



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

3/13/2018 Board Meeting

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7-2

**Subject**

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Adopt CEQA determination and appropriate \$1.7 million; and authorize: (1) preliminary design of upgrades to the San Gabriel Tower on the Upper Feeder; and (2) agreement with Aspen Environmental Group in an amount not to exceed \$500,000 to provide environmental support (Appropriation No. 15441)

**Executive Summary**

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This action authorizes preliminary design to rehabilitate and strengthen the San Gabriel Tower and its adjacent spillway. This action also authorizes an agreement for preparation of environmental documentation. The tower is located on the western portion of the Upper Feeder, which conveys treated water from the F. E. Weymouth Water Treatment Plant to the Eagle Rock Control Facility and the Central Pool. The tower is adjacent to the San Gabriel River and the Angeles National Forest.

**Timing and Urgency**

Metropolitan has an ongoing program to evaluate the seismic stability of its facilities in order to maintain reliable water deliveries and to meet current design practices and building codes. Seismic analyses of the San Gabriel Tower have identified that the tower may be damaged during a major earthquake, which could lead to an extended outage of the Upper Feeder. Given the importance of the Upper Feeder in delivering water to the agencies along the San Gabriel Mountains, and to Metropolitan's Central Pool, staff recommends moving forward with upgrades at this time.

The tower was constructed in 1939. In addition to the structural improvements, the facility requires upgrades to several features including the tower's slide gates, spillway, and access road. The condition of adjacent valves on a bypass line from the Upper Feeder and at service connection USG-03 also needs to be assessed. Addressing these improvements under a single project will provide the most cost-effective means to complete the work.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is included in the Distribution System Reliability Program. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2017/18.

**Details**

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**Background**

The San Gabriel Tower is located adjacent to Morris Reservoir, north of the city of Azusa. The tower is situated at the base of the San Gabriel Mountains and is surrounded by the Angeles National Forest. It is an 86-foot-tall free-standing structure with a rectangular base that sits atop a rock foundation. The tower can only be accessed by traversing an unpaved crossing of the San Gabriel River during periods of low water flow. The facility was designed as a flow control structure, with slide gates to adjust flow and provide isolation, and is equipped with a nearby overflow weir and spillway to prevent over-pressurization of the Upper Feeder. The spillway discharges into the San Gabriel River. Just upstream of the San Gabriel Tower, a bypass connection to Morris Dam is located on the Upper Feeder. Morris Dam is no longer a Metropolitan facility. However, the bypass connection

has several large diameter valves whose condition needs to be assessed, along with a nearby valve for service connection USG-03 that is located at the end of the Glendora Tunnel.

While Metropolitan facilities have always been designed to meet up-to-date codes that were in place at the time of their construction, industry practices and seismic code requirements are periodically updated, particularly following a major earthquake. Under Metropolitan's seismic assessment program, staff conducted an initial structural evaluation of the facility. This effort identified that there is potential for both a landslide and structural damage to the tower in the event of a major earthquake. Earthquake faults within the vicinity of the San Gabriel Tower include the Sawpit Fault and the Sierra Madre Fault, which are located 1.5 miles and 3.1 miles away, respectively. Both faults are capable of generating an earthquake with a magnitude ranging from 6.5 to 7.0.

In 2011, Metropolitan's Board authorized preliminary investigations of the San Gabriel Tower, including topographical and geologic mapping of the vicinity, detailed seismic and structural assessments, and hydraulic surge analyses. The investigations concluded that reducing the height of the tower and reinforcing its roof against boulder impacts would increase the tower's seismic resilience. The recommended modifications would cause the tower to operate under pressure at times. As a result, air release/vacuum valves would be added to mitigate against pressure fluctuations within the Upper Feeder and the tower.

In addition to the seismic upgrades, several other improvements are needed at the San Gabriel Tower to improve the overall reliability of the facility and to improve access. The tower's three 24-inch by 96-inch cast iron slide gates need to be replaced in order to restore the capability to isolate the Upper Feeder. Due to corrosion, the gates have become inoperable. Replacement of the gates will enable the eastern portion of the Upper Feeder, extending from the Weymouth plant to the San Gabriel Tower, to remain in service while the western portion of the feeder, which continues to the Eagle Rock Control Facility, is removed from service. This isolation capability will reduce delivery impacts to member agencies when portions of the feeder are removed from service for inspection or repair.

