

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

October 14, 2003 Board Meeting

9-3

Subject

Appropriate \$1,072,600; award contract and authorize change orders for the Skinner Expansion No. 4 Program (Approp. 15410) and Effluent Replenishment Tank Bypass Pipeline (Approp. 15365)

Description

In July 2003, Metropolitan's Board authorized the final designs of Skinner Expansion No. 4 and the Skinner Oxidation Retrofit Program (ORP). The Skinner Expansion No. 4 will include addition of the 110-mgd Module No. 7; a 34-mgd Washwater Reclamation Plant No. 3; and reclaimed washwater pumping station. It also will provide new and consolidated chemical tank farms and feed systems; sludge handling facilities expansion (one additional belt press and sludge drying beds); new water pumping stations; yard piping; and related work. Module No. 7 is scheduled to be on-line in July 2006. The Skinner ORP will retrofit the expanded plant to treat water with an ozone disinfection system, which is scheduled to be on-line in July 2007.

The Effluent Replenishment Tank Bypass Pipeline Project will construct a pipeline around the 4 million-gallon effluent tank. The construction work is currently underway and is scheduled for completion in April 2004.

Skinner Expansion No. 4 Program

Pipe Procurement for Skinner Expansion No. 4 – Appropriate \$618,400

Staff has identified the need for several procurement and construction contracts to most efficiently implement the Skinner Expansion No. 4 project. The initial contract consists of pre-purchase of approximately 320 linear feet of 78-inch-diameter steel pipe, 930 linear feet of 48-inch-diameter steel pipe and 55 linear feet of 36-inch-diameter steel pipe. The 78-inch-diameter pipe will be part of the Module No. 7 influent piping and the 48-inch and 36-inch-diameter pipes will be used to temporarily re-route reclaimed washwater while other construction takes place. Pipe fabrication and delivery to the site is expected to take three months. This pipe will be installed within the Skinner plant site preparation contract in spring 2004. Board award of the site preparation construction contract is scheduled for February 2004.

This action appropriates \$618,400, and awards a procurement contract in the amount of \$560,355 to Northwest Pipe Co. to furnish all materials as described in Specifications No. 1484, Furnishing Fabricated Steel Pipe and Fittings for the Skinner Expansion No. 4.

Skinner Sludge Handling Facilities Project – Appropriate \$454,200

In May 2003, Metropolitan's Board awarded Contract No. 1565 to Gantry Constructors, Inc., in the amount of \$3.2595 million, to rehabilitate the Skinner plant's solids handling facilities. Provisions were included in this design for future installation of a third belt press, which is required to process additional solids produced by the future Module No. 7. At this time, staff recommends issuance of a change order to Gantry Constructors, Inc., to purchase and install the third belt press.

This action appropriates \$454,200 and authorizes a change order with Gantry Constructors, Inc., in the amount of \$372,000, to purchase and install the third belt press and accessories. Construction of this work via change order is anticipated to save Metropolitan approximately \$260,000 over alternate approaches for adding the third belt press in the future.

Skinner Filtration Plant Improvements Program

Skinner Effluent Replenishment Tank Bypass Pipeline Project – No Appropriation

In July 2003, Metropolitan awarded Contract No. 1566 to Gantry Constructors, Inc., in the amount of \$1,384,879, to construct a bypass pipeline around the 4 million-gallon effluent replenishment tank. At that time it was planned to have Metropolitan forces perform the tie-in of the new pipeline into the existing pipeline in order to allow maximum flexibility for the shutdown date. The Skinner plant will need to be shut down so that the tie-in work can be performed. Staff has re-evaluated this approach, based on a defined February 2004 shutdown date, and the demand for Metropolitan construction forces during this shutdown period. Staff now recommends issuance of a change order to include the tie-in work within Gantry's construction contract. This change will allow Metropolitan forces to focus on critical infrastructure work instead of the tie-in.

This action authorizes a change order with Gantry Constructors, Inc., in an amount not to exceed \$415,000. Funds are available for this work within the existing appropriation. No additional funds are required.

The Skinner Expansion No. 4 Program (Approp. 15410) and the Skinner Effluent Replenishment Tank Bypass Pipeline (Approp. 15365) have been evaluated and recommended by the Capital Investment Plan Evaluation Team and funds have been included in the fiscal year 2003/04 capital budget. See [Attachment 1](#) for the detailed report, [Attachment 2](#) for the abstract of bids for the pipe procurement contract, and [Attachment 3](#) for the financial statement.

