

DATE ISSUED: October 24, 2003 REPORT NO. 03-219

ATTENTION: Natural Resources & Culture Committee  
Agenda of October 29, 2003

SUBJECT: Alvarado WTP Upgrade & Expansion – Phase II

#### SUMMARY

THIS IS AN INFORMATION ITEM ONLY. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL.

#### BACKGROUND

Alvarado WTP Upgrade & Expansion – Phase II was approved by the Natural Resources & Culture Committee on April 9, 2003, and by City Council on July 14, 2003. The approved budgeted construction cost of this project is \$44,000,000. Bids for this project were opened on July 23, 2003, with Kiewitt Pacific recording the apparent low bid of \$55,976,000; approximately \$12,000,000 over the construction estimate.

While an overage of this magnitude may require an adjustment in the department's current Capital Improvements Program (CIP), we believe that the opportunity exists to substantially mitigate the effects of that adjustment through the deferral of a single component of this project's planned improvements. The deferral of the ozone facilities within this phase of work will not impact the City's ability to meet water quality regulations. Ozone technology is still a desirable option as a means to address taste and odor issues with our source water.

Deferring construction of ozone disinfection facilities until the next phase of the department's Capital Improvements Program reduces the project's estimated cost of construction to an amount below Council's authorization of \$44,000,000. Alvarado's ozone disinfection facility had been scheduled in the current CIP to facilitate economies of scale. Therefore its deferral could be adopted without affecting either the Department's own operational improvement goals or those imposed on the Department by the California Department of Health Services (DHS) compliance order. The DHS order states the City must open bids for the construction of the Alvarado Phase II Flocculation and Sedimentation basins by December 1, 2003, and start construction by April 1, 2004.

## DISCUSSION

A post-bid analysis, conducted in an attempt to understand the discrepancy between the construction estimate and the low bid result, revealed issues with both the development and evaluation components of the project's cost estimate.

Developing the project cost estimate is the responsibility of the project's Design Consultant, which in this case is Malcolm Pirnie Inc. (MPI). Based on input received from contractors who bid on the project, we have concluded that the majority of the discrepancy is due to the following:

- The values used for unit cost of concrete
- The quantity of material required
- The contractual phase funding constraints
- The construction duration

Due to the complexity of the project two additional independent cost estimate reviews took place by Richard Brady and Associates, and Parsons Infrastructure to provide a quality control cross-check of MPI's estimate. The results of both of these independent estimates were different than MPI's estimate. The Design Consultant reviewed the information and provided their project estimate to the City. Unfortunately, the estimate was understated.

The project team believes that with the re-packaging of Phase II; the reduction in scope of work which reduces the construction duration, the updating of unit material costs, the confirmation of quantity of material required, and the phasing of the project will keep the cost within the budget approved by Council.

Finally, in an effort to develop a more rigorous and effective cost estimating procedure for future projects, the Water Department facilitated a cost estimating workshop attended by project managers, a representative from the contracting industry and key design consultants. Recommendations arising out of that workshop are being incorporated in the design process, which included the following:

- Preparation of a detailed and complete quantity take off based on multiple quotes
- Completion of a detailed estimate at 100% Design Completion
- Project Team agreement to fixed costs associated with the current construction bidding market.
- Possible use of an independent estimator on complex projects

Based on this report, the department is recommending that the Ozone improvements be differed to a future CIP phase, and to proceed with the project's re-advertisement and award.

Respectfully submitted,

---

Larry Gardner  
Water Department Director

GARDNER/VB

---

Approved: Richard Mendes  
Utilities General Manager