Staff also recommends assessing the condition of valves located near the San Gabriel Tower, including: (1) 51-inch and 39-inch needle valves and a 78-inch butterfly valve that are located on the bypass line that originally provided the connection to Morris Dam; and (2) a 42-inch conical plug valve at Service Connection USG-03 at the end of the Glendora Tunnel. The latter valve delivers untreated water to Upper San Gabriel Valley Municipal Water District. Replacement of the slide gates and actuators on the tower, and the valves adjacent to the tower (if needed), would take advantage of construction efficiencies and reduce shutdown durations if performed in conjunction with the tower's structural upgrades.

The project location and nearby surroundings are an environmentally sensitive area. Bird, fish, and amphibian species listed as federal and state sensitive and endangered species that may be present include the gnatcatcher, Santa Ana sucker, and arroyo toad. Environmental documentation is required to assess the project's potential impacts to biological and other factors such as air quality, traffic, and cultural resources, in accordance with the California Environmental Quality Act (CEQA). Scoping and community meetings may be necessary with local jurisdictions including the city of Azusa, U.S. Forest Service, and Los Angeles County Department of Public Works. Regulatory permits may be required due to potential impacts to sensitive species and may include a Section 404 permit (U.S. Army Corps of Engineers), Section 401 Water Quality Certification (Regional Water Quality Control Board), and Streambed Alteration Agreement (California Department of Fish and Wildlife).

### **San Gabriel Tower Upgrades – Preliminary Design Phase (\$1,700,000)**

The upgrades to the San Gabriel Tower will include: (1) reducing the height of the tower to increase its structural stability; (2) capping the tower with a protective slab designed to withstand a potential debris slide or rockfall; (3) adding new air release/vacuum valves; (4) replacing the slide gates and actuators to restore isolation capability for the Upper Feeder; (5) improving access to the tower and spillway, including the river crossing; (6) repairing deteriorated spillway concrete surfaces and fencing; and (7) stabilizing the adjacent rocky slope to prevent falling rock from striking the tower.

Planned preliminary design phase activities include: (1) field investigations to evaluate site constraints, environmental restrictions, and potential hazardous materials; (2) inspection of the spillway's concrete;

(3) development of final design criteria; (4) preparation of environmental documentation; (5) third-party value engineering assessment; (6) assessment of the condition, access constraints, and retrofit options for the nearby valves; and (7) development of a construction cost estimate. The agreement with the value engineering firm is planned to be awarded under the General Manager's Administrative Code authority to award contracts of \$250,000 or less.

Metropolitan staff will develop the project description and initial study for the purposes of CEQA; consult with local, state, and federal regulatory agencies; and oversee the preparation of environmental documentation and state and federal permit applications. Specialized environmental support will be provided by Aspen Environmental Group, as described below.

This action appropriates \$1.7 million and authorizes preliminary design of upgrades to the San Gabriel Tower. The requested funds include \$557,000 for the design-related activities described above; \$79,000 for value engineering; \$826,000 for preparation of environmental documentation, permitting, and project management; and \$238,000 for remaining budget. Staff will return to the Board at a later date to authorize final design.

### **Specialized Environmental Services (Aspen Environmental Group) - New Agreement**

Specialized environmental support is recommended to be provided by Aspen Environmental Group under a new professional services agreement. Aspen Environmental Group was prequalified to provide environmental services through a competitive process via Request for Qualifications No. 1143, and was subsequently selected based on its extensive experience with projects in environmentally sensitive locations. The planned scope of work includes conducting biological field surveys, traffic surveys, and environmental analyses; and preparing environmental documentation. The estimated cost for Aspen Environmental Group to provide these services is \$500,000. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 25 percent. Aspen Environmental Group has agreed to meet this level of participation. The planned subconsultants under this agreement are Blackhawk Environmental, Inc., Buena Vista Environmental Consulting, and Galvin Preservation Associates, Inc.

This action authorizes an agreement with Aspen Environmental Group in an amount not to exceed \$500,000 to provide specialized environmental support for upgrades to the San Gabriel Tower.

### **Summary**

This action appropriates \$1.7 million, authorizes preliminary design of upgrades to the San Gabriel Tower; and authorizes a professional services agreement for environmental support. This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2017/18 capital expenditure plan. See **Attachment 1** for the Financial Statement and **Attachment 2** for the Location Map.

