



A REGIONAL WATER AGENCY
SINCE 1954

BOARD OF DIRECTORS WORKSHOP -

RESOURCES/ENGINEERING

TUESDAY, AUGUST 8, 2023 - 2:00 P.M.

PUBLIC PARTICIPATION

Public participation is welcome and encouraged. You may participate in the August 8, 2023, meeting of the San Bernardino Valley Municipal Water District in-person, or online and by telephone as follows:

**Dial-in Info: (877) 853 5247 US Toll-free
Meeting ID: 824 9230 9440
PASSCODE: 3802020**

<https://sbvmwd.zoom.us/j/82492309440>

If you are unable to participate online or by telephone, you may also submit your comments and questions in writing for the District's consideration by sending them to comments@sbvmwd.com with the subject line "Public Comment Item #" (insert the agenda item number relevant to your comment) or "Public Comment Non-Agenda Item". Submit your written comments by 6:00 p.m. on Monday, August 9, 2023. All public comments will be provided to the Chair and may be read into the record or compiled as part of the record.

IMPORTANT PRIVACY NOTE: Participation in the meeting via the Zoom app is strongly encouraged. Online participants MUST log in with a Zoom account. The Zoom app is a free download. Please keep in mind: (1) This is a public meeting; as such, the virtual meeting information is published on the World Wide Web and available to everyone. (2) Should you participate remotely via telephone, your telephone number will be your "identifier" during the meeting and available to all meeting participants; there is no way to protect your privacy if you elect to call in to the meeting.



A REGIONAL WATER AGENCY
SINCE 1954

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
380 E. Vanderbilt Way, San Bernardino, CA 92408

BOARD OF DIRECTORS' WORKSHOP - RESOURCES/ENGINEERING

AGENDA

2:00 PM Tuesday, August 8, 2023

CALL TO ORDER

Chairperson: Director Hayes

Vice-Chair: Director Harrison

1) INTRODUCTIONS

2) PUBLIC COMMENT

Members of the public may address the Board regarding any item within the subject matter jurisdiction of the Board; however, no action may be taken on off-agenda items except as authorized by law. Each speaker is limited to a maximum of three (3) minutes.

3) DISCUSSION AND POSSIBLE ACTION ITEMS

3.1 Consider Professional Services Agreement for Design and Environmental Review of the Foothill Pipeline Crossing at City Creek Project (30 min) - Page 3

[Staff Memo - Consider Professional Services Agreement for Design and Environmental Review of the Foothill Pipeline Crossing at City Creek Project](#)

[Proposal for Design and Environmental Review of the Foothill Pipeline Crossing at City Creek Project by AECOM](#)

3.2 Approval of Cost Share Agreement with Western MWD for Forecast Informed Reservoir Operations (FIRO) Study (30 min) - Page 20

[Staff Memo - Approval of Cost Share Agreement with Western MWD for Forecast Informed Reservoir Operations \(FIRO\) Study](#)

[Proposed Cost Share Agreement](#)

4) FUTURE BUSINESS

5) ADJOURNMENT

PLEASE NOTE:

Materials related to an item on this Agenda submitted to the Board after distribution of the agenda packet are available for public inspection in the District's office located at 380 E. Vanderbilt Way, San Bernardino, during normal business hours. Also, such documents are available on the District's website at www.sbvmd.com subject to staff's ability to post the documents before the meeting. The District recognizes its obligation to provide equal access to those individuals with disabilities. Please contact Melissa Zoba at (909) 387-9228 two working days prior to the meeting with any special requests for reasonable accommodation.

DATE: August 8, 2023

TO: Board of Directors' Workshop - Resources/Engineering

FROM: Leo Ferrando, Assistant Chief Engineer

SUBJECT: Consider Professional Services Agreement for Design and Environmental Review of the Foothill Pipeline Crossing at City Creek Project

Staff Recommendation

Staff recommends the Board of Directors (BOD) consider authorizing the CEO/General Manager to execute an Engineering Services Agreement with AECOM for a not-to-exceed amount of \$908,035 to develop construction plans and specifications, prepare required CEQA documentation, and provide project management assistance for the Foothill Pipeline Crossing at City Creek Project.

Summary

Since 2006 Valley District has been actively working to protect the portion of the Foothill Pipeline that crosses City Creek. The City Creek Channel has been eroding and head-cutting for the last several years between Highland Avenue and Base Line Road in the City of Highland. In late 2021, Staff released a Request for Proposal (RFP) for a Tunneling Feasibility Study of the Foothill Pipeline Crossing at City Creek (Project). Through a competitive selection process, AECOM was chosen and awarded to conduct a feasibility study, which has since been completed. Findings and recommendations of the Feasibility Study were provided to the BOD at the July 11, 2023, workshop. Following the discussion, the BOD authorized Staff to negotiate with AECOM to provide a proposal for preparing construction plans, project specifications, CEQA documentation, and assistance throughout the bidding process to begin construction of the Project.

Background

San Bernardino Valley constructed the 78-inch diameter Foothill Pipeline in the 1970s, one of the Valley's primary water supply pipelines. A portion of the existing pipeline that crosses under City Creek has become exposed in recent years during significant storm events, which increases the potential of a major pipe failure. In recent years, temporary measures have been implemented to help mitigate the erosion and scour over the pipeline. The interim measures have included the construction of Gabion walls along the channel sides and the placing of boulders on top of the pipeline to protect the pipeline's structural integrity and encasement. This has allowed for

necessary studies and research to be conducted so that a permanent solution could ultimately be implemented.

West Consultants have performed scour studies for the Foothill Pipeline at City Creek. Additionally, a similar study was performed by Engineering & Hydrosystems Inc. for the nearby Metropolitan Water District of Southern California (MWDSC) Inland Feeder Pipeline. Both reports indicated that an additional scouring depth in the 15 to 25 feet range is possible. Separately, the United States Army Corps of Engineers (USACE) has been planning to modify City Creek to reduce the channel velocity and scouring depth. However, the timing of these improvements is still being determined by the USACE and could be several years away. Therefore, as recommended by staff, the BOD approved a contract with AECOM to prepare a feasibility study to assess the viability of potential relocation options for the Foothill Pipeline crossing at City Creek.

Two primary alignments were analyzed, including a tunnel alignment below the creek and a pipe bridge alignment above the creek. Both options would remedy the potential creek scouring concerns and better protect the pipe at the crossing. It is recommended, however, to proceed with the tunneling option as environmental permitting will be much more streamlined as there will be no aesthetic issue, and there will be no pier footing in the center of the channel, which would be susceptible to the same issues we have been experiencing in City Creek (i.e., head cutting and scouring).

In addition to the evaluation of the alignment alternatives, AECOM also evaluated several different trenchless construction methodologies for the proposed tunnel alignment of the Foothill Pipeline crossing City Creek, including the Sequential Excavation Method (SEM), Shielded Tunneling, Pipe Jacking, and micro tunneling. The trenchless construction methodologies presented above are viable options for the proposed alignment, but each has advantages and disadvantages associated with risks and potential hazards. Currently, the recommended method at the recommended depth is closed-faced micro tunneling beneath the groundwater table.

Furthermore, a conceptual-level opinion of the probable construction cost was developed for both the tunnel alignment and pipe bridge options. The estimated costs range from \$15.1M to \$16.8M, depending on the alignment and the tunneling method.

