350 associated software licenses for the radio modems. The scope of work will include procurement, delivery of requested equipment, and services to assist Metropolitan staff in the installation of the equipment. RFB-PR-412908 was issued on 10 August 2022. There was one qualified respondent to the request for bid (RFB). Voyageur Security Inc. doing business as Access Technologies is recommended to be awarded a contract in an amount not to exceed \$860,000.

Alternatives Considered

During the previous phase of the project, several communications alternatives were considered for eventual implementation, including licensed radios/master stations, satellite, cellular modems, and utilizing the data channel of Metropolitan's separate licensed two-way radio system. Ultimately, a hybrid endpoint radio using the licensed radio system was selected for O&M cost and reliability reasons.

Project Milestones

Release Procurement – January 2023

Complete Installations – June 2024

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

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

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 52778, dated April 12, 2022, the Board appropriated a total of \$600 million for projects identified in the Capital Investment Plan for Fiscal Years 2022/23 and 2023/24

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action involves operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use and no possibility of significantly impacting the physical environment. In addition, the proposed action includes the construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. Accordingly, the proposed action qualifies under Class 1 and Class 3 Categorical Exemptions (Sections 15301 and 15303 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Authorize an agreement with Voyageur Security Inc. doing business as Access Technologies in an amount not to exceed \$860,000 for procurement of radio equipment for Metropolitan's AMR System

Fiscal Impact: Expenditure of \$3,340,000 in capital funds. All funds were incurred in the current biennium and have been previously authorized.

Business Analysis: Replace end-of-life equipment, increasing reliability of AMR data communications related to billing volumes

Option #2

Do nothing at this time

Fiscal Impact: Unknown

Business Analysis: Continue experiencing data communication interruptions on an intermittent basis, potentially requiring significant efforts of Metropolitan field staff to drive and collect billing data manually

Staff Recommendation

Option #1



Charles Eckstrom
Information Technology, Group Manager

11/17/2022

Date



Adel Hagekhalil
General Manager

12/6/2022

Date

Attachment 1 – Financial Statement

Ref# it12688609

Allocated Funds for AMR Upgrade Project

	Current Board Action (Dec. 2022)
Labor	
Owner Costs (Program mgmt.)	210,000
Metropolitan Force Construction	1,060,000
Materials & Supplies Radio Equipment	860,000
Materials & Supplies other	600,000
Incidental Expenses	-
Professional/Technical Services	310,000
Equipment Use	-
Contracts	-
Remaining Budget	300,000
Total	\$ 3,340,000