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

July 11, 2006 Board Meeting

7-6

Subject

Appropriate $487,000 and authorize (1) Preliminary design of the Skinner plant electrical buildings and ground fault protection upgrades, and (2) Final design, procurement, and replacement of the Skinner dry polymer system control panels (Approps. 15365 and 15435)

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 three times and now consists of six treatment modules that are operated as two distinct plants (Plants 1 and 2). Construction of the plant's fourth expansion is underway, and when complete, the facility will have seven treatment modules with a combined 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 Electrical Buildings Upgrade – Preliminary Design ($173,000)

Skinner Electrical Equipment Buildings Nos. 1 to 3 were constructed over 20 years ago of ribbed sheet metal to house Unit Power Centers and other electrical equipment that supply power to nine Plant 1 Motor Control Center (MCC) buildings. The nine Plant 1 MCC buildings, also constructed of sheet metal over 20 years ago, house the MCCs that distribute power to all Plant 1 process equipment.

These twelve buildings were installed without insulation or air-conditioning systems. Current Metropolitan practice, as well as a common industry practice, is to provide electrical equipment buildings with air conditioners and wall and ceiling insulation to maintain interior temperatures below 85°F, which is within equipment manufacturers' recommended operating environment. During the summer, temperatures inside the twelve buildings frequently exceed 100°F, with peak temperatures up to 120°F. The lack of temperature control inside the electrical buildings has contributed to equipment deterioration and component failures. Spare parts for some of the electrical equipment are difficult to locate or are no longer available.

Staff recommends replacement of deteriorated electrical equipment and addition of air conditioners and insulation to the 12 Plant 1 electrical buildings to ensure plant reliability. The upgrades will be initiated after completion of Skinner Expansion No. 4 to avoid interferences between the contractors.

This action appropriates $173,000 and authorizes preliminary design of the Skinner Electrical Buildings Upgrade project. Metropolitan staff will perform the preliminary design.

Skinner Plant 1 Ground Fault Protection Upgrade – Preliminary Design ($39,000)

In early 2004, an electrical ground fault occurred at the Mills plant due to a pump failure. Due to the Mills plant's outdated ground fault protection system, this isolated event caused a chain reaction of unexpected equipment shutdowns, which in turn impacted operation of the entire plant. Skinner Plant 1 uses a similar outdated ground fault protection system which could impact plant operations in the event of an electrical fault. Modern power systems isolate a ground fault for a specific piece of equipment and keep other equipment on-line.

Staff recommends upgrade of the Plant 1 ground fault protection system to reduce the potential for plant shutdowns caused by electrical ground faults. This upgrade is consistent in approach with a Mills upgrade project

that was authorized by the Board in May 2006. The Skinner Plant 1 upgrade will be initiated after completion of Skinner Expansion No. 4 to avoid interferences between the contractors.

This action appropriates $39,000 and authorizes preliminary design of the Skinner Plant 1 Ground Fault Protection Upgrade project. Metropolitan staff will perform the preliminary design.

Skinner Dry Polymer System Control Panel Replacement – Final Design, Procurement, and Installation ($275,000)

The Skinner Dry Polymer Building was constructed in 1996. The building houses three dry polymer mixing and transfer systems that were designed and constructed to produce varying concentrations of liquid polymers on-site to aid in the filtration and filter backwash processes. Each system consists of a mixer, transfer pump, piping, valves, and a system control panel. In order for the dry polymer systems to support the new Module 7, which is currently under construction, the three system control panels must be replaced. Staff assessed the feasibility of modifying the existing control panels. However, the manufacturer of the panels is no longer in business and spare parts are difficult to obtain. As a result, the most cost-effective solution to accommodate both the existing Plants 1 and 2 and the new Module 7 is to replace the existing panels.

This action appropriates $275,000 and authorizes final design, procurement, and installation of three dry polymer system control panels. All work will be performed by Metropolitan staff. The cost of final design is approximately 11 percent of the estimated construction cost. Engineering Services' goal for design of projects with estimated construction cost less than $3 million is 9 to 15 percent.