Following the discussion at the July 11 BOD Resources/Engineering Workshop, the BOD authorized Staff to negotiate with AECOM to develop a proposal to include preparation of construction plans and specifications, CEQA documentation, and project management support for the Project. The attached proposal consists of the abovementioned scope of services with a not-to-exceed fee of \$908,035. AECOM's team is well prepared and has the resources and experience

to complete the proposed services on time and within budget, as demonstrated during their efforts on the Feasibility Study. Staff has reviewed the proposal and concludes that the fee is adequate for the required services.

District Strategic Plan Application

This Project will enable San Bernardino Valley to provide a resilient and reliable water supply to our service area for future generations.

Fiscal Impact

Costs associated with this Project will be shared with San Gorgonio Pass Water Agency per Reach 1 Repayment terms (18.33%). The cost to develop construction plans and specifications required CEQA documentation and provide project management assistance is \$908,035 and has been included in the 2023/24 State Water Contract Fund Budget.

Attachment:

Proposal for Design and Environmental Review of the Foothill Pipeline Crossing at City Creek Project by AECOM

August 2, 2023

Mr. Aaron Jones, PE
Senior Engineer
San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408

Subject: Engineering Services for the Foothill Pipeline Crossing at City Creek

Dear Mr. Jones:

AECOM is pleased to submit this proposal to provide engineering services for the above referenced project. We have selected key individuals for this project who are familiar with the project site and experienced and knowledgeable in preliminary design, final design, permitting, CEQA services, and bid phase support for conveyance and large diameter tunneling projects. Their combined experience provides the San Bernardino Valley Municipal Water District (Valley District) with a project team that will address all the components of the requested scope to ensure a successful completion of the project. With our depth of local resources, we will be able to provide all design services in-house.

AECOM will manage and implement the project from our Orange County office with support from our Los Angeles office providing specialty expertise as needed throughout the design and bid phases of the project. Our team will be led by Bryan Paine, PE, a Senior Project Manager and Principal Engineer whose 25-year career, including 21 years with AECOM, has focused on the planning, design, construction, and operations of public infrastructure with a focus on pipeline conveyance systems. For continuity, we are providing the same team that has worked with Valley District on the Geotechnical Investigation and Feasibility Study for this project.

Please feel free to contact Bryan Paine, PE with any questions, comments, or requests at (714) 483-1354 or email bryan.paine@aecom.com.

We look forward to the opportunity to continue to partner with your staff to deliver an outstanding project.

Sincerely,

AECOM Technical Services, Inc.



Bryan C. Paine, PE, QSD
Senior Project Manager
Vice President



Jagdish (Jack) Gundarlahalli, PE
Principal-in-Charge
Vice President

Scope of Work and Methodology

This proposal documents a proposed scope of work for engineering services to complete the preliminary design, final design, permitting, California Environmental Quality Act (CEQA) studies and documentation, bid phase services, and bid phase services for the relocation of the Foothill Pipeline into a new tunnel below City Creek. The San Bernardino Valley Municipal Water District (Valley District) owns and operates the 78-inch Foothill Pipeline. The Foothill Pipeline crosses underneath the City Creek flood control channel in the City of Highland near the intersection of Highland Avenue and California State Highway 330. The Foothill Pipeline is a critical infrastructure component for the Valley District, which provides water to a large portion of the District's service area. The Valley District wants to ensure that the pipeline is protected through the creek crossing and does not become exposed during scour events, which could cause the pipe to be damaged from traveling rocks and debris. Given the current depth of the pipeline at City Creek (10 to 15 feet below existing grade) and the potential scour depth in the creek (20 to 25 feet below existing grade), the existing Foothill Pipeline crossing could be exposed during a severe scour event that would occur during a larger storm. Downstream head cutting could propagate upstream and undermine the Foothill Pipeline. The current pipeline depth of cover at the river channel thalweg is estimated to be less than five feet when this report was published.

Considering the foregoing, the Valley District hired AECOM to prepare a Feasibility Study to determine the viability of potential relocation options for the Foothill Pipeline crossing at City Creek. AECOM developed conceptual designs for two primary alignment alternatives, including a tunnel alignment below the creek and a pipe bridge alignment above the creek. The tunnel alternative was selected and will consist of approximately 610 lineal feet of an approximately 9-foot diameter tunnel casing installed approximately 70 feet below the creek bottom with the 78-inch diameter Foothill Pipeline routed inside the tunnel. The launch and receiving shafts for the tunnel installation would be located outside City Creek, and no major construction activities would be required within the San Bernardino County Flood Control (SBCFCD) right-of-way or United States Army Corp of Engineers (USACE) jurisdiction. There are no USACE facilities (e.g., jurisdiction levees) within the proposed alignment, although the project will need to be permitted through the SBCFCD.

Several different trenchless construction methodologies were considered for the proposed tunnel alignment of the Foothill Pipeline crossing at City Creek, including Sequential Excavation Method (SEM), Shielded Tunneling, and Pipe Jacking. Based on our geotechnical investigation, evaluation of the site and ground conditions, risk analysis, and cost analysis, we recommend constructing the tunnel with closed face microtunneling below the groundwater table.

The scope of work for this project will involve four major tasks including Project Management and Administration, Permitting and CEQA Services, Preliminary and Final Design Services, and Bid Phase Services. AECOM will work closely with Valley District, MWD, and SBCFCD to develop the most economical solution that meets the needs of all project stakeholders. See Figure 1 for the project team organizational chart, which includes key staff and discipline leads for the AECOM team. Our detailed scope of work and approach is described below.

Previous Studies by AECOM and Legacy Companies

The AECOM team proposed for project worked on the Valley District's Foothill Pipeline Crossing at City Creek Feasibility Study and MWD's 144-inch Inland Feeder Project crossing of City Creek and are very familiar with the site and geotechnical conditions. A comprehensive geotechnical and geologic investigation report was prepared by AECOM for the original City Creek segment of the MWD Inland Feeder, and the results of our investigation were presented in a report dated June 30, 1995, and Supplementary Report No. 3 dated September 17, 1996. AECOM prepared a Geotechnical Investigation Report for the Foothill Pipeline Crossing dated March 29, 2023, an Aquatic Resource Delineation Report

dated July 31, 2023, a Biological Technical Memorandum for the Foothill Pipeline Crossing dated July 31, 2023, and a Feasibility Study for the Foothill Pipeline Crossing dated July 6, 2023.

Task 1 – Project Management and Administration

1.1 Project Management and Administration: AECOM will provide project management services for the project. AECOM implements a Project Delivery System (PDS) to assist its project managers in the successful execution of every project. This PDS encompasses elements such as:

- Project Work Plan (PWP) to define project goals, limits, deliverables, schedule, and scope. The PWP includes plans for quality control and a risk register.
- Staffing and communication plan
- Document control and management information systems
- Staffing resources, equipment, and tools
- QA/QC protocols
- Risk management issues
- Safety, Health, and Environment (SH&E) procedures and training needs

Our Project Manager, Bryan Paine, is responsible for managing project controls and is an AECOM Certified Project Manager. We use several methods of tracking progress such as the critical path method and earned value management (EVM). By using proven project management tools, such as EVM, we can proactively identify and mitigate issues before they begin to adversely impact schedule and budget. Bryan will prepare a monthly progress report and provide it with each invoice. AECOM will jointly prepare a Risk Register for the project that will identify risks for the design and construction of the project.

1.2 Project Meetings: AECOM will attend twelve (12) monthly meetings and four (4) design review meetings after each design submittal. Bryan will provide an agenda prior to each meeting and meetings minutes on the same day after each meeting.

Task 2 – Permitting and CEQA Services

2.1 Permitting Services: AECOM will prepare encroachment permit applications for SBCFCD and MWD during the final design phase. This task will include all verbal and written communication and coordination with agencies and stakeholders, preparation of written descriptions, figures, estimates, and other documentation that is required for the permit applications. We assume that the Valley District will pay the required permitting fees.

