

- **Board of Directors**
Engineering and Capital Programs Committee

February 12, 2008 Board Meeting

8-3

Subject

Appropriate \$3.94 million; and authorize (1) completion activities for the major construction program at the Skinner treatment plant; (2) increase in change order authority for the Skinner ozone equipment procurement contract; and (3) amendment of existing agreement with Camp Dresser & McKee for post-construction services (Approps. 15346, 15365, 15388, and 15410)

Description

The Robert A. Skinner Water Treatment 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 four times and now consists of seven treatment modules that are operated as three distinct facilities (Plants Nos. 1, 2 and 3). With Module No. 7 now fully operational, the Skinner plant has a total treatment capacity of 630 mgd. The plant delivers a blend of waters from the Colorado River and State Water Project to Eastern Municipal Water District, Western Municipal Water District of Riverside County, and San Diego County Water Authority.

Skinner Plant Construction Completion Activities

Over the past four years, the Skinner plant has undergone a major construction program. Metropolitan's plan to execute this program has included a series of contracts which are designed to minimize overlap of contractors, to complete key elements of work within shutdown windows and in advance of fixed completion dates, and to minimize impacts to plant operations. A total of five major construction contracts are planned. Four contracts with a total exceeding \$381 million have been awarded to date: (1) Site Preparation; (2) Module No. 7; (3) Chemical Systems Modifications; and (4) Oxidation Retrofit Program (ORP) and Washwater Reclamation Plant (WWRP) No. 3. The first three of these contracts are complete, while the fourth contract to construct the ORP facilities is approaching 72 percent complete.

Some work elements have been reserved for the fifth construction contract (Skinner Completion Project – Project No. 1 herein) to address items that were dependent on completion of the first four contracts or were spread throughout the plant. This approach was taken to provide uniform responsibility for certain work rather than splitting it among multiple parties, and to avoid modifying or damaging work which was installed in one of the earlier contracts. In addition to the fifth construction contract, several other activities necessary for completion of the Skinner capital programs remain, which are best addressed after the construction contractors have demobilized from the site. These include the installation of physical security systems and integration with the plant security system (Project No. 2 - Physical Security Systems for Module No. 7 and Chemical Systems); preparation of final record drawings, operations and maintenance manuals, and control system operating descriptions; and final supervisory control and data acquisition (SCADA) integration (Project No. 3 - Post-Construction Start-Up Activities for Skinner ORP and WWRP No. 3). Consolidating the various tasks included in Project No. 3 in a single contract is more efficient than proceeding with separate contracts, and is consistent with past practice on large programs such as Diamond Valley Lake. Finally, staff recommends that the General Manager's change order authority for the Skinner ozone equipment procurement contract be increased to 5 percent of the initial contract amount.

Project No. 1 - Skinner Completion Project – Final Design (\$1,280,000)

The Skinner Completion Project will address plant-wide improvements to enhance plant reliability and safety, and to serve as “wrap-up” for the major construction work that has taken place. The scope of this project includes:

- A roadway to directly connect the Skinner Administration Building area with the Skinner ORP area.
- Addition of a concrete trench for sodium hypochlorite piping at Modules Nos. 5 and 6.
- Addition of secondary containment and piping modifications for the filter backwash polymer and sodium hypochlorite pipes at Modules Nos. 1 to 6, to prevent spills from flowing into adjacent areas of the plant during a potential pipe break, and for added protection to minimize ultraviolet light deterioration of the piping.
- An additional emergency generator and back-up pump for the new potable water pump system to enhance and increase plant reliability.

This action appropriates \$1.28 million in budgeted funds and authorizes final design of the Skinner Completion Project. Final design will be performed by Metropolitan staff. The anticipated cost of final design is approximately 13.6 percent of the estimated total construction cost. Engineering Services' goal for design of projects with construction cost higher than \$3 million is 9 to 15 percent. The construction cost for this project is anticipated to range from \$5 million to \$6 million.