These projects have been evaluated and recommended by Metropolitan's Capital Investment Plan Evaluation Team and funds have been included in the fiscal year 2006/07 capital budget. See **Attachment 1** for the Financial Statement and **Attachment 2** for the Location Map.

Project Milestones

October 2006 – Completion of preliminary design of the Skinner Electrical Buildings Upgrade project

October 2006 – Completion of preliminary design of the Skinner Plant 1 Ground Fault Protection Upgrade project

October 2006 – Completion of Skinner Dry Polymer System Control Panel Replacement project

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriation

California Environmental Quality Act (CEQA)

CEQA determinations for Option #1:

Skinner Electrical Buildings Upgrade; Skinner Plant 1 Ground Fault Protection Upgrade - Preliminary Design

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions consist of funding for study, preliminary design, and basic data collection and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed actions qualify as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed actions qualify under a Categorical Exemption (Class 6, Section 15306 of the State CEQA Guidelines).

Skinner Dry Polymer System Control Panel Upgrade - Final Design, Procurement, and Installation

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, design, procurement, minor alterations and replacement of existing public facilities, along with the installation of minor appurtenant structures. These activities would result in

negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed actions qualify under Classes 1 through 3 Categorical Exemptions (Sections 15301, 15302, and 15303 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed actions qualify under three Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; and Class 3, Section 15303 of the State CEQA Guidelines).

CEQA determinations for Option #2:

Skinner Electrical Buildings Upgrade - Preliminary Design

None required

Skinner Plant 1 Ground Fault Protection Upgrade - Preliminary Design

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

Skinner Dry Polymer System Control Panel Upgrade - Final Design, Procurement, and Installation

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

CEQA determinations for Option #3:

Skinner Electrical Buildings Upgrade - Preliminary Design

None required

Skinner Plant 1 Ground Fault Protection Upgrade - Preliminary Design

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

Skinner Dry Polymer System Control Panel Upgrade - Final Design, Procurement, and Installation

None required

Board Options

Option #1

Adopt the CEQA determinations and

a. Appropriate $487,000 in budgeted funds;
b. Authorize preliminary design of the Skinner Electrical Buildings Upgrade project;
c. Authorize preliminary design of the Skinner Plant 1 Ground Fault Protection Upgrade project; and
d. Authorize final design, procurement, and replacement of the Skinner dry polymer system control panels.

Fiscal Impact: $212,000 of budgeted funds under Approp. 15365 and $275,000 of budgeted funds under Approp. 15435

Business Analysis: Implementation of the Plant 1 Ground Fault Protection Upgrade project will reduce the potential for plant shutdowns caused by electrical ground faults. The Plant 1 Electrical Buildings upgrade and Dry Polymer System Control Panel Replacement projects will aid in maintaining plant reliability.

Option #2

Adopt the CEQA determinations and

a. Appropriate $314,000 in budgeted funds;
b. Defer preliminary design of the Skinner Electrical Buildings Upgrade project;
c. Authorize preliminary design of the Skinner Plant 1 Ground Fault Protection Upgrade project; and
d. Authorize final design, procurement, and replacement of the Skinner dry polymer system control panels.

Fiscal Impact: $39,000 of budgeted funds under Approp. 15365 and $275,000 of budgeted funds under Approp. 15435

Business Analysis: If the Plant 1 electrical buildings are not upgraded proactively, costs to repair could be higher after systems fail, and plant reliability would be reduced.

Option #3

Adopt the CEQA determinations and

a. Appropriate $39,000 in budgeted funds;
b. Defer preliminary design of the Skinner Electrical Buildings Upgrade project;
c. Authorize preliminary design of the Skinner Plant 1 Ground Fault Protection Upgrade project; and
d. Defer final design, procurement, and replacement of the Skinner dry polymer system control panels.

