

**LAS VIRGENES - TRIUNFO  
JOINT POWERS AUTHORITY  
AGENDA**

**4232 Las Virgenes Road, Calabasas, CA 91302**

**Members of the public wishing to address the Las Virgenes-Triunfo Joint Powers Authority (JPA) Board of Directors are advised that a statement of Public Comment Protocols is available from the Clerk of the Board. Prior to speaking, each speaker is asked to review these protocols, complete a speakers' card, and hand it to the Clerk of the Board. Speakers will be recognized in the order the cards are received.**

**The Public Comments agenda item is presented to allow the public to address the Board on matters not on the agenda. The public may also present comments on matters on the agenda; speakers for agendized items will be recognized at the time the item is called up for discussion.**

**Materials prepared by the JPA in connection with the subject matter on the agenda are available for public inspection at 4232 Las Virgenes Road, Calabasas, CA 91302. Materials prepared by the JPA and distributed to the Board during this meeting are available for public inspection at the meeting or as soon thereafter as possible. Materials presented to the Board by the public will be maintained as part of the records of these proceedings and are available upon request to the Clerk of the Board.**

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5:00 PM

March 4, 2019

**PLEDGE OF ALLEGIANCE**

**1 CALL TO ORDER AND ROLL CALL**

**2 APPROVAL OF AGENDA**

**3 PUBLIC COMMENTS**

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

**4 CONSENT CALENDAR**

Matters listed under the Consent Calendar are considered to be routine, non-controversial and normally approved with one motion. If discussion is requested by a member of the Board on any Consent Calendar item, or if a member of the public wishes to comment on

an item, that item will be removed from the Consent Calendar for separate action.

**A Minutes: Regular Meeting of February 4, 2019 (Pg. 4)**

Approve.

**B Budget Planning Calendar for Fiscal Year 2019-20 (Pg. 10)**

Receive and file the Budget Planning Calendar for Fiscal Year 2019-20.

**5 ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS**

**A Pure Water Project Las Virgenes-Triunfo: Visitor Experience**

**6 ACTION ITEMS**

**A Tapia WRF Summer Season Waste Load Allocation Compliance Project: Mitigated Negative Declaration and Preliminary Design Report (Pg. 12)**

Adopt the Mitigated Negative Declaration, including a Mitigation Monitoring and Reporting Program; authorize the Administering Agent/General Manager to file a Notice of Determination with the County Clerk; and receive and file the Preliminary Design Report for the Tapia Water Reclamation Facility Summer Season Waste Load Allocation Compliance Project.

**B Rancho Solar Generation Project Phase II: Mitigated Negative Declaration (Pg. 240)**

Adopt the Mitigated Negative Declaration and authorize the Administering Agent/General Manager to file a Notice of Determination with the County Clerk for the Rancho Solar Generation Project Phase II.

**7 BOARD COMMENTS**

**8 ADMINISTERING AGENT/GENERAL MANAGER REPORT**

**9 FUTURE AGENDA ITEMS**

**10 INFORMATION ITEMS**

**A State and Federal Legislative Update (pg. 248)**

**B Phase 2 White Paper on Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions: Award (Pg. 260)**

**C Pure Water Project Las Virgenes-Triunfo: Preliminary Evaluation of Stormwater Diversion Opportunities (Pg. 318)**

**11 PUBLIC COMMENTS**

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

**12 CLOSED SESSION**

**A Conference with Legal Counsel – Existing Litigation (Government Code Section 54956.9(a)):**

**13 ADJOURNMENT**

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

**LAS VIRGENES – TRIUNFO  
JOINT POWERS AUTHORITY  
MINUTES  
REGULAR MEETING**

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5:00 PM

February 4, 2019

**PLEDGE OF ALLEGIANCE**

The Pledge of Allegiance to the Flag was led by Lynda Lo-Hill.

**1. CALL TO ORDER AND ROLL CALL**

The meeting was called to order at **5:00 p.m.** by Chair Orkney in the Board Room at Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road in Calabasas, California. Josie Guzman, Clerk of the Board, conducted the roll call.

Present: Directors Caspary, Lewitt, Lo-Hill, Orkney, Polan, Renger, Shapiro, Tjulander, and Wall.

Absent: Director Pan

**2. APPROVAL OF AGENDA**

Administering Agent/General Manager David Pedersen requested that Item 12A be removed from the agenda as there was no update.

Director Caspary moved to approve the agenda with the removal of Item 12A. Motion seconded by Director Renger. Motion carried by the following vote:

AYES: Caspary, Lewitt, Lo-Hill, Orkney, Polan, Renger, Shapiro, Tjulander, Wall

NOES: None

ABSTAIN: None

ABSENT: Pan

**3. PUBLIC COMMENTS**

None.

**4. CONSENT CALENDAR**

**A Minutes: Regular Meeting of January 7, 2019**

Director Lo-Hill moved to approve the Consent Calendar. Motion seconded by Director Tjulander. Motion carried by the following vote:

AYES: Caspary, Lewitt, Lo-Hill, Orkney, Polan, Renger, Shapiro, Tjulander, Wall

NOES: None

ABSTAIN: None

ABSENT: Pan

**5. ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS**

**A Pure Water Project Las Virgenes-Triunfo: Update**

Administering Agent/General Manager David Pedersen noted that nearly 90 percent of the plans and specifications have been completed for the Pure Water Demonstration Project. He stated that an item would be presented at the March 4th meeting to discuss the visitor experience, followed by approval of a call for bids at the April 1st meeting and recommendation to award a construction contract at the June 3rd meeting. He also stated that construction could begin in late summer, and commissioning of the facility would occur in late November or early December. He also reported that staff submitted a request for a time extension to the U.S. Bureau of Reclamation related to the grant in order to produce testing results. He noted that staff met with representatives from Camrosa Water District, the City of Thousand Oaks, and Calleguas Municipal Water District to discuss preparation of a joint study and draft scope of work for a brine conveyance and disposal strategy. He stated that the next step would be to select qualified consultants to submit proposals, which would be presented to the JPA for consideration of award together with the terms of cooperative funding amongst the parties. He also reported that the annual Washington D.C. lobbying trip would be scheduled the first week in April to discuss the progress of the Pure Water Project Las Virgenes-Triunfo (Pure Water Project). He noted that a list of grant applications for the Pure Water Project was provided to the Board.

**B Financial Review: Second Quarter of Fiscal Year 2018-19**

Angela Saccareccia, Finance Manager, provided a PowerPoint presentation. She responded to questions related to recycled water sales and reimbursement from the JPA's insurance carrier and the Federal Emergency Management Agency (FEMA) related to expenses stemming from the Woolsey Fire.

**6. ACTION ITEMS**

**A Rancho Solar Generation Project Phase II: Additional Reimbursable Payment to SCE for Interconnection Facility**

**Authorize the Administering Agent/General Manager to increase the reimbursable payment amount to Southern California Edison by \$189,998.90,**

**from \$208,557.38 to \$398,556.28, and appropriate the additional amount for the interconnection facility costs associated with the Rancho Solar Generation Project Phase II.**

Administering Agent/General Manager David Pedersen presented the report.

Director Renger moved to approve Item 6A. Motion seconded by Director Polan.

Staff responded to questions related to the time extension for federal rebates, Southern California Edison's responsibility for financial risk for this project, and the Power Purchase Agreement.

Motion carried by the following vote:

AYES: Caspary, Lewitt, Lo-Hill, Orkney, Polan, Renger, Shapiro, Tjulander, Wall

NOES: None

ABSTAIN: None

ABSENT: Pan

#### **B Tapia Process Air Improvements Project: Construction Award**

**Award a construction contract to Cushman Contracting Corporation, in the amount of \$3,267,000, and reject all remaining bids; authorize the Administering Agent/General Manager to approve a change of scope to Pacific Advanced Civil Engineering, in the amount of \$122,720, for support services during construction, and to MSO Technologies, in the amount of \$53,200, for SCADA integration services; and appropriate an additional \$1,989,126 for the Tapia Process air Improvements Project.**

Administering Agent/General Manager David Pedersen presented the report. He noted that the correct amount for additional appropriation would be \$1,989,126, as opposed to \$2,436,293 as stated in the report.

Director Caspary moved to approve Item 6B. Motion seconded by Director Tjulander.

Eric Schlageter, Senior Engineer, responded to a question related to monitoring for small particles in the process air pipeline.

Motion carried by the following vote:

AYES: Caspary, Lewitt, Lo-Hill, Orkney, Polan, Renger, Shapiro, Tjulander, Wall

NOES: None

ABSTAIN: None

ABSENT: Pan

**7. BOARD COMMENTS**

Chair Orkney commended staff and the consultant on their efforts in preparing the Regulatory Pathway for Surface Water Augmentation Technical Memorandum.

**8. ADMINISTERING AGENT/GENERAL MANAGER REPORT**

Administering Agent/General Manager David Pedersen reported that 4.75 inches of rain was measured at the Tapia Water Reclamation Facility. He noted that there were no significant damages or operational challenges at JPA-owned facilities. He also noted that peak flow was measured to be 26.25 million gallons per day (MGD) at Tapia and 7,900 cubic feet per second (CFS) in Malibu Creek. He also noted that the Quarterly Wastewater, Recycled Water, and Watershed Tour would be held on February 9th with Directors Caspary and Tjulander hosting, and the next JPA meeting would be held on March 4th at Oak Park Library. He stated that plans were underway for the annual Washington D.C. lobbying trip scheduled April 1 through 5, 2019, and he recommended that the Board consider canceling the April 1st JPA Regular Meeting and schedule a Special Meeting on March 28th. The Board agreed.

**9. FUTURE AGENDA ITEMS**

None.

**10. INFORMATION ITEMS**

**A State and Federal Legislative Update**

**B Pure Water Project Las Virgenes – Triunfo: Regulatory Pathway for Surface Water Augmentation**

Administering Agent/General Manager David Pedersen responded to questions regarding the current methods used for treating pharmaceuticals and other contaminants in potable water and wastewater.

Bryan Trussell, representing Trussell Technologies, responded to questions related to monitoring for contaminants of emerging concern and testing for nanoparticles and microplastics.

David Lippman, Director of Facilities and Operations, responded to a question regarding the construction timeline by stating that construction was expected to begin in 2026 or 2027. He stated that staff would provide an updated timeline at a future Board Meeting.

**C Woolsey Fire Response and Recovery Effort: End of Emergency**

Director Polan moved to receive and file the Information Items. Motion seconded by Director Renger. Motion carried by the following vote:

AYES: Caspary, Lewitt, Lo-Hill, Orkney, Polan, Renger, Shapiro, Tjulander, Wall

NOES: None

ABSTAIN: None

ABSENT: Pan

**11. PUBLIC COMMENTS**

None.

**12. CLOSED SESSION – (This item was removed from the agenda)**

**A Conference with Legal Counsel – Existing Litigation (Government Code Section 54956.9(a)).**

Zusser Company, Inc., v. Las Virgenes Municipal Water District

**13. ADJOURNMENT**

Seeing no further business to come before the Board, the meeting was duly adjourned at **6:13 p.m.**



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Janna Orkney, Chair

ATTEST:

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Jay Lewitt, Vice Chair

March 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

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**Subject : Budget Planning Calendar for Fiscal Year 2019-20**

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**SUMMARY:**

This item provides the schedule for key activities associated with the development and adoption of the Fiscal Year 2019-20 Budget, which is the second year of the two-year budget cycle.

**RECOMMENDATION(S):**

Receive and file the Budget Planning Calendar for Fiscal Year 2019-20.

**FISCAL IMPACT:**

No

**ITEM BUDGETED:**

No

**FINANCIAL IMPACT:**

There is no financial impact associated with this action.

**DISCUSSION:**

The attached schedule outlines the timeframe and process to review and adopt the Budget for Fiscal Year 2019-20. As the second year of the two-year budget cycle, the focus of the process will be on significant changes to the existing two-year budget plan.

Prepared by: Angela Saccareccia, Finance Manager

**ATTACHMENTS:**

Budget Planning Calendar

**Las Virgenes - Triunfo Joint Powers Authority**  
**FY 2019-20 Budget Planning Calendar**

Date	Board Activity	Description
3/4/2019	JPA Board Meeting	Budget Process review - distribute Budget Planning Calendar
3/28/2019	JPA Board Meeting	Budget Workshop- Significant Changes
3/28/2019	JPA Board Meeting	5 Yr Infrastructure Investment Program (IIP) presented for review
4/29/2019	JPA Board Meeting	Preliminary Budget provided to Board
6/3/2019	JPA Board Meeting	JPA Budget Adoption

March 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

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**Subject : Tapia WRF Summer Season Waste Load Allocation Compliance Project:  
Mitigated Negative Declaration and Preliminary Design Report**

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**SUMMARY:**

On May 7, 2018, the JPA Board approved a Technical Memorandum that analyzed various options to achieve summertime compliance with NPDES permit requirements for the Tapia Water Reclamation Facility and selected breakpoint chlorination with the discharge of potable water to Malibu Creek as the preferred alternative to comply with Tapia's summer season waste load allocation.

The objective of breakpoint chlorination and the discharge of potable water to Malibu Creek is to achieve compliance with the future summer season NPDES permit limits (1.0 mg/L total nitrogen and 0.1 mg/L total phosphorous) for Malibu Creek, which become effective on May 16, 2022. Potable water averages 1.2 mg/L of total nitrogen, and the breakpoint chlorination process will bring it into compliance with the discharge limits. Stantec Consulting Services, Inc. has recently completed a Preliminary Design Report and Mitigated Negative Declaration for the project to achieve regulatory compliance.