All work will be sequenced to minimize disruptions to the operating treatment facilities, and will be closely coordinated with Skinner plant personnel. Staff will return to the Board at a later date for award of the construction contract. This project is categorized as an Infrastructure Upgrade project within Metropolitan's Capital Investment Plan (CIP).

Project No. 2 - Physical Security Systems for Module No. 7 and Chemical Systems (\$850,000)

In addition to the existing Skinner plant's outdoor perimeter security, new security systems within the plant are needed to monitor the recently completed Module No. 7 and Chemical Systems, and to protect them from potential security threats. In July 2007, Metropolitan's Board authorized a master agreement with Johnson Controls, Inc., to design, procure, and install physical security systems for capital projects on an as-needed basis. All funding for the security system installation work is to be provided under individually budgeted and appropriated capital programs.

Security features recommended for the new Skinner facilities include access controls and surveillance equipment, such as card readers, door contacts and monitors; infrared motion detection; and cameras. The recommended features are consistent with security systems planned or in place at other Metropolitan facilities and at the remainder of the Skinner plant.

This action appropriates \$850,000 in budgeted funds and authorizes installation of security system components for Module No. 7, the new chemical tank farms, the Chlorine Containment Building, and other new Skinner facilities. The work will be performed by Johnson Controls under its new five-year master agreement. Installation of the physical security systems covered under this agreement is consistent with Metropolitan's long-term strategic plan to enhance safety and security of employees, the public, and Metropolitan's infrastructure. This project is categorized as an Infrastructure Upgrade project within Metropolitan's CIP.

Project No. 3 - Post-Construction and Start-Up Activities for Skinner ORP and Washwater Reclamation Plant No. 3 (\$1,810,000)

The ORP construction contract is scheduled to be completed in early 2009, while the facilities needed to support Module No. 7 (e.g., WWRP No. 3) are already complete. Since the ORP contract is nearing completion, preparations are underway for start-up activities and final documentation. Major elements of work include:

- Preparation of system descriptions for use in programming the plant's SCADA system for the new processes and equipment installed under this contract.
- Updating of instrumentation and control loop descriptions prepared during final design, to reflect changes during construction.
- Preparation of as-built drawings to accurately record changes which occurred during construction.

- Preparation of operations manuals and integration with current plant manuals for the new ozone facilities, WWRP No. 3, and WWRP No. 2 improvements.
- Specialized technical assistance during start-up of ozone equipment and related systems. Start-up assistance will include performance testing, preparation of start-up checklists, witnessing selected testing and start-up activities, optimization of working systems, and providing technical support on process operation. This specialized support is critical to achieving a reliable, efficient working system.

This action appropriates \$1.81 million in budgeted funds and authorizes post-construction and start-up activities for the Skinner ORP and WWRP No. 3 facilities. This work is recommended to be performed by Camp Dresser & McKee (CDM), the design consultant for those facilities. Amendment of the existing CDM agreement to perform this work is described below. These services are consistent with the scope and level of activity previously provided for Metropolitan's existing ozone systems at the Mills and Jensen plants. This project is categorized as an Infrastructure Upgrade project within Metropolitan's CIP.

Change Order Authority for Skinner Ozone Equipment Procurement Contract (No Funds Required)

In May 2004, Metropolitan's Board awarded an \$8,409,000 procurement contract to Ozonia North America to supply ozone equipment for the Skinner ORP. The procurement contract includes furnishing ozone equipment; testing, installation oversight, equipment start-up, training, and extended onsite services; and control system integration for the ozone system. The ozone equipment consists of ozone generators, power supply units, liquid oxygen storage (LOX) and feed equipment, ozone off-gas destruct equipment, and a complete ozone control system. All ozone equipment except for the LOX tanks has been delivered onsite and is currently in storage pending installation.

