

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

June 13, 2006 Board Meeting

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**8-6**

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**Subject**

Authorize amendment to existing agreement with Hatch Mott MacDonald for construction management services for the Arrowhead Tunnels of the Inland Feeder Program (Approp. 15122)

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**Description**

The Arrowhead Tunnels are the final segment to be constructed of the Inland Feeder Program. The project consists of two tunnels through the San Bernardino Mountains north of the city of San Bernardino. The 3.8-mile Arrowhead West Tunnel begins at the Waterman Canyon Portal and ends at Devil Canyon, while the 4.3-mile Arrowhead East Tunnel begins at the Strawberry Creek Portal and connects to the previously constructed 8,000 feet of tunnel at City Creek. Both tunnels pass through a variety of challenging geologic and hydrogeological conditions.

Mining of these tunnels is being conducted with two tunnel boring machines (TBMs). Mining commenced in August 2003 on the Arrowhead East Tunnel, with the TBM advancing 12,180 feet (54% of the tunnel's length) through mid-May 2006. On the Arrowhead West Tunnel, mining began in October 2003. Through mid-May 2006, the TBM has progressed 6,155 feet (31% of the tunnel's length). The original contract schedule called for all tunnel work to be completed by early 2007. At the October 2005 board meeting, the completion date was revised to late 2008. However, based on recent developments and actual TBM advancement rates, completion of the tunnels is expected to be further delayed. The new completion date is under further review as Metropolitan is currently in discussions with the contractor on strategies to optimize future progress.

Given the complexity of the mining operation for the Arrowhead Tunnels, Metropolitan's construction management approach is to utilize an outside consultant experienced in this type of specialized work. Use of a consultant to execute this project is consistent with the Corporate Resources Group's business plan and Metropolitan's Capital Investment Plan (CIP) budget. The Board initially authorized an agreement with Hatch Mott MacDonald (HMM) in January 2002 to provide construction management and inspection of the Arrowhead Tunnels. Funding for this agreement was based on the planned 2007 completion date for the project.

HMM was selected through a competitive process (Request for Proposals No. 468) to perform construction management for the Arrowhead Tunnels, and a professional services agreement in the amount of \$12 million was authorized by Metropolitan's Board. HMM has significant experience in managing tunnel construction projects around the world, including the Inland Feeder's Riverside Badlands Tunnel, which was successfully completed in early 2003. Services provided by HMM include field engineering, inspection, surveying, and field office administration for the project. Based on these efforts, an increase to the agreement will be required by July 2006. Staff recommends that the existing HMM agreement be extended to continue providing these services through mid-2008. At that time, Metropolitan will assess the construction management staffing needs for the remainder of the project as well as in-house availability to perform this work. If necessary, staff will return to the Board in mid-2008 to further amend the HMM agreement through completion of the project.

This action authorizes an increase of \$8.9 million to the existing agreement with Hatch Mott MacDonald, for a new not-to-exceed total of \$20.9 million, to provide continued construction management and inspection services for the Arrowhead Tunnels.

No funds are required to be appropriated under this action, as sufficient funds are available within the program's remaining budget. There is no increase to the approved program budget of \$1.186 billion. This program has been

evaluated and recommended by Metropolitan's CIP Evaluation Team and funds have been included within the fiscal year 2005/06 capital budget.

## **Policy**

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Metropolitan Water District Administrative Code Section 8117: Professional and Technical Consultants

## **California Environmental Quality Act (CEQA)**

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CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA because it involves continuing administrative activities (Sections 15378(b)(2) and 15378(b)(5) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not subject to the provisions of CEQA pursuant to Sections 15378(b)(2) and 15378(b)(5) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

## **Board Options/Fiscal Impacts**

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### **Option #1**

Adopt the CEQA determination and authorize an increase of \$8.9 million to the existing agreement with Hatch Mott MacDonald, for a new not-to-exceed total of \$20.9 million.

**Fiscal Impact:** \$8.9 million of budgeted and previously appropriated funds under Approp. 15122

**Business Analysis:** This option is the most efficient approach to acquire the needed construction management services. Hatch Mott MacDonald's key personnel have been assigned to this project since its inception and have developed in-depth knowledge of the technical and contract issues on the Arrowhead Tunnels, which has been a major benefit to Metropolitan.

### **Option #2**

Do not amend this consulting agreement and seek a new firm to perform construction management of the Arrowhead Tunnels.

**Fiscal Impact:** This option's cost would exceed the \$8.9 million cost of Option #1.

**Business Analysis:** Inefficiencies and a potential delay in the project would likely occur if a new construction management consultant is selected, because of the consultant's need to mobilize their lack of familiarity with the work, and their need to establish working relationships with the contractor and Metropolitan.

## **Staff Recommendation**

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Option #1

  
 Roy L. Wolfe  
 Manager, Corporate Resources

5/26/2006  
 Date

  
 Jeffrey Kightlinger  
 General Manager

5/30/2006  
 Date