The Preliminary Design Report recommends extending a potable water main down Malibu Canyon Road into Tapia, where it would terminate at the existing final effluent overflow structure. Modifications would be made to the effluent structure, including the installation of baffling, analyzers, chemical storage tanks and new piping to allow breakpoint chlorination to occur in the overflow structure before discharge to Malibu Creek.

The CEQA environmental review process identified potentially significant impacts from the project on biological resources, cultural resources and due to noise and traffic. Mitigation measures through best management practices, workforce education, construction surveys, biological avoidance and monitoring were developed to address the potential impacts and reduce them to be "less than significant."

At the meeting, Stantec representatives will review the Preliminary Design Report, Mitigated Negative Declaration and comments received during the review period. Attached for reference are copies of the Preliminary Design Report and Mitigated Negative Declaration, including a Mitigation Monitoring and Reporting Program.

**RECOMMENDATION(S):**

Adopt the Mitigated Negative Declaration, including a Mitigation Monitoring and Reporting

Program; authorize the Administering Agent/General Manager to file a Notice of Determination with the County Clerk; and receive and file the Preliminary Design Report for the Tapia Water Reclamation Facility Summer Season Waste Load Allocation Compliance Project.

**FISCAL IMPACT:**

No

**ITEM BUDGETED:**

Yes

**FINANCIAL IMPACT:**

There is no financial impact associated with this action.

**DISCUSSION:**

In June 2017, the Los Angeles Regional Water Quality Control Board approved a new NPDES permit for Tapia. The limits established by the permit for total nitrogen (TN) and total phosphorous (TP) discharged to Malibu Creek are seasonal. The winter season (November 16th to April 14th) limits of 4.0 mg/L TN and 0.20 mg/L TP become effective on November 16, 2030. The JPA's plan for compliance with the winter season TMDL nutrient limits will be achieved through the Pure Water Project Las Virgenes-Triunfo.

Tapia is prohibited from discharging to Malibu Creek from April 15th until November 15th each year. However, there are three specific exceptions to the discharge prohibition. One of these exceptions is a requirement to augment flow in Malibu Creek such that 2.5 cubic feet per second of maximum total flow is measured at the downstream Los Angeles County Gauging Station F-130-R. This requirement is in place to sustain endangered species habitat during dry periods. To comply with this requirement, staff regularly monitors the flow at the gauging station and, when the flow drops below 2.5 cubic feet per second, Tapia's effluent is introduced into the creek in increasing increments until the desired flow at the gauging station is reached. In 2018, 165 million gallons of final effluent was discharged to maintain the 2.5 cubic feet per second flow requirement.

The summer season (April 15th to November 15th) limits are 1.0 mg/L TN and 0.10 mg/L TP, which become effective on May 16, 2022. In February 2016, Stantec was engaged to prepare a Technical Memorandum, a Preliminary Design Report, and a CEQA determination. On May 7, 2018, the JPA Board approved a Technical Memorandum that selected breakpoint chlorination with the discharge of potable water to Malibu Creek as the preferred method to comply with Tapia's summer season waste load allocation.

Stantec has recently completed the Preliminary Design Report and required environmental document for the project. The Preliminary Design Report recommends extending a potable waterline south on Malibu Canyon Road, across Malibu Creek via the existing bridge and into Tapia. The pipeline would turn west at the entrance to Tapia and continue to the existing final effluent overflow structure. Modifications would be made to the effluent structure, including the installation of baffling, analyzers, chemical storage tanks and piping to allow breakpoint chlorination to occur in the overflow structure before discharge to Malibu Creek.

The CEQA environmental review process identified potentially significant impacts from the project on biological resources, cultural resources and due to noise and traffic. Mitigation measures through best management practices, workforce education, construction surveys, biological avoidance and monitoring were developed to address the potential impacts and reduce them to be “less than significant.” Comments received during the CEQA review period will be reviewed by Stantec representatives at the JPA Board meeting.

Prepared by: Brett Dingman, Water Reclamation Manager

**ATTACHMENTS:**

Preliminary Design Report

Mitigated Negative Declaration

Mitigation Monitoring and Reporting Program



## Preliminary Design Report

Summer Flow Augmentation of Malibu Creek

January 18, 2019

Prepared for:

Las Virgenes– Triunfo Joint Powers Authority

Prepared by:

Jim Borchardt, Zakir Hirani, Kyleen Marcella, Tyler  
Hadacek

Stantec

# Table of Contents

<b>1.0</b>	<b>INTRODUCTION</b> .....	<b>1</b>
<b>2.0</b>	<b>POTABLE WATER CONVEYANCE</b> .....	<b>2</b>
2.1	EXISTING WATER PIPELINE .....	2
2.2	PIPELINE ALIGNMENT ALTERNATIVES .....	3
2.2.1	Alternative 1 - Mount to existing LA County Bridge over Malibu Creek .....	3
2.2.2	Alternative 2 – Directional drill under Malibu Creek .....	4
2.2.3	Alternative 3 – Install new pipe bridge over Malibu Creek .....	4
2.3	RECOMMENDED ALTERNATIVE .....	4
<b>3.0</b>	<b>CHLORINATION/DECHLORINATION</b> .....	<b>5</b>
3.1	BREAKPOINT CHLORINATION TEST FINDINGS.....	5
3.1.1	Bench-scale Testing.....	5
3.1.2	Chlorine Design Dose and Contact Time .....	5
3.1.3	Sodium Bisulfite Design Dose and Contact Time .....	6
3.2	CHLORINATION/DECHLORINATION CONTACTOR ALTERNATIVES .....	7
3.2.1	Alternative 1 – Construct a New Contact Tank .....	7
3.2.2	Alternative 2 – Construct a New Contact Pipe.....	8
3.2.3	Alternative 3 – Retrofit Existing Overflow Structure .....	8
3.3	RECOMMENDED ALTERNATIVE .....	8
<b>4.0</b>	<b>SYSTEM DESIGN</b> .....	<b>9</b>
4.1	POTABLE WATER CONVEYANCE .....	11
4.1.1	Existing Utilities .....	11
4.1.2	Design Criteria .....	12
4.1.3	Pipeline Alignment .....	12
4.1.4	Pipeline Material.....	16
4.1.5	Valves .....	16
4.2	CHLORINATION/DECHLORINATION.....	16
4.2.1	Existing Facilities.....	16
4.2.2	Design Criteria .....	17
4.2.3	Overflow Structure Modifications.....	18
4.2.4	Chemical Feed Systems .....	21
4.3	PROCESS CONTROL AND OPTIMIZATION.....	26
4.3.1	Process Control.....	26
4.3.2	Operation Optimization.....	27
<b>5.0</b>	<b>PROJECT IMPLEMENTATION</b> .....	<b>29</b>
5.1	COORDINATION WITH FUTURE PROJECTS .....	29
5.2	COST ESTIMATE .....	29
5.3	SCHEDULE.....	31
5.4	PERMITTING .....	31



**LIST OF TABLES**

Table 4-1 – Known Existing Utilities in Project Area ..... 11  
Table 4-2 – Chlorination/Dechlorination Design Criteria ..... 18  
Table 5-1 – Project Implementation Cost Estimate..... 30

**LIST OF FIGURES**

Figure 2-1 – Existing Potable Water Pipeline ..... 2  
Figure 2-2 – Potable Pipeline Alternatives..... 3  
Figure 3-1 – Theoretical Breakpoint Chlorination Curve ..... 5  
Figure 3-2 – Reaction Time Required for Various Chlorine Concentrations..... 6  
Figure 3-3 – Tank Contactor Alternative..... 7  
Figure 4-1 – Discharge Outfall Locations 001 and 003..... 9  
Figure 4-2 – Project Area Plan ..... 10  
Figure 4-3 – Pipeline Alignment ..... 14  
Figure 4-4 – View Under LA County Bridge: Method of Pipe Mounting ..... 14  
Figure 4-5 – Pipe Hanger Detail for Bridge Mounting ..... 15  
Figure 4-6 – Overflow Structure Modifications..... 20  
Figure 4-7 - Chemical Feed Option 1 ..... 22  
Figure 4-8 - Chemical Feed Option 2 ..... 23  
Figure 4-9 – Chemical Feed Option 3 ..... 24  
Figure 4-10 – Potential Equipment Locations in Effluent Pump Room..... 25  
Figure 4-11 – Process Control Schematic ..... 26  
Figure 4-12 – Chemical Usage for Ammonia Removal..... 28  
Figure 5-1 – Preliminary Project Implementation Schedule ..... 32

**LIST OF APPENDICES**

**APPENDIX A      BREAKPOINT CHLORINATION STUDY PROTOCOL ..... A.1**  
**APPENDIX B      BREAKPOINT CHLORINATION STUDY RESULTS ..... B.1**  
**APPENDIX C      REFERENCE DRAWINGS ..... C.1**

## 1.0 INTRODUCTION

The Las Virgenes -Triunfo Joint Powers Authority (JPA) owns and operates the Tapia Water Reclamation Facility (Tapia WRF). Tapia WRF currently treats approximately 7 million gallons per day (mgd) of wastewater, which is either reused in the JPA's Recycled Water System or sent to the Los Angeles River (Outfall 005), Malibu Creek (Outfall 001, 002, 003), or to JPA-operated spray irrigation fields. Discharges to Malibu Creek and the Los Angeles River are regulated under NPDES permit CA0056014 issued by the Los Angeles Regional Water Quality Control Board (RWQCB) in 2017. The discharge permit requires a minimum of 2.5 cubic feet per second (cfs) constant flow in Malibu Creek, and requires that the Las Virgenes Municipal Water District (LVMWD) supplement the creek flow, as needed, during the summertime period (April 15<sup>th</sup> – November 15<sup>th</sup>) to maintain this flow. New, more stringent nutrient summertime requirements of 1.0 mg/L total nitrogen (TN) and 0.1 mg/L total phosphorus (TP) have been implemented as the Total Maximum Daily Loads for Nutrients in the Malibu Creek Watershed by the United States Environmental Protection Agency, Region 9. These limits will go into effect for Tapia WRF discharges on May 16, 2022.

LVMWD retained Stantec to prepare a Compliance Method Study to evaluate alternatives to meet the summertime nutrient limits. Five alternatives were evaluated with the use of potable water with ammonia removal recommended as the preferred alternative in the final Compliance Method Study (April 2018). In May 2018, the JPA Board elected to move forward with a Preliminary Design Report (PDR) for the preferred alternative. The scope of this PDR consists of the following:

- Evaluate alternatives for pipeline alignment, facility siting, and equipment selection
- Develop design criteria, schematic drawings, site plans, and sample sections
- Develop a Class 4 Opinion of Probable Construction Cost (OPCC)
- Prepare a preliminary construction schedule
- Review permitting requirements

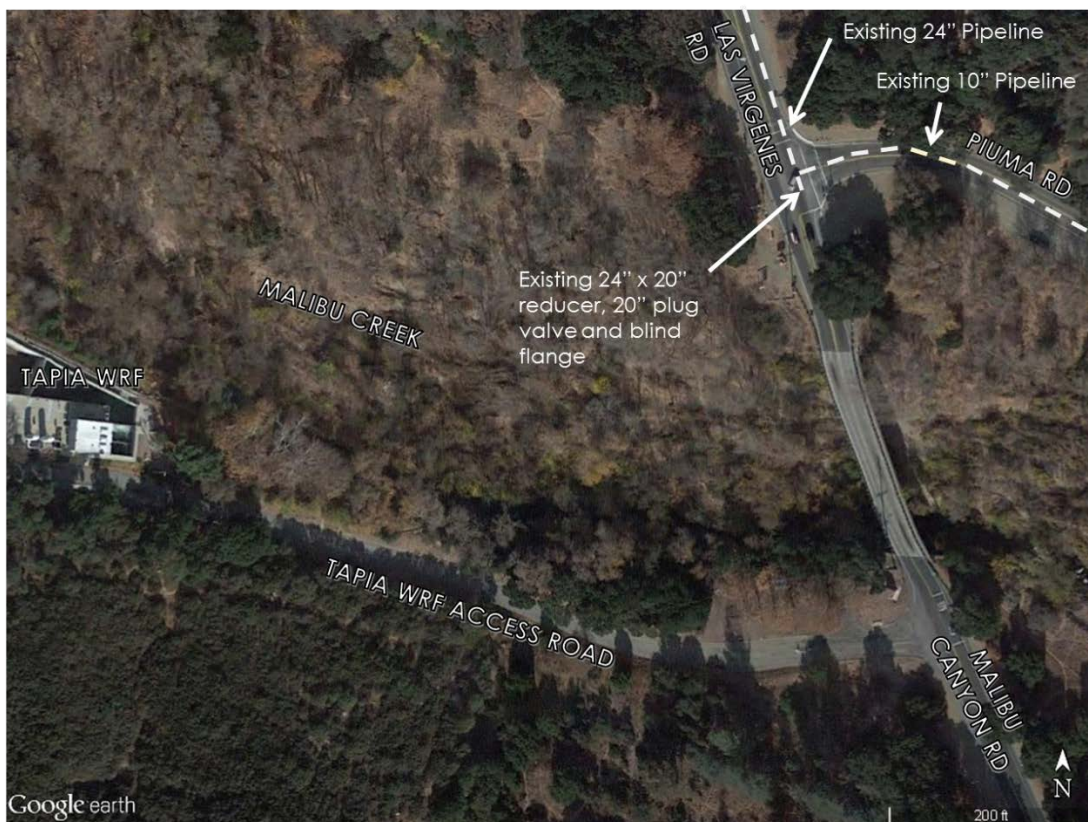
The preliminary design is composed of two components – 1) conveyance of potable water to Tapia WRF, and 2) facilities for ammonia removal (chlorination/dechlorination) at Tapia WRF and subsequent discharge to Malibu Creek. The alternative configurations for these two components are discussed in Sections 2 and 3 of this PDR, respectively. The preliminary design of the recommended project is described in Section 4, and a discussion of project implementation including costs, schedule, and permitting is included in Section 5.

