

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

September 12, 2000 Board Meeting

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8-1

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**Subject**

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Amend Agreement No. 4803 with Keith Companies, Inc., formerly known as John M. Tettemer and Associates (KC), to Continue to Provide Technical Services for the Lake Mathews Watershed – Drainage Water Quality Management Plan. Amend Agreement No. 16504 with the County of Riverside Transportation Department to Provide Construction Support Services During the Relocation of the Cajalco Road Portion of the Project.

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**Description**

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The Lake Mathews Watershed – Drainage Water Quality Management Plan will provide facilities to protect Lake Mathews by reducing the surface flow of contaminants from Cajalco Creek into the lake. The first phase of this plan is the Cajalco Creek Dam and Detention Basin Project.

KC was selected under the Request for Proposal process to provide design services for the Cajalco Creek Dam and Detention Basin Project. In January 1995, the Board authorized the General Manager to enter into an agreement with KC for geotechnical studies, final design and preparation of specifications for the project. The Board authorized \$1.9 million for these services. After completion of the design in December 1999, the Board authorized the award of a construction contract for the project and an increase in the agreement amount with KC to \$2.467 million for their technical support services during construction.

Construction of the Cajalco Creek Dam and Detention Basin began in January 2000. Shortly after the start of construction, the contractor unexpectedly encountered groundwater that contained high levels of uranium, which precluded its discharge into Cajalco Creek. Metropolitan's staff, along with the design and geotechnical consultants from KC, developed several options for managing the groundwater and making design adjustments to enable construction to continue. This resulted in KC performing additional tasks, including developing an alternative dam design, performing field work to evaluate the dewatering operation, developing a hydrogeologic model of the groundwater movement, revising the design of the dam left abutment, and revising the sedimentation embankment and subdrain designs.

The recent dry weather has resulted in a significant subsidence of the groundwater in the last two months that is enabling a return to the original dam design approach. This has allowed Metropolitan to avoid the expensive groundwater treatment and alternate dam design options that were developed by the consultant. The contractor is accelerating the construction of the dam foundation to take advantage of the dry conditions and is expected to complete the dam foundation ahead of schedule, before the return of the groundwater. The project is expected to be completed within its original schedule.

Because of the potential impact of the groundwater issue on the contractor's work, Metropolitan authorized KC to perform the extra scope tasks using funds that were allocated for construction support through the end of the project. To complete the additional scope tasks and to provide continued construction support, it is recommended that Agreement No. 4803 be increased by \$420,000 for a maximum agreement amount of \$2.887 million. The appropriation contains sufficient funds for the additional scope. No increase in the program estimate or appropriation is required.

During the design phase, Metropolitan and the County of Riverside Transportation Department (County) executed Agreement No. 16504 for the County to perform a review of the Cajalco Road relocation design (a County road). The agreement allocated \$58,000 for the County's services and was approved by the General Manager. When construction activities halted on the dam, the contractor directed his work activities to the construction on the road

relocation in March 2000 with the cooperation of the County. Recently, negotiations were completed on an amendment to the agreement for the County to provide inspection, testing and surveying services during construction of the road relocation. An additional \$568,500 is required for these construction services and post design activities, including title recordation, dedication, survey and vacation of the replaced road. This increase has been planned and the appropriation contains sufficient funds for this scope.

To provide for construction support services by the County, it is recommended that Agreement No. 16504 be increased by \$568,500 for a maximum agreement amount of \$626,500. No increase in the program estimate or appropriation is required.

(See [Attachment 1](#) for a detailed description, [Attachment 2](#) for the site map).

## Policy

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Metropolitan Water District Administrative Code Section 8115: Contracts over \$250,000.

## Board Options/Fiscal Impacts

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### Option #1

Authorize the General Manager to amend Agreement No. 4803 with KC by \$420,000 for a maximum agreement amount of \$2.887 million to complete all construction support activities. Authorize the General Manager to amend Agreement No. 16504 with the County by \$568,500 for a maximum agreement amount of \$626,500 for all construction support activities.

**Fiscal Impact:** \$988,500 expenditure of appropriated funds.

## Staff Recommendation

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Option #1

  
 Roy L. Wolfe  
 Manager, Corporate Resources

8/23/2000  
 Date

  
 Ronald R. Jester  
 General Manager

8/28/2000  
 Date

[Attachment 1 – \(Detailed Description\)](#)

[Attachment 2 – \(Site Map\)](#)

BLA # 160

## **Detailed Report**

### ***Project and Program Description***

The Cajalco Creek Dam and Detention Basin Project will provide facilities to protect Lake Mathews by reducing the surface flow of contaminants into the lake. The project involves the construction of a 1500-ft long, 45-ft high dam across Cajalco Creek upstream of Lake Mathews. To construct the dam, approximately one mile of Cajalco Road, a County road, will be rerouted around the south end of the dam. In addition, four small sedimentation basins will be constructed on four tributaries south of Lake Mathews several miles west of the new dam. Design consultant Keith Companies, Inc., formerly known as John M. Tettemer and Associates (KC) was selected under the RFP process to provide design services for the project, under Agreement No. 4803.

