

WEST BASIN MUNICIPAL WATER DISTRICT

DECEMBER 4, 2002 - Water Resources
McDonald, Little

DECEMBER 23, 2002 - Board Meeting

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ACTION ITEM

PHASE IV WATER RECYCLING PLANT EXPANSION
PROJECT UPDATE / TITLE 22 FILTER MEDIA PILOT STUDYSUMMARY:**Preliminary Design Report**

CDM Consulting Engineers is currently completing the Preliminary Design Report for the West Basin Water Recycling Plant (WBWRP) Phase IV Expansion Project. The Preliminary Design Report will be used as the basis for the Design-Build Project requirements during the bidding process. The Preliminary Design Report should be completed in February 2003.

Title 22 Filter Media

As part of the Title 22 System expansion, existing Barrier Filters will be retrofitted and converted to meet Title 22 requirements and the existing Lime Clarifier will be converted to a flocculation clarifier and used as pre-treatment for the converted Barrier Filters. Due to the proposed changes in the overall treatment process associated with the Title 22 System expansion, a filter media pilot study is recommended to identify the most suitable filter media and configuration for the expanded system.

Pilot testing would be performed on-site at the WBWRP and would utilize existing secondary wastewater effluent with simulated future flocculation conditions. Filter media piloting will allow evaluation of various filter media types, sizes, and configurations at optimum loading and backwash rates. The information obtained will be used in sizing of filter processes for Design-Build bidding purposes.

Three options were explored for acquiring a pilot unit for the test study:

- Rental of pilot unit from established unit supplier, such as USFilter or CDM,
- Borrow existing pilot unit from Orange County Water District, and
- Purchase and construct permanent pilot unit.

Based on review of the options, rental of a pilot unit is the most feasible and economical option. The pilot unit selected would be provided by CDM Engineers & Constructors, Inc. CDM Constructors maintains an in-house pilot plant division that develops, fabricates, and operates pilot treatment units. The pilot unit would meet all the requirements of the study and would be cost-effective due to its "off-the-shelf" availability. The pilot unit

would be rented for a two-month period and then returned to CDM when testing is completed.

The other options considered were not selected due to the following reasons:

- USFilter pilot unit did not include required testing equipment/instrumentation and was inadequate for meeting the testing requirements. The unit proposed would have required additional fabrication costs and purchasing of various equipment resulting in excessive cost and delays.
- Existing Orange County Water District pilot unit was oversized and inadequately equipped for West Basin's piloting requirements, resulting in extensive retrofitting, cost, and delay of implementation.
- Construction of a permanent pilot unit was costly (\$140,000) and inefficient for the purposes of a one-time study.

The 2-month rental cost of the proposed CDM Pilot Unit is \$18,300 and approximately \$4,000 for filter media purchase and mechanical plumbing costs. Rental cost includes all module fabrication, shipping, on-site installation, and training. The unit could be shipped to the WBWRP site within three weeks from authorization.

UV System Selection

The UV pilot testing program was completed in mid-November. Four (4) UV vendors participated in the program and have qualified for the pre-selection process of the Phase IV Design-Build bidding process. Power and performance data developed from the pilot testing program will be used to establish submittal criteria during the pre-selection process. A "Request for Proposals" will be sent out to each qualified UV Vendor this month in order to select the most qualified UV vendor to be included in the Design-Build bid package. The selected UV vendor will be required to submit a life-cycle cost analysis and meet specific performance requirements. UV equipment selection is anticipated to be awarded in March 2003.

MF System Selection

The Microfiltration pilot testing program was completed in late October. Three (3) MF vendors participated in the program and have qualified to be included in the Phase IV Design-Build bidding package. Performance data developed from the pilot testing program has been used to establish design criteria for each of the qualified MF vendors. Selection of MF equipment will be based on the overall Design-Build contractor bids and will include life-cycle cost analysis for long-term performance.

Program Management Services

A Program Management Services contract will be required as part of the Phase IV bidding and construction phase. The Program Manager will provide construction management services for overall coordination, project management, scheduling, and cost control

associated with the Project. "Requests for Proposals" from qualified consultants have been solicited and selection of the Program Management firm is anticipated for January 2003.

Design-Build Contractor Services

Qualified Design-Build contractors will be solicited with "Request for Proposals" in January 2003 for the Phase IV Project construction. The selected "short-list" of Design-Build contractors will then be requested to provide proposals on the Phase IV Project. Award of the Design-Build Project is anticipated for late March 2003.

FISCAL IMPACTS:

The FY 2002-03 budget program will include designated funds to achieve the aforementioned project activities.

ENVIRONMENTAL COMPLIANCE:

None.

COMMITTEE STATUS:

This item was reviewed by the Water Resources Committee on December 4, 2002 and was recommended for approval at the December 23, 2002 Board meeting.

RECOMMENDED MOTION:

Authorize the General Manager to approve payment to CDM Constructors for rental cost of a pilot unit for a total amount of \$18,300 plus purchase of filter media and mechanical work totaling \$4,000, for a total not-to-exceed amount of \$22,300.

LIST OF EXHIBITS:

None.