THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

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

10/12/2010 Board Meeting

7-3

Subject

Appropriate $900,000; and authorize an agreement not to exceed $875,000 with X.W., LLC for assignment of FCC clear-channel licenses to support Metropolitan's emergency response communications (Approp. 15376)

Description

This action authorizes an assignment agreement for three Federal Communications Commission (FCC) clear-channel licenses in the 454 MHz spectrum necessary to support Metropolitan's emergency response communications. These limited exclusive use licenses would enhance the reliability of the communication systems.

Timing and Urgency

Staff recommends moving forward at this time with the acquisition of the X.W. licenses for the Two-Way Radio System Upgrade project because there is a significant risk that in the event of a regional disaster, deficiencies in the existing radio system could hinder Metropolitan's ability to respond in disaster conditions. The two-way radio infrastructure is a critical communications system, and it is imperative that this project move forward expeditiously to ensure effective emergency response capability and improve routine operational communications.

In addition, the FCC has mandated that by January 1, 2013, all current UHF licensees must upgrade their systems from 25 KHz to the narrower 12.5 KHz bandwidth. Because, Metropolitan's existing radio system is based on the larger bandwidth, it will become obsolete and unusable after that date.

Background

The two-way radio system is an important element of Metropolitan's communication strategy and emergency response plan. The system is primarily used for daily operational communications by Water System Operations field staff at the treatment plants, Colorado River Aqueduct pumping plants, conveyance and distribution system facilities, and at Headquarters. Metropolitan has more than 250 employees using two-way radios during routine operational activities, and may have over 500 users during emergencies. Radio communication is particularly vital during disasters such as earthquakes, when staff must be able to respond quickly and effectively to assess, repair, and operate damaged water conveyance, treatment, and distribution facilities. Cellular phone services become overloaded and are not a reliable means of communication during major regional events. Satellite phones have proven to be impractical for communication among large numbers of employees and are hindered by poor weather and the need to be outdoors to receive a signal. Therefore, it is particularly important that Metropolitan have a reliable two-way radio system with sufficient capacity for mission-critical communication during emergencies.

Metropolitan's existing two-way radio communication system was initially designed and installed 18 years ago to support communications internal to individual facilities. Licensed radio frequencies were acquired with the local needs in mind. As the distribution system evolved, and its operations became centralized, communications between the treatment plants became more crucial in order to coordinate efforts, especially in the event of a major disaster impacting more than one region of Metropolitan's service area. While the radio system has been expanded to partially address this need for expanded coverage, the current system design has significant

limitations including its inability to provide complete geographic coverage of Metropolitan's service area. Additionally, Metropolitan does not enjoy exclusive use of two-way radio frequencies, which can result in interference from other entities.

Metropolitan is in the second phase of the Two-Way Radio System Upgrade project. Phase Two of the project includes preliminary system design and selection of a vendor for implementation of the system. As part of the preliminary design effort, an extensive study was performed to identify the best way to use existing radio licenses, and to obtain additional licenses if needed, to improve coverage throughout the service area. Acquiring the three FCC licenses would improve two-way radio system coverage, enhance performance for both emergency and standard operational uses, and reduce radio system infrastructure costs.

Tests of the existing radio system indicated that radio coverage is lacking in significant portions of Metropolitan's service area, and that the system has insufficient capacity to handle the communications traffic expected during a major emergency. These tests were conducted using patrol run and emergency response exercises, such as the "Golden Guardian 2008 Statewide Emergency Exercise." Not only was coverage poor, but it was found that, due to a lack of radio frequency capacity, the existing system would be overwhelmed during a major emergency situation, creating significant and unacceptable operational difficulties. It is critical that the current radio system be upgraded to minimize disruptions in communications during disasters to help ensure an effective response to assess and repair damage to Metropolitan's system. Alternatives to upgrading the radio system were carefully evaluated, including significantly expanding the number of satellite phones currently deployed, and the upgrade of the two-way radio system was determined to be the most practical, economical, and reliable means of ensuring effective communications among over 500 employees during a major emergency.

The Two-Way Radio System Upgrade project is being conducted in three phases.

Phase One – Performance Specification and Conceptual Design

Metropolitan's Board authorized $557,000 for Phase One of the Two-Way Radio System Upgrade project in July 2006. The planned scope of work was to document user requirements; identify operational specifications; examine options and analyze needed UHF or VHF frequencies to provide comprehensive coverage of the service area; determine the feasibility and cost of obtaining necessary UHF or VHF frequencies; and return to the Board with a recommendation to obtain frequency licenses and implement the new system. This phase required extensive analysis of existing FCC licenses and identification of locations within Metropolitan's service area with poor radio coverage.

A consulting firm with expertise in two-way radio system development was chosen to provide specialized technical expertise to assist staff's efforts to accomplish the Phase One objectives. The firm completed a conceptual design and recommended that Metropolitan acquire clear channel FCC licenses for its exclusive use in Southern California as the optimum solution to complete the upgrade. A clear channel frequency would allow Metropolitan to broadcast at higher power to cover a larger area with fewer frequencies and radio repeaters and without interference from other FCC licensees. Metropolitan's needs require FCC licensing for use in all counties where Metropolitan has facilities. Such clear channel frequencies are rare and in high demand in the Southern California region.