Policy

Metropolitan Water District Administrative Code § 5108: Capital Project Appropriation

California Environmental Quality Act (CEQA)

CEQA determinations for Option #1:

Pipe Procurement for Skinner Expansion No. 4; Skinner Sludge Handling Facilities Project

The environmental effects from the construction and operation of the proposed Skinner Expansion No. 4 and Skinner ORP (collectively referred to as the projects) were evaluated in the Robert A. Skinner Filtration Plant Reliability and Quality Program Final Program Environmental Impact Report (Final PEIR). The Final PEIR was certified by the Board on July 8, 2003. The Board also approved the Findings of Fact, the Statement of Overriding Considerations (SOC), the Mitigation Monitoring and Reporting Program (MMRP), and the projects themselves. The present proposed board actions are solely based on the designing, funding, procuring, and installing of pipes related to the expansion of the Skinner plant, as well as the funding and authorizing a change order for the purchase and installation of the third belt press and accessories associated with Module 7, and not on any changes to the approved projects themselves. Hence, the previous environmental documentation taken by the Board in conjunction with the proposed actions fully complies with CEQA and the State CEQA Guidelines. As such, no further CEQA documentation is necessary for the Board to act on the proposed actions.

The CEQA determination is: Determine that the proposed actions have been previously addressed in the certified 2003 Final PEIR, adopted Findings of Fact, adopted SOC, and adopted MMRP and that no further environmental analysis or documentation is required.

Skinner Effluent Replenishment Tank Bypass Pipeline Project

To comply with CEQA and the State CEQA Guidelines, Metropolitan as the Lead Agency determined that the funding, designing and constructing of the Skinner Effluent Replenishment Tank Bypass Pipeline Project was categorically exempt (Classes 1 and 3, Sections 15301 and 15303 of the State CEQA Guidelines) and approved the overall project on July 9, 2002. The present proposed board action is solely based on authorizing a change order for the construction work and not on any changes to the approved project. 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 CEQA documentation or analysis 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 2002 categorical exemption 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 determinations and

- a. Appropriate \$1,072,600 (\$618,400 for Pipe Procurement for Skinner Expansion No. 4 and \$454,200 for Skinner Sludge Handling Facilities);
- b. Award a procurement contract in the amount of \$560,355 to Northwest Pipe Co. to furnish all materials as described in Specifications No. 1484, Furnishing Fabricated Steel Pipe and Fittings for the Skinner Expansion No. 4;
- c. Authorize issuance of a change order to Gantry Constructors, Inc., Contract No. 1565 in an amount not to exceed \$372,000 to purchase and install a third belt press and accessories for the Skinner Sludge Handling Facilities Project; and
- d. Authorize issuance of a change order to Gantry Constructors, Inc., Contract No. 1566 in an amount not to exceed \$415,000 to perform pipeline tie-in work for the Skinner Effluent Replenishment Tank Bypass Pipeline Project (no appropriation required).

Fiscal Impact: \$1,072,600 of budgeted CIP funds under Appropriation 15410

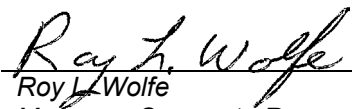

Option #2

Do not award a procurement contract and do not authorize issuance of change orders. Rebidding the pipe procurement contract would have an unknown impact on project costs. Implementation of this option will delay the Module No. 7 on-line date of July 2006. Including the third belt press within a subsequent Skinner Expansion No. 4 bidding package is anticipated to cost \$260,000 more than the recommended option once it is implemented.

Fiscal Impact: None

Staff Recommendation

Option #1

| | |
|---|-------------------|
|  Roy L. Wolfe Manager, Corporate Resources | 9/26/2003 Date |
|  Ronald R. Gastelum Chief Executive Officer | 9/30/2003 Date |

Attachment 1 – Detailed Report

Attachment 2 – Abstract of Bids

Attachment 3 – Financial Statement for Skinner Expansion No. 4 Program

Detailed Report

The Robert A. Skinner Filtration Plant was placed into service in 1976 to supply treated water to Riverside and San Diego counties. Since its original construction, the plant has been expanded three times and now consists of six treatment modules that are operated as two distinct filtration plants (Plants 1 and 2). Plants 1 and 2 have capacities of 240 million gallons per day (mgd) and 280 mgd, respectively, for a total combined rated capacity of 520 mgd. The plant typically treats a blend of State project water (SPW) and Colorado River water (CRW). Plant 1 uses conventional water treatment processes including coagulation, flocculation, sedimentation, filtration, and disinfection; while Plant 2 is a direct filtration plant similar to Plant 1, but without the sedimentation process.