Fiscal Impact: $39,000 of budgeted funds under Approp. 15365

Business Analysis: If the Plant 1 electrical buildings are not upgraded proactively, costs to repair could be higher after systems fail, and plant reliability would be reduced. Deferring the dry polymer system controls replacement project will impact plant reliability and will require manual operation.

Staff Recommendation

Option #1

Roy L. Wolfe 6/19/2006
Roy L. Wolfe *Date*
Manager, Corporate Resources

Jeffrey Kightlinger 6/22/2006
Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – Financial Statements

Attachment 2 – Location Map

BLA #4398

Financial Statement for Skinner Water Treatment Plant Improvements Program

A breakdown of Board Action No. 12 for Appropriation No. 15365 is as follows:

	Previous Total Appropriated Amount (Feb. 2006)	Current Board Action No. 12 (July 2006)	New Total Appropriated Amount
Labor			
Studies and Investigations	$ 609,000	$ 178,000	$ 787,000
Final Design	680,500		680,500
Owner Costs (Program management)	3,451,500	21,000	3,472,500
Construction Inspection and Support	8,527,600	-	8,527,600
Metropolitan Force Construction	2,557,300	-	2,557,300
Materials and Supplies	2,107,000	-	2,107,000
Incidental Expenses	310,000	3,000	313,000
Professional/Technical Services	4,001,000	-	4,001,000
Equipment Use	268,000	-	268,000
Contracts	101,663,500	-	101,663,500
Remaining Budget	7,119,300	10,000	7,129,300
Total	**$ 131,294,700**	**$ 212,000**	**$ 131,506,700**

Funding Request

Program Name:	Skinner Water Treatment Plant Improvements Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15365	**Board Action No.:**	12
Requested Amount:	**$** 212,000	**Capital Program No.:**	15365-I
Total Appropriated Amount:	**$** 131,506,700	**Capital Program Page No.:**	E-62
Total Program Estimate:	**$** 177,800,000	**Program Goal:**	I-Infrastructure Reliability

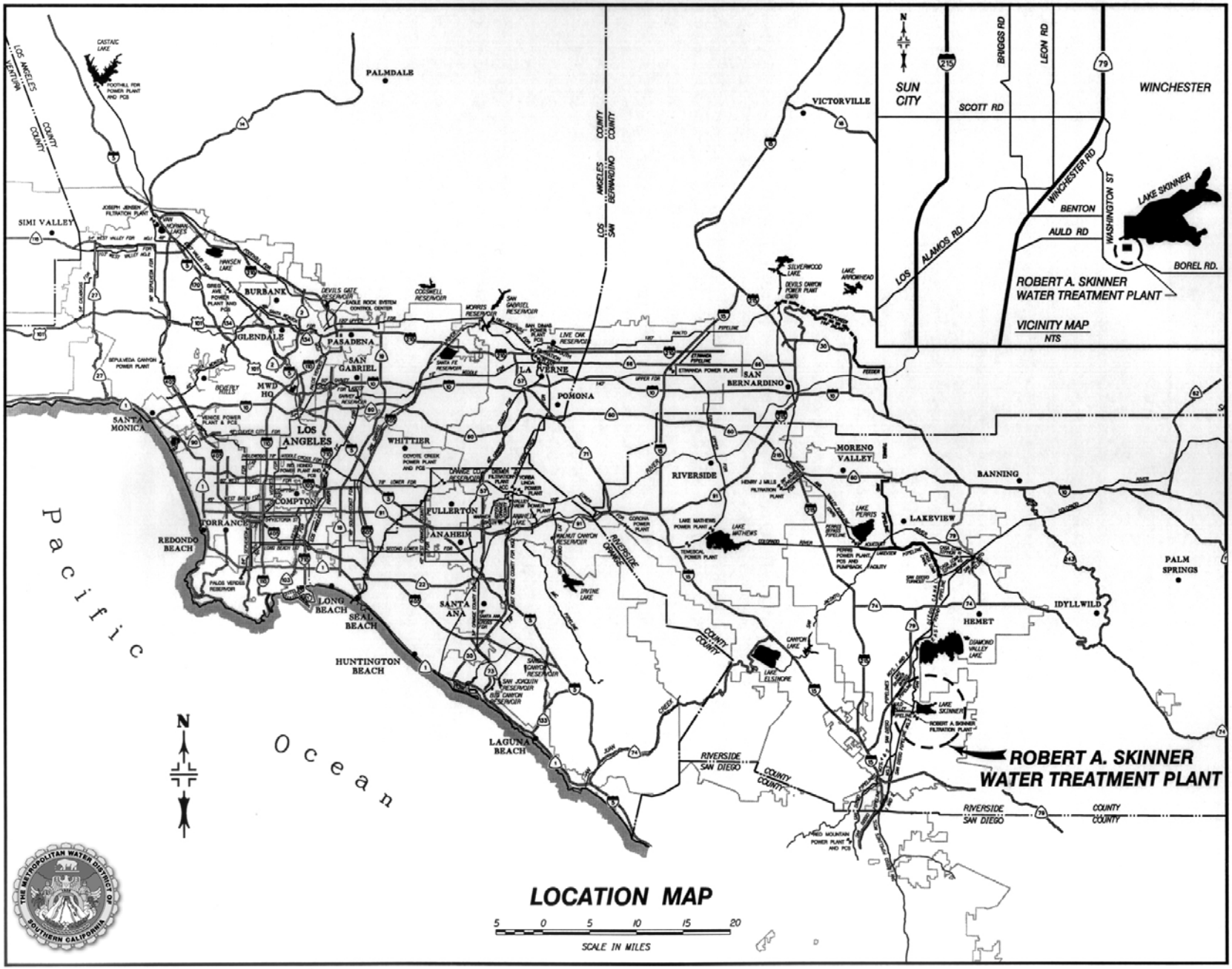
Financial Statement for Skinner Water Treatment Plant Rehabilitation Program

