



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

9/14/2010 Board Meeting

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**7-5**

**Subject**

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Appropriate \$150,000; and authorize preliminary design to replace the uninterruptible power supply for the data center at Metropolitan's Headquarters at Union Station (Approp. 15376)

**Description**

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This action authorizes preliminary design to replace the uninterruptible power supply (UPS) system at Metropolitan's data center at the Headquarters Building at Union Station. The existing 12-year-old data center UPS has reached the end of its service life and needs to be replaced.

**Timing and Urgency**

The purpose of the UPS is to prevent fluctuations in electric power and to serve as a backup power supply in the event of loss of utility power. A UPS system differs from an emergency standby generator in that it provides near-instantaneous power until the emergency generator comes on-line, or until its connected equipment is properly shut down. A UPS reduces the potential for service disruption, loss of critical data, or damage to Metropolitan's data systems, which support financial operations, communications, emergency response, engineering functions, and water operations.

This project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Upgrade project. This project is budgeted within Metropolitan's CIP for fiscal year 2010/11.

**Background**

Metropolitan's data center, which was constructed in 1998, is over 4,000 square feet in area and is located at the Headquarters Building at Union Station in Los Angeles. The data center acts as Metropolitan's centralized repository for data processing, storage, management, and dissemination from key computer systems such as:

- Financial - Water Information System (WINS) which calculates customer water usage and produces bills
- Communications - Voice and data network
- Emergency Response - Two-way radio system
- Engineering - Programs that monitor and measure seepage and displacement of dams
- Water Operation Systems - Supervisory Control & Data Acquisition (SCADA) and Automated Meter Reading (AMR) systems used to control and meter water deliveries throughout Metropolitan's service area

Many of these systems run 24 hours per day, 7 days per week, and therefore have a required return-to-service time from immediate to within the first 2 hours of an outage.

**Uninterruptible Power Supply System Replacement – Preliminary Design Phase (\$150,000)**

The UPS is located in its own room within the data center. The UPS continuously protects computers, servers, telecommunications equipment, and other electronic equipment from power disruption such as power surges or spikes, which could cause damage to hardware and equipment, including loss of critical data. The UPS also provides emergency electrical power when utility power is lost. The UPS allows enough time for crucial systems to be correctly powered down until the emergency generator can be activated.

In July 2008, a comprehensive study evaluated the condition of the data center. This study identified that the 12-year-old UPS system is outdated and has reached the end of its service life. The existing UPS lacks up-to-date features typical of newer systems, such as built-in system redundancies. Further, the manufacturer no longer supports the equipment, and spare parts are difficult to obtain. Typically, these systems have a service life of approximately ten years. Although the equipment has performed well, it has exceeded its life span and has become unreliable. For example, during a routine shutdown test in August 2009, the UPS failed to act as a power surge buffer and 15 hardware components were damaged and needed replacement.

Staff recommends proceeding with preliminary design to upgrade the UPS system. Upgrade work will include replacement of the UPS with a system that is more efficient, features built-in redundancies, and which is scalable for future expansion. In addition, the existing UPS room air conditioning system will be re-configured to allow cooling from the larger data center air conditioning system. This reconfiguration will provide a backup cooling system to the UPS room in case of a failure or scheduled maintenance of the existing air conditioning system.

This action appropriates \$150,000 and authorizes preliminary design phase activities to upgrade the UPS system in the Headquarters data center. The planned activities include engineering analyses, preparation of a preliminary design report, and development of schedule and cost estimates. All preliminary design activities will be performed by Metropolitan staff. The construction cost for this project is anticipated to range from \$900,000 to \$1.1 million.

Staff will return to the Board for authorization of final design. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

This project is consistent with Metropolitan's goals for sustainability by enhancing reliability of the UPS system in or to maintain reliable equipment during emergencies.