The California Department of Health Services (CDHS) has on file a permit to operate the Skinner filtration plant at a "nameplate" rated capacity of 520 mgd (804 cfs) under normal operating conditions. Metropolitan may request that the Skinner filtration plant be allowed to operate above its rated capacity based on a number of factors including influent water quality, effluent water quality and filter loading rates. Metropolitan's member agencies that receive water from the Skinner filtration plant include Eastern Municipal Water District (EMWD), Western Municipal Water District of Riverside County (WMWD), and San Diego County Water Authority (SDCWA). With the exception of a small portion of EMWD's service area, which can receive water from the Henry J. Mills Filtration Plant during non-peak flows, the Skinner service area is unable to receive treated water from any other Metropolitan treatment plant within Metropolitan's service area.

Background/Purpose

Metropolitan's Board authorized the final designs of Skinner Expansion No. 4 and the Skinner Oxidation Retrofit Program (ORP) in July 2003 and authorized design and construction of the Skinner Effluent Replenishment Tank Bypass Pipeline in July 2002 to meet future water demands, ensure reliable plant operations, and meet water quality goals. The Skinner Expansion No. 4 will include addition of the 110-mgd Module No. 7; a 34-mgd Washwater Reclamation Plant No. 3; a reclaimed washwater pumping station; new and consolidated chemical tank farms and feed systems; sludge handling facilities expansion (one additional belt press and sludge drying beds); new water pumping stations; yard piping; and related work. Module No. 7 is scheduled to be on-line in July 2006. The Skinner ORP will retrofit the expanded plant to treat water with an ozone disinfection system, which is scheduled to be on-line by July 2007.

The Effluent Replenishment Tank Bypass Pipeline Project will construct a pipeline around the 4-million gallon effluent tank. The construction work is currently underway and is scheduled for completion in April 2004.

Skinner Expansion No. 4 Program

Pipe Procurement for Skinner Expansion No. 4 (\$618,400)

Staff is proceeding with final design of Skinner Expansion No. 4, and has identified the need for several procurement and construction contracts to most efficiently implement the work. The first construction contract will be for site preparation, which will include earthwork; offsite disposal of unsuitable materials; installation of the Module 7 influent piping; re-routing of the existing reclaimed washwater pipeline and provisions for future re-routing to the ORP inlet; installation of an emergency generator for the existing reclaimed washwater pumping station; removal and replacement of existing storm drains; and all other appurtenant work. Board award of the site preparation construction contract is planned for February 2004.

For the Skinner Expansion No. 4 project, staff recommends pre-purchase of approximately 320 linear feet of 78-inch-diameter steel pipe, 930 linear feet of 48-inch-diameter steel pipe and 55 linear feet of 36-inch-diameter steel pipe. This pipe will be installed within the Skinner plant site preparation contract in spring 2004.

The 78-inch-diameter pipe will be part of the Module No. 7 influent piping. The site preparation contractor must excavate and remove unsuitable soils between existing Module No. 6 and future Module No. 7. While this excavation is open, the site preparation contractor will install the 320 linear feet of 78-inch-diameter steel pipe, which will be part of the Module No. 7 influent piping, and then backfill with suitable materials.

The site preparation contractor will also place earthen fill in the reclaimed washwater ponds to create the pads for the Skinner ORP facilities. This requires temporary re-routing of the reclaimed washwater piping until the Skinner ORP facilities are constructed. The 48-inch-diameter pipe will be used to temporarily re-route reclaimed washwater while other construction takes place. The site preparation contractor will install the 930 linear feet of 48-inch-diameter steel pipe and 55 linear feet of 36-inch-diameter steel pipe between the existing Washwater Reclamation Plant No. 2 and the existing reclaimed washwater pumping station. After Skinner ORP construction is completed, the 48-inch and 36-inch-diameter piping will be removed from service.

Pipe Procurement Bid Results

As shown in Attachment 2, two bids were received and opened under Specifications No. 1484 for pipe fabrication and delivery. The low bid from Northwest Pipe Co. in the amount of \$560,355 complies with the requirements of the specifications and is \$134,645 less than the second low bid. The engineer's estimate was \$650,000.

Skinner Sludge Handling Facilities Projects (\$454,200)

In May 2003, Metropolitan's Board awarded a construction contract to Gantry Constructors, Inc., in the amount of \$3.2595 million, to replace sludge pumps in Modules 1 and 2; construct two solids thickeners; and to replace the belt press and conveyor system with two larger belt presses and a larger conveyor system. Gantry Constructors, Inc., was issued a Notice to Proceed on June 4, 2003. Provisions were included in the design for future installation of a third belt press, which will be required to process additional solids produced by the future Module No. 7. Staff recommends issuance of a change order to Gantry Constructors to purchase and install the third belt press and accessories.

