



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

1/9/2018 Board Meeting

8-2

Subject

Adopt CEQA determination and appropriate \$4.1 million; and authorize: (1) design of seismic upgrades to three buildings at the La Verne site; (2) agreement with IBI Group in an amount not to exceed \$630,000; and (3) agreement with La Cañada Design Group, Inc. in an amount not to exceed \$950,000 (Appropriations Nos. 15369 and 15495)

Executive Summary

This action authorizes design of seismic upgrades and building improvements to Metropolitan's Water Quality Laboratory, the Weymouth plant's Administration Building, and the Field Engineering Building at the La Verne site. In the event of a major earthquake, the upgrades will reduce the risk of significant damage to these buildings and the resulting impacts to their functions. This action also authorizes two professional service agreements to provide specialized design services.

Timing and Urgency

Metropolitan has an ongoing program to evaluate the seismic stability of its facilities in order to maintain water delivery reliability. While Metropolitan facilities have always been designed to meet up-to-date codes and regulations that were in place at the time of their construction, building codes and engineering practices are periodically updated, particularly following a major earthquake.

A seismic assessment of the Water Quality Laboratory, the Weymouth plant's Administration Building, and the Field Engineering Building identified that the existing structures need to be strengthened in order to withstand a major earthquake. Due to the critical nature of these facilities in supporting Metropolitan operations, staff recommends proceeding with design of seismic upgrades at this time. The planned work also includes building improvements that will comply with current codes relating to accessibility and fire/life safety, and improvements needed to handle increased levels of water quality monitoring and testing at the plant.

These projects have been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria and are categorized as Infrastructure Reliability projects. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2017/18.

Details

Background

The Weymouth plant's Administration Building, the Water Quality Laboratory, and the Field Engineering Building are all located on the grounds of the F. E. Weymouth Water Treatment Plant in the city of La Verne. The Weymouth Administration Building has been in service since 1941 and houses the plant's control room and administrative staff. The Water Quality Laboratory was constructed in 1985 and was expanded in 1995. It houses Metropolitan's central laboratory that conducts over 300,000 water quality analyses each year to demonstrate compliance with treated water standards. The laboratory also supports studies of emerging contaminants and the assessment of future treatment technologies. The Field Engineering Building was constructed in 1970. It houses Metropolitan's construction inspectors, corrosion control and metallurgy

engineers, and material and concrete testing equipment and technicians. Each of these buildings is vulnerable to damage in the event of a major earthquake. If damaged, there could be impacts to Metropolitan's ability to maintain reliable water deliveries, comply with water quality regulations, and respond to emergencies.

The La Verne site is located approximately 1.5 miles from the Sierra Madre-Cucamonga Fault, which is capable of generating a 7.0 magnitude earthquake. Under Metropolitan's seismic assessment program, 33 structures and major conduits at the La Verne site have been analyzed. A total of 21 were found to be structurally adequate or have already been upgraded. In addition to the three buildings included in this action, four other structures have design of seismic upgrades presently underway. The remaining five structures will be the subject of future board actions.

In January 2003 and September 2014, Metropolitan's Board authorized preliminary design of seismic upgrades to various buildings at the La Verne site, including the Weymouth Administration Building, the Water Quality Laboratory, and the Field Engineering Building. Preliminary design of these three buildings has been completed, and staff recommends moving forward with final design at this time.

Weymouth Administration Building Seismic Upgrades and Building Improvements – Final Design Phase (\$1,900,000)

The planned seismic upgrades to the Weymouth Administration Building include: (1) reinforcement of the walls for the plant's filter outlet channel and abandoned inlet channel; (2) addition of a structural floor and walls above the inlet channel; (3) filling of below-ground openings with structural concrete; (4) reinforcement of the control tower's column base plates; (5) reinforcement of roof-to-wall connections; (6) addition of new interior and exterior shear walls; (7) reinforcement of beam and shear wall connections; and (8) addition of new drag beams. In conjunction with the seismic upgrades, the California Building Code (CBC) requires the installation of a fire sprinkler system and accessibility improvements. Electrical, mechanical, and plumbing components impacted by the upgrades will also be reconfigured.

In conjunction with the seismic upgrades, the Weymouth plant's water quality sampling laboratory will be relocated from the southwest corner of the Administration Building to the northeast corner of the building. The existing laboratory has been in continuous service for nearly 30 years. This work can most efficiently be completed as part of the seismic upgrades, while also minimizing impacts to building occupants and operations. The existing sample lines to the lab have experienced leaks and are difficult to repair and maintain, due to their installation through crowded areas in the older portions of the original building. The new sample lines will be more accessible for maintenance; allow for additional expansion to accommodate future sampling requirements; and will be shorter in length, which will improve the quality of the representative samples and improve response times to address potential water quality episodes.

