



- Board of Directors
Engineering and Operations Committee

1/13/2015 Board Meeting

8-5

Subject

Appropriate \$34.3 million; and authorize: (1) final design to rehabilitate prestressed concrete cylinder pipe (PCCP) portions of the Second Lower Feeder; (2) preliminary engineering and environmental analyses to rehabilitate four other PCCP feeders; (3) an agreement with Black & Veatch in an amount not to exceed \$16 million; and (4) an increase of \$350,000 to the agreement with ICF International, for a new not-to-exceed total of \$1.3 million (Approp. 15471)

Executive Summary

This action authorizes the first phase of final design to rehabilitate 28 miles of the Second Lower Feeder, including all remaining Prestressed Concrete Cylinder Pipe (PCCP) portions of the line which have not yet been repaired. The final design will be accomplished in two phases to provide flexibility in sequencing contracts and adjusting to pipeline conditions and operational requirements. This action also authorizes preliminary engineering and preparation of environmental documentation to rehabilitate the PCCP portions of the Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and the Allen-McColloch Pipeline.

Timing and Urgency

In September 2011, Metropolitan's Board authorized initiation of the PCCP Rehabilitation Program in order to develop a comprehensive, long-term plan for repair of Metropolitan's at-risk PCCP feeders. There were several drivers for the creation of this program: (1) The increasing number of failures of PCCP lines within the water industry, along with recognition of the risks associated with these failures; (2) Trends of PCCP deterioration within Metropolitan's distribution system, based on monitoring data collected over a 14-year period; and (3) Metropolitan's experience with expensive, urgent repairs on PCCP lines. Based on this experience and on a risk assessment of Metropolitan's PCCP lines, staff concluded that 100 miles of PCCP will have a reduced service life versus other types of pipe and will need to be rehabilitated. As a result, a long-term program to rehabilitate five PCCP feeders was initiated and incorporated into Metropolitan's Capital Investment Plan (CIP).

The Second Lower Feeder is Metropolitan's highest priority PCCP line for rehabilitation. Several repairs to this feeder have been completed within the past year, and another is presently underway. The line originally contained 30 miles of PCCP, but as a result of the cumulative repairs to date, approximately 28 miles remain to be addressed. Preliminary design to rehabilitate all remaining PCCP portions of the Second Lower Feeder has been completed, and staff recommends moving forward with final design, permitting, and right-of-way activities so the full-scale rehabilitation effort may proceed in an orderly, planned manner that will minimize delivery impacts to member agencies. The final design effort will be accomplished in two phases to provide flexibility in sequencing construction contracts according to pipeline risk, water supply availability, and operational requirements. This action authorizes the first phase; staff will return to the Board to authorize the second phase of design in 2016.

Staff's strategy for addressing California Environmental Quality Act (CEQA) requirements for the PCCP Rehabilitation Program includes the preparation of a programmatic environmental impact report (EIR) for the five feeders that will be repaired. This approach will address environmental issues in a comprehensive manner and provide flexibility in planning and scheduling repairs for specific portions of the five PCCP lines. While preliminary design has been completed for the Second Lower Feeder, conceptual-level engineering is needed to

support environmental analyses for the four other feeders. Staff recommends moving forward with this preliminary engineering so the Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and Allen-McColloch Pipeline may be included in the programmatic EIR.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Rehabilitation project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2014/15.

Details

Background

Metropolitan's water delivery system includes approximately 830 miles of large-diameter pipelines, of which 161 miles are currently comprised of PCCP. (The original length was 163 miles.) These PCCP lines were installed between 1965 and 1985, and range in diameter from 54 to 201 inches. The lines are located in both dense urban areas and remote regions.

Over the last several decades, water agencies throughout the United States and other countries have found that under certain conditions, PCCP lines may have a reduced service life and elevated risk of failure versus other types of pipe. PCCP failures can be catastrophic and can occur without forewarning, compromising system reliability and resulting in significant costs due to interruption of service, unplanned major repairs, and potential third-party damages.