The Sludge Handling Facilities Project was designed to upgrade the aging solids handling equipment within the existing Skinner plant. The project scope includes purchase and installation of two 2-meter belt presses and accessories. Construction of the concrete pedestals for the belt presses and the belt presses' installation requires a Dewatering Building shutdown. To facilitate installation, the contractor will remove sections of the Dewatering Building roof to lower the belt presses into the building using an overhead crane and then replace the roof sections. A temporary (leased) belt press is currently on site to process solids while the Dewatering Building is out of service. Space is reserved within the Dewatering Building for addition of a third 2-meter belt press to process solids from the future 110-mgd Module No. 7.

Two viable approaches to add the third belt press include: (1) issuing change orders to the existing Skinner sludge handling facilities contractor, Gantry Constructors, Inc., to purchase and install the third belt press and accessories or (2) specifying the belt press and accessories within the Skinner Module No. 7 construction documents for purchase and installation by that contractor. The Skinner Module No. 7 construction is scheduled to begin in July 2004.

Purchase of an additional belt press using the current Gantry Constructors, Inc., contract will insure that all three new belt presses (and accessories including control panels) will be of the same make and model, optimizing operational flexibility and spare parts inventory. In addition, Gantry Constructors, Inc., would install all three within the same time frame of the existing contract. The existing construction contract is approximately 20 percent complete and work is expected to be completed in June 2004. A lump-sum change order is anticipated with Gantry Constructors, Inc., to conduct the work. The amount of the change order would not exceed \$372,000.

If the third belt press were included within the Module No. 7 construction package, the Module No. 7 contractor may furnish equipment which does not match the two-belt presses installed by Gantry Constructors, Inc. The Module No. 7 contractor would also not begin on-site work until July 2004. The Dewatering Building would again be taken out of service while the Module No. 7 contractor constructs the concrete pedestals, removes the roof sections, installs the third belt press, and reinstalls the roof panels. During this time, another temporary (leased) belt press would be used to maintain operations. The approximate cost of the belt press and accessories, installation and temporary belt press under this scenario is \$632,000.

By issuing a change order to Gantry Constructors, Inc., a savings of approximately \$260,000 will be realized. Presently, a window of opportunity exists in the Gantry construction schedule whereby additional work can be added to Gantry's existing contract with no impact to the completion date for the existing work, while allowing purchase of a third belt press to match the original two units. Use of the Module No. 7 contractor would insure competitive bidding, but due to ancillary work, would have a higher cost than the change order approach and may result in installation of a non-matching belt press.

Staff recommends authorizing a change order to Gantry Constructors, Inc., (Contract No. 1565) in an amount not to exceed \$372,000 to purchase and install a third belt press and accessories (identical to those specified in Specifications No. 1467 for the Skinner Sludge Handling Facilities Project).

Cost Estimate

Attachment 3 shows the breakdown of the total estimated cost of \$1,072,600, for procurement activities, materials, construction management activities and issuance of a change order to Gantry Constructors, Inc. Metropolitan staff will perform construction management and inspection and other support services. The construction inspection cost as a percentage of the change order's construction cost is approximately 10 percent. Engineering Services' goal for inspection of construction contracts of less than \$10 million is 12-15 percent.

Project Milestones

- October 2003 – Issuance of construction change order
- February 2004 – Award of site preparation contract for Skinner Expansion No. 4 and Skinner ORP facilities
- June 2004 – Completion of Skinner Sludge Handling Facilities Project construction
- June 2004 – Award of construction contract for Module No. 7
- January 2005 – Award of construction contract for remaining Skinner Expansion No. 4 work and Skinner ORP
- July 2006 – Completion of Module No. 7 construction
- December 2006 – Completion of all Skinner Expansion No. 4 work

Skinner Improvements Program

Skinner Effluent Replenishment Tank Bypass Pipeline Project

In July 2003, Metropolitan awarded Contract No. 1566 to Gantry Constructors, Inc., in the amount of \$1,384,879, to construct a bypass pipeline around the 4-million-gallon effluent replenishment tank. At that time it was planned to have Metropolitan forces perform the tie-in of the new pipeline into the existing pipeline in order to allow maximum flexibility for the shutdown date. The Skinner plant will need to be shut down so that the tie-in work can be performed. Staff has re-evaluated this approach, based on a defined February 2004 shutdown date, and the demand for Metropolitan construction forces during this shutdown period. Staff now recommends issuance of a change order to include the tie-in work within Gantry's construction contract. This change will allow Metropolitan forces to focus on critical infrastructure work instead of the tie-in.