Final design phase activities will include: (1) detailed structural analyses; (2) preparation of drawings and specifications; (3) development of a construction cost estimate; (4) value engineering; and (5) advertisement and receipt of competitive bids. The structural design will be performed by Metropolitan staff, while the civil, electrical, mechanical, and architectural design activities are recommended to be performed by IBI Group, as discussed below. Metropolitan staff will also perform overall project management and technical review.

This action appropriates \$1.9 million and authorizes final design of seismic upgrades and building improvements to the Weymouth Administration Building. Requested funds include \$630,000 for design activities by IBI Group; \$718,000 for the portion of the design and technical review by Metropolitan staff; \$20,000 for field investigations and potholing; \$75,000 for geotechnical investigations; \$66,000 for value engineering; \$217,000 for bidding and project management; and \$174,000 for remaining budget. Value engineering and geotechnical investigations will be performed by specialized consultants, as described below. For this project, the anticipated cost of final design is approximately 11.9 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction greater than \$3 million is 9 to 12 percent.

The estimated cost of construction for this project is anticipated to range from \$10 million to \$12 million. Staff will return to the Board at a later date for award of the construction contract.

Water Quality Laboratory and Field Engineering Building Seismic Upgrades and Building Improvements – Final Design Phase (\$2,200,000)

The planned seismic upgrades to the Water Quality Laboratory include: (1) replacement of the existing diagonal steel bracing with new buckling-restrained braces; (2) strengthening of the building foundation; and (3) anchorage and bracing of key non-structural elements, such as the rooftop mechanical enclosure, precast exterior concrete panels, and mechanical, electrical, and plumbing equipment. Other needed building improvements include: (1) fire protection upgrades to integrate the fire alarm system for the entire building, and to replace the obsolete Halon fire suppression system; (2) replacement of the building's roof; (3) weather-proofing and coating of the rooftop mechanical enclosure, and addition of roof drains inside the mechanical enclosure; (4) drywall repairs throughout the older portions of the laboratory; and (5) accessibility improvements to meet CBC requirements.

The planned seismic upgrades to the Field Engineering Building include: (1) addition of exterior steel-braced frames supported by drilled pile foundations; (2) strengthening of the roof diaphragm; and (3) horizontal steel bracing at the interior mezzanine level. Other needed building improvements include: (1) hazardous material abatement of lead and asbestos; (2) addition of card readers at each entrance for improved security; (3) hallway and entrance lighting upgrades; (4) accessibility improvements to meet CBC requirements; and (5) heating, ventilation, and air conditioning (HVAC) improvements. The HVAC improvements include replacement of the existing air handling system, chilled water systems, and related plumbing and electrical systems, which are failing and need to be replaced. Insulation and weather-proofing will also be provided for the roof, mezzanine, and ductwork. The existing ductwork will be reconfigured to improve airflow distribution throughout the building.

Final design phase activities for the two buildings will include: (1) conducting detailed field surveys; (2) preparation of drawings and specifications; (3) development of a construction cost estimate; (4) value engineering; and (5) advertisement and receipt of competitive bids. The structural design will be performed by Metropolitan staff, while the civil, electrical, mechanical, and architectural design activities are recommended to be performed by La Cañada Design Group, Inc., as discussed below. Metropolitan staff will also perform overall project management and technical review.

This action appropriates \$2.2 million and authorizes final design of seismic upgrades and building improvements to the Water Quality Laboratory and the Field Engineering Building at the La Verne site. Requested funds include \$950,000 for design activities by La Cañada Design Group, Inc.; \$697,000 for the portion of the design and technical review by Metropolitan staff; \$20,000 for field investigations and potholing; \$75,000 for geotechnical investigations; \$66,000 for value engineering; \$220,000 for bidding and project management; and \$172,000 for remaining budget. Value engineering and geotechnical investigations will be performed by specialized consultants, as described below. For this project, the anticipated cost of final design is approximately 10.6 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction greater than \$3 million is 9 to 12 percent.

The estimated cost of construction for this project is anticipated to range from \$13 million to \$15 million. Staff will return to the Board at a later date for award of the construction contract.

Engineering Design Services for Weymouth Administration Building (IBI Group) – New Agreement

IBI Group is recommended to perform final design of the building improvements related to the seismic upgrades for the Weymouth Administration Building. IBI Group was selected via Request for Qualification No. 1040 based on its expertise in the design of similar industrial facilities. IBI Group also previously performed preliminary design of the building improvements. The scope of work will include: (1) detailed design of the civil, electrical, mechanical, and architectural portions of the work; (2) preparation of drawings and specifications; (3) development of a construction cost estimate; and (4) technical assistance during the bid period. The estimated cost for these services is \$630,000.