This project is the major component of the Drainage Water Quality Management Plan (DWQMP) for the Lake Mathews watershed. The DWQMP is a joint program between the County of Riverside, Riverside County Flood Control and Water Conservation District (RCFC&WCD), and Metropolitan. The objectives of the DWQMP are to:

- ❑ Protect Lake Mathews against urban storm water entering the lake.
- ❑ Provide a barrier against potential spills of hazardous material in the 40-square-mile watershed.
- ❑ Assist the County in managing storm water runoff from the watershed and meeting proposed National Pollutant Discharge Elimination System (NPDES) permit requirements.

The roles and responsibilities of each agency are defined in a 1995 memorandum of understanding (MOU), authorized by the Board.

In addition to the construction of the current project facilities, five other water quality wetland/diversion projects are included in the DWQMP program. The construction of these facilities will be triggered by future development within the watershed.

### ***Project and Program Cost Estimates***

In May of 1998, the Board authorized funds for the construction of the Cajalco Creek Dam and Detention Basin Project. The total funding appropriated for the project is \$37.4 million. This includes the cost of environmental documentation and mitigation, design, and construction. Partial financing for the project will be provided by a \$20 million low interest (approximately 2.8 percent) State Revolving Fund loan authorized by the State Water Resources Control Board and by Area Drainage Plan (ADP) fees collected by Riverside County from land developers.

The program estimate of \$45.9 million includes the cost of the current project and the future water quality wetland/diversion projects. The RCFC&WCD is responsible for the design and construction of the five remaining facilities, subject to available funding from either Metropolitan or other sources. Additional funding from Metropolitan would be subject to Board approval.

Costs for the Lake Mathews Watershed – Drainage Water Quality Management Plan were previously planned and budgeted. The current appropriation for the program remains unchanged at \$37.4 million, while the total program estimate remains at \$45.9 million.

### ***Project Construction Description***

Construction of the Cajalco Creek Dam and Detention Basin Project began in January 2000. Shortly after the start of construction, the Contractor initiated groundwater removal that is required to construct the foundation of the dam. Samples of the groundwater indicated high levels of uranium, which precluded discharge of the water into Cajalco Creek. The Riverside County health officials and the Regional Water Quality Control Board, as well as Metropolitan, were unaware of the presence of the uranium in the area.

Metropolitan's staff, along with the design and geotechnical consultants from KC, developed several options for managing the groundwater and making design adjustments to enable construction to continue. This resulted in KC performing additional tasks beyond their scope. KC developed an alternative dam design which was presented to the California Division of Safety of Dams, performed field work to evaluate the dewatering operation, developed a hydrogeologic model of the groundwater movement, developed a sheet pile cutoff barrier concept, and revised the design of the dam left abutment. Additional tasks to be performed to reduce the impact of groundwater on construction include a revision of the sedimentation basin embankment design and a revision of the subdrain design.

The construction contractor modified the work schedule and made other adjustments in the sequence of the work to mitigate the impact on construction, while a resolution of the groundwater problem was being developed.

#### ***Consultant Contract Amendment***

KC was selected under the RFP process to provide design services for the project. It was anticipated that, as the engineer of record, KC would provide engineering and geotechnical support during construction.

In January 1995, the Board authorized the General Manager to enter into an agreement with KC for geotechnical investigation, design and the preparation of specifications for the Cajalco Creek Dam and Detention Basin Project. The Board authorized \$1.9 million for these services. The General Manager has since approved a contract increase of \$167,000 for a maximum agreement amount of \$2.067 million, and in December 1999 the Board approved an increase in the maximum agreement amount to \$2.467 million for construction support.

Because of the critical nature of the additional tasks and KC's familiarity with the project, KC was requested to evaluate the groundwater options and to prepare the final design modifications. Performing the additional tasks to resolve the groundwater issues resulted in the use of funds that were allocated for construction support through the end of the project. To complete the additional scope tasks and to provide continued construction support, it is recommended that the Board approve an amendment to Agreement No. 4803 with KC to increase the contract amount by \$420,000 for a maximum agreement amount of \$2.887 million. The appropriation contains sufficient funds for the additional scope. No increase in the program estimate or appropriation is required.

There are limited subcontracting opportunities for the additional scope of work, The consultant's subcontracting goals for the additional scope of work are 2 percent for MBE firms and 2 percent for WBE firms.

#### ***County of Riverside Transportation Department Contract Amendment***

During the design phase, Metropolitan and the County of Riverside Transportation Department (County) executed Agreement No. 16504 for the County to perform a review of the Cajalco Road relocation design (a County road). The agreement allocated \$58,000 for the County's services and was approved by the General Manager. Recently, negotiations were completed on an amendment to the agreement for the County to provide inspection, testing and surveying services during construction of the Cajalco Road relocation. An additional \$568,500 is required for construction support services.

To provide for construction support services by the County, it is recommended that the Agreement No. 16504 be increased by \$568,500 for a maximum agreement amount of \$626,500. This increase has been planned and the appropriation contains sufficient funds for this scope. No increase in the program estimate or appropriation is required.

