

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

February 12, 2002 Board Meeting

9-2

Subject

Authorize CEO to enter into a contract with J.F. Shea Construction, Inc. and Kenny Construction Company, A Joint Venture, for the construction of the Arrowhead Tunnels of the Inland Feeder Program in an amount not to exceed \$242.3 million (Approp. 15122)

Description

The Arrowhead Tunnels portion of the Inland Feeder is located in the San Bernardino Mountains. It stretches from Devil Canyon Portal located north of the city of San Bernardino to City Creek north of the city of Highland (see [Attachment 1](#) for location map). It consists of two separate tunnels, the Arrowhead West Tunnel (AWT) and Arrowhead East Tunnel (AET). The AWT and AET are 3.8 and 4.3 miles in length, respectively. Both tunnels pass through a variety of challenging ground and geologic conditions, including high groundwater pressures. Tunnel depths reach up to 2,000 feet below the ridgeline.

In April 1997 and June 1998, construction contracts were issued for the AET and the AWT, respectively. Metropolitan halted mining in the AET in April 1999 due to concerns from the United States Forest Service (USFS) and a local Indian tribe about the level of groundwater inflows in the tunnel. An intensive grouting program subsequently reduced inflows. In order to assure lower inflows when mining resumes, it was apparent to project staff and the Board of Consultants for the project that a modification to the construction method is needed.

In December 1999, staff presented the Board with a report detailing the findings of a study that investigated several options to completing the Arrowhead Tunnels. In the report, staff recommended that Metropolitan proceed with the Arrowhead Tunnels using a redesigned primary lining system that more effectively controls inflows. The Board agreed with the staff recommendation. The USFS also accepted the plan, and subsequently issued an amended special-use permit allowing the tunnels to proceed.

Under the revised plan, mining was deleted from the existing AWT and AET contracts. The AET contractor completed 8,000 feet of the tunnel at the City Creek portal, installed the final pipeline segments, and constructed the City Creek portal access structure. Under the contract, AWT work primarily consisted of a cut and cover pipeline installation in Waterman and Devil Canyons.

The new revised plan calls for expediting construction by mining both tunnels simultaneously using two tunnel boring machines (TBM). The AWT will be mined in a westerly direction, beginning at the Waterman Canyon Portal and exiting at Devil Canyon. The AET TBM will mine easterly from the Strawberry Creek Portal in Waterman Canyon and connect to the previously installed tunnel at City Creek. The Arrowhead Tunnels will be constructed using a bolted and gasketed precast concrete segmented lining system for initial ground support. This type of segment also serves to minimize groundwater inflows. After mining, a 12-foot diameter impermeable final liner will be installed. Construction also includes portal access structures, completion of remaining pipeline segments, and all other appurtenances. Construction is scheduled to be completed in early 2007.

Due to the complexity of this work, a pre-qualification process was completed to select firms with the expertise necessary to complete this type of construction. A total of six contractors were selected to bid the work. In January 2002, bids were received from two of the contractors. The responsible low bid was received from J.F. Shea Construction, Inc. and Kenny Construction Company, A Joint Venture, (J.F. Shea/Kenny) in the amount of \$242.3 million. The bid complies with the requirements of the specifications, it is \$24.4 million less than the next lowest bidder, and is \$6.2 million less than the engineer's estimate.

Specifications No. 1437 established a mandatory minimum subcontracting requirement of 5 percent. J.F. Shea/Kenny has subcontracted 7.56 percent of the project and submitted documentation of its good-faith effort that was deemed acceptable for consideration of a contract award per a memorandum from the Business Outreach Office dated January 15, 2002.

The bid is based on fixed prices for all work except for pre-excavation grouting. Pre-excavation grouting was included in the specifications as a \$27.5 million allowance item, and will be paid under time and material provisions. The final contract price may fluctuate to the extent that actual pre-excavation grouting and/or the geologic condition varies from those established in the specifications.

Approval of this request will authorize the CEO to enter into a contract in the amount not to exceed \$242.3 million with J.F. Shea/Kenny, the low bidder for Specifications 1437 for the construction of the Arrowhead Tunnels.

This project has been evaluated and recommended by the Capital Investment Plan (CIP) Evaluation Team and has been included in the CIP budget for fiscal year 2001/02. The Inland Feeder Program budget remains unchanged at \$1.186 billion.

Policy

Metropolitan Water District Administrative Code § 8113: Contracts over \$250,000

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The original environmental effects from the construction of the Arrowhead Tunnels were evaluated in the Inland Feeder Project (i.e., Inland Feeder Program) Final Environmental Impact Report and Environmental Assessment (Final EIR/EA), which was certified by Metropolitan's Board of Directors (Board) in February 1993. The Board also approved the Findings of Fact, the Mitigation Monitoring and Reporting Program, the Statement of Overriding Considerations, and the Inland Feeder Program. Subsequent to these actions, additional environmental documentation was prepared and certified to address modifications to the project, i.e., Addenda Nos. 1 through 6 and a Supplemental EIR. The present proposed Board action is solely based on awarding a contract for construction services to the Inland Feeder Program itself. The redesign of the primary lining system in the tunnels and the overall modification to the construction methodology remains consistent with the impacts analyzed in the original 1993 certified FEIR/EA. Hence, the previous environmental documentation taken by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. As such, 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, Addenda Nos. 1 through 6, Supplemental EIR and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required.