2.2 Groundwater Dewatering Permitting: AECOM will apply for and obtain an NPDES groundwater dewatering permit from the Regional Water Quality Control Board (Regional Board) prior to the construction phase of the project. Our services include the Notice of Intent (NOI) and Notice of Termination (NOT) packages and sampling, and analytical services required by the Regional Board. We assume that the NOI/NOT fees will be paid by the Valley District and that the Valley District will submit the monthly dewatering discharge letter to the Regional Board during the construction phase.

CEQA Services: It is assumed at this time that the proposed project will not result in any significant adverse impacts that cannot be mitigated to below a level of significance. If during our analysis it is found that the proposed project triggers a significant adverse impact, we will contact Valley District to discuss the appropriate environmental documentation needed for the proposed project and if a contract modification is necessary.

2.3 Project CEQA Kick-Off Meeting and Project Definition/Description: Upon receipt of a Notice to Proceed, AECOM will attend a project kick-off meeting with Valley District to initiate the CEQA process for the proposed project. The purpose of the kick-off meeting would be to clarify the

proposed project objectives, receive all detailed information on the project construction scenario, site plans, specifications, existing environmental documents, existing permits related to the proposed project, and any other relevant information. In addition, we will discuss client point of contact, status reports, project schedule, environmental issues, and any other logistical, technical, or procedural protocols. Prior to the kick-off meeting, AECOM will provide a memorandum identifying anticipated data needs for the IS/MND and the technical studies. Examples of some of the data needs consist of the following:

- Preferred aerial image of the project site and vicinity
- Preferred IS/MND style (sample) and/or template

AECOM will prepare a project description for use in the technical analyses based on information and specifications provided by Valley District and AECOM's engineers. The project description will describe the location and characteristics of the proposed project, including construction details and operational aspects; purpose and objectives; and relevant background information. An electronic copy of the draft project description, including graphics, will be provided to Valley District for review. This scope of work assumes two rounds of review and comment from Valley District. The final project description will be used to initiate the technical analyses described in Task 2 below, and in the IS/MND described in Task 3 below.

Task 2.3 Work Product(s)

- Attend kick-off meeting
- Data needs memorandum
- 1st Draft project description (electronic)
- 2nd Draft project description (electronic)
- Final project description

2.4 Preparation of Technical Studies: AECOM assumes the 2023 Geotechnical Investigation Report (GIR) prepared by AECOM for the feasibility study will be used to support applicable analysis within the IS/MND. Upon receipt of all necessary information and completion of data collection, AECOM will prepare the following technical studies (technical memoranda) and incorporate them into the IS/MND. These technical studies will be submitted electronically to Valley District for review. AECOM assumes one (1) round of review by Valley District of each Technical Memo.

Air Quality/Greenhouse Gas Emissions/Energy

AECOM will prepare an Air Quality, Greenhouse Gas (GHG) Emissions, and Energy Technical Memorandum (Technical Memo) that would support the IS/MND.

The Foothill Pipeline is located in the South Coast Air Basin (SCAB), under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Technical Memo will be developed in accordance with the methodologies and thresholds of significance recommended by the SCAQMD.

The Technical Memo will include a brief discussion of air quality conditions in the proposed project study area and region including ambient air quality monitoring data, attainment designations, and location of nearby sensitive receptors. Natural factors in the proposed project study area and air basin that affect the transport and dilution of pollutants will also be addressed. The Technical Memo will also include a summary of pertinent GHGs and their role in climate change. Related to energy resources, the Technical Memo will describe the utility providers in the project area and provide an overview of the role of energy consumption sources associated with the proposed project, such as transportation fuel and electricity (as applicable).

AECOM will evaluate potential air quality and GHG emission impacts from construction and operational activities. Construction of the proposed project would generate criteria pollutant and GHG emissions associated with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive dust emissions would be generated during site preparation and excavation activities based upon the selected tunneling option and vary as a function of such parameters as soil silt content, soil moisture, wind speed, disturbance area, and miles traveled by workers and construction vehicles on- and off-site. Emissions associated with long-term operations of the pipeline are anticipated to minor, primarily limited to maintenance-related staff vehicle trips.

Criteria air pollutant and GHG emission estimates will be developed using the California Emissions Estimator Model (CalEEMod), Version 2022.1. Operational emissions will be estimated based on anticipated operational requirements, such as energy consumption (if applicable), mechanical equipment use (if applicable), and maintenance/inspection activities and staff trips. Conservative assumptions will be used by AECOM in place of data that is not available.

Criteria air pollutant emissions generated during construction and operation will be compared to the appropriate regional thresholds of significance adopted by the SCAQMD. AECOM will also compare the proposed project's onsite construction and operational emissions against localized significance thresholds (LSTs) per SCAQMD CEQA Guidelines. The SCAQMD recommends that lead agencies perform dispersion modeling for projects greater than five acres. Since the construction disturbance area would not exceed five acres and due to the project's linear nature, AECOM assumes that dispersion modeling would not be required. The LST thresholds will be based on data tables developed by SCAQMD, consistent with the total acreage of the project site and distance to the nearest sensitive receptors.

AECOM will also qualitatively analyze the proposed project's toxic air contaminant emissions (e.g., diesel particulate matter) and the potential exposure of existing nearby sensitive receptors to substantial pollutant concentrations during construction and operational activities per SCAQMD guidelines. AECOM assumes that dispersion modeling or a health risk assessment (HRA) will not be necessary based on project characteristics, linear nature of the project's construction activities, and short-term construction schedule. AECOM will also qualitatively address the potential exposure of sensitive uses to project-generated odors pursuant to CEQA and SCAQMD Rule 402.

Using information consistent with the air quality and GHG modeling, AECOM will prepare quantified estimates of energy demand during the short-term construction activities (based on anticipated gasoline and diesel fuel consumption) and during the operational and maintenance activities (e.g., transportation-related fuel consumption).

Finally, AECOM will evaluate the proposed project's GHG emissions in the context of consistency with applicable plans, policies or regulations for the purpose of reducing GHG emissions, such as the Valley District's Strategic Plan (2022), as well as whether the proposed project would conflict with a state or local plan for renewable energy or energy efficiency. The proposed project's indirect and direct GHG emissions associated with construction, such as construction equipment exhaust and operational energy consumption (as applicable), will also be estimated. The Technical Memo will also assess if the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy, which would include an emphasis on the purpose of the proposed project for ensuring water reliability in the Valley District's service area.

AECOM will identify any mitigation measures to reduce any potentially significant impacts, as necessary.

Biological Resources

In 2023 AECOM prepared a Biological Technical Memorandum for the Foothill Pipeline Feasibility Study in support of the feasibility study and future planning for the proposed project. The

Memorandum included information from site visits conducted in June and November of 2022 and biological resource database searches of (1) California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Data Base (CNDDDB), (2) California Native Plant Society's (CNPS's) online Inventory of Rare and Endangered Plants of California, and (3) United States Fish and Wildlife's (USFWS's) online Information for Planning and Consultation (IPaC). Site-specific biological resource information, such as vegetation communities/land cover types, potential for special-status plant and wildlife species, potential for sensitive natural communities, applicable federal, state, and local regulations, etc., was identified and discussed. Additionally, an analysis of the potential biological resources impacts that could occur from implementation of an underground pipeline installation method was provided along with identification of best management practices (BMPs) that would reduce associated potential direct and indirect impacts to below a level of significance.