A breakdown of Board Action No. 1 for Appropriation No. 15435 is as follows:

	Board Action No. 1 (July 2006)
Labor	
Studies and Investigations	$ -
Final Design	18,000
Owner Costs (Program management)	55,000
Construction Inspection and Support	-
Metropolitan Force Construction	115,000
Materials and Supplies	51,000
Incidental Expenses	-
Professional/Technical Services	-
Equipment Use	-
Contracts	-
Remaining Budget	36,000
Total	**$ 275,000**

Funding Request

Program Name:	Skinner Water Treatment Plant Rehabilitation Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15435	**Board Action No.:**	1
Requested Amount:	**$** 275,000	**Capital Program No.:**	06707-I
Total Appropriated Amount:	**$** 275,000	**Capital Program Page No.:**	E-64
Total Program Estimate:	**$** 2,700,000	**Program Goal:**	I-Infrastructure Reliability


ROBERT A. SKINNER
WATER TREATMENT PLANT
VICINITY MAP
NTS
SUN CITY
SCOTT RD
BRIGGS RD
LEON RD
WINCHESTER
BENTON
AULD RD
WASHINGTON ST
LAKE SKINNER
BOREL RD.
LOS ALAMOS RD
WINCHESTER RD
PALMDALE
VICTORVILLE
SIMI VALLEY
BURBANK
GLENDALE
PASADENA
SAN GABRIEL
LA VERNE
POMONA
SAN BERNARDINO
SANTA MONICA
LOS ANGELES
WHITTIER
RIVERSIDE
MORENO VALLEY
BANNING
COMPTON
FULLERTON
TORRANCE
ANAHEIM
REDONDO BEACH
LAKEVIEW
PALM SPRINGS
LONG BEACH
SEAL BEACH
SANTA ANA
IDYLLWILD
HEMET
HUNTINGTON BEACH
LAGUNA BEACH
Pacific Ocean
LOCATION MAP
SCALE IN MILES
5 0 5 10 15 20
ROBERT A. SKINNER
WATER TREATMENT PLANT