## 2.0 POTABLE WATER CONVEYANCE

This section describes the existing potable water pipeline in Las Virgenes Road (Rd) and alternatives for conveying potable water from this pipeline to Tapia WRF for treatment (ammonia removal via chlorination/dechlorination) and discharge. Based on the plant's permit, 2.5 cfs (1.6 mgd) is the maximum flowrate of potable supplemental water required to be treated and discharged to augment Malibu Creek flow. Based on historical flow data from the last few years, the average flowrate discharged to the creek by LVMWD is less than 1.5 cfs. To maintain an average pipeline velocity of less than 5 feet per second (ft/s), it is recommended the new pipeline be 8-inch diameter. With such diameter, the maximum velocity will be limited to 7.5 ft/s, which is expected to occur infrequently.

### 2.1 EXISTING WATER PIPELINE

The existing potable water line closest to Tapia WRF is in Las Virgenes Rd, as shown on **Figure 2-1**. The 24-inch line branches off to a 10-inch line at the intersection of Piuma Rd and is reduced to a 20-inch plug valve with a blind flange. The line terminates directly south of the intersection of Las Virgenes Rd and Piuma Rd. The static pressure in this pipeline is approximately 330 psi.

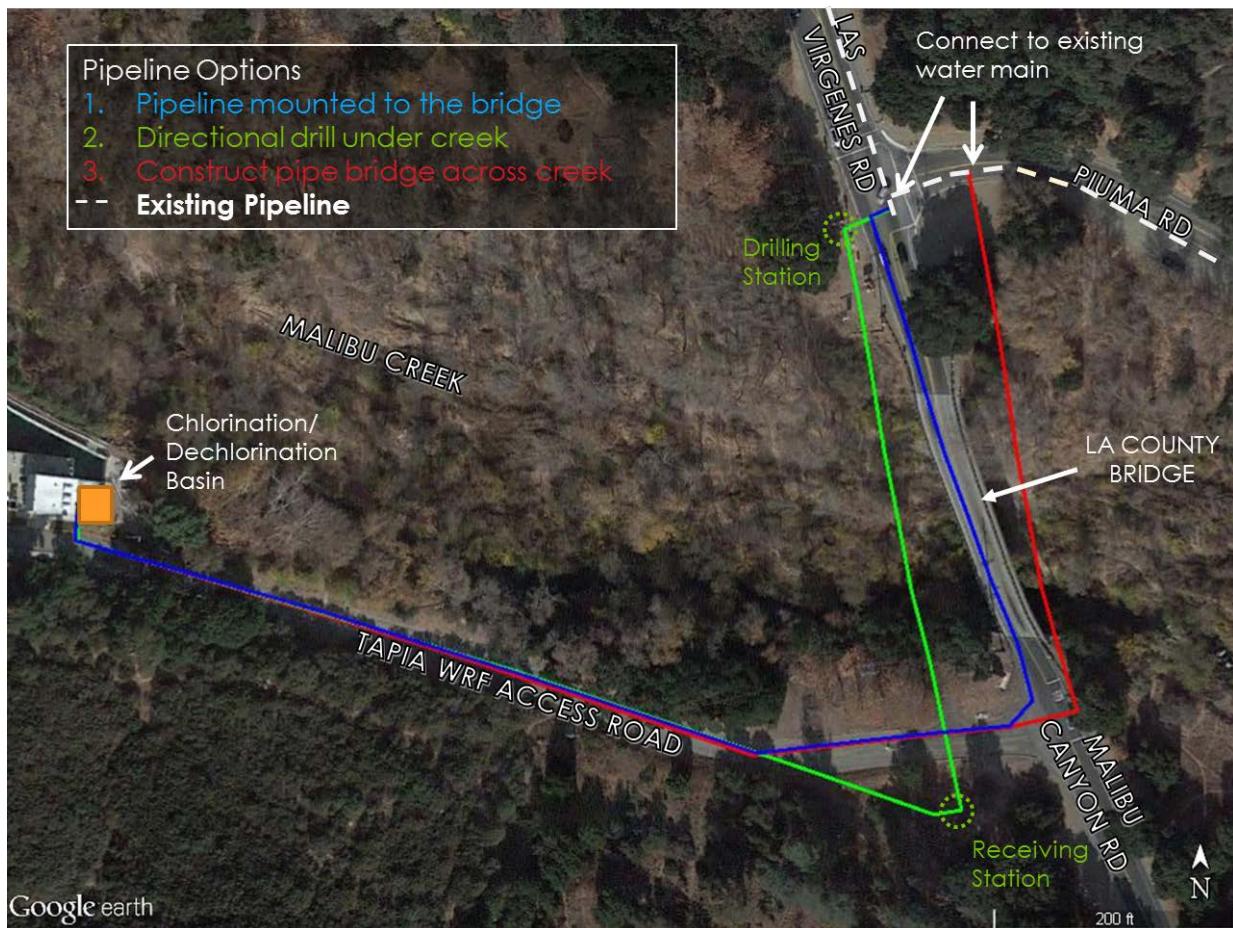


**Figure 2-1 – Existing Potable Water Pipeline**

## 2.2 PIPELINE ALIGNMENT ALTERNATIVES

To convey water to Tapia WRF, the existing pipeline will have to be extended and cross Malibu Creek. The bridge across Malibu Creek is owned and maintained by the Los Angeles County Department of Public Works (LACDPW), identified as Bridge 989 along LA County Road N-1. This bridge is herein referred to as LA County Bridge for the purposes of this report. South of the LA County Bridge, Las Virgenes Rd becomes Malibu Canyon Rd.

Three alignment alternatives have been identified for the Malibu Creek crossing, and are presented on **Figure 2-2**. For all alternatives, pressure reducing valves are used due to high system pressure.



**Figure 2-2 – Potable Pipeline Alternatives**

### 2.2.1 Alternative 1 - Mount to existing LA County Bridge over Malibu Creek

This alternative begins at the existing 20-inch pipeline in Las Virgenes Rd, and is constructed via open trench to the bridge. The pipe is then mounted under the existing LA County Bridge. After the bridge, the pipe is constructed via open trench in the roadway across Las Virgenes Rd and then along the entrance road to Tapia WRF and the

chlorination / dechlorination basin. Open trench work will be kept in a single lane to avoid complete disruption of traffic.

### **2.2.2 Alternative 2 – Directional drill under Malibu Creek**

This second alternative will use directional drilling to install the pipeline under Malibu Creek. This will require a launching and receiving pit on either side of the creek. It is estimated that the pipeline would need to be drilled at least 15 feet or deeper below the bottom of the creek to mitigate the risk of seepage of fluids and creek bed scour depth. The alignment to the chlorination/dechlorination basin will be similar to the other alternatives, however there will be a portion of pipeline that will be constructed on the side of the Tapia WRF entrance road, as opposed to the roadway entrance.

### **2.2.3 Alternative 3 – Install new pipe bridge over Malibu Creek**

This alternative will construct a new pipeline suspension bridge for the potable water line over Malibu Creek. The alignment to the chlorination/dechlorination basin will be similar to the other alternatives.

## **2.3 RECOMMENDED ALTERNATIVE**

The first alternative has the least environmental concerns because construction is within existing road alignments, using either public right-of-way or JPA land. The second and third alternatives involve some portions of the alignment outside of the paved areas of the roadways. While these alternatives remain within public right-of way, it may impact potentially sensitive biological/cultural resources. The second alternative of directional drilling would require environmental permits for geotechnical investigation involving borings in order to classify soil type prior to construction. The third alternative has the added environmental impact of staging construction equipment in the creek right of way in order to construct the new pipe bridge and may have additional constraints and requirements in order to obtain permit(s) for new construction in the area.

The total pipe length is roughly equivalent for all alternatives. However, bridge mounting requires minimal additional cost for installation of pipe hangers, whereas directional drilling and a new pipe bridge require costs for substantial additional investigations and facilities. Additionally, mounting to the bridge minimizes environmental and permitting issues.

Based on the above factors, alternative one - mounting the pipe to the bridge is recommended since it is the most cost effective, has the least environmental impact, and is easier to construct using common pipeline installation methods.

## 3.0 CHLORINATION/DECHLORINATION

Before discharge to Malibu Creek, chlorine addition and contact time will be required to provide complete and reliable ammonia removal to meet discharge requirements. This section describes the bench-scale study performed to determine the required contact times and doses, followed by a discussion of alternatives for providing the contact time and chemical additions.

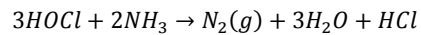
### 3.1 BREAKPOINT CHLORINATION TEST FINDINGS

#### 3.1.1 Bench-scale Testing

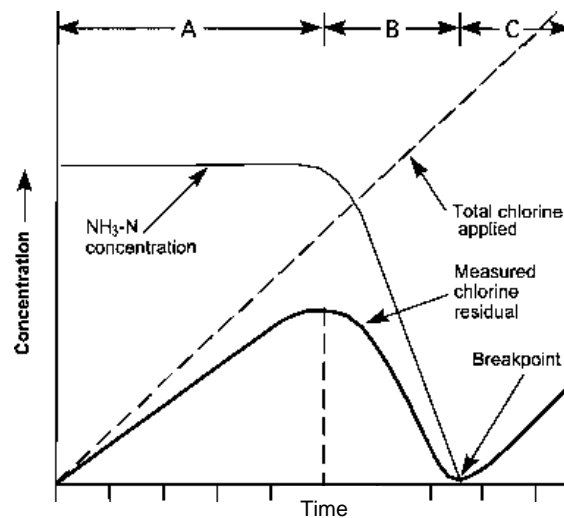
Bench-scale breakpoint chlorination testing was performed during preliminary design to determine target doses and contact times for sodium hypochlorite and sodium bisulfite. Breakpoint chlorination refers to the process of removing ammonia through oxidation with chlorine. Previous sampling of potable water near Tapia WRF has shown that nitrate + nitrite is approximately 0.4 mg/L-N, ammonia is approximately 0.38 mg/L-N and organic nitrogen is less than 0.2 mg/L. To ensure reliable compliance with the new total nitrogen limit of 1.0 mg/L, the breakpoint chlorination will reduce the ammonia concentration to approximately 0.1 mg/L providing for a total nitrogen of 0.7 mg/L (0.1 + 0.4 + 0.2 mg/L). Testing was performed at the Tapia WRF laboratory using the test protocol (**Appendix A**) as a basis and adjusting once baseline data was established.

#### 3.1.2 Chlorine Design Dose and Contact Time

Breakpoint chlorination is the reaction that converts ammonia to nitrogen gas by oxidation per the following reaction:

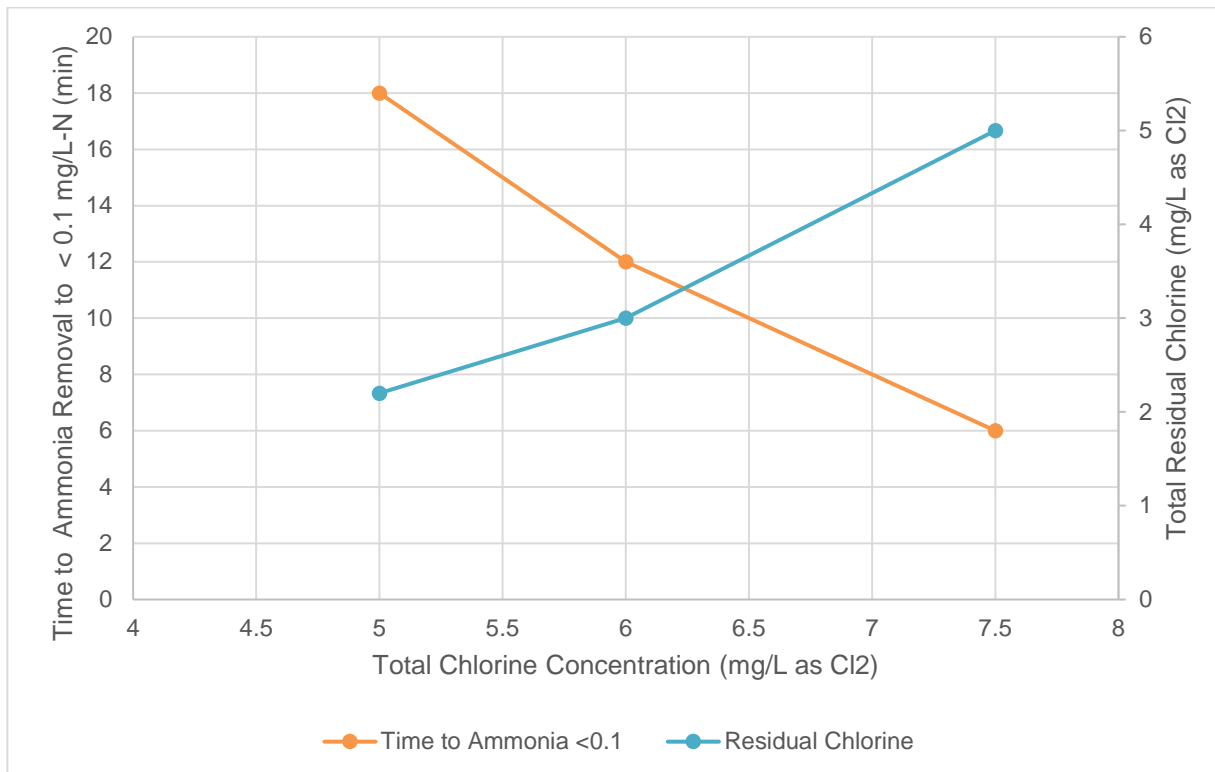


Chlorine dose and contact time are determined by ammonia removal through complete breakpoint chlorination as shown in **Figure 3-1**.