Based on Metropolitan's Administrative Code, the General Manager's change order authority for this procurement contract is \$250,000, which is approximately 3 percent of the contract amount. This authority is lower than for a construction contract, for which the General Manager would have 5 percent authority for change orders. On the Skinner ozone procurement contract, change orders are anticipated which may potentially exceed the current 3 percent change order authority. These changes include extended storage of the ozone equipment at Metropolitan's request, and additional safety features such as increased numbers of ozone and oxygen leak detectors. The need to increase the number of detectors was identified during the system's Process Hazard Analysis, which was jointly conducted by the Riverside County Fire Department and Metropolitan staff. The additional detectors are consistent with recent industry practice and are planned for the upcoming Diemer and Weymouth ozone projects. Staff recommends that the General Manager's change order authority for this procurement contract be increased to \$420,450, or 5 percent of the initial contract amount.

This action authorizes the General Manager to execute change orders for the Skinner ozone equipment procurement contract up to an aggregate amount not to exceed \$420,450. No additional funds are required, as sufficient funds are available within the existing appropriation.

Technical Engineering Support – Amendment to Existing Agreement

CDM prepared the final design of the Skinner ORP and WWRP No. 3 facilities and is currently providing technical engineering support during construction of that contract. As the engineer of record, CDM is recommended to provide technical engineering support during post-construction activities. Amendment of the CDM agreement is consistent with the agreement's scope of work and with the planned approach for project implementation.

This action authorizes an increase of \$1.81 million to the existing agreement with CDM, for a new not-to-exceed total of \$22,661,000, to provide technical support for Project No. 3 described above.

Summary

This action appropriates \$3.94 million and authorizes: final design of the Skinner Completion Project; installation of physical security systems for new facilities; post-construction and start-up activities for the Skinner ORP and WWRP No. 3; an increase in change order authority for the Skinner ozone equipment procurement contract; and

amendment of an existing agreement with CDM. Each project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2007/08 capital budget.

These projects are consistent with Metropolitan's goals for sustainability by enhancing the reliability of the existing treatment, conveyance and distribution system, in order to maintain reliable water deliveries in the future. Funds for these projects are included under four capital programs within Metropolitan's CIP. See [Attachment 1](#) for the Financial Statements and [Attachment 2](#) for the Location Maps.

Project Milestones

January 2009 – Completion of Skinner ORP construction

March 2009 – Completion of final design of the Skinner Completion Project

August 2009 – Anticipated initial operation of Skinner ozone facilities

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121(a): Contracts over \$250,000

Metropolitan Water District Administrative Code Section 8123: Authority of the General Manager to Amend Contracts

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Skinner Completion Project – Final Design; Physical Security Systems for Module No. 7 and Chemical Systems; Post-Construction and Start-Up Activities for Skinner ORP and WWRP No. 3; Change Order Authority for Skinner Ozone Equipment Procurement Contract; and Technical Engineering Support – Amendment to Existing Agreement

The environmental effects from the funding, design, procurement of equipment, construction, and operation of the Skinner Module No. 7, Oxidation Retrofit Program, Chemical Systems Modifications, and Wastewater Reclamation Plant programs (Program) 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 (Findings), the Statement of Overriding Considerations (SOC), the Mitigation Monitoring and Reporting Program (MMRP), and the Program itself.

Subsequent to the certification of the 2003 Final PEIR for the Program, to comply with CEQA and the State CEQA Guidelines, Metropolitan as the Lead Agency prepared a Mitigated Negative Declaration (MND) entitled "Robert A. Skinner Filtration Plant Reliability and Quality Program, Additional Construction Use Area and Creek Crossing" to address the environmental impacts of establishing an additional construction use area for the Program. The MND was adopted by the Board on May 11, 2004. Additionally, further refinements were found to be required thus modifying the original Program description. Metropolitan prepared a Negative Declaration (ND) entitled "Robert A. Skinner Filtration Plant Reliability and Quality Program Refinements to the Program" to address these refinements. The ND was adopted by the Board on November 9, 2004. Addendum No. 1 to the MND was prepared in July 2006, for installation and use of a temporary metal storage building during Program construction. The current proposed actions would not result in any new significant environmental impacts, nor result in substantial changes to the approved Program. Hence, the previously adopted environmental documentation in conjunction with the current board actions fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further environmental documentation is necessary for the Board to act on with respect to the proposed actions.