In a proactive measure to maintain overall system reliability, Metropolitan initiated a comprehensive program in September 2011 to inspect, manage, and rehabilitate its PCCP feeders. This effort included preparation of a risk analysis to assess the need and priority for rehabilitation of individual PCCP lines. The risk analysis included a combination of likelihood factors such as prestressing wire breaks, soil corrosivity, and repair history, along with consequence factors such as criticality and location. The analysis also included the evaluation of 38 separate assessment criteria published by the American Water Works Association's Water Research Foundation. Through this process, five PCCP lines were identified that will require rehabilitation. Each line's condition has deteriorated since its original installation, and each will have a shorter service life than expected. The five lines are: (1) the Second Lower Feeder, (2) the Sepulveda Feeder, (3) the Rialto Pipeline, (4) the Calabasas Feeder, and (5) the Allen-McColloch Pipeline. These five feeders have a disproportionate share of all prestressing wire breaks (80 percent), repair length to date (90 percent), and cost of repairs (70 percent). In addition to having the highest risk scores, these five lines are expected to continue to deteriorate, as indicated by a progression of wire breaks over time. The remaining PCCP feeders contain prestressing wire breaks in some pipe segments, but do not exhibit the same trend of increasing wire breaks over time. While these feeders may eventually need to be rehabilitated, at present they appear to be stable. Under Metropolitan's long-term management strategy, all PCCP lines will continue to be monitored and assessed. The prioritization of needed PCCP repairs will be reevaluated on a regular basis, and adjustments will be made to the PCCP Rehabilitation Program if additional feeders are determined to be at risk in the future.

Metropolitan's long-term PCCP management strategy is comprised of four coordinated elements:

1. **Monitoring and inspection** – Metropolitan currently inspects all 161 miles of PCCP within the distribution system every three to five years. In order to increase knowledge of the pipelines' baseline condition, to track prestressing wire breakage over time, and to identify distressed PCCP segments, staff will continue to inspect PCCP lines using state-of-the-art inspection techniques. In addition, staff will continue to perform regular monitoring for stray current interference on PCCP lines.
2. **Stray current protection** – Installation of stray current protection represents a proactive and cost-effective measure to safeguard PCCP from stray current interference, which is a major cause of corrosion damage. Where excessive levels of stray current are detected, staff will recommend the installation of current drain stations to limit further corrosion. A number of projects to install stray current drain stations on PCCP lines are currently underway or have recently been completed.

3. **Near-term repairs** – During the course of the PCCP Rehabilitation Program, individual PCCP segments may be identified as distressed prior to the scheduled rehabilitation of an entire feeder. If needed, staff will recommend moving forward with near-term repairs to those individual PCCP segments.
4. **Long-term rehabilitation** – The PCCP Rehabilitation Program will complete the long-term rehabilitation of the five PCCP feeders identified above. This effort is projected to cost approximately \$2.4 billion to \$2.6 billion over a 20-year period. The objectives of this program include:
 - Reduce the risk of unplanned outages
 - Rehabilitate the PCCP feeders in the most cost-effective manner possible
 - Minimize delivery impacts to member agencies, consistent with Metropolitan's Administrative Code
 - Minimize the loss of hydraulic capacity within the distribution system
 - Take advantage of opportunities to improve system flexibility and reliability

In September 2013, Metropolitan's Board authorized preparation of environmental documentation and preliminary design for rehabilitation of the PCCP portions of the Second Lower Feeder. Preliminary design is now complete. With the assistance of specialized consultants, staff has performed utility research, assessed right-of-way needs, evaluated design alternatives, performed a value engineering review, conducted hydraulic modeling, developed phasing of construction contracts, and conducted initial permitting and outreach with local agencies.

Two elements of work are ready to proceed at this time. The first will move forward with the initial phase of final design for full-scale rehabilitation of 28 miles of the Second Lower Feeder, including acquisition of permits and temporary right-of-way required for construction. The second element of work will complete the preparation of environmental documentation for rehabilitation of the Sepulveda Feeder, Rialto Pipeline, Calabasas Feeder, and Allen-McColloch Pipeline. In this effort, the programmatic EIR under preparation for the Second Lower Feeder will be expanded in scope to address the other four feeders.