**Figure 3-1 – Theoretical Breakpoint Chlorination Curve**

The tested water contained a background chlorine concentration of 2 mg/L, and during bench-scale testing, chlorine was dosed into a liter of potable water to achieve initial total chlorine concentrations of 5, 6 and 7.5 mg/L (dosing 3, 4 and 5.5 mg/L respectively). Samples for total chlorine, free chlorine and ammonia were collected at 3-minute intervals to determine the contact time required for ammonia reduction to 0.1 mg/L or less. Once an optimum concentration (6 mg/L) was determined, the test with that concentration was repeated to confirm the results. Results from the tests are summarized in **Figure 3-2**.



**Figure 3-2 – Reaction Time Required for Various Chlorine Concentrations**

The results showed that the total chlorine concentrations in the range of 5 to 7.5 mg/L and corresponding contact times of 18 to 6 minutes provide effective ammonia removal to levels below 0.1 mg/l. On the basis of testing, it is recommended that a chlorine concentration of 6 mg/l and contact time of 12 minutes be used as the design condition for maximum flow of 2.5 cfs discharged to Malibu Creek. This optimizes chemical use of both chlorine and bisulfite, while providing a reasonable contact time to allow repurposing of existing facilities at the Tapia WRF, as discussed in Section 3.3.3. During periods of lower Creek augmentation flows, lower doses of chemical can be used, as contact time will increase as flow rate decreases. These results will be used to size the selected chlorine contactor described in Section 4.

### 3.1.3 Sodium Bisulfite Design Dose and Contact Time

Assuming a chlorine concentration of 6 mg/L results in approximately 3 mg/L of chlorine remaining after 12 minutes of contact time. This residual must be fully quenched by sodium bisulfite before discharge to Malibu Creek. A desirable mass ratio for the quenching reaction is 1.6:1.0, which results in 4.8 mg/L of sodium bisulfite for removal of 3 mg/L of

chlorine. The reaction is expected to occur almost instantaneously, which was confirmed with testing as the first sample taken after 3 minutes of sodium bisulfite addition provided a non-detect chlorine concentration. Exact contact time will ultimately be determined by contactor geometry.

## 3.2 CHLORINATION/DECHLORINATION CONTACTOR ALTERNATIVES

Both breakpoint chlorination and subsequent dechlorination occur in contactors to provide adequate contact time for the reactions to fully occur as indicated from the results of the bench-scale testing. Three types of contactors were considered, including the use of new tanks, an enlarged pipeline, and the existing overflow structure at the Tapia WRF. Each of these alternatives are discussed below.

### 3.2.1 Alternative 1 – Construct a New Contact Tank

For ammonia reduction using breakpoint chlorination, two separate tanks would be employed; one for chlorination and a second for dechlorination. Tanks are commonly used for chlorine contactors, but have varying hydraulic efficiencies depending on how they are designed to allow adequate mixing and uniform flow. Due to space constraints, vertical FRP or steel tanks are selected for this application. Assuming a contact tank efficiency of 60% and a chlorine contact time of 12 minutes at a flow rate of 2.5 cfs, a 22,500 gal tank would be required for breakpoint chlorination. Assuming three minutes of contact time for dechlorination at the same flow rate requires a 5,600-gal tank for this reaction. Tapia WRF has limited space for new facilities and the most viable location for these tanks would be directly adjacent to the existing overflow structure as shown in **Figure 3-3**.



**Figure 3-3 – Tank Contactor Alternative**

Based on the use of 12-ft diameter and 6-ft diameter tanks for breakpoint chlorination and dechlorination respectively, both tanks would be 30-ft tall to provide the required volumes. Tanks of this height are typically not recommended in



seismically active areas. Seismic concerns could be mitigated by the use of multiple, shorter tanks but such a configuration would require additional space that is not available.

### **3.2.2 Alternative 2 – Construct a New Contact Pipe**

Pipes are also commonly used to provide contact time and have the advantage of high hydraulic efficiencies of approximately 90 percent. The Tapia WRF access road provides approximately 800 feet between the entrance gate and the overflow structure. Assuming a maximum flow of 2.5 cfs, a 24-inch pipe could be used to provide the required contact time for both chlorination and dechlorination reactions. However, to make this alternative work, it would be necessary to extend chlorine piping to the entrance gate and bisulfite piping past the fenced perimeter of the plant. These remote chemical feed points present security, containment, safety, and operational concerns, and for these reasons, a pipeline contactor is not recommended.

### **3.2.3 Alternative 3 – Retrofit Existing Overflow Structure**

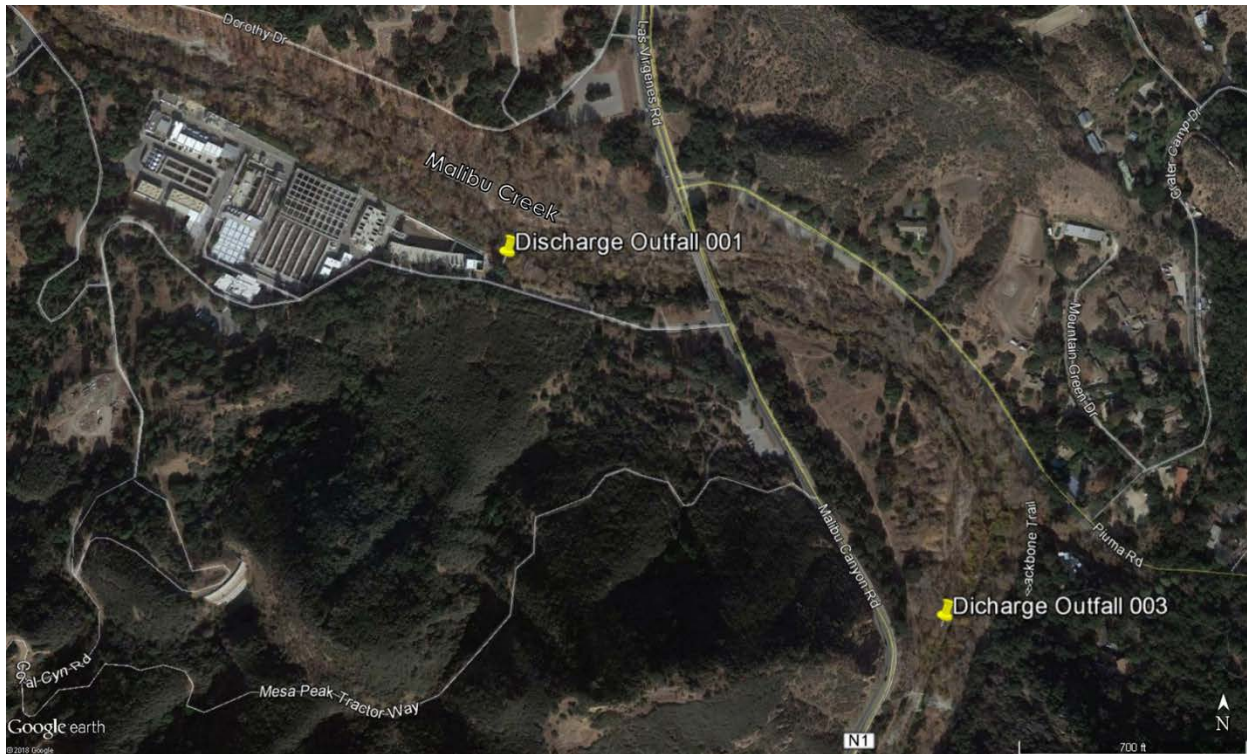
The third alternative for the contactors is to retrofit the existing overflow structure to serve as a contactor that provides sufficient contact time for both reactions. The overflow structure has a current hydraulic volume of 26,000 gallons which provides a theoretical retention time of 23 minutes. With the installation of baffling, it should be possible to achieve a hydraulic efficiency of approximately 70 percent. Considering the volume occupied by baffles and the stated efficiency, retrofitting the overflow structure is expected to provide approximately 15 minutes of total contact time. This is sufficient for both breakpoint chlorination (12 minutes) and dechlorination (3 minutes).

## **3.3 RECOMMENDED ALTERNATIVE**

Based on the analysis of the three alternatives above, the recommended alternative for the contactor is to retrofit the existing overflow structure. This option is the most cost effective as it requires minimal new construction compared to the other two options and utilizes existing plant infrastructure.

## 4.0 SYSTEM DESIGN

Breakpoint chlorination and subsequent dechlorination will occur at Tapia WRF before discharge through an existing outfall to Malibu Creek. The two existing permitted outfalls to Malibu Creek for Tapia WRF are Outfall 001 and 003. Both outfalls have existing piping from Tapia WRF to the outfall locations that can be utilized. Outfall 003 will be used for this project since it is further downstream and nearer to the LA County gauging station F-130-R that is the compliance point for stream flow augmentation. **Figure 4-1** shows the locations of the two discharge points.



**Figure 4-1 – Discharge Outfall Locations 001 and 003**

Information on existing facilities, design parameters for the new pipeline and facilities, and process control is presented in this section. An area map of new construction for the project is shown in **Figure 4-2**.



## 4.1 POTABLE WATER CONVEYANCE

### 4.1.1 Existing Utilities

Stantec has identified utilities along the pipeline alignment from record drawings and information provided by LVMWD, and from DigAlert online database. **Table 4-1** shows the utility companies that were identified, along with their utility information if known.

**Table 4-1 – Known Existing Utilities in Project Area**

Utility Company	Known Utilities in the Area	Utility Location
Las Virgenes Municipal Water District	Storm Drains	Two separate crossings along Tapia WRF Access Road
	Electrical Conduits, Access Road Loop Detectors	Two separate locations along Tapia WRF Access Road
	24" overflow pipeline	Tapia WRF Access Road (from Existing Overflow to Outfall 003)
Pepperdine University	6" sewer force main, 6" recycled water pipeline	Tapia WRF Access Road, Malibu Canyon Road
Los Angeles County Department of Public Works	--1	--1
Southern California Gas Company	2" high pressure natural gas line	Las Virgenes Rd, LA County Bridge, Malibu Canyon Rd, Tapia WRF Access Road
Charter Spectrum Cable	--1	--1
AT&T	--1	--1
T-Mobile	--1	--1
Southern California Edison	--1	--1

1. Information was not available, but the DigAlert online database indicated these utilities are in the area

A field survey will be conducted during detailed design to locate surface features of utilities (i.e. valve covers, manhole covers, utility boxes, meter covers) within the street right-of-way. This information, along with record drawings and utility maps will be used to develop an existing utility base mapping file that will serve as the basis for

establishing pipeline alignments. Existing utilities include water lines, sewer lines, stormwater culverts, gas lines, electrical conduits, electrical vaults, traffic lights, loop detectors, aerial and underground cables, street lights, and AT&T conduits. The search for record drawings for the Tapia WRF entrance road did not provide fully detailed information on the location of underground utilities. If detailed records are found, then potholing during design may be sufficient to determine a final pipe alignment. However, if detailed records are not found, more extensive field investigations may be warranted, such as using ground penetrating radar. Roadways along the alignment are relatively narrow and must be kept open during construction, so accurate utility location will be an important part of the pipeline design. Relevant reference drawings to existing utilities and of the LA County Bridge are included in Appendix B.

### 4.1.2 Design Criteria

The following defines the preliminary design criteria for the conveyance pipeline:

- Pipe diameter – 8 inch.
- Velocity – At maximum flow of 2.5 cfs, velocity is 7.2 ft/s.
- Material – Cement Mortar Lined and Coated (CMLC) Welded Steel.
- Depth of cover – A minimum of three feet.
- Blow-offs – LVMWD standards will be followed. It is anticipated that blow-offs will be installed at low points.
- Pipe bedding and backfill requirements – LVMWD standards will be followed for backfill. It is anticipated that the trench zone backfill will be screened native backfill to remove rocks larger than 1". The pipe zone bedding and backfill will be based on LVMWD standards but is anticipated that it will be sand, crushed aggregate base, or similar material to provide a stable base.
- Air Gap – An air gap is required at the discharge location between potable water pipeline and chlorination basin.

LVMWD Standard Plans and Specifications for the Construction of Water Mains and Facilities are to be followed where applicable.

### 4.1.3 Pipeline Alignment

The new pipeline will begin at the intersection of Las Virgenes Rd and Piuma Rd. The alignment is described herein and shown on **Figure 4-3**.

According to record drawings, the existing water main terminates with a 20" plug valve and blind flange. A new 20" tee with 8" branch will be added downstream of the plug valve, and the blind flange relocated to the end of the 20" tee. From the branch, the new 8" pipe will align with the southbound lane of Las Virgenes Rd and LA County Bridge over Malibu Creek.

The pipeline will be aligned with the existing 2' x 2' utility opening in the bridge abutment and cross beams. Flexible couplings will be installed at each abutment. The pipe will be mounted to the bridge deck using pipe hangers as

shown on **Figure 4-4** and **Figure 4-5**, to allow independent movement of the pipe and the bridge during a seismic event. The pipeline may be encased crossing the bridge if required by LACDPW or desired by LVMWD to mitigate the risk of potable water leaking or discharging into the creek below. Mounting the pipeline to the bridge will require access scaffolding or an articulated access lift in order to avoid staging construction equipment in the creek bed, but this is possible.

