

- **Board of Directors**
Engineering and Capital Programs Committee

April 10, 2007 Board Meeting

8-2

Subject

Authorize an increase of \$2 million to the existing agreement with Jacobs Associates for specialized engineering support on the Inland Feeder Program (Approp. 15122)

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 will end at Devil Canyon, while the 4.3-mile Arrowhead East Tunnel begins at the Strawberry Creek Portal and will connect 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 16,740 feet (75% of the tunnel's length) through early March 2007. On the Arrowhead West Tunnel, mining began in October 2003. Through early March 2007, the TBM has progressed 9,770 feet (49% of the tunnel's length). The original contract schedule called for the facility to be on-line by early 2007. However, in mid-2006 the date was revised to September 2010 based on updated projections from the actual TBM advancement rates.

Given the complexity of the geology and mining operations for the Arrowhead Tunnels, Metropolitan's engineering design approach is to utilize an outside consultant experienced in this type of specialized work for the duration of this project's specific needs. Use of a consultant to perform this specialized function is consistent with the Corporate Resources Group's business plan and with Metropolitan's Capital Investment Plan (CIP) budget. The Board initially authorized an agreement with Jacobs Associates in December 2001 to provide engineering support on the Arrowhead Tunnels. Funding for this agreement was based on the original completion date of 2007 for the project. Due to the revised completion date and the ongoing need for geotechnical, groundwater monitoring, and mitigation expertise on the project, staff recommends that Jacobs continue to provide technical support for the Arrowhead Tunnels. Based on expenditures to date and the projected work plan going forward, an increase to the amount of the agreement will be required by September 2007.

Jacobs was selected through a competitive process (Request for Proposals No. 505) to provide engineering support for the Arrowhead Tunnels. The original professional services agreement with Jacobs to perform all work (excluding post-construction groundwater monitoring and mitigation) was authorized by Metropolitan's Board in December 2001 in the amount of \$10 million. Jacobs was selected based on its significant experience in tunnel design on projects around the world, and because it was responsible for the original design of the Arrowhead Tunnels in the mid-1990s. Jacobs currently provides expertise in tunnel engineering, tunnel grouting, and geologic and hydrogeologic analyses including groundwater monitoring and mitigation.

While construction is projected to be completed in 2010, groundwater monitoring will continue for two additional years to comply with the program's Final Environmental Impact Report. Staff recommends that the existing Jacobs agreement be extended through the completion of mining of the Arrowhead Tunnels, which is currently scheduled for late 2009. At that time, Metropolitan will assess the engineering support 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 to further amend the Jacobs agreement through completion of the project.

This action authorizes an increase of \$2 million to the existing agreement with Jacobs Associates, for a new not-to-exceed total of \$12 million, to provide specialized engineering support for the Arrowhead Tunnels.

No additional funds are required under this action and the remaining budget category will not be reduced, as sufficient funds have previously been appropriated and are included in the Arrowhead Tunnels budget that was revised in mid-2006 to support the new on-line date of September 2010. The Inland Feeder Program budget remains at \$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 2006/07 capital budget.

Policy

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

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The original environmental effects from the construction and operations of the Arrowhead Tunnels were evaluated in the Inland Feeder Project (i.e., IFP) Final Environmental Impact Report/Environmental Assessment (Final EIR/EA), which was certified by the Board in February 1993. The Board also approved the Findings of Fact (findings), the Mitigation Monitoring and Reporting Program (MMRP), the Statement of Overriding Considerations (SOC), and IFP. The present proposed board action is solely based on extending an existing agreement with Jacobs Associates to continue providing engineering support services for the Arrowhead Tunnel construction and operations through late 2009 and not on any substantial changes to the original IFP. Hence, the environmental documentation previously certified and approved by the Board in conjunction with the IFP is adequate for the proposed action and fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further environmental 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 1993 certified Final EIR/EA and related environmental documentation (i.e., findings, MMRP, and SOC) and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and authorize an increase of \$2 million to the existing agreement with Jacobs Associates, for a new not-to-exceed total of \$12 million.

Fiscal Impact: \$2 million of budgeted and previously appropriated funds under Approp. 15122

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

Option #2

Do not amend this agreement and seek a new firm to provide engineering support services on the Arrowhead Tunnels.

Fiscal Impact: With this option, costs would exceed the \$2 million cost of Option #1.

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

Staff Recommendation

Option #1


Roy L. Wolfe
Manager, Corporate Resources

3/19/2007
Date


Jeffrey Kightlinger
General Manager

3/26/2007
Date

BLA #5273