Project No. 1 – Second Lower Feeder PCCP Rehabilitation – Final Design, Phase 1 (\$31,700,000)

The Second Lower Feeder delivers treated water from the Robert B. Diemer Water Treatment Plant in Yorba Linda to Palos Verdes Reservoir in Rolling Hills Estates. The feeder was constructed in 1967 and is 39 miles long. Approximately 30 miles of the line were originally constructed of PCCP, with diameters ranging from 78 to 84 inches. By mid-2015, approximately two miles of PCCP will have been repaired by lining the existing pipe segments with a steel liner. As a result, approximately 28 miles of PCCP remain to be rehabilitated.

The Second Lower Feeder follows major public streets as it extends through a highly urbanized area. Along its alignment there are numerous nearby underground utility lines, natural gas lines, and oil lines, which expose the feeder to significant stray current interference. The feeder also passes under several freeways, multiple flood control channels, and an airport. In addition to supplying water to the Central Pool portion of Metropolitan's distribution system, the Second Lower Feeder has 11 service connections for treated water deliveries to the cities of Long Beach, Los Angeles, and Torrance; the Central Basin Municipal Water District; and the Municipal Water District of Orange County.

The planned rehabilitation work will be staged over a period of eight years with multiple construction and procurement contracts. The work will be designed to minimize delivery impacts to member agencies. Extensive coordination with member agencies will be conducted to address construction phasing, isolation points, shutdown durations, and water quality-related issues. Similarly, coordination with local permitting authorities will be performed to minimize traffic and other potential impacts to the general public.

The final design effort will be accomplished in two phases. This action authorizes the initial phase of final design, which will address approximately one-half of the remaining PCCP segments on the Second Lower Feeder, and initiate the procurement process for long lead-time items such as valves and liner pipe. A total of 14 construction contracts are planned, with seven included in the initial phase. Staff will return to the Board for authorization of design for the remaining PCCP segments within the Second Lower Feeder in 2016. Staff's strategy for this project is to complete the final design of several contract packages initially, so that construction

will be ready to proceed on several different reaches of the feeder depending on shutdown constraints. This approach will provide flexibility to re-sequence the contracts as needed based on changes in pipeline risk priority, water supply availability, system demands, or other operational requirements.

Planned engineering activities for the final design effort include: hydraulic modeling; detailed technical design; preparation of procurement specifications for long lead-time items such as liner pipe and valves; preparation of drawings and specifications for multiple bid packages; identification and acquisition of contractor laydown and storage areas; preparation of traffic control plans and other permitting; shutdown planning with member agencies; and development of construction cost estimates. Final design is recommended to be performed by Black & Veatch, as discussed below.

Metropolitan staff will manage the overall engineering effort to rehabilitate the Second Lower Feeder. Staff will be responsible for the procurement of long lead-time items, right-of-way activities, permitting, public outreach, project controls and reporting, and technical review. A value engineering (VE) workshop will be conducted, focusing on constructability issues and cost-saving strategies during construction. A professional services agreement will be awarded under the General Manager's Administrative Code authority for a specialized firm to conduct the VE workshop.

The project controls function will be managed by Metropolitan staff, with future support by a consultant. The budget development, expenditure tracking, schedule development, and report generation efforts will rely on Metropolitan's new Project Control and Reporting System (PCRS), which is currently under development. The PCCP Rehabilitation Program will be the first major capital program to take advantage of the new PCRS. Staff will return to the Board at a later date for authorization of a professional services agreement to provide project management support and document control services.

This action appropriates \$31.7 million and authorizes the first phase of final design for rehabilitation of the PCCP portions of the Second Lower Feeder. The requested funds include \$16 million for potholing, field investigations, and final design by Black & Veatch; \$3.23 million for right-of-way activities and preparation of construction easements; \$1.81 million for preparation of procurement contracts; \$7.4 million for permitting, project management, technical review, project controls, and value engineering; and \$3.26 million for remaining budget. The final design cost as a percentage of the estimated construction cost is approximately 5.3 percent. Engineering Services' goal for design of projects with construction cost greater than \$3 million is 9 to 12 percent. The estimated construction cost to rehabilitate the first-phase portions of the Second Lower Feeder is anticipated to range from approximately \$250 million to \$350 million.