The alignment to the access road will continue within the roadway from the abutment utility opening to the intersection of the Tapia WRF access road and Malibu Canyon Road. The pipeline will then be routed in the Tapia WRF access roadway via open trenching.

The pipeline alignment along the Tapia WRF access road will parallel the side of the roadway. It is anticipated to be offset 5 feet into the roadway on the north side of the roadway, but this will be confirmed after locating existing utilities in the roadway listed in Table 1, including the recycled water and potable water lines for Pepperdine University. There are existing access gates at both the end of the access road at Malibu Canyon Rd and at the plant entrance approximately 120 and 750 linear feet up the access road from Malibu Canyon Rd. At these locations, the traffic loop signals will need to be removed and replaced during construction, and the pipeline routed beneath electrical duct banks. There are two storm-drain culverts that cross the access road at two separate locations, approximately 350 and 700 linear feet from Malibu Canyon Rd that the pipeline will need to cross.

From the access gates nearest to the new chlorination/dechlorination basin, there are a few utilities to be avoided including existing 24" outfall pipeline to discharge Outfall 003, and other utilities. The pipeline will be routed from the access roadway to the new chlorination/dechlorination basin at the southeast corner of the basin. At this location, the pipeline will be routed above ground and be surface mounted to the discharge location with an isolation valve, flow meter, electrically actuated pressure reducing valve, and electrically actuated flow control valve easily accessible for operation and maintenance. At the discharge into the basin, air gap separation will be provided.

The total pipeline length is approximately 1,270 linear feet. There is approximately 430 linear feet of pipe from the existing water main to Malibu Canyon Rd, of which the bridge span accounts for approximately 210 linear feet. The total length of pipe along the Tapia WRF access road to the discharge location at the chlorination/dechlorination basin is 840 feet.

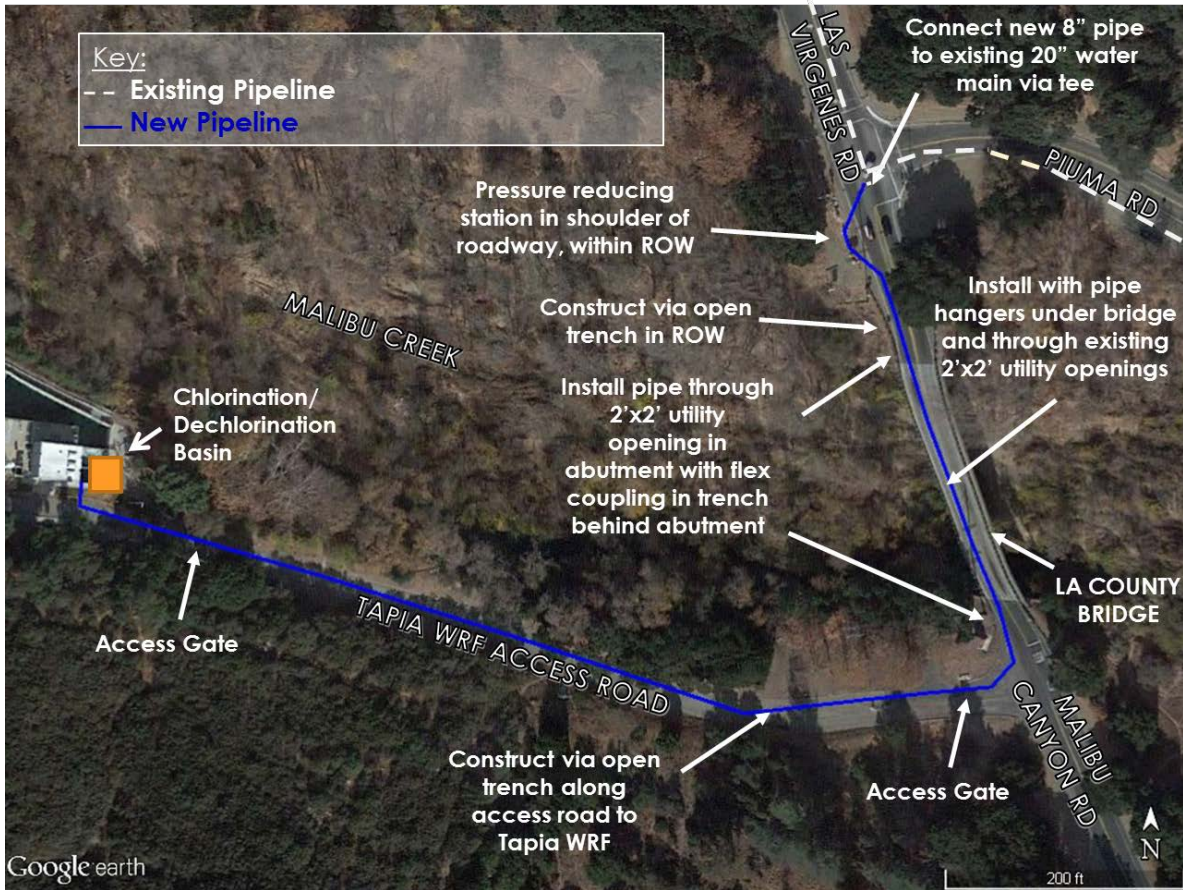


Figure 4-3 – Pipeline Alignment



Figure 4-4 – View Under LA County Bridge: Method of Pipe Mounting

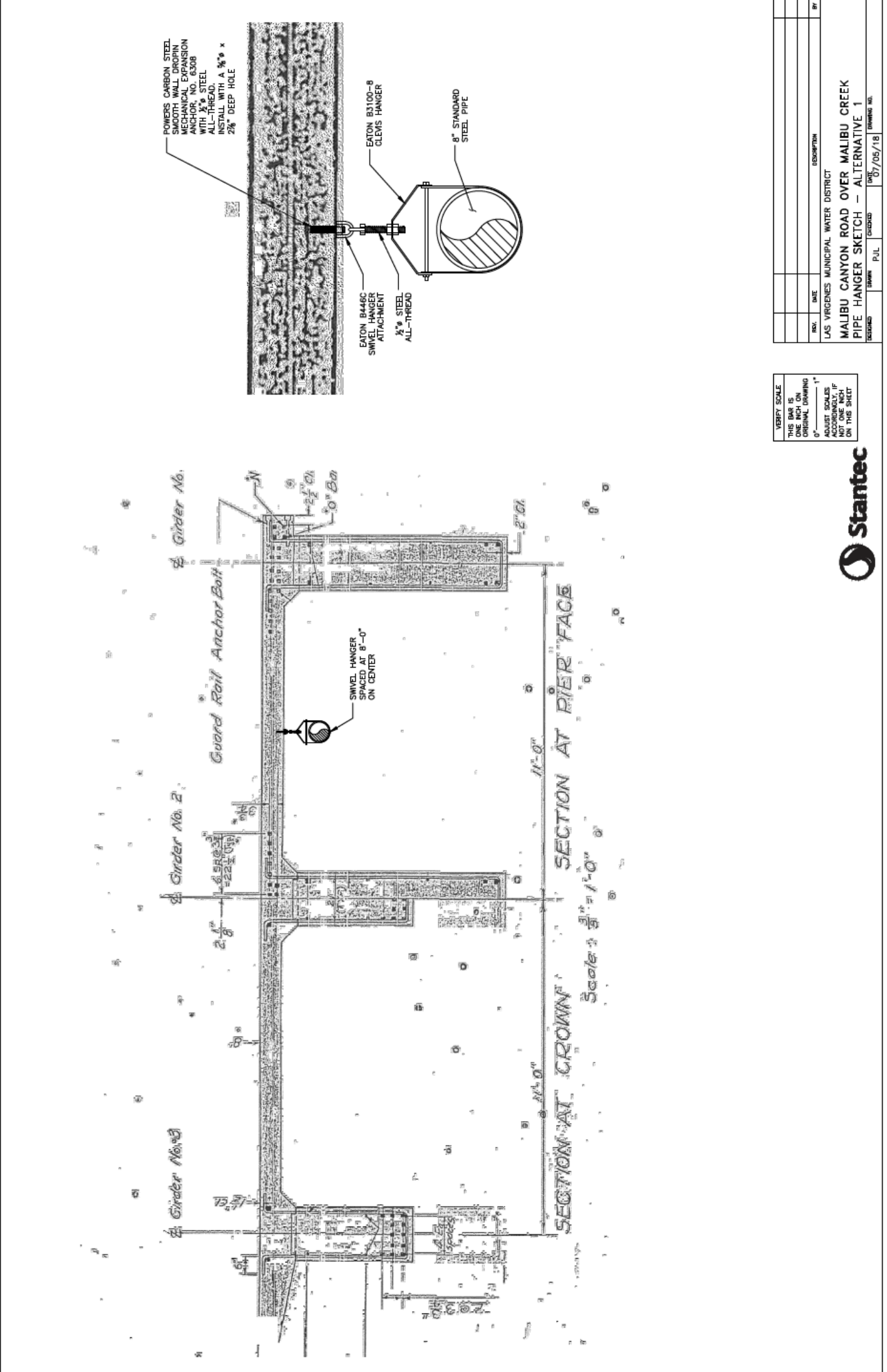


Figure 4-5 – Pipe Hanger Detail for Bridge Mounting



#### 4.1.4 Pipeline Material

Welded steel pipe is recommended as the pipeline material due to the high system pressure in the existing potable water pipeline (~330 psi static pressure), and the high transient pressures that could be encountered. This is also the same pipe material as the existing water pipeline it will be connected to. This material will be used for the entire pipeline alignment.

Welded Steel Pipe consists of a steel cylinder lined with cement mortar and coated with a dense cement mortar to mitigate internal and external corrosion. Fully welded joints are anticipated to be used on this project. Due to the size of the pipe (8 inch), they will be externally welded. Welded steel pipe is strong and durable.

#### 4.1.5 Valves

Pressure reducing valves are required due to the high pressure in the existing pipeline. These are planned to be located at the chlorination/dechlorination basin at the WRF for ease of access and maintenance. Further evaluation will be completed during detailed design to confirm the configuration of pressure reducing and flow control valves, but a preliminary concept is proposed in this section.

Due to very high pressure (~330 psi) two electrically-actuated pressure reducing/flow control valves and an orifice plate in series will be used to step down the pressure and avoid accelerated damage to the valves from cavitation. The first valve will reduce the pressure from approximately 330 psi to 150 psi. The second valve will be a flow control valve and serve a dual purpose to reduce the remaining pressure and control the flowrate of the discharge. The flow control valve will be looped to a magnetic flow meter to maintain a constant flow rate. An orifice plate will be downstream of both valves to provide a final step of pressure loss prior to atmospheric discharge, and will serve as a sacrificial component if necessary since cavitation damage is most prevalent when reducing a pressurized fluid to atmospheric pressure.

There will be one isolation valve located at the discharge location upstream of the other valves. The isolation valve is anticipated to be a gate valve. All valves will be located above grade, mounted on the overflow structure for ease of access for operation and maintenance.

Combined air release/vacuum relief valves will be used along the pipeline at high points to provide air release and vacuum relief during filling, draining and surge events. Pipe blowoffs will be installed at all low points in the pipeline profile. Continuous slopes will be used whenever possible to minimize the number of blowoffs.

## 4.2 CHLORINATION/DECHLORINATION

### 4.2.1 Existing Facilities

The existing facilities that will be utilized for this project include the access road, overflow structure, effluent pump room, chemical storage area, and outfall to Malibu Creek as shown in **Figure 4-2**. The overflow structure is currently only used during the winter time when the adjacent effluent pond reaches capacity (typically during a heavy rain event or when recycled water demand is low) and flows over the weir connecting the two structures. The overflow

structure connects to a 42-inch pipe that discharges these high flows to Malibu Creek through Outfall 001. This function is used for emergency situations and as a disposal option when recycled water demand is low during the winter months and should not affect the planned summertime augmentation to the creek.

Tapia WRF currently distributes both sodium hypochlorite and sodium bisulfite from the chemical storage area to various treatment processes within the plant. Five 0.75 hp pumps are dedicated to sodium hypochlorite, which is fed to the filter influent, chlorine contact tank, return activated sludge (RAS), and balancing pond. Two 0.5 hp pumps are dedicated to sodium bisulfite which is used for dechlorination of the plant's effluent water.

#### 4.2.2 Design Criteria

The preliminary design criteria for breakpoint chlorination and dechlorination are summarized in **Table 4-2**. The basis for determination of this criteria was discussed in Section 3 earlier.