AECOM will provide a project-specific biological resources technical report by updating the Memorandum that was prepared for the feasibility study. This would involve updating the proposed project description details, project-related figures, and updates to the impacts analysis and BMP recommendations (as necessary) to reflect the final design/final trenchless construction method for the proposed project.

Wetlands

In 2023 AECOM prepared an Aquatic Resource Delineation Report (ARDR) for the Foothill Pipeline Feasibility Study to evaluate viable vertical and horizontal alignment alternatives and support associated potential environmental permit applications. The Report included information from a field investigation (June 13 and 14, 2022) and desktop review of various resources. Additionally, a preliminary jurisdictional evaluation of the study area was provided. Non-wetland waters were found (City Creek and associated riparian habitat). It is assumed no additional site visit is necessary, though AECOM will update the regulatory section to bring the Memorandum up to date with current regulations and policy after the revised final rule and response to a recent Supreme Court case.

Using information prepared for the ARDR, AECOM will provide a project-specific memorandum (and/or insert to the biological resources technical report) addressing the wetlands question under the biological resources issue of Appendix G of the CEQA guidelines, which will include a discussion of the necessary biological resource-related permitting associated with the final design/final trenchless construction method for the proposed project.

Cultural Resources

AECOM will conduct a desktop cultural resources study for the project area to identify historical, archaeological, and tribal cultural resources that may be impacted by the proposed project in compliance with CEQA guidelines. The cultural resources study will include archival research, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, AB 52 support, and a pedestrian field survey. A Technical Memo will detail the methodology and results of the cultural resources study. The memo will also include an impact analysis under CEQA thresholds and any recommendations for the mitigation of potential impacts to historical resources, unique archaeological resources, or tribal cultural resources identified during the analysis.

AECOM will complete a records search of a 0.5-mile radius of the project area at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton. The records search will provide background information pertaining to previously conducted cultural resources investigations and site records for previously recorded archaeological and built environment resources. The records search will also identify resources listed in or determined eligible for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and other national, state, local registers.

AECOM will conduct additional archival research to determine the prehistoric and historic setting of the project for context and to identify potential historical and archaeological resources in the project

vicinity. This will include research at online repositories, specifically, review of historic maps (Sanborn Fire Insurance Maps, historic aerials, historic topographical maps), the Built Environment Resource Directory (BERD), and ethnographic maps prepared by local historians, early anthropologists, and modern Native American tribal leaders.

Additionally, AECOM will contact the NAHC to request a SLF search for the project area and vicinity. This scope assumes that formal AB52 consultation will be conducted by the Valley District, as lead agency; however, AECOM will provide as-needed support. Support may include the preparation of an initiation letter, responses and/or questions from tribal contacts, and participation in virtual meetings.

AECOM will conduct a pedestrian survey of the project area to identify any archaeological resources that might be impacted by proposed project activities. The entire project area shall be inspected using survey transects spaced no greater than 15 meters apart. Site locations will be recorded with a handheld GPS with submeter accuracy, photographically documented, and recorded on appropriate Department of Parks and Recreation 523 (DPR 523) forms. The survey will document built environment resources, including any buildings or structures more than 45 years old that may be potential historical resources, that may be indirectly impacted by visual, audible, or atmospheric impacts.

AECOM will prepare a Cultural Resources Technical Memo that will include: a description of the study methodology, the project setting, and the prehistoric and historic contexts outlining the chronology of development in the project area; the results of archival research, the NAHC SLF, AB52 consultation efforts, and the pedestrian survey; a description and evaluation of potentially significant resources under the NRHP, CRHR, and local criteria (if applicable); and an impacts assessment in compliance with CEQA. If potential significant impacts are identified, the report will also include recommendations for mitigation measures to reduce impacts and will address the likelihood of encountering subsurface intact archaeological or tribal cultural resources during construction.

Additionally, AECOM will conduct a paleontological resources study for the project area to identify paleontological resources that may be impacted by the proposed project in compliance with CEQA guidelines. The study will include a record search from the Natural History Museum of Los Angeles County, literature review, and a review of geologic maps. The record search will identify the geologic units that may be encountered during project excavations and provide a report on known nearby fossil localities within those geologic units. The results of the study, an impact analysis, and any recommendations for the mitigation of potential impacts to paleontological resources will be summarized in the Paleontological Resources section of the MND.

Noise/Vibration

AECOM will review relevant available preliminary proposed project documents and develop a detailed data needs and assumptions list for the Valley District and the AECOM engineering parties prior to initiating the noise and vibration study. AECOM will also check for updates of State, County, and Local (e.g., City of Highland) laws, ordinances, regulations, standards, and guidance that may influence the assessment of noise impacts.

AECOM will conduct up to three (3) attended short-term (20-minute duration) sound level measurements at, or in proximity to, the nearest noise-sensitive properties to the proposed launch shaft, receiving shaft, and haul route. AECOM will make notes to characterize the outdoor ambient sound environment in the proposed project vicinity and document the associated environmental conditions (e.g., weather, observed or perceived audible sound sources or activities). Please see Noise/Vibration Assumptions for detailed parameters of these anticipated field efforts.

AECOM will predict noise and vibration generated by proposed construction activities. Due to the anticipated duration of construction activities and likelihood for adverse noise effects at closest residential land uses, a detailed three-dimensional model will be used for the prediction of on-site construction noise to allow for potential noise mitigation design. Construction haul route noise and

construction vibration will be predicted and assessed using tools at AECOM discretion. Proposed project operational noise and vibration are expected to be minimal and will thus be assessed qualitatively. Please see Noise/Vibration Assumptions for detailed parameters of these anticipated modeling efforts.

AECOM will prepare a draft noise and vibration Technical Memo that incorporates the data, analysis, findings and recommendations resulting from the performance of the tasks described above.

Task 2.4 Work Product(s)

- Electronic submittals of the Technical Memos (one round of review).

Task 2.4 Assumption(s)

Air Quality/GHG/Energy Assumptions

- Dispersion modeling and quantitative HRA is not necessary.
- If responses to data needs requests are not provided or unknown, AECOM will use model defaults and/or conservative assumptions.
- No field monitoring will be required.

Biological Resources and Wetlands Assumptions

- No additional field assessment/site survey would be required for the updated biological resources technical report and jurisdictional delineation.
- Biological resources database queries performed for the feasibility study (in September 2022) are sufficient for the updated biological resources technical report and will not be re-queried.
- No species-specific protocol surveys (e.g., San Bernardino kangaroo rat [SBKR], Santa Ana Sucker, etc.) will be performed, but the updated biological resources technical report may include information from any future SBKR protocol surveys (as applicable) prepared for Valley District by CEREUS Environmental (or another subconsultant).
- Because the proposed project will tunnel beneath City Creek, it is assumed no 404, 401, or 1600 permits will be required.

Cultural Resources Assumptions

- An in-house SCCIC record search will be conducted and may take up to 45 days to complete, depending on SCCIC schedule and availability.
- Cultural staff will attend up to three virtual calls/meetings (kickoff and two meetings)
- One round of responses/questions from tribal contacts related to AB52 support will be addressed
- Field survey will be conducted in one day.
- No Native American monitor will be required for the pedestrian survey.
- The Foothill Pipeline (built in 1970s) is greater than 45 years old and requires recordation; however, it is not eligible/significant.

- No resources evaluated on the site or adjacent to the property will be eligible for the NRHP, CRHR, or local register or will be considered historical or unique archaeological resources for the purposes of CEQA.
- No stand-alone paleo technical report is included in this cost and scope.
- One digital copy of the final Cultural Resources Technical Memo shall be submitted to the SCCIC within 45 days of final submittal to the Valley District.