Project No. 2 – PCCP Rehabilitation for the Sepulveda Feeder, Rialto Pipeline, Calabasas Feeder, and Allen-McColloch Pipeline – Conceptual Engineering (\$2,600,000)

In order to complete the environmental documentation for PCCP rehabilitation of the Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and Allen-McColloch Pipeline, conceptual-level engineering analyses must be conducted of the improvements. Planned preliminary engineering activities include: identifying and evaluating options to recover any losses in hydraulic capacity due to the relining of the pipelines; conducting utility searches and substructure investigations; evaluating isolation facilities for construction staging; and coordinating with member agencies for shutdown planning.

Environmental analyses for the four feeders are also needed so the unified programmatic EIR can address all of Metropolitan's planned PCCP repairs. Following this approach, Metropolitan will have increased flexibility during construction to re-prioritize and re-sequence the work among the feeders due to operational requirements, water supply availability, system demands, or changes in pipeline condition and risk priority. The programmatic EIR approach will also be more efficient, as subsequent project-level environmental analyses will be more focused and limited in scope. Staff recommends proceeding with the programmatic level environmental analyses at this time in conjunction with the previously authorized EIR for the Second Lower Feeder. Preparation of the programmatic EIR is recommended to be performed by ICF International, as discussed below.

This action appropriates \$2.6 million and authorizes preliminary engineering and environmental analyses to be conducted for the Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and Allen-McColloch Pipeline. The

requested funds include \$1.02 million for technical studies by Metropolitan staff; \$350,000 for preparation of environmental documentation by ICF Consultants; \$910,000 for staff review, technical support, and program management; and \$320,000 for remaining budget.

Engineering Design Services (Black & Veatch) – New Agreement

Black & Veatch is recommended to perform final design to rehabilitate the remaining PCCP portions of the Second Lower Feeder. Black & Veatch was prequalified via Request for Qualifications No. 1032 to provide engineering services, and previously performed preliminary design for the project. Black & Veatch was selected to perform final design for the project based on its experience with pipeline rehabilitation projects and with PCCP. The planned scope of work includes field investigations, preparation of traffic control plans, permitting with local agencies, detailed engineering design, preparation of drawings and specifications for up to seven construction contracts, development of construction cost estimates, and technical assistance during bidding. The estimated cost for these services is \$15.7 million.

The field investigations will include potholing of existing utilities to confirm their location in order to avoid future conflicts during construction. Potholing will involve approximately 800 separate excavations at more than 150 potential excavation sites. Geotechnical investigations will be performed at locations of proposed structures where high groundwater levels may be encountered.

This action authorizes an agreement with Black & Veatch in an amount not to exceed \$16 million to perform design to rehabilitate PCCP portions of the Second Lower Feeder. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 25 percent. Black & Veatch has agreed to meet this level of participation. The subconsultants for this agreement are listed in [Attachment 3](#).

Specialized Environmental Support (ICF International) – Amendment to Agreement

ICF International is recommended to prepare programmatic environmental documentation for rehabilitation of PCCP portions of the Sepulveda Feeder, Rialto Pipeline, Calabasas Feeder, and Allen-McColloch Pipeline. ICF International was prequalified via Request for Qualifications No. 956, and is currently preparing the environmental documentation for the Second Lower Feeder. Utilization of ICF International for all five feeders will allow a unified programmatic EIR to be prepared, which will be more cost-effective than addressing the four other feeders separately. The planned scope of work for ICF International includes: preparing programmatic environmental documents in compliance with CEQA; conducting technical analyses to evaluate potential impacts associated with air quality, biology, noise, traffic, and cultural resources; and providing technical guidance on state and federal environmental laws and regulations. The estimated cost for these services is \$350,000.

This action authorizes an increase of \$350,000 to the existing agreement with ICF International, for a new not-to-exceed total of \$1.3 million, to prepare programmatic environmental documentation for the PCCP Rehabilitation Program. For this agreement, Metropolitan has established an SBE participation level of 18 percent. ICF International has agreed to meet this level of participation. The subconsultants authorized under this agreement are listed in [Attachment 3](#).