The CEQA determination is: Determine that the proposed actions have been previously addressed in the certified 2003 Final PEIR and related documents, the adopted 2004 MND and 2006 Addendum No. 1 to the MND, and the adopted 2004 ND, and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

Skinner Completion Project – Final Design; Post-Construction and Start-Up Activities for Skinner ORP and WWRP No. 3; Change Order Authority for Skinner Ozone Equipment Procurement Contract; and Technical Engineering Support – Amendment to Existing Agreement

CEQA determination is the same as stated in Option #1.

Physical Security Systems for Module No. 7 and Chemical Systems

None required

CEQA determination for Option #3:

Post-Construction and Start-Up Activities for Skinner ORP and WWRP No. 3; Change Order Authority for Skinner Ozone Equipment Procurement Contract; and Technical Engineering Support – Amendment to Existing Agreement

CEQA determination is the same as stated in Option #1.

Skinner Completion Project – Final Design; and Physical Security Systems for Module No. 7 and Chemical Systems

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$3.94 million in budgeted funds;
- b. Authorize final design of the Skinner Completion Project;
- c. Authorize installation of physical security systems for the new Skinner facilities;
- d. Authorize post-construction and start-up activities for the Skinner ORP;
- e. Authorize the General Manager to execute change orders for the Skinner ozone equipment procurement contract up to an aggregate amount not to exceed \$420,450; and
- f. Authorize an increase of \$1.81 million to the existing agreement with CDM, for a new not-to-exceed total of \$22,661,000.

Fiscal Impact: \$3.94 million of budgeted funds under the following appropriations:

- Approp. 15346: \$146,000 (Chlorine Containment and Handling Facilities)
- Approp. 15365: \$1,644,000 (Skinner Improvements)
- Approp. 15388: \$1,760,000 (Skinner Oxidation Retrofit Program)
- Approp. 15410: \$390,000 (Skinner Expansion No. 4)

Business Analysis: Authorization of the Skinner Completion Project will enhance plant reliability and complete major construction at the Skinner plant. Implementation of physical security systems for the new Skinner facilities will enhance monitoring and protection from security threats. Post-construction services will aid in overall completion and start-up of the Skinner ORP facilities.

Option #2

Adopt the CEQA determination and

- a. Appropriate \$3.09 million in budgeted funds;
- b. Authorize final design of the Skinner Completion Project;
- c. Do not authorize installation of physical security systems for the new Skinner facilities at this time;
- d. Authorize post-construction and start-up activities for the Skinner ORP;
- e. Authorize the General Manager to execute change orders for the Skinner ozone equipment procurement contract up to an aggregate amount not to exceed \$420,450; and
- f. Authorize an increase of \$1.81 million to the existing agreement with CDM, for a new not-to-exceed total of \$22,661,000.

Fiscal Impact: \$3.09 million of budgeted funds under the following appropriations:

- Approp. 15365: \$1,128,000 (Skinner Improvements)
- Approp. 15388: \$1,760,000 (Skinner Oxidation Retrofit Program)
- Approp. 15410: \$202,000 (Skinner Expansion No. 4)

Business Analysis: Under this option, staff will return to the Board following the Skinner Completion Project, when the major Skinner construction program will have concluded, to request authorization for the recommended physical security systems. Timely implementation of security features for the Skinner plant’s new facilities will be delayed, leaving internal portions of the Skinner plant temporarily without adequate monitoring.