The effluent replenishment tank bypass pipeline will travel around the existing 4-million-gallon, aboveground welded steel tank, which measures 150 feet in diameter by 33.5 feet high. All of the treated water from Skinner Plant 1 flows through this tank on its way to the Skinner finished water reservoir and distribution system. Construction of the tank bypass will provide greater operational flexibility by allowing maintenance in the future of the tank or the plant's finished water reservoir without a shutdown of Plant 1.

Cost Estimate

This action authorizes a change order with Gantry Constructors, Inc., in an amount not to exceed \$415,000. Funds are available for this work within the existing appropriation. No additional funds are required. Metropolitan staff will perform construction management and inspection and other support services. The construction inspection cost as a percentage of the change order's construction cost is approximately 11 percent. Engineering Services' goal for inspection of construction contracts of less than \$10 million is 12-15 percent.

Project Milestones

- October 2003 – Issuance of construction change order
- February 2004 – Completion of tie-in work
- April 2004 – Completion of Skinner Effluent Replenishment Tank Bypass Pipeline Project

The Metropolitan Water District of Southern California
Abstract of Bids Received on September 16, 2003 at 2:00 P.M.
Specifications No. 1484
Furnishing Fabricated Steel Pipe and Fittings For
Robert A. Skinner Filtration Plant

The contract consists of performing all necessary work to furnish fabricated steel pipes. The work consists of fabrication, application of coatings, and delivery to the jobsite of welded steel pipe sections, fittings, and appurtenances as specified in the Specifications No. 1484. The size and length of pipe sections and fittings consist of approximately 320 linear feet of 78-inch-diameter welded steel pipe and fittings, and approximately 930 linear feet of 48-inch welded steel pipe and fittings.

Engineer’s Estimate: \$650,000

| Bidder and Location | Total | SBE \$ | SBE % | Met SBE* |
|---|--------------------|---------------|--------------|-----------------|
| Northwest Pipe Co., Riverside, CA | \$560,355 (Note 1) | N/A | N/A | N/A |
| Ameron International – Water Transmission Group, Rancho Cucamonga, CA | \$695,000 (Note 1) | N/A | N/A | N/A |

N/A – Not Applicable

Note 1 – Price shown is the total bid price. For the purpose of bid evaluation, a five percent price reduction credit in the bid price was given to the company as a regional business.

Financial Statement for Skinner Filtration Plant Expansion No. 4 Program

A breakdown of Board Action No. 2 for Appropriation No. 15410 for the Skinner Filtration Plant Expansion No. 4 Program is as follows:

| | Previous Board Action No. 1 (Jul. 2003) | Current Board Action No. 2 (Oct. 2003) | New Total Appropriated Amount |
|---|--|---|--|
| Labor | | | |
| Studies and Investigations | \$ 0 | | \$ 0 |
| Design and Specifications | 8,089,000 | 10,000 | 8,099,000 |
| Owner Costs (Program management and construction management) | 1,081,000 | 47,200 | 1,128,200 |
| Water System Operations (Skinner plant) | 100,000 | 13,000 | 113,000 |
| Materials and Supplies (Pipe procurement) | 10,000 | 560,400 | 570,400 |
| Incidental Expenses | 150,000 | | 150,000 |
| Professional/Technical Services | 2,251,000 | | 2,251,000 |
| Equipment Use | 10,000 | 10,000 | 20,000 |
| Contract (Change order to Skinner Sludge Handling Facilities Project) | | 372,000 | 372,000 |
| *Fund reallocated from Approp. 15365 | 1,460,000 | | 1,460,000 |
| *Remaining Budget | 2,089,000 | 60,000 | 2,149,000 |
| Total | \$15,240,000 | \$1,072,600 | \$16,312,600 |

Funding Request

| | | | |
|-----------------------------------|--|----------------------------------|------------------------------|
| Program Name: | Skinner Filtration Plant – Expansion No. 4 Program | | |
| Source of Funds: | Construction Funds (General Obligation, Revenue Bonds, Pay-As-You-Go Fund) | | |
| Appropriation No.: | 15410 | Board Action No.: | 2 |
| Requested Amount: | \$ 1,072,600 | Capital Program No.: | 15410-I |
| Total Appropriated Amount: | \$ 16,312,600* | Capital Program Page No.: | E-67 (Approp. 15365) |
| Program Estimate: | \$ 111,498,000* | Program Goal: | I-Infrastructure Reliability |

* Total Appropriated Amount and Total Program Estimate reflect previous reallocation of \$1.76 million, including \$300,000 remaining budget, (previously authorized by Board Actions 1 and 4 of Skinner Improvements Program) from Approp. 15365 to Approp. 15410.