Noise/Vibration Assumptions

- Execution of the fieldwork would proceed at AECOM investigator discretion (or at the direction of the noise task lead), factoring in safety, security, and suitability of meteorological factors and other environmental conditions. AECOM is not responsible for field survey sound level measurement delays due to weather (i.e., sustained winds greater than 12 mph or precipitation) or other factors outside of its control. Additional time or days in the field would accrue additional labor costs and expenses in accordance with applicable rates.
- AECOM will limit noise level measurement locations to Valley District-owned/leased property and/or publicly accessible areas, rights-of-way, easements, etc. If access is needed for MWD property, we assume Valley District will obtain access.
- The analysis will also require the input of manufacturer noise specifications for noise-generating system equipment. Vendor data is expected to be gathered by appropriate engineers in response to the data needs and assumptions list. Without such data, we can only make reasonable assumptions or use data from previous similar modeling efforts that may not represent actual proposed project conditions.
- This scope assumes predictive modeling consideration for up to four (4) worst-case-noise construction scenarios and one (1) noise control design/mitigation scenario.

2.5 Preparation of IS/MND: Upon receipt of all necessary information and completion of data collection and technical analyses (Task 2.0 above), AECOM will prepare an Administrative Draft IS/MND in accordance with the CEQA Guidelines (California Code of Regulations Section 15000 et. seq.), as amended and Valley District's requirements. It is assumed at this time that the proposed project will not result in any significant adverse impacts that cannot be mitigated to below a level of significance.

Upon completion, AECOM will provide an electronic copy of the Administrative Draft IS/MND to Valley District for review. AECOM assumes one (1) round of review by Valley District and one (1) round of review by MWD.

Task 2.5 Work Product(s)

- Electronic submittal of the 1st Administrative Draft IS/MND
- Electronic submittal of the 2nd Administrative Draft IS/MND

Task 2.5 Assumption(s)

- AECOM assumes one (1) round of review by Valley District and one (1) round of review by MWD for this task.

2.6 Preparation/Circulation of Draft IS/MND

Following review and comment on the Administrative Draft IS/MND by Valley District/MWD, AECOM will revise and incorporate comments, as appropriate. AECOM assumes that Valley District will provide one

(1) consolidated set of Valley District comments. AECOM will submit the revised Draft IS/MND (Print check Draft IS/MND) for a final review prior to circulating the document for public review. AECOM will provide four (4) hard copies (with technical appendices on CD) and fifteen (15) CD copies of the Draft IS/MND (and electronic copies [Word and PDF]) to Valley District. AECOM will prepare the required Notice of Intent (NOI) and Notice of Completion (NOC) for review and approval by Valley District.

AECOM will coordinate with Valley District to create a mailing list of addresses and AECOM will distribute the NOI based on the mailing list (estimate of 15 agencies via FedEx and up to 90 addresses via USPS) for the required 30-day public review period to all applicable responsible agencies, trustee agencies, interested parties, and adjacent property owners/tenants. Pursuant to Executive Order N-80-20, AECOM will electronically submit the NOI to the State Clearinghouse's CEQA Database; AECOM will coordinate with Valley District prior to State Clearinghouse submittal to ensure Valley District and AECOM are properly registered to submit documents to the online CEQA Database. AECOM will then file the NOI with the County Clerk's Office and the NOC with the State Clearinghouse. Printing and mailing charges are included in the cost estimate; AECOM will also pay the County filing fee.

Task 2.6 Work Product(s)

- Electronic submittal of the Print check Draft IS/MND.
- Four (4) hard copies (with technical appendices on CD), fifteen (15) CD copies, and electronic copies (Word and PDF) of the Draft IS/MND to Valley District.
- Electronic copy of the NOI and NOC.

Task 2.6 Assumption(s)

- AECOM assumes 15 FedEx addresses (agencies) for the Draft IS/MND and NOI distribution and up to 90 addresses via USPS for the NOI distribution.
- AECOM will file the NOI and NOC and pay the County filing fee.
- No public meetings are assumed during the 30-day public review period.
- AECOM assumes one (1) round of review by Valley District for this task.

2.7 Preparation of Final IS/MND and Responses to Comments/NOD

Organize and Annotate Comments Received

Following the public review period, AECOM will assist Valley District with responding to agency and public comments. To assist the reader in referencing comments and responses, each specific comment will be numbered and refer to a statement or paragraph in the corresponding letter.

Prepare Administrative Final IS/MND and Response to Comments (RTC)

AECOM will review comments received during the Draft IS/MND comment period and respond to those comments which raise an environmental issue. An Administrative Final IS/MND and RTC will be prepared in a manner consistent with Valley District's processing and formatting requirements. It is assumed that the Administrative Final IS/MND and RTC will include: an introductory chapter, enumerated list of all persons, organizations, and public agencies commenting on the Draft IS/MND, copies of the written comments received on the Draft IS/MND, response to all environmental issues raised in the review process, and Errata revisions to the Draft IS/MND based on the responses (as necessary). An electronic copy of the Administrative Final IS/MND and RTC will be submitted to Valley District for review and approval. AECOM assumes one (1) round of review by Valley District for this task.

It should be noted that AECOM's cost estimate does not include the receipt of detailed/extensive comments from attorneys or special interest groups. The cost estimate assumes receipt of no more than ten (10) comment letters of 1 to 3 pages each. Should such extensive comments from attorneys and/or organized or special interest groups be received, these comments will be discussed with Valley District prior to beginning preparation of responses. Based upon our understanding of the proposed project, the level of controversy is considered low.

Prepare Mitigation Monitoring and Reporting Program (MMRP)

AECOM will prepare the MMRP in accordance with Section 15097 of the CEQA Guidelines and Valley District requirements. The MMRP for the proposed project would include all accepted mitigation measures and indication of the mitigation measure, project time period to which the measure applies, responsible party, and method of monitoring. AECOM will provide an electronic copy of the MMRP to Valley District. AECOM assumes one (1) round of review for this task.

Prepare Final IS/MND and RTC

AECOM will take one (1) consolidated set of Valley District comments on the Administrative Final IS/MND and RTC and prepare the Final IS/MND for final review by Valley District. The Final IS/MND will be submitted to Valley District in electronic format. Once the Draft Final IS/MND is finalized, AECOM will provide four (4) hard copies and ten (10) CD copies of the Final IS/MND and RTC (and electronic copies [Word and PDF]) to Valley District.

Notice of Determination (NOD)

AECOM will prepare the Notice of Determination (NOD) and then submit it to Valley District for review. The NOD will then be revised and finalized. AECOM will file the NOD electronically with the State Clearinghouse in compliance with CEQA (within five days of IS/ND or MND certification) and will post the NOD with the County Clerk Office. At the time the NOD is posted with the County Clerk's Office, the California Department of Fish and Wildlife (CDFW) fee (estimate \$2,980.00 for an MND in 2024) will be required. This scope and budget assume AECOM will pay the CDFW fee along with the County filing fees. The proposed project approval will not be considered final until these fees are paid.

Task 2.7 Work Product(s)

- Electronic submittal (Word) of the Administrative Final IS/MND and Response to Comments
- Electronic submittal (Word) of the MMRP
- Four (4) hard copies, ten (10) CD copies, and electronic copies (Word and PDF) of the Final IS/MND and RTC
- Electronic copy of the NOD

Task 2.7 Assumption(s)

- AECOM assumes one (1) round of review by Valley District for each deliverable (Administrative Final IS/MND and RTC, MMRP, Final IS/MND and RTC, and NOD).
- AECOM will pay County and CDFW filing fees.