Summary

This action appropriates \$34.3 million; authorizes the first phase of final design to rehabilitate PCCP portions of the Second Lower Feeder; authorizes preliminary engineering and environmental analyses for PCCP rehabilitation of the Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and Allen-McColloch Pipeline; authorizes an agreement with Black & Veatch; and authorizes an amendment to the existing agreement with ICF International.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2014/15 capital expenditure plan. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

This work is included within Appropriation No. 15471, the PCCP Rehabilitation Appropriation, which was initiated in fiscal year 2011/12. With the present action, the total funding for this appropriation will increase from \$38.06 million to \$72.36 million.

The total estimated cost for rehabilitation of the PCCP portions of Second Lower Feeder, including the amount authorized to date, current funds requested, and future construction costs, is \$575 million to \$625 million. The total estimated cost to complete the rehabilitation of all five PCCP lines is anticipated to range from \$2.4 billion to \$2.6 billion over a 20-year period.

Project Milestones

December 2015 – Certification of programmatic EIR

April 2016 – Award of procurement contracts for piping and valves for the Second Lower Feeder

August 2016 – Award of first construction contract for the Second Lower Feeder, and authorization of the second phase of final design

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

California Environmental Quality Act (CEQA)

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 final design, and preparing and processing environmental documentation for the proposed action. 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 two categorical exemptions (Class 6, Section 15306 and Class 9, Section 15309 of the State CEQA Guidelines).

In addition, the proposed action is not subject to CEQA because it involves government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action is categorically exempt (Class 6, Section 15306; and Class 9, Section 15309 of the State CEQA Guidelines). In addition, the fiscal aspects of the proposed actions are not subject to CEQA (Section 15378(b)(4) of the State CEQA Guidelines).

CEQA determination for Option #2:

Same as for Option #1

CEQA determination for Option #3:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed actions are categorically exempt and are not subject to CEQA, and

- a. Appropriate \$34.3 million;
- b. Authorize the first phase of final design to rehabilitate the PCCP portions of the Second Lower Feeder;
- c. Authorize preliminary engineering and environmental analyses to rehabilitate the PCCP portions of the Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and Allen-McColloch Pipeline;
- d. Authorize an agreement with Black & Veatch in an amount not to exceed \$16 million; and

- e. Authorize an increase of \$350,000 to the agreement with ICF International, for a new not-to-exceed total of \$1.3 million.

Fiscal Impact: \$34.3 million of capital funds under Approp. 15471

Business Analysis: This option will enhance distribution system reliability by reducing the risk of failure of Metropolitan's PCCP feeders.

Option #2

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

- a. Appropriate \$31.7 million;
- b. Authorize the first phase of final design to rehabilitate the PCCP portions of the Second Lower Feeder; and
- c. Authorize an agreement with Black & Veatch in an amount not-to-exceed \$16 million.

Fiscal Impact: \$31.7 million of capital funds under Approp. 15471

Business Analysis: This option would enhance distribution system reliability by reducing the risk of failure of PCCP segments within the Second Lower Feeder. However, this option would defer rehabilitation of the remaining four PCCP lines.

Option #3


Do not proceed with the PCCP Rehabilitation Program at this time.

Fiscal Impact: None

Business Analysis: This option would forgo an opportunity to proactively reduce the risk of PCCP failures within the distribution system. Staff would continue to inspect all PCCP lines and make repairs to individual pipe segments when they are found to be distressed.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer,
Engineering Services
12/23/2014
Date



Jeffrey Kightlinger
General Manager
12/26/2014
Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Attachment 3 – Subconsultants for Black & Veatch and ICF International

Ref# es12634248

Financial Statement for PCCP Rehabilitation Appropriation

A breakdown of Board Action No. 9 for Appropriation No. 15471 to rehabilitate PCCP portions of the Second Lower Feeder¹ is as follows:

	Previous Total Appropriated Amount (Mar. 2014)	Current Board Action No. 9 (Jan. 2015)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 1,842,000	1,950,000	\$ 3,792,000
Final Design	1,261,736	4,190,000	5,451,736
Owner Costs (Program mgmt., permitting, outreach)	2,487,924	4,810,000	7,297,924
Submittals Review & Record Drwgs	366,000	-	366,000
Construction Inspection & Support	1,921,238	-	1,921,238
Metropolitan Force Construction	5,601,074	-	5,601,074
Materials & Supplies	963,000	-	963,000
Incidental Expenses	204,800	150,000	354,800
Professional/Technical Services	4,959,400	270,000	5,229,400
Black & Veatch	2,780,000	16,000,000	18,780,000
ICF International	800,000	350,000	1,150,000
Right-of-Way	100,000	3,000,000	3,100,000
Equipment Use	20,000	-	20,000
Contracts	12,531,308	-	12,531,308
Remaining Budget	2,221,520 ²	3,580,000	5,801,520
Total	\$ 38,060,000	\$ 34,300,000	\$ 72,360,000

Funding Request

Appropriation Name:	PCCP Rehabilitation Appropriation		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15471	Board Action No.:	9
Requested Amount:	\$ 34,300,000	Budget Page No.:	308
Total Appropriated Amount:	\$ 72,360,000	Total Appropriation Estimate:	\$2,600,000,000

¹ The total amount expended to date on the Second Lower Feeder PCCP Rehabilitation project is approximately \$2,665,000. The total estimated cost to complete the Second Lower Feeder PCCP rehabilitation, including the amount authorized to date and current funds requested, is \$575 million to \$625 million.

² Includes previous reallocation of \$661,552 from Remaining Budget for PCCP master planning, hydraulic modeling, and initial siting studies to rehabilitate PCCP portions of the Sepulveda Feeder and Calabasas Feeder.

Distribution System



Subconsultants for Agreement No. 141118 – Black & Veatch

Subconsultants to be included under this agreement are as follows:

Consultant	Specialty	Business Enterprise Certifications
DDB Engineering, Inc.	Regulatory Review	SBE, RBE
E2 Consulting Engineers, Inc.	Civil Engineering and Drafting Support	SBE
GeoPentech, Inc.	Geotechnical Engineering	SBE, RBE
Johnson – Frank & Associates, Inc.	Surveying	SBE, RBE
Malefyt Land Planning	Landscape Architecture	RBE
Melissa Blanton	Technical Editing	RBE
Minagar & Associates, Inc.	Traffic Engineering	SBE, RBE
Stine Solutions	Technical Advisors	SBE
UltraSystems Environmental, Inc.	Environmental Compliance	SBE
V&A Consulting Engineers	Corrosion Engineering	SBE

SBE: Small Business Enterprise

RBE: Regional Business Enterprise

Subconsultants for Agreement No. 140607 – ICF International

Subconsultants currently authorized under this agreement are as follows:

Consultant	Specialty	Business Enterprise Certifications
Fehr & Peers	Transportation	RBE
Habitat West, Inc	Habitat Restoration, Landscape Services	RBE
Infrastructure Engineering Corporation	CEQA Compliance, Permitting Services, Technical Studies	SBE, RBE
Ironwood Consulting, Inc.	Wildlife Surveys	RBE
Kidd Biological, Inc.	Wildlife and Botanical Surveys, Habitat Restoration, Landscape Services	SBE, RBE
MBI Media	Public Outreach	SBE, RBE
Ninyo & Moore	Hazards and Hazmat Surveys	RBE
North State Resources, Inc.	Aquatic and Terrestrial Biological Resources	SBE
Paleo Solutions, Inc.	Paleontology	SBE, RBE
Riverside Corona Resources Conservation District (RCRCD)	Wildlife and Botanical Surveys, Habitat Restoration, Landscape Services, Land Management	RBE
SJM Biological Consultants, Inc.	Wildlife Surveys	SBE
TTG Environmental	CEQA Compliance, Permitting Services, Technical Studies	SBE, RBE
ZMassociates, Inc.	Air Quality and Greenhouse Gas Analyses	SBE, RBE

SBE: Small Business Enterprise

RBE: Regional Business Enterprise