



- Board of Directors  
*Engineering and Operations Committee*

2/14/2012 Board Meeting

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**7-1**

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## **Subject**

Appropriate \$540,000; and authorize two reliability projects at the Robert A. Skinner Water Treatment Plant (Approps. 15365 and 15435)

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## **Description**

This action authorizes the final design of solids handling improvements at the Robert A. Skinner Water Treatment Plant, and construction of an electrical supply, lighting, and security system at the Equipment Storage Building.

### **Timing and Urgency**

Electrical supply, lighting, and security features need to be added to the Skinner plant's Equipment Storage Building to provide adequate lighting inside and outside of the building, enhance personnel safety, and provide a secure storage area. Improvements to the Solids Dewatering Building are needed to fulfill the Skinner plant's basic requirements for solids handling. Rehabilitation of that building's bridge crane is needed to enable maintenance of the mechanical belt presses, while improvements to the exterior solids storage and truck loading area are needed to properly contain dewatered solids and contaminated rainwater.

Staff recommends proceeding with these two projects to protect Metropolitan's assets and enhance Skinner plant reliability. These projects have been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria and are categorized as Infrastructure Reliability projects. Each project is included within Metropolitan's CIP for fiscal year 2011/12.

### **Background**

The Skinner 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 operate as three distinct facilities (Plants Nos. 1, 2 and 3). The Skinner plant has a treatment capacity of 630 mgd and delivers a blend of waters from the Colorado River Aqueduct and State Water Project to Eastern Municipal Water District, Western Municipal Water District of Riverside County, and San Diego County Water Authority.

### **Project No. 1 – Equipment Storage Building Improvements – Final Design and Construction (\$385,000)**

The 7,500-square-foot Skinner Equipment Storage Building, which was built in 1997, is located south of the San Diego Canal near its entrance into Lake Skinner. This metal building is normally unoccupied and is used for equipment and parts storage. It does not have electricity, lighting, or security features. Illumination within the building is dependent upon the few skylights in the roof.

Staff recommends that lighting and security features be added to the building. Power cables, fiber optic cables, lights, and door alarms will be installed, and a duct bank will be extended to the building. These improvements will provide a safe and secure storage area for equipment and parts. Staff has completed conceptual layouts for these improvements and recommends proceeding to complete the design and construction.

This action appropriates \$385,000 and authorizes final design, procurement of materials, and construction to provide an electrical supply, lights and security system for the Equipment Storage Building. The appropriated

funds include \$235,600 for Metropolitan force construction; \$42,000 for procurement of materials, supplies and equipment use; \$38,000 for final design; \$6,000 for technical support from design staff during construction, and for preparation of record drawings; \$27,000 for environmental review, permitting and project management; and \$36,400 for remaining budget. All work will be performed by Metropolitan staff.

The anticipated cost of final design is approximately 13.7 percent of the estimated construction cost. The estimated construction cost for this project is \$277,600. Engineering Services' goal for design of projects with estimated construction cost less than \$3 million is 9 to 15 percent.

### **Project No. 2 – Solids Handling Improvements – Final Design Phase (\$155,000)**

Residual chemicals and settled solids collected from the Skinner plant's sedimentation basins are thickened on-site and then mechanically dewatered in the 2,800-square-foot Solids Dewatering Building, which was built in 1989. This uninsulated building is constructed of painted corrugated sheet metal attached to metal framing. The building houses three belt press units and a polymer feed system used to aid the dewatering process. Each belt press unit can produce up to 12 dry tons of dewatered solids per day. Dewatered solids are conveyed to an exterior solids storage and truck loading area adjacent to the building.

The Solids Dewatering Building contains a 1-ton overhead bridge crane, which is used to lift and remove belt press parts for cleaning, servicing, or replacement. With no insulation in the building, the bridge crane trolley rails expand and contract due to the variation between extreme summer and winter temperatures, causing misalignment. In recent years, the crane frequently could not move along the misaligned bridge rails. An inoperable crane system increases the downtime of the belt press units, which limits solids dewatering capacity.

The unroofed solids storage and truck loading area consists of a concrete pad with curbing where the dewatered solids are temporarily stored, and an adjacent 1,600-square-foot asphalt parking area for haul trucks. Front end loaders scoop the dewatered solids off the concrete pad and dump them into an adjacent haul truck. Solids being lifted into the truck bed often spill over the curbing and onto the asphalt pavement, which is cracked and weathered.

Staff recommends rehabilitating the crane system in the Solids Dewatering Building; replacing the asphalt pavement at the truck-loading area with a concrete containment pad with sump pump; and replacing existing asphalt pavement and improving drainage next to the Solids Dewatering Building, so that storm water runoff is directed away from the solids storage and truck loading area.