Option #3

Adopt the CEQA determination and

- a. Appropriate \$1.81 million in budgeted funds;
- b. Do not authorize final design of the Skinner Completion Project at this time;
- c. Do not authorize installation of physical security systems for the new Skinner facilities at this time;
- d. Authorize post-construction and start-up activities for the Skinner ORP;
- e. Authorize the General Manager to execute change orders for the Skinner ozone equipment procurement contract up to an aggregate amount not to exceed \$420,450; and
- f. Authorize an increase of \$1.81 million to the existing agreement with CDM, for a new not-to-exceed total of \$22,661,000.

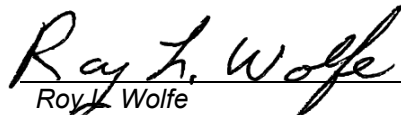
Fiscal Impact: \$1.81 million of budgeted funds under the following appropriations:

- Approp. 15365: \$202,000 (Skinner Improvements)
- Approp. 15388: \$1,406,000 (Skinner Oxidation Retrofit Program)
- Approp. 15410: \$202,000 (Skinner Expansion No. 4)

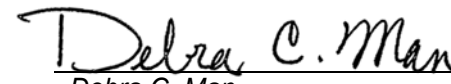
Business Analysis: This option would complete only the Skinner ORP contract at this time. Staff will return to the Board to request authorization for individual elements of the Skinner Completion Project and physical security systems following completion of the Skinner ORP contract. Deferral of the Skinner Completion Project would leave portions of the Skinner construction program incomplete, which would result in temporary operational inefficiencies and reduced reliability of the potable water pump station. Timely implementation of security features for the Skinner plant’s new facilities will also be delayed, leaving internal portions of the Skinner plant without adequate monitoring.

Staff Recommendation

Option #1


 Roy L. Wolfe
 Manager, Corporate Resources

1/25/2008
 Date


 Debra C. Man
 for Jeffrey Kightlinger
 General Manager

1/28/2008
 Date

Attachment 1 – Financial Statements

Attachment 2 – Location Maps

Financial Statement for Chlorine Containment and Handling Facilities Program

A breakdown of Board Action No. 15 for Appropriation No. 15346 is as follows:

	Previous Total Appropriated Amount (Sep. 2007)	Current Board Action No. 15 (Feb. 2008)	New Total Appropriated Amount
Labor			
Studies and Investigations	\$ 840,000	\$ -	\$ 840,000
Final Design	1,790,650	-	1,790,650
Owner Costs	3,158,400	-	3,158,400
Construction Inspection and Support	9,490,800	-	9,490,800
Metropolitan Force Construction	4,663,000	3,600	4,666,600
Materials and Supplies	3,241,129	4,000	3,245,129
Incidental Expenses	481,500	-	481,500
Professional/Technical Services	6,375,700	-	6,375,700
Right of Way Fees	118,000	-	118,000
Land Cost	7,050,000	-	7,050,000
Equipment Use	470,500	-	470,500
Contracts	69,324,000	120,700	69,444,700
Remaining Budget	14,040,321	17,700	14,058,021
Total	\$ 121,044,000	\$ 146,000	\$ 121,190,000

Funding Request

Program Name:	Chlorine Containment and Handling Facilities Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15346	Board Action No.:	15
Requested Amount:	\$ 146,000	Capital Program No.:	15346-W
Total Appropriated Amount:	\$ 121,190,000	Capital Program Page No.:	E-12
Total Program Estimate:	\$ 135,800,000	Program Goal:	W—Water Quality

Financial Statement for Skinner Improvements Program

A breakdown of Board Action No. 16 for Appropriation No. 15365 is as follows:

	Previous Total Appropriated Amount (Feb. 2008)	Current Board Action No. 16 (Feb. 2008)	New Total Appropriated Amount
Labor			
Studies and Investigations	\$ 787,000	\$ -	\$ 787,000
Final Design	1,919,500	573,000	2,492,500
Owner Costs (Program management, bidding process)	3,879,500	203,000	4,082,500
Construction Inspection and Support	8,527,600	-	8,527,600
Metropolitan Force Construction	2,846,300	13,000	2,859,300
Materials and Supplies	2,479,000	14,000	2,493,000
Incidental Expenses	357,000	20,000	377,000
Professional/Technical Services	3,573,000	-	3,573,000
Camp Dresser & McKee, Inc.	515,000	176,000	691,000
Equipment Use	278,000	-	278,000
Contracts	113,514,800	421,000	113,935,800
Remaining Budget	-	224,000	224,000
Total	\$ 138,676,700	\$ 1,644,000	\$ 140,320,700

Funding Request

Program Name:	Skinner Improvements Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15365	Board Action No.:	16
Requested Amount:	\$ 1,644,000	Capital Program No.:	15365-I
Total Appropriated Amount:	\$ 140,320,700	Capital Program Page No.:	E-58
Total Program Estimate:	\$ 158,116,000	Program Goal:	I-Infrastructure Reliability

Financial Statement for Skinner Oxidation Retrofit Program

A breakdown of Board Action No. 10 for Appropriation No. 15388 is as follows:

	Previous Total Appropriated Amount (Feb. 2008)	Current Board Action No. 10 (Feb. 2008)	New Total Appropriated Amount
Labor			
Studies and Investigations	\$ 1,540,000	\$ -	\$ 1,540,000
Final Design	136,000	242,000	378,000
Owner Costs (Program management, bidding process)	6,851,536	75,000	6,926,536
Submittals Review	608,000	-	608,000
Metropolitan Force Construction	2,036,000	-	2,036,000
Construction Inspection and Support	2,385,000	-	2,385,000
Control System Integration	1,077,000	-	1,077,000
Materials and Supplies	18,918,000	-	18,918,000
Incidental Expenses	696,000	20,000	716,000
Professional/Technical Services	30,446,801	-	30,446,801
Camp Dresser & McKee, Inc.	3,923,000	1,406,400	5,329,400
Equipment Use	476,000	-	476,000
Contracts	158,073,000	-	158,073,000
Remaining Budget	8,095,663	16,600	8,112,263
Total	\$ 235,262,000	\$ 1,760,000	\$ 237,022,000

Funding Request

Program Name:	Skinner Oxidation Retrofit Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15388	Board Action No.:	10
Requested Amount:	\$ 1,760,000	Capital Program No.:	15388-W
Total Appropriated Amount:	\$ 237,022,000	Capital Program Page No.:	E-60
Total Program Estimate:	\$ 237,022,000	Program Goal:	WQ/Compliance