***Project Milestone***

December 2010 – Completion of preliminary design

**Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

**California Environmental Quality Act (CEQA)**

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CEQA determination for Option #1:

The environmental effects from the design, construction, and operation of the headquarters facility were evaluated in the Final Environmental Impact Report (Final EIR) for the Headquarters Facility Project (project). The Final EIR was certified by the Board on November 14, 1995. The Board also approved the Findings of Fact (findings), the Statement of Overriding Considerations (SOC), the Mitigation Monitoring and Reporting Program (MMRP), and the project itself. The current board action is solely based on upgrading interior spaces and existing hardware/power equipment and does not pose new substantial information or new significant impacts that have not already been fully disclosed and addressed in the original Final EIR. Hence, the previous environmental documentation acted on by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act on the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the certified 1995 Final EIR, findings, SOC, and MMRP and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

## Board Options

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### Option #1

Adopt the CEQA determination and

- a. Appropriate \$150,000; and
- b. Authorize preliminary design to replace the data center UPS system at Metropolitan's Headquarters Building at Union Station.

**Fiscal Impact:** \$150,000 of budgeted funds under Appropriation 15376

**Business Analysis:** This project will enhance reliability of the UPS system, which is used to protect computers, servers, and telecommunications equipment at Metropolitan's Headquarters Building at Union Station.

### Option #2

Do not proceed with preliminary design to replace the data center UPS system.

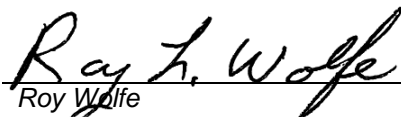
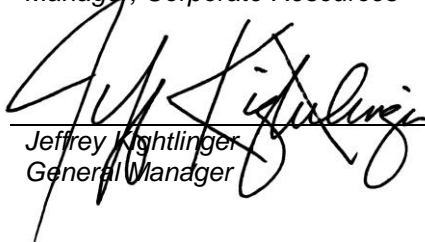
**Fiscal Impact:** None

**Business Analysis:** This option will forego an opportunity to improve reliability of the data center UPS system which is used to protect computers, servers, and telecommunications equipment at Metropolitan's Headquarters Building.

## Staff Recommendation

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Option #1

	8/24/2010
Roy Wolfe Manager, Corporate Resources	Date
	8/30/2010
Jeffrey Nightlinger General Manager	Date

[Attachment 1 – Financial Statement](#)

[Attachment 2 – Location Map](#)

Ref# cr12606699

### Financial Statement for ITSP Infrastructure Program

A breakdown of Board Action No. 12 for Appropriation No. 15376 for preliminary design of Metropolitan's Headquarters Data Center Uninterruptible Power Supply system\* is as follows:

	<b>Previous Total Appropriated Amount (July 2009)</b>	<b>Current Board Action No. 12 (Sept 2010)</b>	<b>New Total Appropriated Amount</b>
Labor	\$ 15,811,146	\$ -	\$ 15,811,146
Studies and Investigations	-	97,500	97,500
Final Design	-	-	-
Owner Costs (Program mgmt., permitting envir. doc. )	-	52,500	52,500
Construction Inspection and Support	-	-	-
Metropolitan Force Construction	-	-	-
Materials and Supplies	10,386,989	-	10,386,989
Incidental Expenses	151,493	-	151,493
Professional/Technical Services	5,439,608	-	5,439,608
Equipment Use	43,231	-	43,231
Contracts	269,266	-	269,266
Remaining Budget	2,159,267	-	2,159,267
<b>Total</b>	<b>\$ 34,261,000</b>	<b>\$ 150,000</b>	<b>\$ 34,411,000</b>

### Funding Request

<b>Program Name:</b>	ITSP Infrastructure Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15376	<b>Board Action No.:</b>	12
<b>Requested Amount:</b>	\$ 150,000	<b>Capital Program No.:</b>	15376-I
<b>Total Appropriated Amount:</b>	\$ 34,411,000	<b>Capital Program Page No.:</b>	298
<b>Total Program Estimate:</b>	\$ 46,983,000	<b>Program Goal:</b>	Reliability & Efficiency

\*This action is the initial appropriation for Metropolitan's Headquarters Data Center Uninterruptible Power Supply system.

# Metropolitan Headquarters