This project is included within capital Appropriation No. 15441, the Conveyance and Distribution System Rehabilitation Appropriation – FY 2006/07 Through FY 2011/12, which was initiated in 2006. With the present action, the total funding for Appropriation No. 15441 will increase from \$105,159,000 to \$106,859,000.

### ***Project Milestone***

June 2019 – Completion of preliminary design

### **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

By Minute Item 48911, dated December 13, 2011, the Board authorized seismic investigations of the San Gabriel Tower.

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

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#### **CEQA determination for Option #1:**

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, studying, carrying out preliminary design, and preparing and processing

environmental documentation for the proposed project. These activities consist of basic data collection and resource evaluation activities that 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. In addition, the activities may involve a check for performance of an operation, or quality, health, or safety of a project. Accordingly, the proposed action qualifies for both Class 6 and Class 9 Categorical Exemptions (Sections 15306 and 15309 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is categorically exempt under Class 6, Section 15306 and Class 9, Section 15309 of the State CEQA Guidelines.

**CEQA determination for Option #2:**

None required

**Board Options**

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**Option #1**

Adopt the CEQA determination that the proposed action is categorically exempt, and

- a. Appropriate \$1.7 million;
- b. Authorize preliminary design of upgrades to the San Gabriel Tower on the Upper Feeder; and
- c. Authorize agreement with Aspen Environmental Group in an amount not to exceed \$500,000 for environmental support.

**Fiscal Impact:** \$1.7 million in capital funds under Appropriation No. 15441

**Business Analysis:** This option will enhance delivery reliability for member agencies served by the Upper Feeder.

**Option #2**

Do not proceed with the upgrades at this time.

**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to enhance reliability of the Upper Feeder, and to reduce the risk of costly emergency repairs.

**Staff Recommendation**

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Option #1

  
 \_\_\_\_\_ 2/26/2018  
 Gordon Johnson Date  
 Manager/Chief Engineer,  
 Engineering Services

  
 \_\_\_\_\_ 3/2/2018  
 Jeffrey Kightlinger Date  
 General Manager

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Map**

**Financial Statement for Conveyance and Distribution System Rehabilitation Appropriation – FY 2006/07 Through FY 2011/12**

A breakdown of Board Action No. 80 for Appropriation No. 15441<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Nov. 2017)</b>	<b>Current Board Action No. 80 (Mar. 2018)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 4,816,914	\$ 557,000	\$ 5,373,914
Final Design	6,516,293	-	6,516,293
Owner Costs (Program mgmt., permitting)	8,608,123	317,000	8,925,123
Submittals Review & Record Drwgs.	1,878,670	-	1,878,670
Construction Inspection & Support	7,219,050	-	7,219,050
Metropolitan Force Construction	12,890,210	-	12,890,210
Materials & Supplies	3,593,040	-	3,593,040
Incidental Expenses (Permit fees, reproduction)	1,334,900	9,000	1,343,900
Professional/Technical Services	4,239,000		4,239,000
Aspen Environmental Group	-	500,000	500,000
Value engineering firm	-	79,000	79,000
Right-of-Way	1,150,000	-	1,150,000
Equipment Use	330,200	-	330,200
Contracts	48,818,762	-	48,818,762
Remaining Budget	3,763,838 <sup>2</sup>	238,000	4,001,838
<b>Total</b>	<b>\$ 105,159,000</b>	<b>\$ 1,700,000</b>	<b>\$ 106,859,000</b>

**Funding Request**

<b>Appropriation Name:</b>	Conveyance and Distribution System Rehabilitation Appropriation – FY 2006/07 Through FY 2011/12		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15441	<b>Board Action No.:</b>	80
<b>Requested Amount:</b>	\$ 1,700,000	<b>Budget Page No.:</b>	212
<b>Total Appropriated Amount:</b>	\$ 106,859,000	<b>Total Appropriation Estimate:</b>	\$ 182,700,000

<sup>1</sup> The total amount expended to date on upgrades to the San Gabriel Tower is approximately \$452,000.

<sup>2</sup> Includes previous reallocation of \$95,000 from Remaining Budget for design modifications to cathodic protection systems on the Orange County Feeder to prevent interferences with planned city projects within Fullerton and Anaheim.

# Distribution System