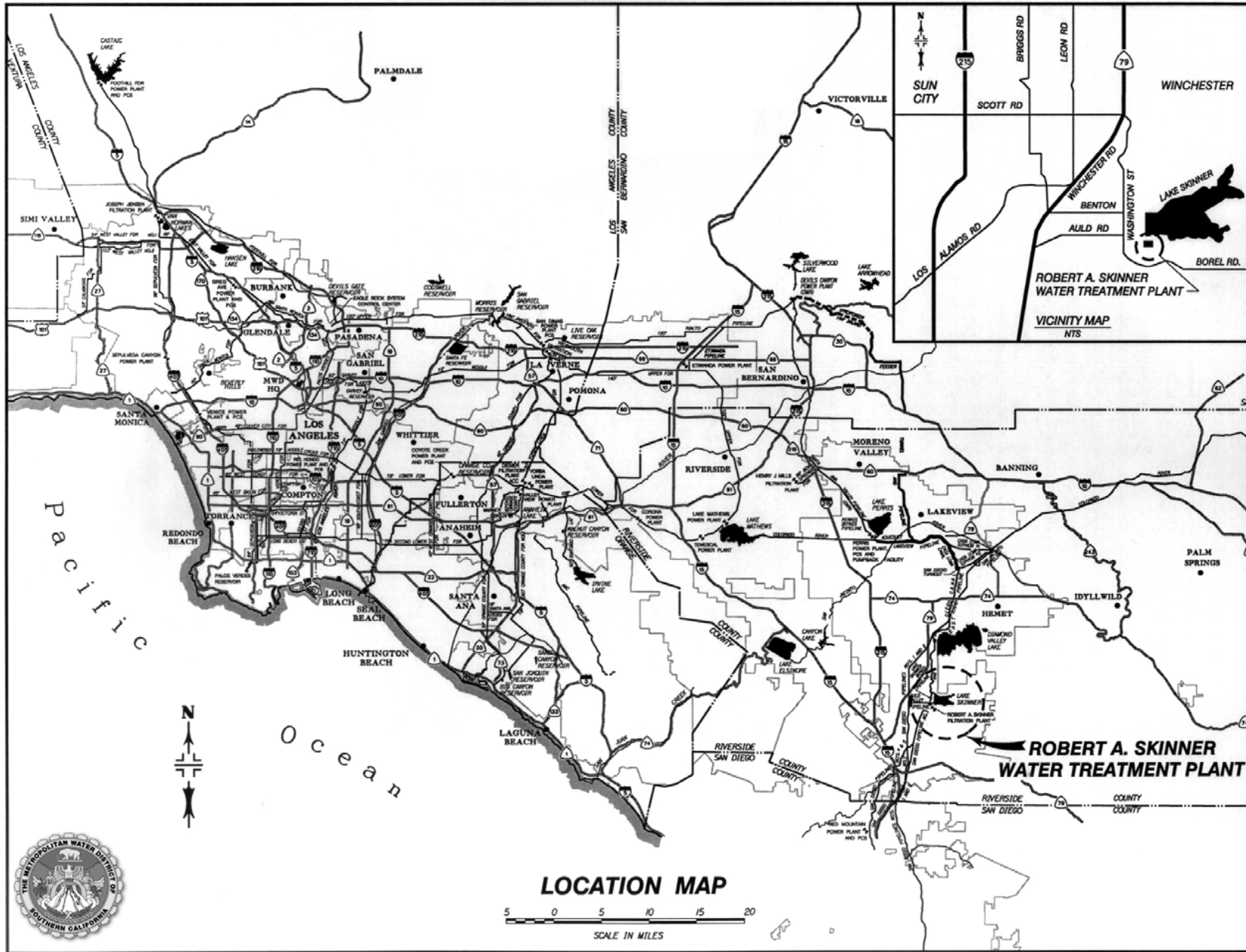
Financial Statement for Skinner Expansion No. 4 Program

A breakdown of Board Action No. 9 for Appropriation No. 15410 is as follows:

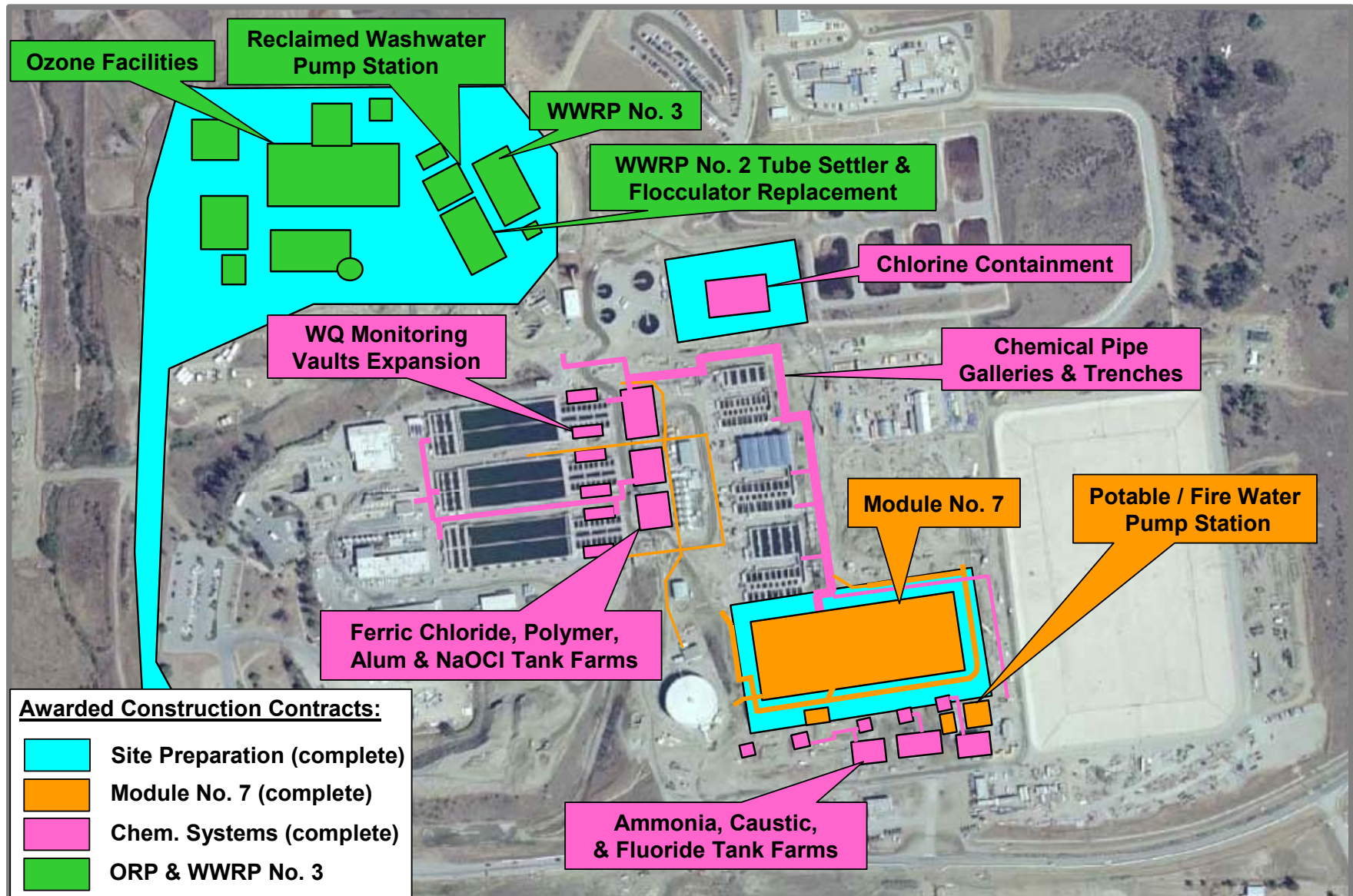
	Previous Total Appropriated Amount (Feb. 2008)	Current Board Action No. 9 (Feb. 2008)	New Total Appropriated Amount
Labor			
Studies and Investigations	\$ 580,000	\$ -	\$ 580,000
Final Design	13,189,000	-	13,189,000
Owner Costs	5,419,200	-	5,419,200
Construction Inspection and Support	8,531,000	-	8,531,000
Metropolitan Force Construction	1,862,000	1,800	1,863,800
Materials and Supplies	1,940,400	-	1,940,400
Incidental Expenses	452,000	-	452,000
Professional/Technical Services	6,441,000	-	6,441,000
Camp Dresser & McKee, Inc.	-	175,800	175,800
Equipment Use	297,000	2,000	299,000
Contracts	112,932,000	161,800	113,093,800
Remaining Budget	-	48,600	48,600
Total	\$ 151,643,600	\$ 390,000	\$ 152,033,600

Funding Request

Program Name:	Skinner Expansion No. 4 Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15410	Board Action No.:	9
Requested Amount:	\$ 390,000	Capital Program No.:	15410-S
Total Appropriated Amount:	\$ 152,033,600	Capital Program Page No.:	E-57
Total Program Estimate:	\$ 153,430,000	Program Goal:	S-Supply and Delivery Reliability



Skinner Water Treatment Plant



Skinner Water Treatment Plant