Board Options/Fiscal Impacts

Option #1

Adopt the CEQA determination and authorize the CEO to enter into a contract with J.F. Shea Construction, Inc. and Kenny Construction Company, A Joint Venture, for construction of the Arrowhead Tunnels in an amount not to exceed \$242.3 million.

Fiscal Impact: \$242.3 million. Funded under existing Appropriation No. 15122

Option #2

Do not authorize the CEO to enter into a contract to the lowest responsive bidder and require Board award. This option would delay construction of the Arrowhead Tunnels.

Fiscal Impact: Low bid amount.

Option #3


Reject all bids and re-advertise the project in order to get a more favorable bid. This, however, would delay the project completion, increase administrative costs, and may or may not result in a lower bid.

Fiscal Impact: Increased cost.

Staff Recommendation

Option #1

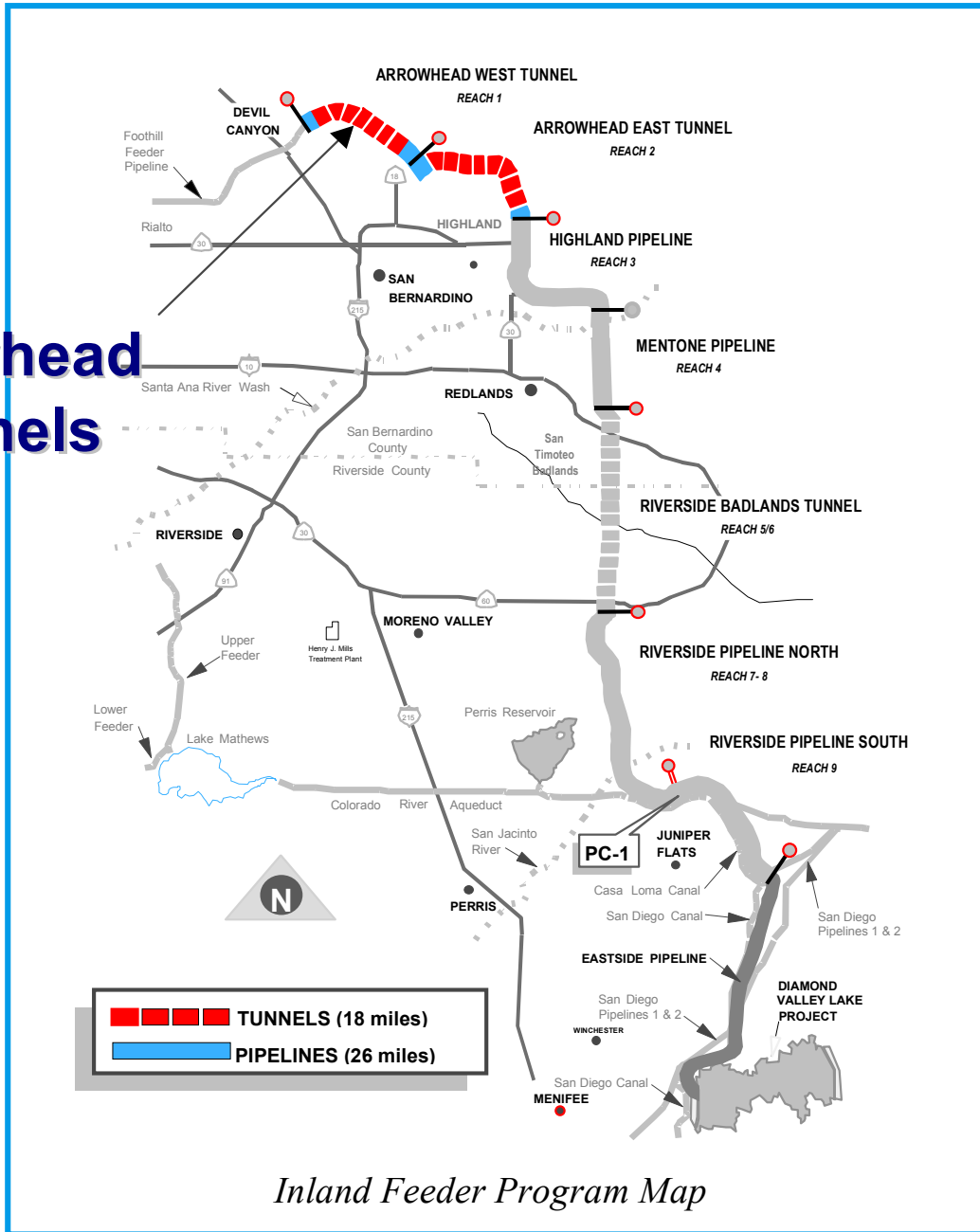
 Roy L. Wolfe Manager, Corporate Resources	1/30/2002 Date
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 Ronald R. Gastelum Chief Executive Officer	1/31/2002 Date
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Attachment 1 – Location Map

BLA #433

Arrowhead Tunnels



General Location Map