This action appropriates \$155,000 and authorizes final design of improvements to the Skinner solids handling system. Planned activities include preparation of construction drawings and specifications; development of a construction cost estimate; advertisement and receipt of bids; and all other activities in advance of award of a construction contract. All design activities will be performed by Metropolitan staff. Requested funds include \$19,000 for field surveys and preparation of procurement documents; \$61,200 for final design; \$51,800 for receipt of bids and project management; and \$23,000 for remaining budget.

The anticipated cost of final design is approximately 14.9 percent of the estimated total construction cost. Engineering Services' goal for final design of projects with construction cost less than \$3 million is 9 to 15 percent. The construction cost for this project is anticipated to range from \$350,000 to \$450,000.

### **Summary**

This action appropriates \$540,000 and authorizes: (1) Installation of an electrical supply, lighting, and security system for the Skinner Equipment Storage Building; and (2) Final design of solids handling improvements at the Skinner Plant. All work has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2011/12 capital budget. This work will be funded under two capital appropriations. See [Attachment 1](#) for the Financial Statements and [Attachment 2](#) for the Location Map.

Installation of an electrical supply, lighting, and security system for the Skinner Equipment Storage Building project is included within capital Appropriation No. 15435, the Skinner Improvements Program Phase II, which was initiated in fiscal year 2006/07. Appropriation No. 15435 also includes projects such as the Dry Polymer Control Panel Modifications; Potable Water Connection at the Finished Water Reservoir; and Maintenance

Building Insulation Replacement. With the present action for this project, the total funding for Appropriation No. 15435 will increase from \$3,475,000 to \$3,860,000.

Final design of the solids handling improvements is included within capital Appropriation No. 15365, the Skinner Improvements Program, which was initiated in fiscal year 2000/01. Appropriation No. 15365 also includes projects such as the plant's Chemical System Modifications; Electrical Building and Ground Fault Protection Upgrades; and Modules Nos. 5 and 6 Filter Surface Wash Header Rehabilitation. With the present action for this project, the total funding for Appropriation No. 15365 will increase from \$154,220,700 to \$154,375,700.

These projects are consistent with Metropolitan's goals for sustainability by enhancing the reliability of the Skinner plant in order to maintain reliable water deliveries in the future.

### ***Project Milestones***

March 2013 – Complete final design of the solids handling improvements

June 2013 – Complete Metropolitan force construction of an electrical supply, lighting, and security system for the Skinner Equipment Storage Building

### **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

### **California Environmental Quality Act (CEQA)**

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#### **Project No. 1: Equipment Storage Building Improvements – Final Design and Construction**

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed project involves the funding; final design; and minor alterations of existing private or public facilities, along with the construction of minor appurtenant structures, with minor modifications in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees. These activities would result in negligible expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1, Class 3, and Class 4 Categorical Exemptions (Sections 15301, 15303, and 15304 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under three Categorical Exemptions (Class 1, Section 15301; Class 3, Section 15303; and Class 4, Section 15304 of the State CEQA Guidelines).

CEQA determination for Options #2 and #3:

None required

#### **Project No. 2: Solids Handling Improvements – Final Design Phase**

CEQA determination for Options #1 and #2:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed project involves the funding; final design; and minor alterations and reconstruction or replacement of existing public facilities along with the construction of minor appurtenant structures with no expansion of use and no possibility of significantly impacting the physical environment. In addition, the proposed project involves minor modifications in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees. Accordingly, the proposed action qualifies under Class 1, Class 2, Class 3, and Class 4 Categorical Exemptions (Sections 15301, 15302, 15303, and 15304 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under four Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 4, Section 15304).

CEQA determination for Option #3:

None required

**Board Options**

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**Option #1**

Adopt the CEQA determinations and

- a. Appropriate \$540,000;
- b. Authorize final design and construction of improvements to the Skinner Equipment Storage Building; and
- c. Authorize final design of improvements to the Skinner plant’s solids handling system.

**Fiscal Impact:** \$155,000 of budgeted funds under Approp. 15365 and \$385,000 of budgeted funds under Approp. 15435

**Business Analysis:** This option will enhance reliability of the Skinner plant and improve plant security.

**Option #2**

Adopt the CEQA determination and

- a. Appropriate \$155,000;
- b. Authorize final design of improvements to the Skinner plant’s solids handling system; and
- c. Do not authorize improvements to the Skinner Equipment Storage Building.