**Table 4-2 – Chlorination/Dechlorination Design Criteria**

<b>Parameter</b>	<b>Units</b>	<b>Value</b>
Flow	cfs	2.5
Assumed Sidewater Depth	ft	4.5
<b>Overflow Structure Retrofit</b>		
Existing Overflow Structure Volume	gal	26,000
Overflow Structure Length	ft	27.2
Number of Divider Walls	-	4
Contact Channel Width	ft	5.2
Contact Volume	gal	23,800
Total HRT	min	21
Contact Hydraulic Efficiency	%	70
Effective HRT	min	15
<b>Chlorination</b>		
Target Chlorine Contact Time	min	12
Assumed Background Chlorine Concentration	mg/L	2
Target Chlorine Concentration	mg/L	7
Design Chlorine Dose	mg/L	5
Sodium Hypochlorite Stock Solution	%	12
Sodium Hypochlorite Dose	mg/L	5-7
Maximum Sodium Hypochlorite Flow Rate	gph	2.4
Sodium Hypochlorite Storage Required (14 days)	gal	810
<b>Dechlorination</b>		
Target Dechlorination Contact Time	min	3
Residual Chlorine to be Neutralized	mg/L	3
Design Sodium Bisulfite Dose	mg/L	4.8
Sodium Bisulfite Stock Solution	%	38
Sodium Bisulfite Dose	mg/L	4.8-7
Maximum Sodium Bisulfite Flow Rate	gph	0.75
Sodium Bisulfite Storage Required (14 days)	gal	250

### 4.2.3 Overflow Structure Modifications

For the overflow structure to provide adequate contact time for both chlorination and dechlorination, various modifications are required as follows and indicated in **Figure 4-6**. Additional details regarding modifications to the overflow structure will be included as part of the final design. These modifications will maintain the current functionality for the originally intended use of the structure as overflow during the winter months. Modifications include:

- Demolish the existing concrete wall that includes a weir for flow measurement. Flow measurement during overflow operations can still be achieved by the inclusion of a new meter on the existing discharge pipe out of the channel.
- 8-inch influent line mounted above grade near the south wall of the overflow structure.
- Flow meter and flow control valve installed on exposed influent pipe before penetration into tank for easy access for operations and maintenance.
- One colorimetric ammonia analyzer, one nitrate ion selective electrode (ISE) analyzer, one total chlorine analyzer and one dechlorination analyzer (such as the Deox/2000® analyzer).
- Four 10-inch thick concrete walls (4.75 ft high) to channelize flow through the contactor
- Five wood baffles to dissipate energy and unify flow
- Weir (4.3 ft high) near discharge of contactor to provide flow control and monitoring
- Sodium hypochlorite and sodium bisulfite injection
- 12-inch effluent pipe with motorized valve for discharge from contactor to existing Outfall 003 channel leaving the plant
- Pipe and valve penetrating through common wall between overflow structure and effluent pond for off-spec water release.

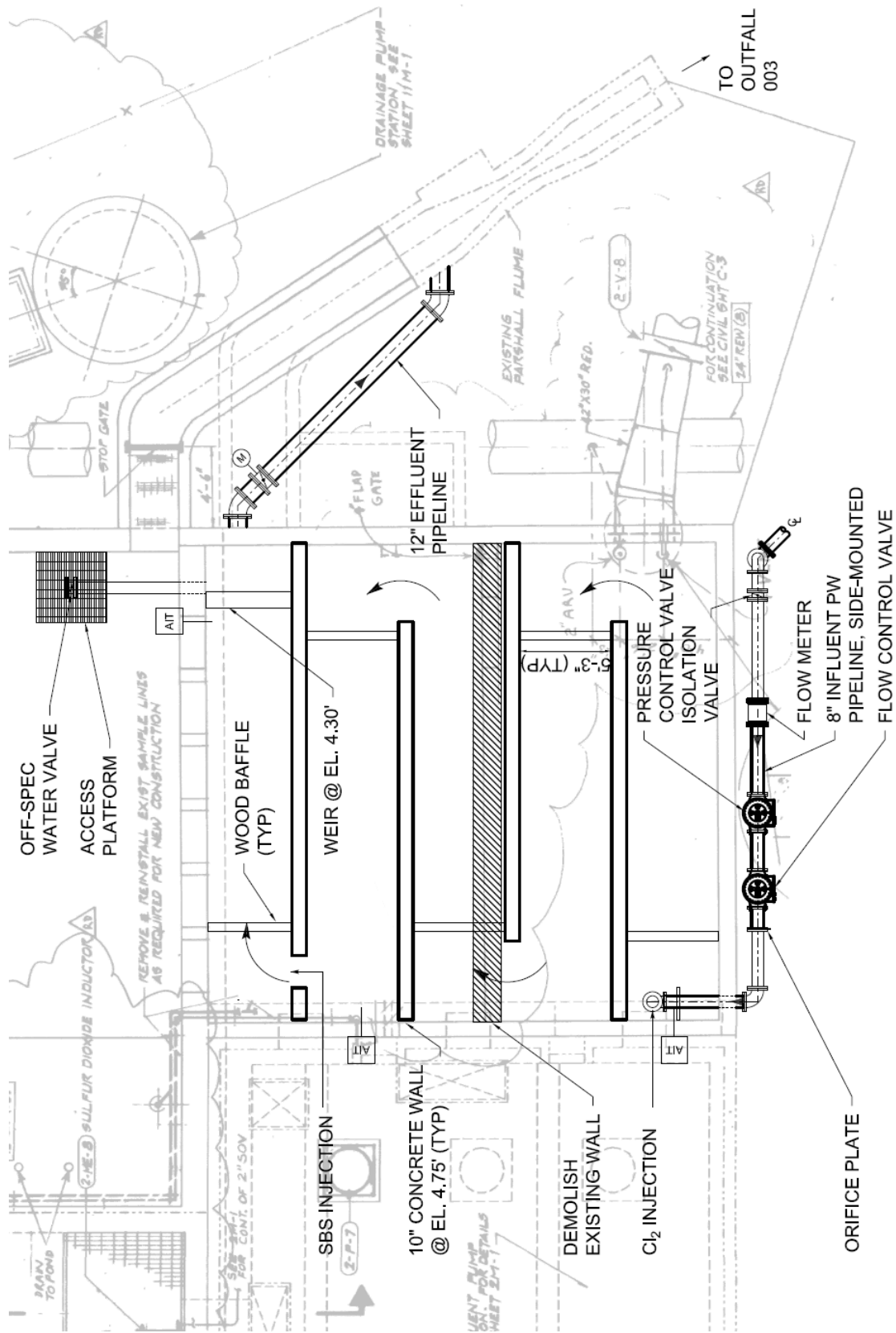


Figure 4-6 – Overflow Structure Modifications

## 4.2.4 Chemical Feed Systems

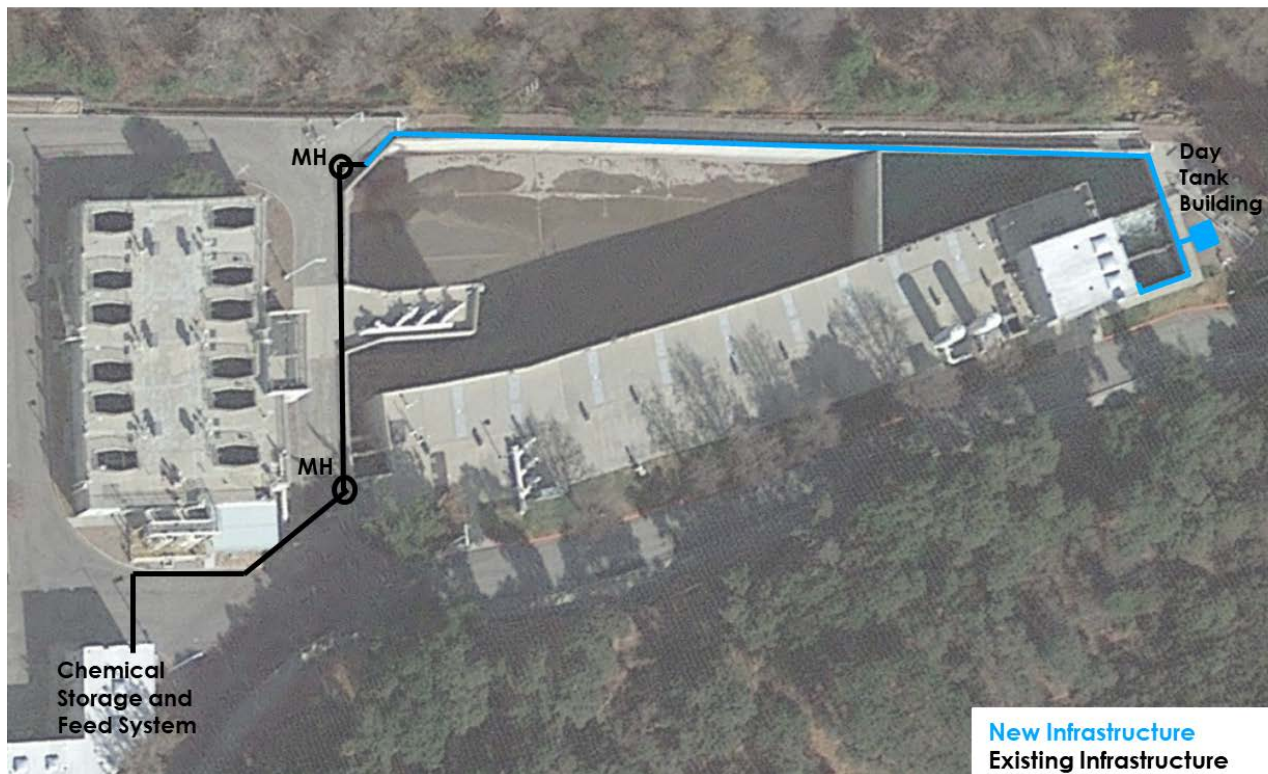
Tapia WRF has existing chemical storage and feed systems, including both chemicals needed for this ammonia removal project i.e. sodium hypochlorite and sodium bisulfite. Both chemicals are centrally located within the plant, as shown in **Figure 4-2**. Chemical feed lines branch out to their various feed points through a system of HDPE carrier (or containment) pipes that connect to containment manholes at key locations in the plant yard. Shutoff valves are accessible within the manholes to allow operation and maintenance of the chemical distribution system. Based on the current setup, it is possible to use the existing chemical facilities, extend the feed system to the ammonia removal facilities, and minimize disruption to the plant.

The maximum chemical feed rates for the ammonia removal facilities are modest in comparison to the requirements for the full plant. Breakpoint chlorination requires approximately 5 mg/L of sodium hypochlorite (plus the 2 mg/L of background chlorine in the potable water for a total chlorine concentration of 7 mg/L) with a maximum flow rate of 2.4 gallons per hour (gph). The existing sodium hypochlorite pumps (4+1) in the chemical room are all sized for 180-300 gph and all are in use (either in duty or standby). Dechlorination using sodium bisulfite requires a dose of approximately 5 mg/l with a maximum flow rate of 0.75 gph. The existing sodium bisulfite pumps (1+1) in the chemical room are all sized for 45 – 135 gph and all are in use (either in duty or standby).

While it is possible to install new feed pumps in the chemical room properly sized for the ammonia removal facility, routing new feed lines through the existing carrier pipes is not practical, as it would require removing all the existing chemical feed lines and pulling new feed lines into the carrier pipes. This would seriously impact plant operations. Installing new carrier piping and feed lines from the chemical room all the way to the overflow structure is expensive and will disrupt existing roadways and traffic.

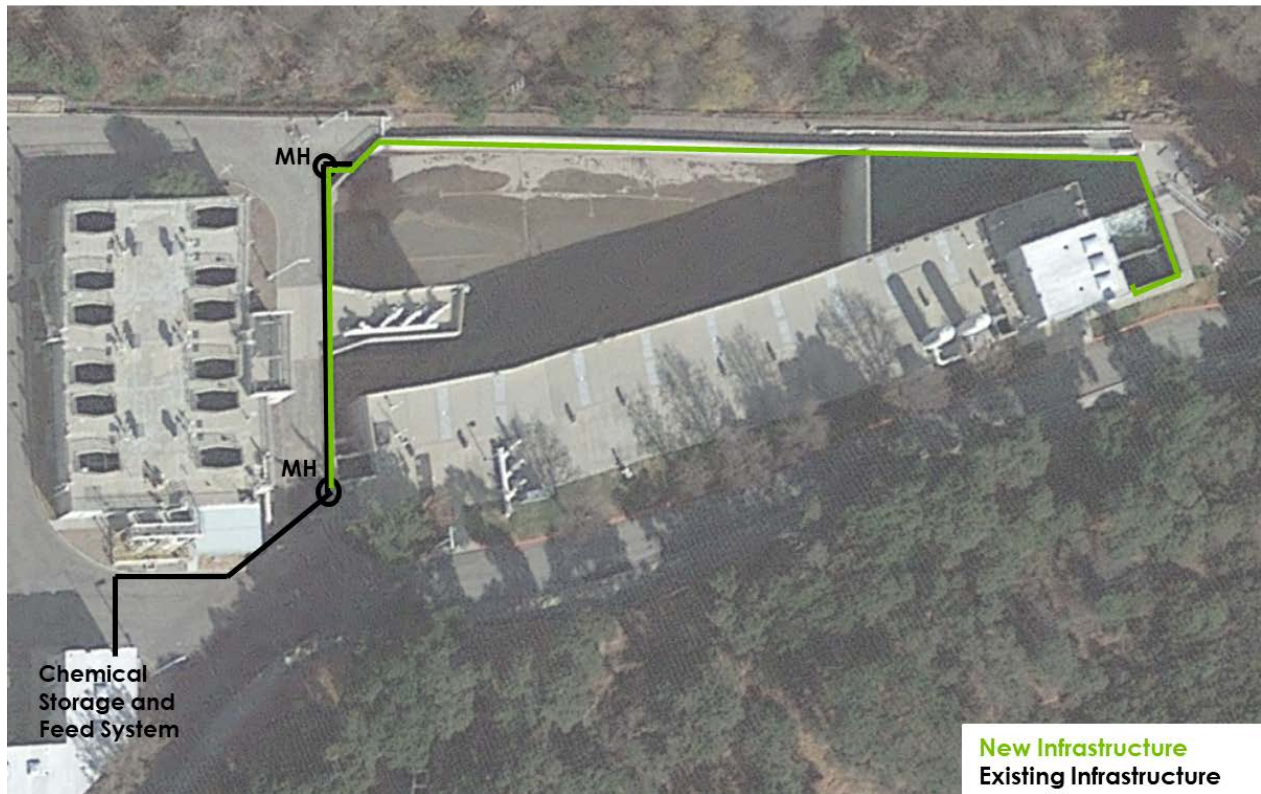
For these reasons, options that utilize the existing feed pumps, carrier pipes, and feed lines with limited new chemical system components are preferred. For sodium hypochlorite, three options were assessed:

1. **Intermittent Feed with Day Tank:** This option would connect to an existing sodium hypochlorite feed line that is in intermittent use, such as the RAS feed line. This feed line is already located in the manhole adjacent to the storage basin, so no removal or reinstallation of feed lines in the carrier pipe would be needed. The same route for the feed line extension would be used to reach the overflow structure. A new day tank (or chemical tote) and feed pumps would be located adjacent to the overflow structure to continuously inject hypochlorite into the water. The day tank could be located in a small fiberglass building either in the available dirt area east of the structure (as shown in **Figure 4-7**) or on top of the chlorine contact tank. Based on level in the day tank, the feed pump back in the existing chemical room would be turned on or off to supply the day tank. If the RAS feed line were already in use, a shutoff valve at the tank would prevent overfilling.