2.8 Project Management/Meetings/Hearings: For the purpose of this proposal, AECOM assumes that three (3) meetings/hearings will be necessary during the IS/MND process. It is also assumed that teleconference meetings will take place between Valley District and AECOM staff to ensure close coordination and monitoring of the project's progress. Additional meetings or public hearing attendance can be performed on a time and material basis. AECOM's Project Manager will work to verify that tasks identified within this scope of work are running on time and within budget and all

deliverables prepared in support of the proposed project are technically sound. The Project Manager will be the management liaison among the project team and Valley District for communication of issues, transmittal of comments, financial management (i.e., invoices), and other project matters.

Task 2.8 Work Product(s)

- Attend three meetings during the CEQA process.

Task 3 – Preliminary and Final Design Services

- 3.1 Preliminary Design Report:** AECOM will prepare a Preliminary Design Report (PDR) to support the final design of the proposed pipeline improvements. The report will provide the basis of design, design criteria, 30%-level preliminary design plans, a specifications table of contents, and a preliminary opinion of probable construction costs. AECOM will submit an electronic copy of the draft and final reports to Valley District in PDF format. For budgeting purposes, we have assumed one round of review and comment by Valley District and electronic PDF deliverables.
- 3.2 Geotechnical Interpretive Report:** AECOM will prepare a Geotechnical Interpretive Report (GIR) to support the final design of the proposed pipeline improvements. The report will rely on the data presented in our Geotechnical Investigation Report to provide an interpretation of subsurface conditions for the proposed tunnel. Conclusions and geotechnical recommendations and design parameters will be presented for each portion of the tunnel and launch and receiving shafts. The GIR will be part of the contract documents that will be used by the Contractor to develop means and methods for the tunnel, shaft, and carrier pipeline installation. AECOM will submit an electronic copy of the draft and final reports to Valley District in PDF format. For budgeting purposes, we have assumed one round of review and comment by Valley District and electronic PDF deliverables.
- 3.3 Construction Plans:** AECOM will prepare detailed construction plans in AutoCAD 2022 using NCS V4.0 layering standards. Construction plans will be prepared on Valley District standard full-size sheet with Valley District title block. Pipeline plan and profile sheets will be prepared of two-strip (e.g. profile over plan view) at a scale of 1"=40' horizontal and 1"=4' vertical. The horizontal and vertical control will be established with NAD83 and NAVD88 survey standards, respectively. We assume that the construction plans will consist of thirty (30) sheets and will include 90%, 100%, and Final Submittals with one round of review for each deliverable. We will include one interim submittal between the 30% and 90% deliverables so that the Valley District staff have an opportunity to review the set during between these submittals. We have assumed that electronic PDF deliverables for the plans will be acceptable.
- 3.4 Construction Specifications:** AECOM will prepare the specifications for the project in standard Valley District format and complete Valley District templates for the bidding and contract requirements section of the manual. AECOM will use the latest version of Valley District's Specification templates for the front-end documents related to bidding, agreements, general provisions, and special provisions. The special provisions will be tailored for the project. The technical specifications will be prepared in CSI format and will include an appendix with the NPDES dewatering permit, encroachment permits, standard details, and other relevant information for the Contractor. We assume the specifications will include 90%, 100%, and Final Submittals with one round of review for each deliverable. We have assumed that electronic PDF deliverables for the specification will be acceptable.
- 3.5 Opinion of Probable Construction Cost:** AECOM will provide Valley District with an engineer's estimate of probable construction costs in electronic PDF format for the 90% 100% and final submittals. AECOM will incorporate and address comments from Valley District related to the cost estimate. Construction costs will be developed by AECOM's professional cost estimator certified by the Association for the Advancement of Cost Engineering International (AACE). The estimator will use a variety of resources, including vendor quotes, Caltrans Cost Data Books, recent Valley District

construction bids, and bids from other local tunneling and conveyance projects that AECOM has recently designed.

- 3.6 **Project Schedule:** AECOM will submit project schedule updates in electronic PDF format with each stage of final design submittal, include a construction schedule. The project schedule will reflect coordination items, submittal milestones, critical path items, Valley District review times, shop drawing approvals, manufacturing, delivery, seasonal weather impacts, and affected construction projects. AECOM will prepare the schedule in Microsoft Project format.

Phase 4 - Bid Phase Services

- 4.1 **Bid Phase Meetings:** We have assumed that AECOM will attend one (1) in-person pre-bid meeting at the Valley District office with potential bidders. AECOM will answer technical questions that come up during the meeting either at the meeting or afterwards by formal written responses.
- 4.2 **Bid Addenda:** During the bidding period, AECOM will provide bidding support and assistance as it pertains to the contract documents. For budgetary purposes, we have assumed several hours in our fee estimate to answer questions from prospective bidding contractors and assist Valley District in providing information and clarification of the bid documents. AECOM will consult with Valley District to address concerns or answer their questions in support of administering the bid process. AECOM has budgeted for two (2) addenda to the construction plans and/or specifications for prospective bidders, if requested by Valley District.
- 4.3 **Contractor Requests for Information Responses:** AECOM will provide Requests for Information (RFI) responses in a timely manner. We have assumed that AECOM will provide responses for fifteen (15) contractor RFIs during the bid phase. AECOM will maintain a log for all RFI responses. We assume that all RFI responses will be provided electronically via email or with construction management software (i.e., paperless).
- 4.4 **Minor Plan Revisions:** AECOM will provide construction plan revisions during the bid phase. Plan revisions may be required to account for unforeseen site conditions and field changes that may be requested by the Valley District and other project stakeholders. We have assumed that eighty (80) hours of staff labor will be required to address plan revisions.

Estimated Cost Breakdown of Total Fee
San Bernardino Valley Municipal Water District
Engineering Services for the Foothill Pipeline Crossing at City Creek
August 2, 2023