**Fiscal Impact:** \$155,000 of budgeted funds under Approp. 15365

**Business Analysis:** Deferral of the Equipment Storage Building improvements would forego an opportunity to enhance safety and security at the Skinner plant.

**Option #3**

Do not authorize the two reliability projects at this time.


**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to enhance staff safety and security.

**Staff Recommendation**

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Option #1

  
 \_\_\_\_\_ 1/24/2012  
 Gordon Johnson Date  
 Manager/Chief Engineer,  
 Engineering Services

  
 \_\_\_\_\_ 2/1/2012  
 Jeffrey Kichtlinger Date  
 General Manager

**Attachment 1 – Financial Statements**

**Attachment 2 – Location Map**

**Financial Statement for Skinner Improvements Program**

A breakdown of Board Action No. 21 for Appropriation No. 15365 for the Skinner Solids Handling Improvements project <sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Jul. 2010)</b>	<b>Current Board Action No. 21 (Feb. 2012)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies, Field Surveys & Investigations	\$ 787,000	\$ 19,000	\$ 806,000
Final Design	2,492,500	61,200	2,553,700
Owner Costs (Program mgmt.)	4,625,100	47,800	4,672,900
Submittals Review	314,000	-	314,000
Construction Inspection & Support	9,609,000	-	9,609,000
Metropolitan Force Construction	5,186,400	-	5,186,400
Materials & Supplies	5,989,150	-	5,989,150
Incidental Expenses	499,500	4,000	503,500
Professional/Technical Services	5,334,000	-	5,334,000
Equipment Use	333,000	-	333,000
Contracts	116,946,680	-	116,946,680
Remaining Budget	2,104,370 <sup>2</sup>	23,000	2,127,370
<b>Total</b>	<b>\$ 154,220,700</b>	<b>\$ 155,000</b>	<b>\$ 154,375,700</b>

**Funding Request**

<b>Program Name:</b>	Skinner Improvements Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15365	<b>Board Action No.:</b>	21
<b>Requested Amount:</b>	\$ 155,000	<b>Capital Program No.:</b>	15365
<b>Total Appropriated Amount:</b>	\$ 154,375,700	<b>Capital Program Page No.:</b>	325
<b>Total Program Estimate:</b>	\$ 155,271,000	<b>Program Goal:</b>	I-Infrastructure Reliability

<sup>1</sup> This action is the initial appropriation for the Skinner Solids Handling Improvements project.

<sup>2</sup> Include previous reallocation of \$250,200 from Remaining Budget to (1) Metropolitan Force Construction (\$38,000) and Materials & Supplies (\$13,000) for the Chemical System Modifications project to replace leaking chemical piping; and (2) to Contracts (\$199,200) for the Washwater Reclamation Plant No. 3 project for differing site conditions of unrippable rock excavation during construction.

## Financial Statement for Skinner Water Treatment Plant Improvements Program Phase II

A breakdown of Board Action No. 6 for Appropriation No. 15435 for the Equipment Storage Building Improvements<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Aug. 2009)</b>	<b>Current Board Action No. 6 (Feb. 2012)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ -	\$ -	\$ -
Final Design	92,000	38,000	130,000
Owner Costs (Program mgmt., envir. doc)	223,498	27,000	250,498
Construction Inspection & Support	34,000	6,000	40,000
Metropolitan Force Construction	898,500	235,600	1,134,100
Materials & Supplies	512,300	37,000	549,300
Incidental Expenses	35,785	-	35,785
Professional/Technical Services	9,817	-	9,817
Equipment Use	216,200	5,000	221,200
Contracts	126,500	-	126,500
Remaining Budget	1,326,400 <sup>2</sup>	36,400	1,362,800
<b>Total</b>	<b>\$ 3,475,000</b>	<b>\$ 385,000</b>	<b>\$ 3,860,000</b>

### Funding Request

<b>Program Name:</b>	Skinner Water Treatment Plant – Improvements Program Phase II		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15435	<b>Board Action No.:</b>	6
<b>Requested Amount:</b>	\$ 385,000	<b>Capital Program No.:</b>	15435
<b>Total Appropriated Amount:</b>	\$ 3,860,000	<b>Capital Program Page No.:</b>	326
<b>Total Program Estimate:</b>	\$ 49,499,000	<b>Program Goal:</b>	I-Infrastructure Reliability

<sup>1</sup> This action is the initial appropriation for the Equipment Storage Building Improvements.

<sup>2</sup> Includes previous reallocation of \$935,000 to Remaining Budget due to enhancements in operation of the post-ozonation emergency chlorination system, which eliminated the need to construct common chlorine injection points for Plants Nos. 2 and 3.

# Robert A. Skinner Water Treatment Plant