**Figure 4-7 - Chemical Feed Option 1**

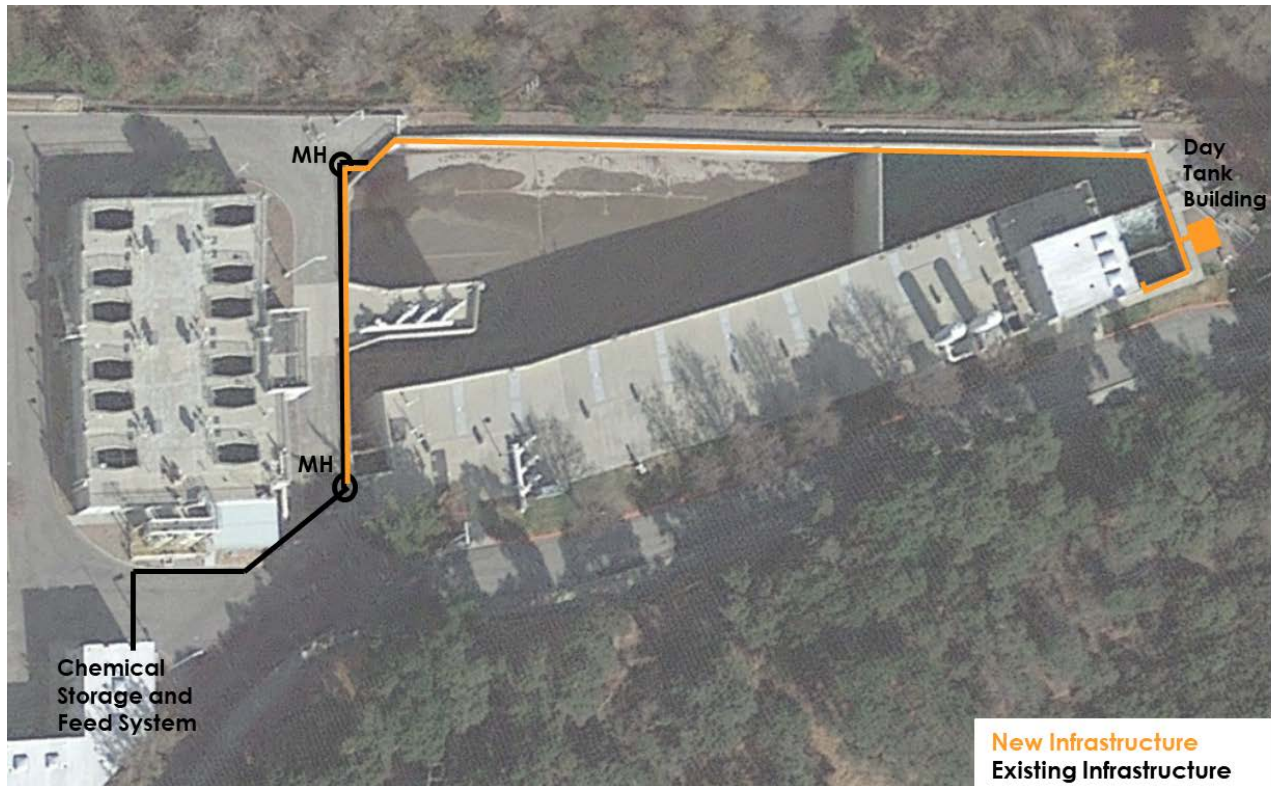
2. **Continuous Feed:** This option would connect to an existing sodium hypochlorite feed line that is continuously used, such as the feed line to the chlorine contact basins. Because the required flow for ammonia removal is relatively low, the impact on the primary use of the feed line would be minimal. If desired, an adjustment could be incorporated into the plant control system to adjust feed rates when both systems are in operation. This approach would require removing the feed line in the carrier pipe between the two manholes shown in **Figure 4-8**, and reinstalling two new feed lines in the same carrier pipe, one for the existing service at RAS, and one for the new service at the ammonia removal facility. From the downstream manhole, a double-contained pipe could be mounted on the storage basin wall and extended to the overflow structure. Once there, a magnetic flow meter with modulating control valve could be used to meter the hypochlorite into the water. These facilities would be housed in the effluent pump station and would not require a day tank.



**Figure 4-8 - Chemical Feed Option 2**

3. **Continuous Feed with Day Tank:** This option, a combination of Options 1 and 2, would utilize the existing sodium hypochlorite feed line that is continuously used and route it to a new day tank adjacent to the overflow structure, as shown in **Figure 4-9**. The day tank (or chemical tote) would be located in a small fiberglass building as discussed above. A manual valve could be added to the day tank feed line to allow the operators to fill the tank as needed. A small chemical feed pump located on top of the tank would be used to meter the hypochlorite into the water. This is the preferred and recommended chemical feed system for this application.





**Figure 4-9 – Chemical Feed Option 3**

A sodium bisulfite feed system is already available at the effluent pump station, currently being used to dechlorinate the recycled water leaving the plant. However, this feed will probably not be in use during the summer months and could not be considered a reliable source for augmentation purposes. A new day tank for sodium bisulfite could also be included in the fiberglass building adjacent to the site and either fed by the existing sodium bisulfite pumps (which would require new chemical lines installed to the overflow structure) or as a stand-alone chemical tote that would be a separate service from the rest of the plant. A small chemical feed pump located on top of the tank would be used to continuously feed the sodium bisulfite into the water. A dechlorination analyzer will be provided at the effluent of the contactor to monitor chlorine residual. For this approach, a tee would be installed on the existing feed line with a flow control valve to feed the day tank. Alternatively, a new smaller sodium bisulfite pump could be installed at the existing chemical storage facilities for dedicated use for the dechlorination of potable water for this project, if desired.

The following facilities would be located in the effluent pump station at potential locations as shown in **Figure 4-10**. These items are discussed in the following section of the report.

- Analyzers for total chlorine, ammonia, nitrate and dechlorination
- A new PLC to control the process and communicate with the Plant control system

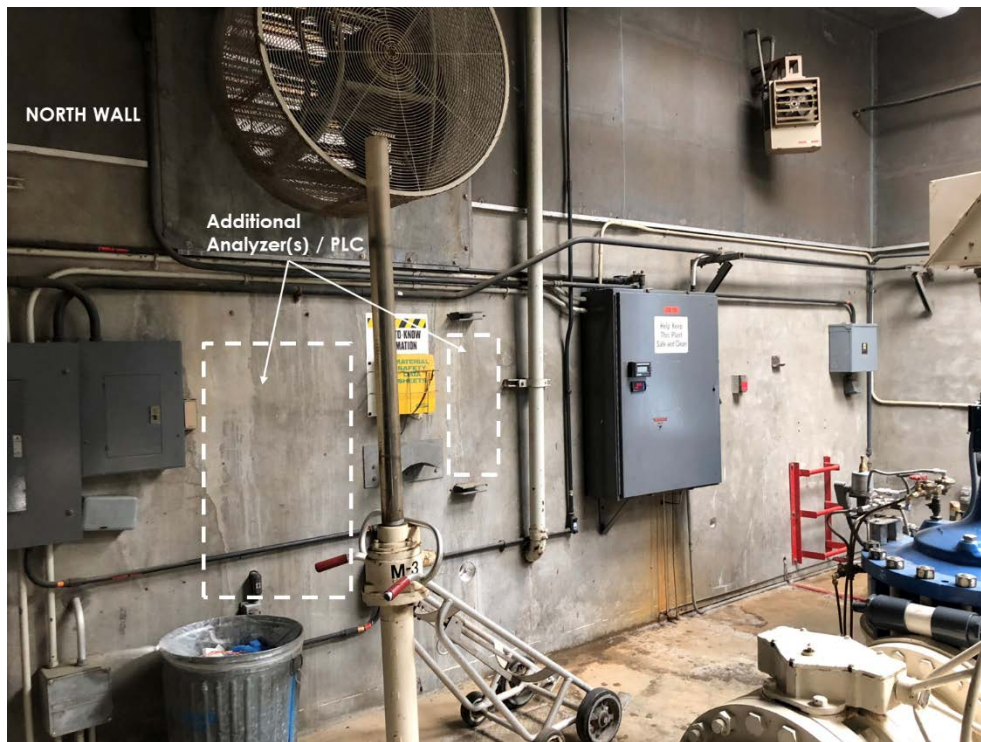


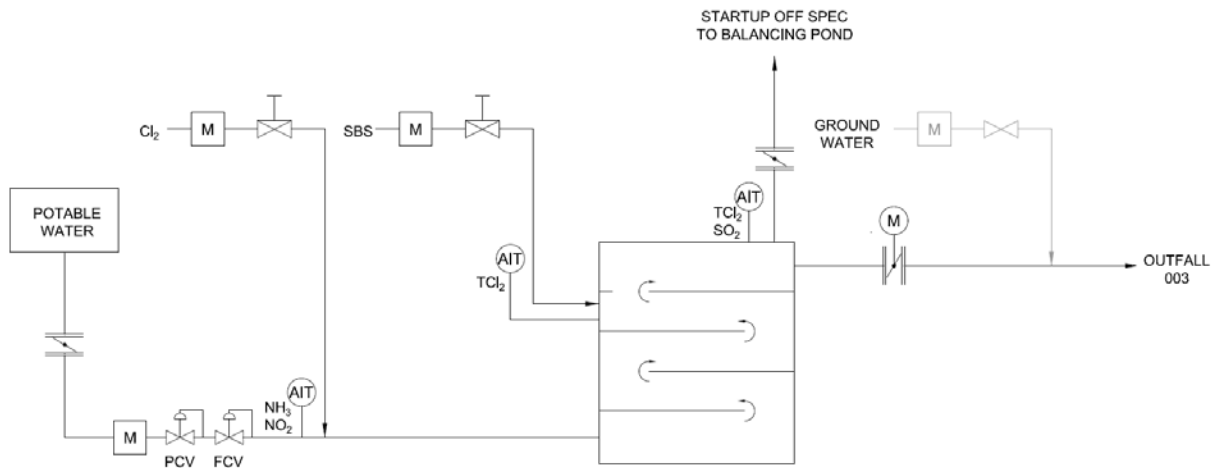
Figure 4-10 – Potential Equipment Locations in Effluent Pump Room

## 4.3 PROCESS CONTROL AND OPTIMIZATION

This section describes the process control philosophy for the chlorination/dechlorination process. It also details methods for process optimization to achieve cost efficiency.

### 4.3.1 Process Control

The breakpoint chlorination and dechlorination systems will be controlled by a new PLC that will be connected to the plant's existing SCADA. A process control schematic is presented in **Figure 4-11**.



**Figure 4-11 – Process Control Schematic**

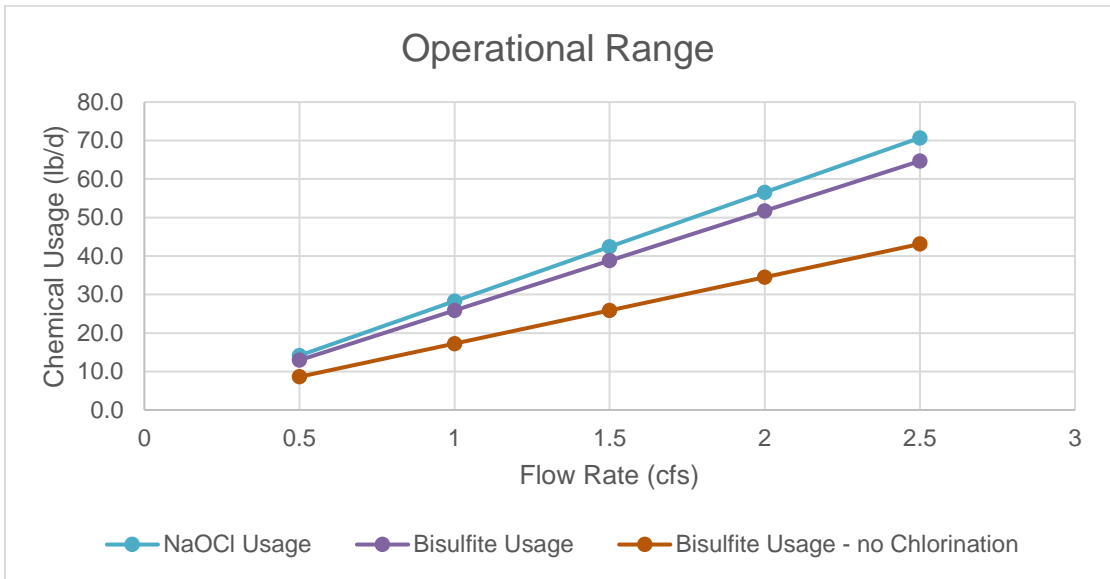
The breakpoint chlorination system is provided to remove ammonia from the potable water to achieve an ultimate total nitrogen (TN) concentration of less than 1.0 mg/L-N. Based on the expected nitrate and organic nitrogen concentrations in potable water, this would require lowering the ammonia concentration to less than 0.1 mg/L-N.