This action authorizes an agreement with IBI Group in an amount not to exceed \$630,000 for final design of building improvements related to the seismic upgrades to the Weymouth Administration Building. For this agreement, Metropolitan established a Small Business Enterprise (SBE) participation level of 18 percent.

IBI Group has agreed to meet this level of participation. The sole subconsultant planned for this agreement is P2S Engineering.

Engineering Design Services for Water Quality Laboratory and Field Engineering Building (La Cañada Design Group, Inc.) – New Agreement

La Cañada Design Group, Inc. is recommended to perform final design of building improvements related to the seismic upgrades to the Water Quality Laboratory and the Field Engineering Building. La Cañada Design Group, Inc. was selected via Request for Qualification No. 1040 based on its expertise and qualifications in the discipline-specific technical aspects of this project, and its experience with similar buildings. The scope of work will include: (1) conducting field surveys; (2) detailed design of the civil, electrical, mechanical, and architectural portions of the work; (3) preparation of drawings and specifications; (4) development of a construction cost estimate; and (5) technical assistance during the bid period. The estimated cost for these services is \$950,000.

This action authorizes an agreement with La Cañada Design Group, Inc. in an amount not to exceed \$950,000 for final design of building improvements related to the seismic upgrades to the Water Quality Laboratory and the Field Engineering Building. La Cañada Design Group, Inc. is an SBE firm, and thus achieves 100 percent SBE participation. The subconsultants planned for this agreement are IDS Group, SpecStudio, and Coffman Engineering.

Other Professional Services Support – No Action Required

The geotechnical investigations and the third-party value engineering for the seismic upgrades will be performed by specialty firms under agreements planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less. No action is required for these agreements.

Summary

This action appropriates \$4.1 million, authorizes final design of seismic upgrades and building improvements for three buildings at the La Verne site, and authorizes agreements with IBI Group and La Cañada Design Group, Inc. These projects have 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 Statements and **Attachment 2** for the Location Map.

The seismic upgrades and building improvements for the Weymouth Administration Building are included within capital Appropriation No. 15369, the Weymouth Improvements Appropriation. With the present action, the total funding for Appropriation No. 15369 will increase from \$185,209,802 to \$187,109,802. The total estimated cost to complete the seismic upgrades and building improvements, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$16 million to \$19 million.

The seismic upgrades and building improvements for the Water Quality Laboratory and the Field Engineering Building were initiated under capital Appropriation No. 15477, the Weymouth Improvements Appropriation – FY 2012/13 Through FY 2017/18. Upon approval of this action, the project and funds appropriated to date will be transferred to Appropriation No. 15495, the Operations Support Facilities Improvements Appropriation. With the present action, the total funding for Appropriation No. 15495 will increase from \$11.82 million to \$14.02 million. The total estimated cost to complete the seismic upgrades and building improvements, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$18 million to \$21 million.

Project Milestones

December 2019 – Completion of final design of seismic upgrades and building improvements for the Water Quality Laboratory and the Field Engineering Building

March 2020 – Completion of final design of seismic upgrades and building improvements for the Weymouth Administration Building

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

By Minute Item 45152, dated January 14, 2003, the Board authorized preliminary design of seismic upgrades to several La Verne buildings, including the Weymouth Administration Building.

By Minute Item 49889, dated September 9, 2014, the Board authorized preliminary design of seismic upgrades to several La Verne buildings, including the Water Quality Laboratory and the Field Engineering Building.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Weymouth Administration Building Seismic Upgrades and Building Improvements – Final Design Phase

The environmental effects from the Weymouth Administration Building Seismic Upgrades and Building Improvements were evaluated in the F. E. Weymouth Filtration Plant Ozonation Facilities and Site Improvements Program Final Environmental Impact Report (Final EIR), which was certified by the Board on April 12, 2005. The Board also approved the Findings of Fact (findings), the Statement of Overriding Considerations (SOC), the Mitigation Monitoring and Reporting Program (MMRP), and the project itself. The current action is solely based on authorizing final design for the project, and not on any changes to the approved program itself. Hence, the previous environmental documentation acted on by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation 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 certified 2005 Final EIR, findings, SOC, and MMRP, and that no further environmental analysis or documentation is required.

Water Quality Laboratory and Field Engineering Building Seismic Upgrades and Building Improvements – Final Design Phase

The environmental effects from the Water Quality Laboratory and Field Engineering Building Seismic Upgrades and Building Improvements were evaluated in the Final EIR, which was certified by the Board on April 14, 2015. The Board also approved the findings, the SOC, the MMRP, and the project itself. The current action is solely based on authorizing final design for the project, and not on any changes to the approved program itself. Hence, the previous environmental documentation acted on by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation 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 certified 2015 Final EIR, findings, SOC, and MMRP, and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed actions have been previously addressed in the certified Final EIRs and related documents and that no further environmental analysis or documentation is required, and

- a. Appropriate \$4.1 million;
- b. Authorize final design of seismic upgrades and building improvements for three buildings at the La Verne site;
- c. Authorize agreement with IBI Group in an amount not to exceed \$630,000; and
- d. Authorize agreement with La Cañada Design Group, Inc. in an amount not to exceed \$950,000.