Task No.	Task Description	AECOM LABOR ¹									AECOM TOTAL HOURS	AECOM LABOR COSTS	AECOM DIRECT COSTS & MATERIALS ³	TOTAL
		Principal-in-Charge	Project Manager	Principal Engineer	Senior Project Engineer / Geologist / Scientist	Project Engineer / Geologist / Scientist / Estimator	Senior Staff Engineer / Geologist / Scientist / CAD	Staff Engineer / Geologist / Scientist / CAD	Tech Editor / Senior Staff Planner	Project Admin / Staff Planner				
		\$325	\$315	\$375	\$260	\$225	\$180	\$140	\$130	\$110				
Task 1 - Project Management and Administration														
1.1	Project Management Services	4	120					60	60		244	\$55,300		\$55,300
1.2	Project Meetings (12 Monthly Meetings, 4 Design Review Meetings)	16	64	64	64	64					272	\$80,400	\$500	\$80,900
Subtotal Task 1		20	184	64	64	64		60	60		516	\$135,700	\$500	\$136,200
Task 2 - Permitting and CEQA Services														
Permitting														
2.1	Encroachment Permits		4			60	40	60	8		172	\$31,400		\$31,400
2.2	Dewatering Permit		4					16	60	4	84	\$11,740	\$10,000	\$21,740
CEQA Studies and Documentation														
2.3	CEQA Kick-off Meeting and Project Definition/Description				6		28	8	4	24	70	\$10,880		\$10,880
2.4	CEQA Preparation of Technical Analyses													
	Air Quality/Greenhouse Gas Emissions/Energy					2	4	95	4		105	\$14,990		\$14,990
	Biological Resources					2	10	20	4		36	\$5,570		\$5,570
	Wetlands					2	10	20	4		36	\$5,570		\$5,570
	Cultural Resources					2	8	30	48	40	128	\$16,730		\$16,730
	Noise Vibration					2	8	30	48	40	128	\$16,730		\$16,730
2.5	CEQA Preparation of IS/MND					20	52	32	20	90	214	\$30,840		\$30,840
2.6	CEQA Preparation and Circulation of Draft IS/MND					8	24	4	2	28	66	\$10,020		\$10,020
2.7	CEQA Preparation and Circulation of Final IS/MND and Response to Comments													
	Organize and Annotate Comments Received					4	4	2	2	10	22	\$3,260		\$3,260
	Prepare Responses to Comments					8	20	4	4	20	56	\$8,680		\$8,680
	Prepare Mitigation Monitoring and Reporting Program					2	8		2		12	\$2,150		\$2,150
	Prepare Final IS/MND and RTC					2	8		2	10	22	\$3,250		\$3,250
	Notice of Determination					1	1			8	10	\$1,285		\$1,285
2.8	CEQA Project Management/Meetings/Hearings/Reproduction					44	16	12			72	\$14,460	\$6,670	\$21,130
Subtotal Task 2			8		6	159	241	333	212	274	1,233	\$187,555	\$16,670	\$204,225
Task 3 - Preliminary and Final Design Services														
3.1	Preliminary Design Report and 30% Plans	4	20	16	40	80	200	120	16		496	\$96,880		\$96,880
3.2	Geotechnical Interpretive Report		2	4	40	24	60	24	12		166	\$33,650		\$33,650
3.3	Construction Plans (90%, 100%, Final Submittals - 30 Sheets)	8	120	120	80	160	400	400	16		1304	\$272,280		\$272,280
3.4	Construction Specifications		40	40	20	200			40		340	\$83,000		\$83,000
3.5	Opinion of Probable Construction Cost		4	4		80	60		4		152	\$32,080		\$32,080
3.6	Construction Schedule		12	8		20					40	\$11,280		\$11,280
Subtotal Task 3		12	198	192	180	564	720	544	88		2,498	\$529,170		\$529,170
Task 4 - Bid Phase Services														
4.1	Bid Phase Meetings (1 Pre-Bid Meeting)		4		4						8	\$2,300	\$100	\$2,400
4.2	Bid Addenda (Assume 2 addendums)		4	4	4	8		20			40	\$8,400		\$8,400
4.3	Bidder Requests-for-Information (15 RFIs)		8	8	8	12	12	12			60	\$14,140		\$14,140
4.4	Minor Plan Revisions (80 Hours)		8			12		48	12		80	\$13,500		\$13,500
Subtotal Task 4			24	12	16	32	12	80	12		188	\$38,340	\$100	\$38,440
TOTAL		32	414	268	266	819	973	1,017	372	274	4,435	\$890,765	\$17,270	\$908,035

Notes & Assumptions:

- 1.) Labor hours for meetings are included in the individual tasks.
- 2.) Direct Costs / Materials include costs such as geotechnical borings, lab testing, mileage to meetings/site, courier fees, and document reproduction costs.



DATE: August 8, 2023

TO: Board of Directors' Workshop – Resources/Engineering

FROM: Greg Woodside, Chief of Planning and Watershed Resilience
Wen Huang, Chief Operating Officer/Assistant General Manager

SUBJECT: Approval of Cost Share Agreement with Western MWD for Forecast Informed Reservoir Operations (FIRO) Study

Staff Recommendations

Approve the Cost Share Agreement with Western Municipal Water District for Forecast Informed Reservoir Operations (FIRO) at Seven Oaks Dam and authorize the CEO/General Manager and House Counsel to make any minor, technical, or non-substantive changes to the Agreement as appropriate.

Summary

In September 2022, the Board approved a contract with the Scripps Institution of Oceanography to conduct a scoping study and preliminary technical studies on FIRO at Seven Oaks Dam. This work is underway. District staff has worked with Western Municipal Water District (Western) to prepare a proposed Cost Share Agreement for the costs associated with the Scripps contract.

Background

FIRO is a reservoir-operations strategy that better informs decisions to retain or release water by integrating additional flexibility in operations policies and rules with enhanced monitoring and improved weather and water forecasts (American Meteorological Society, 2020). FIRO utilizes weather forecasting, streamflow modeling, and watershed monitoring to help water managers selectively retain or release water from reservoirs that reflects current and forecasted conditions, and that adapts to weather extremes.

The work to be conducted by Scripps, the District and our partners for FIRO at Seven Oaks Dam includes forming a Steering Committee. The Steering Committee consist of highly technical individuals with expertise in dam operations, weather and streamflow forecasting, water management, environmental resources, and other technical issues and representing key agencies and partners. Scripps work includes conducting Steering Committee meetings, preparing the Work Plan for the Viability Assessment of FIRO, and related technical studies.

The Steering Committee for FIRO at Seven Oaks Dam held its first meeting on May 15, 2023. The Committee received information on various topics, including a summary of recent studies conducted by Dr. Marty Ralph’s scientists at the Center for Western Weather and Water Extremes (CW3E) at the Scripps Institution of Oceanography. The Committee also discussed how the Committee will function and the timeline for development of the Work Plan.

The proposed Seven Oaks Dam FIRO Steering Committee members are:

- San Bernardino Valley (Heather Dyer; co-chair)
- Scripps Institution of Oceanography/CW3E (Dr. Marty Ralph; co-chair)
- USACE Engineer Research and Development Center (Dr. Cary Talbot; co-chair)
- USACE Los Angeles District (Tim Fairbank)
- National Weather Service (Jayme Laber)
- California Department of Water Resources (Mike Anderson)
- US Fish and Wildlife Service (Rollie White, Palm Springs)
- Orange County Water District (Adam Hutchinson)
- USACE Engineer Research and Development Center (Joe Forbis)
- Orange County Public Works (James Tyler)
- San Bernardino County Public Works (Brendon Biggs, Michael Fam)
- San Bernardino Valley Water Conservation District (Betsy Miller)
- Western Municipal Water District (Mallory Gandara)

San Bernardino Valley and Western executed a Cost-Sharing Agreement for Seven Oaks Enhanced Recharge Project dated July 17, 2013, (“2013 Cost-Share Agreement”), which provides for cost-sharing between Western and San Bernardino Valley for costs associated with the Enhanced Recharge Project, consistent with the Judgment in Western Municipal Water

District of Riverside County v. East San Bernardino County Water District, et al., Riverside County Superior Court Case No. 78426 (1969) (“Judgment”). The proposed FIRO Cost Share Agreement follows a similar framework as the Cost-Sharing Agreement for the Enhanced Recharge Project.

The proposed FIRO Cost Share Agreement with Western splits the cost of the Scripps/UC San Diego FIRO contract per the Western-San Bernardino Watermaster cost allocation formula of 72.05% for San Bernardino Valley and 27.95% for Western. The cost share is summarized in the table below:

Item	Cost
UC San Diego FIRO Study	\$703,513
San Bernardino Valley Cost Share (72.05%)	\$506,881
Western (representing Plaintiffs) Cost Share (27.95%)	\$196,632

District Strategic Plan Application

FIRO aligns with the San Bernardino Valley Strategic Plan Foundation and Goals and Objectives by developing additional supplies for stormwater capture at Seven Oaks Dam for recharge into the Bunker Hill Basin. Implementation of FIRO supports Goal 1.1 ‘Ensure Agency facilities, infrastructure, assets, and habitat investments are resistant or resilient to impacts from changing climate conditions.’ and its related objective ‘Develop a comprehensive strategy to identify long-term uncertainties and adaptive management measures to ensure reliable water supply and protection of habitat investments under climate change conditions.’ FIRO also supports Goal 2.2 ‘Increase local water supplies.’ and the related objective ‘Establish water conservation as an authorized use of Seven Oaks Dam.’