Phase Two – Preliminary Design, Acquisition of Radio Frequency Licenses, and Vendor Selection

The Board authorized $390,000 for portions of Phase Two activities in July 2009. This phase of the project includes completing the preliminary system design, conducting radio site surveys to assess equipment and infrastructure needs, defining specific technical requirements, and generating detailed frequency coverage maps. All of this information is needed by prospective vendors interested in submitting proposals to build out the radio system. Phase Two also includes identification and acquisition of necessary FCC licenses and selection of a vendor for final design and installation of the system in Phase Three. After the vendor is selected, staff will return to the Board to request authorization for an agreement with the recommended vendor to complete the upgrade.

Recent negotiations with the X.W. licensee have been positive and the price of $875,000 for all three licenses is significantly less than when negotiations first commenced. The agreed-upon price of $875,000 is offset by a

reduction in the capital cost of the project. By acquiring the clear channel licenses, Metropolitan is able to avoid constructing additional radio repeater sites.

This action would appropriate $900,000 in budgeted funds and authorize an agreement not to exceed $875,000 for assignment by X.W. subject to FCC approval of three clear channel licenses to facilitate Metropolitan's Two-Way Radio System Upgrades. The remaining $25,000 is for transaction costs and processing fees, including attorney charges. The total program cost, inclusive of all three phases, is estimated to be $5.9 million to $6.9 million.

This project has been evaluated and recommended by Metropolitan's Capital Investment Plan Evaluation Team, and funds have been included in the fiscal year 2010/11 capital budget. This project is consistent with Metropolitan's goals for sustainability by enhancing the reliability of the two-way radio system in order to maintain reliable communications during a major emergency.

See **Attachment 1** for the Financial Statement.

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

By Minute Item 46735, dated July 11, 2006, the Board authorized Phase One of the Two-Way Radio System Upgrade 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. In particular, the proposed action consists of the purchase, licensing, maintenance, and operating of existing equipment and facilities with negligible or no expansion of use beyond that existing at the time of the lead agency's determination. In addition, it will not have a significant effect on the environment. Accordingly, this proposed action qualifies as a Class 1 Categorical Exemption (Section 15301 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (Class 1, Section 15301 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

a. Appropriate $900,000; and
b. Authorize an agreement not to exceed $875,000 with X.W., LLC for assignment of FCC clear-channel licenses to support Metropolitan's Emergency Response Communications

Fiscal Impact: $900,000 in budgeted funds under Approp. 15376

Business Analysis: Under this option, upgrade of the existing two-way radio system will minimize disruptions in communications during disasters and improve routine operational functions. A reliable two-way radio system will help ensure an effective emergency response to assess and repair damage to Metropolitan's facilities. The upgraded system will meet emergency response plan goals established by Water System Operations.

Option #2

Do not appropriate funds or authorize the FCC license assignment agreement.
Fiscal Impact: None
Business Analysis: This option would forego an opportunity to improve communications between employees during a major emergency.

Staff Recommendation

Option #1

9/28/2010
James F. Green *Date*
Manager, Water System Operations

9/29/2010
Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – Financial Statement

Ref# wso12607284

Financial Statement for ITSP Infrastructure Program

A breakdown of Board Action No. 13 for Appropriation No. 15376 for the Two-Way Radio System Upgrade project* is as follows:

	Previous Total Appropriated Amount ** (Sept. 2010)	Current Board Action No. 13 (Oct 2010)	New Total Appropriated Amount
Labor	$ 15,811,146		$ 15,811,146
Studies and Investigations	139,125		139,125
Final Design	-	-	-
Owner Costs (Program mgmt., permitting envir. doc.)	31,875 -		31,875
Construction Inspection and Support	-	-	-
Metropolitan Force Construction	-	-	-
Materials and Supplies	10,386,989	875,000	11,261,989
Incidental Expenses	151,493	-	151,493
Professional/Technical Services	5,439,608	25,000	5,464,608
Equipment Use	43,231	-	43,231
Contracts	269,266	-	269,266
Remaining Budget	2,168,267		2,168,267
Total	**$ 34,441,000**	**$ 900,000**	**$ 35,341,000**

Funding Request

Program Name:	ITSP Infrastructure Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15376	**Board Action No.:**	13
Requested Amount:	**$** 900,000	**Capital Program No.:**	15376-I
Total Appropriated Amount:	**$** 35,341,000	**Capital Program Page No.:**	298
Total Program Estimate:	**$** 46,883,000	**Program Goal:**	Reliability & Efficiency

* The total amount expended to date on the Two-Way Radio System Upgrades project is $709,000.

** Total July 2009 appropriated amount remains unchanged. Funds have been redistributed as follows:

- $185K of Remaining Budget was redistributed to acquire unanticipated additional components in the Union Station Headquarters Technology Upgrade project.
- $140K of Remaining Budget was redistributed to purchase unforeseen additional software licenses needed for the IT Infrastructure Upgrade project.