Fiscal Impact: \$1.9 million of capital funds under Appropriation No. 15369, and \$2.2 million of capital funds under Appropriation No. 15495

Business Analysis: These upgrades will enhance Metropolitan's ability to maintain reliable water deliveries, comply with water quality regulations, respond to emergencies, and enhance worker safety in the event of a major earthquake.

Option #2

Do not proceed with the seismic upgrades and building improvements at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to reduce the seismic risk for key facilities at the La Verne site.

Staff Recommendation

Option #1


 _____ 12/18/2017
 Gordon Johnson Date
 Manager/Chief Engineer
 Engineering Services


 _____ 12/21/2017
 Jeffrey Knight Ings Date
 General Manager

Attachment 1 – Financial Statements

Attachment 2 – Location Map

Financial Statement for Weymouth Improvements Appropriation

A breakdown of Board Action No. 46 for Appropriation No. 15369¹ is as follows:

	Previous Total Appropriated Amount (Nov. 2017)	Current Board Action No. 46 (Jan. 2018)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 2,801,477	\$ 20,000	\$ 2,821,477
Final Design	10,648,141	599,000	11,247,141
Owner Costs (Permit., env. monitoring, contract admin., program mgmt.)	8,258,984	365,000	8,623,984
Submittals Review & Record Drwgs	3,512,723	-	3,512,723
Construction Inspection & Support	14,713,690	-	14,713,690
Metropolitan Force Construction	8,215,780	-	8,215,780
Materials & Supplies	8,326,577	-	8,326,577
Incidental Expenses	1,033,341	7,000	1,040,341
Professional/Technical Services	13,748,100	-	13,748,100
IBI Group	-	630,000	630,000
Value engineering firm	-	30,000	30,000
Geotechnical firm	-	75,000	75,000
Equipment Use	-	-	-
Contracts	111,602,433	-	111,602,433
Remaining Budget	2,348,556	174,000	2,522,556
Total	\$ 185,209,802	\$ 1,900,000	\$ 187,109,802

Funding Request

Appropriation Name:	Weymouth Improvements		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15369	Board Action No.:	46
Requested Amount:	\$ 1,900,000	Budget Page No.:	262
Total Appropriated Amount:	\$ 187,109,802	Total Appropriation Estimate:	\$ 240,700,000

¹ The total amount expended to date on seismic upgrades to the Weymouth Administration Building is approximately \$1 million. The total estimated cost to complete the project, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$16 million to \$19 million.

Financial Statement for Operations Support Facilities Improvements Appropriation

A breakdown of Board Action No. 5 for Appropriation No. 15495¹ is as follows:

	Previous Total Appropriated Amount (July 2017)	Current Board Action No. 5 (Jan. 2018)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 232,000	\$ 20,000	\$ 252,000
Final Design	526,500	528,000	1,054,500
Owner Costs (Permit., env. monitoring, contract admin., program mgmt.)	419,000	418,000	837,000
Submittals Review & Record Drwgs	111,000	-	111,000
Construction Inspection & Support	240,000	-	240,000
Metropolitan Force Construction	1,733,000	-	1,733,000
Materials & Supplies	-	-	-
Incidental Expenses	2,000	7,000	9,000
Professional/Technical Services	350,000	-	350,000
La Cañada Design Group, Inc.	-	950,000	950,000
Value engineering firm	-	30,000	30,000
Geotechnical firm	-	75,000	75,000
Equipment Use	-	-	-
Contracts	7,219,618	-	7,219,618
Remaining Budget ²	986,882	172,000	1,158,882
Total	\$ 11,820,000	\$ 2,200,000	\$ 14,020,000

Funding Request

Appropriation Name:	Operations Support Facilities Improvements		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15495	Board Action No.:	5
Requested Amount:	\$ 2,200,000	Budget Page No.:	245
Total Appropriated Amount:	\$ 14,020,000	Total Appropriation Estimate:	\$ 35,100,000 ²

¹ The total amount expended to date on seismic upgrades to the Water Quality Laboratory and the Field Engineering Building is approximately \$868,000. The total estimated cost to complete the project, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$18 million to \$21 million.

² Upon approval of this action, this project and the funds appropriated to date will be transferred from Appropriation No. 15477, the Weymouth Improvements Appropriation – FY 2012/13 Through FY 2017/18, into this appropriation.