Fiscal Impact

The funding for the study is included in the approved FY 2023-2024 General Fund Budget. This Cost Share Agreement will formalize the reimbursement of 27.95% of the costs for the study.

Attachment

- 1) Proposed Cost Share Agreement

Heather P. Dyer
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408

Craig D. Miller
Western Municipal Water District
14205 Meridian Parkway
Riverside, CA 92518

Re: Cost Sharing Letter Agreement for the Forecast-Informed Reservoir
Operations (FIRO) Study at Seven Oaks Dam

Western Municipal Water District ("Western"), the San Bernardino Valley Municipal Water District ("San Bernardino Valley") and the San Bernardino Valley Water Conservation District ("Conservation District") executed an "Agreement to Develop and Operate Enhanced Recharge Facilities" ("Enhanced Recharge Lease Agreement") dated October 1, 2012.

In cooperation with San Bernardino Valley (non-federal sponsor), the Forecast-Informed Reservoir Operation (FIRO) process is led jointly by the U.S. Army Engineer Research and Development Center (ERDC) and the Center for Western Weather and Water Extremes at UC San Diego Scripps Institution of Oceanography (Scripps). The Corps of Engineers has secured funding from Congress for their agency's portion of the proposed work and received necessary support from Headquarters and the LA District Commander to move forward with the Seven Oaks Dam project. The non-federal sponsor is responsible for funding the Scripps portion of the costs, which totals approximately \$703,513 over two years, excluding the optional task included in their proposal. Completing the scoping study and technical analyses related to FIRO would be a major step towards the goal of optimizing the dam's operation to maximize capture of water released from the dam (i.e., water conservation) and establishing the pathway for updating the Seven Oaks Dam Water Control Manual. San Bernardino Valley and Western believe that pursuing FIRO, in collaboration with ERDC, Scripps, the local flood control districts, and other agencies that will serve on the interdisciplinary Steering Committee is the ideal strategy to protect and increase the local water supply reliability.

To effectively capture the water downstream in the local recharge basins, releases from the dam need to be approximately 500 cubic feet per second (cfs) or less. The current operation of the dam is based on a Water Control Manual that dictates releases based on water levels behind the dam and/or a date on the calendar, not considering upcoming weather patterns or our ability to divert the water downstream. Pursuing FIRO for Seven Oaks Dam brings into the equation hydrometeorological conditions (both rain and snow) upstream of the dam and other important variables while facilitating collaborative problem solving by many agencies.

This Cost Sharing Letter Agreement ("Agreement") sets forth the understanding between San Bernardino Valley and Western regarding the scope of work and associated costs of the FIRO

Study at Seven Oaks Dam. San Bernardino Valley will contract directly with The Regents of the University of California, a California Corporation on behalf of Scripps at the University of California, San Diego campus (“UCSD”) to lead the development of the UCSD FIRO study.

Western and San Bernardino Valley executed a Cost-Sharing Agreement for Seven Oaks Enhanced Recharge Project dated July 17, 2013, (“2013 Cost-Share Agreement”), provides for cost-sharing between Western and San Bernardino Valley for costs associated with the Enhanced Recharge Project, consistent with the Judgment in Western Municipal Water District of Riverside County v. East San Bernardino County Water District, et al., Riverside County Superior Court Case No. 78426 (1969) (“Judgment”). Western and San Bernardino Valley will continue to comply with the terms of the 2013 Cost-Share Agreement.

The 2013 Cost-Share Agreement continues Western’s long-standing practice of representing the Plaintiffs in the Judgment and entering into agreements with San Bernardino Valley regarding cost sharing for the Enhanced Recharge Project while subsequently entering into separate agreements with the Plaintiffs to provide reimbursement of costs and distribution of benefits to the Plaintiffs. This cost sharing letter agreement for the UCSD FIRO Study implements the 2013 Cost-Share Agreement as it pertains to development of additional water resources for the Enhanced Recharge Project. As such, San Bernardino Valley will invoice Western on a quarterly basis, and Western will pay San Bernardino Valley within 30 days after receipt of such invoices, for the Plaintiffs’ share for the development of the UCSD FIRO study per the Western-San Bernardino Watermaster cost allocation formula of 72.05% for San Bernardino Valley and 27.95% for the Plaintiffs.

San Bernardino Valley and Western hereby agree to share the total cost of the UCSD FIRO Study as provided in the project budget and according to the provisions set forth in this Agreement. The scope of work shall consist of that work referenced in UCSD’s proposal dated, September 1, 2022, and executed agreement between San Bernardino Valley and UCSD dated November 14, 2022. Should additional work be necessary for this effort in excess of the project budget outlined below, San Bernardino Valley and Western shall seek a revised cost estimate and enter into an amendment to this Agreement to approve the cost revisions in writing. Western shall also notify the Plaintiffs in writing of the change in scope.

Project Budget:

Item	Cost
UCSD FIRO Study	\$703,513
San Bernardino Valley Cost Share (72.05%)	\$506,881
Western (representing Plaintiffs) Cost Share (27.95%)	\$196,632

1. Effective Date, Term and Termination

This Agreement shall be effective on the date of full execution of this Agreement by both San Bernardino Valley and Western (“Effective Date”). The term of this Agreement shall be from the Effective Date to the date of completion of performance of the FIRO Study.

San Bernardino Valley and Western may elect to extend the term if both parties agree. Either Party may terminate this agreement on thirty (30) days written notice to the other Party. In the event of termination prior to completion of the FIRO study, the terminating Party shall pay its share of any study costs that had been authorized by the date of the notice of termination. The Parties acknowledge and agree that each has existing obligations under the Judgment and that rescinding participation in the cost share for the FIRO study may impact their potential additional new conservation generated by FIRO under the Judgment. All fees due as of the date of said notice shall be paid in accord with the terms of this Agreement.

2. General Provisions

(a) Indemnification

Each Party ("Indemnitors") hereby agrees to defend, indemnify and hold free and harmless the other Parties ("Indemnitees") from and against any and all liability, expense, including defense costs and legal fees, and claims for damages of any nature whatsoever, arising from or connected with Indemnitors' activities under this Agreement.

(b) Notices

Correspondence to be given to any Party may be sent by first-class mail, addressed, and delivered as set forth below in the signature blocks for each Party.

(c) Representation of Authority

Each Party represents to the other that it has the authority to enter into this Agreement and that the individual signing this Agreement on behalf of their respective Parties has the authority to execute this Agreement and to bind their respective Parties to the terms and conditions of this Agreement.

(d) Counterparts

This Agreement may be executed in several counterparts, all or any of which shall be regarded for all purposes as one original and shall constitute and be but one and the same instrument.

(e) Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of California.

(f) Cooperation

The Parties acknowledge that they are entering into an Agreement in which the cooperation of all Parties will be required, including the execution of necessary further documents. The Parties agree to cooperate in good faith with each other and submit timely documents for the benefit of the FIRO Study.

BY SIGNING BELOW, THE PARTIES AGREE TO BE BOUND BY THE PROVISIONS OF THIS AGREEMENT

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
Heather P. Dyer, CEO/General Manager

Dated: _____

380 East Vanderbilt Way
San Bernardino, CA 92408

WESTERN MUNICIPAL WATER DISTRICT

By: _____
Craig D. Miller, General Manager

Dated: _____

14205 Meridian Parkway
Riverside, CA 92518