- Flow sent to the new contactor will be based on an operator-specified setpoint that will be calculated based on the flow detected in Malibu Creek. A flow meter and a flow control valve on the influent potable water pipeline will regulate the amount of flow sent to the contactor. A range of 0.25 to 2.5 cfs is anticipated. A pressure reducing valve upstream of the flow control valve will be programmed to adjust based on a stepwise set of operating points so as not to affect the PID control loop on the flow control valve to meet a certain flow rate set point.
- Readings from the online ammonia and nitrate analyzers on the potable water line, along with influent flow reading, would be used to control the chlorine injection to lower the effluent ammonia concentration to less than 0.1 mg/L-N. A baseline chlorine concentration in the potable water will be assumed based on a minimum ammonia value in order to account for the total chlorine in the water.
- Reading from the total chlorine analyzer installed at the end of chlorination zone in the contactor, along with the influent flow reading, would be used to control the sodium bisulfite injection to lower the effluent total chlorine concentration to non-detect.

- Reading from the dechlorination analyzer installed before the final weir would be used to divert the off-spec water flow to the effluent pond if chlorine is detected in the water. This would be accomplished by closing the influent and effluent valves automatically and opening the valve to the effluent pond manually. The influent and effluent valves to the contactor would be automated whereas the off-spec water diversion valve would be manual.
- To minimize the operating cost, chlorine injection will be ceased automatically if the influent ammonia + nitrate concentration is less than 0.7 mg/L-N. Sodium bisulfite will still be injected to quench the residual chlorine that is already present in the potable water prior to delivery to the contactor. The sodium bisulfite dosing in this scenario will be controlled based on the reading from the first total chlorine analyzer and influent flow-meter and optimized by the dechlorination analyzer.
- During the start-up, the off-spec valve to the effluent pond would be kept open to allow flow through the contactor until the dechlorination analyzer does not detect any residual chlorine. At this time, the valve to the effluent pond will be manually closed and the contactor effluent pipeline valve will be opened to continue normal operations.

### 4.3.2 Operation Optimization

The sodium hypochlorite dose will be determined by both the flow rate and amount of ammonia in the influent water and the sodium bisulfite dose will be dependent on the residual chlorine detected after breakpoint chlorination has occurred. Historical augmentation flows to Malibu Creek have typically ranged between 0.8-1.5 cfs. **Figure 4-12** provides a summary of chemical usage plant operators can expect during the full range of potential flows with influent ammonia concentration of 0.48 mg/L-N. Considering that influent ammonia concentration can vary, the chlorine dosing would be further optimized based on varying flow and concentration. Such approach would minimize the chlorine residual that would need to be quenched using sodium bisulfite. However, it should be noted that some sodium bisulfite injection will always be required during augmentation whether breakpoint chlorination is occurring due to chloramine present in potable water.



**Figure 4-12 – Chemical Usage for Ammonia Removal**

## 5.0 PROJECT IMPLEMENTATION

The following section presents a construction cost estimate for the recommended project, along with a projected schedule, permitting requirements, and coordination with future projects.

### 5.1 COORDINATION WITH FUTURE PROJECTS

Several future projects have been identified during completion of this predesign report that warrant coordination during detailed design of the Malibu Creek Augmentation Project. These include the following:

- The JPA has planned a future project to improve security at the entrance gate adjacent to Malibu Canyon Rd. This may include new electronic entry systems, video cameras, and other similar items. The design of the Malibu Creek Augmentation Project should be coordinated with any future conduit needs to take advantage of the pipe installation and trenching in the plant entrance roadway.
- The JPA has planned to install a new flow meter on the discharge pipeline to Outfall 001. This new meter will replace the use of the weir in the overflow structure to determine flow to the Creek. Because the weir will be demolished by the Malibu Creek Augmentation Project, the meter installation should precede this work to ensure this measurement is available when needed.
- The JPA has planned to remove the Parshall flume on the Outfall 003 discharge of the recycled water effluent pond and replace it with a new flow meter. This is immediately adjacent to the proposed facilities for the Malibu Creek Augmentation Project.
- The JPA has planned to upgrade the existing chemical carrier pipes, feed lines, and manholes at Tapia WRF. Any improvements to these facilities for conveyance of chemicals to the overflow structure for ammonia removal should be coordinated with these upgrades.
- The JPA is considering adding a pipe inspection/clean out for the 003 piping since minor water backups have been observed lately at the front of 003 outfall.

Some of these future projects could be combined into the bid package for construction of the summer augmentation facilities if desired by the JPA. However, it should be noted that the costs and schedule provided in the following sections is limited to the project scope covered within this PDR.

### 5.2 COST ESTIMATE

A summary of the construction cost estimate for implementation of this project is presented in **Table 5-1**. The construction cost is based on the recommended alternatives for both the pipeline and contractor as discussed above. The estimates were prepared in accordance with the criteria established by the Association for the Advancement of Cost Engineering (AACE) for a Class 4 cost estimate that has an accuracy range of -30% to +50%.

**Table 5-1 – Project Implementation Cost Estimate**

Item	Unit Cost	Unit	Quantity	Total
<b>Pipeline</b>				
20" x 8" Tee	\$3,800	each	1	\$3,800
8" Potable Water Main	\$175	LF	1270	\$222,250
Blow Offs, Air/Vacuum and Air Release Valves	\$15,000	LS	1	\$15,000
Bituminous Pavement (4" Patch)	\$5	LF	3810	\$19,050
Traffic Loop Replacement	\$1,500	each	5	\$7,500
Bridge Access Equipment	\$67,500	LF	1	\$67,500
Traffic Control Barricades, Markers and Flaggers	\$20,000	LF	1	\$20,000
<b>Pipeline Subtotal</b>				<b>\$355,100</b>
<b>Chlorination/Dechlorination Facility &amp; Chemical Systems</b>				
8" Potable Water Main	\$175	LF	25	\$4,375
12" Potable Water Main	\$200	LF	15	\$3,000
Valves and Pipe Fittings	\$71,200	LS	1	\$71,200
Concrete Walls	\$1,250	CY	13	\$16,250
Demo Existing Wall	\$500	CY	5	\$2,500
Wood Baffle Walls	\$200	each	5	\$1,000
Analyzer and Chemical Injection Systems	\$59,700	LS	1	\$59,700
Chemical Injection Fiberglass Building	\$10,000	LS	1	\$10,000
New PLC Cabinet	\$20,000	LS	1	\$20,000
Mechanical Installation (of equipment cost)		25%		\$36,000
Electrical/I&C Allocation (of powered equipment cost)		30%		\$12,000
Flush/Decontaminate/Test Pipeline	\$10,000	LS	1	\$10,000
Commission System	\$15,000	LS	1	\$15,000
<b>Chlorination/Dechlorination Subtotal</b>				<b>\$261,025</b>
Allowance for Permitting	\$15,000	LS	1	\$15,000
Prep & Implementation of Environmental Plans	\$15,000	LS	1	\$15,000
SWPPP	\$10,000	LS	1	\$10,000
Mobilization, Demobilization, Bonds, Insurance		10%		\$59,000
<b>Construction Cost - Subtotal</b>				<b>\$715,125</b>
Scope Contingency		20%		\$144,000
Overhead/Profit		25%		\$216,000
<b>Construction Cost - Total</b>				<b>\$1,075,125</b>
Design, Engineering and Administration Fees		20%		\$216,000
<b>TOTAL PROJECT COST</b>				<b>\$1,292,000</b>
<b>Project Cost Range (-30% to +50%)</b>				<b>\$910,000-\$1,950,000</b>

## 5.3 SCHEDULE

A preliminary project implementation schedule is presented on **Figure 5-1**. The following schedule constraints are assumed:

- Bird nesting season in the area that is recognized by California Department of Fish and Wildlife U.S. Fish and Wildlife Service is February 15<sup>th</sup> to September 15<sup>th</sup> every year. Therefore, construction activities may be limited during this time period. It will be simplest to avoid this period where possible, otherwise field surveys and mitigation measures are anticipated to be necessary.
- Wintertime operations of the overflow structure at Tapia WRF will have to be avoided for modifications for the chlorination/dechlorination basin. This will be planned for late summer if there are no concerns in that area for disruption of the bird nesting season.
- Pipe construction in Las Virgenes Rd and Malibu Canyon Rd and under the Malibu Creek Bridge may require limited daytime construction hours or nighttime construction. A traffic control plan will be developed by the selected contractor.
- An approved construction permit will be required from Los Angeles County Department of Public Works, based on a 100 percent complete set of design documents. The LA County has indicated that an initial application review can be completed within two months, with response to comments potentially requiring an additional one or two months.

The schedule includes a six-month delay between final permitting and the start of construction to avoid the bird nesting season. This time could be used to accommodate issues that arise during design and permitting periods.

## 5.4 PERMITTING

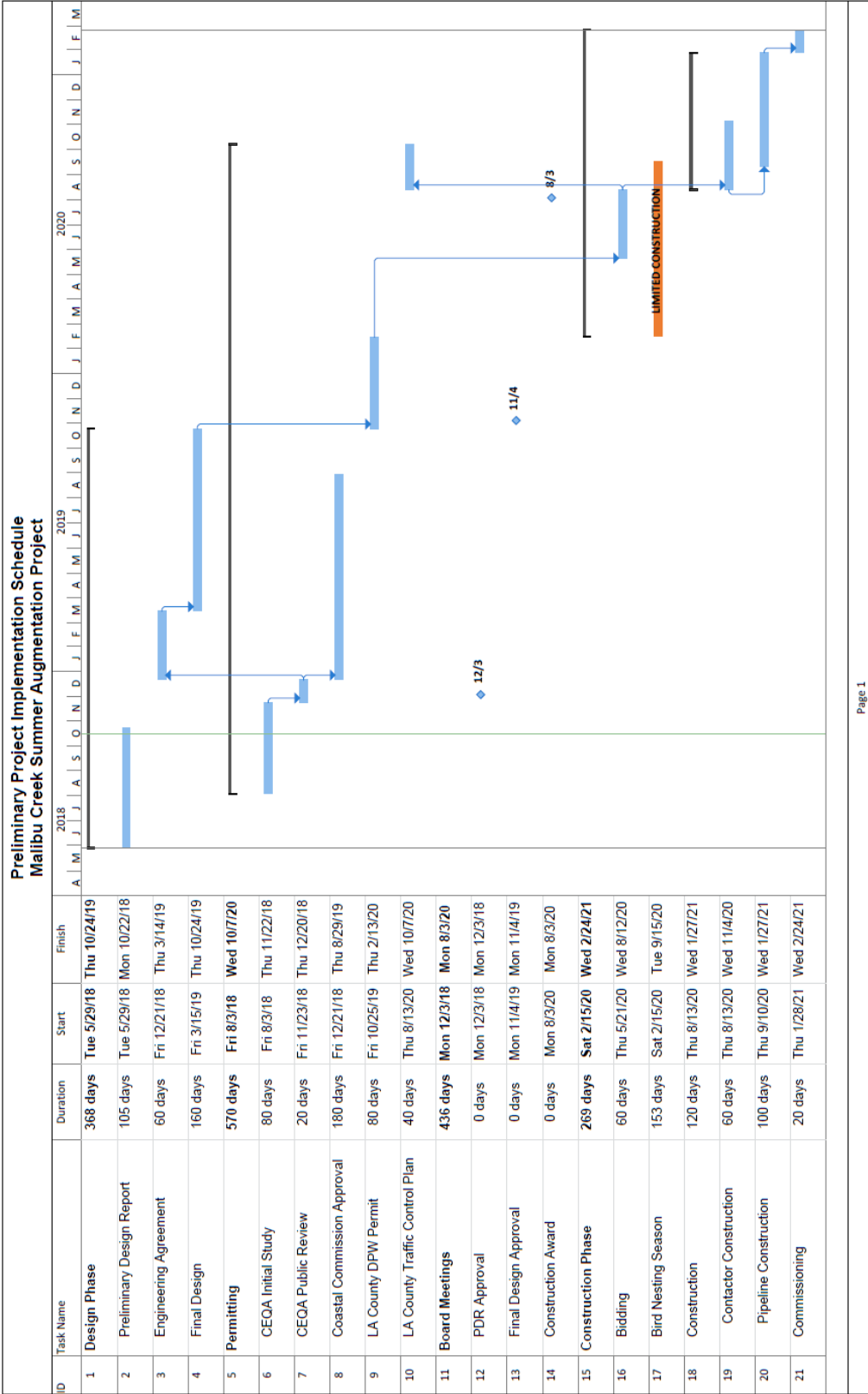
A preliminary list of permits that are anticipated to be required include the following:

- LA County Construction permit for pipeline (includes bridge mounting and traffic control plan)
- Coastal Commission permit
- Los Angeles Regional Water Quality Control Board Waste Discharge Requirements (Update to existing permit)

The following are required to be reviewed to ensure compliance with the applicable planning documents:

- Santa Monica Mountains Local Coastal Program
- LA County Significant Ecological Area 22b
- LA County Oak Tree Ordinance
- LA County Oak Woodlands Conservation Management Plan
- Consultation with Native American Tribes per Assembly Bill No. 52





**Figure 5-1 – Preliminary Project Implementation Schedule**

# **APPENDIX A**

## **Breakpoint Chlorination Study Protocol**

## Appendix A BREAKPOINT CHLORINATION STUDY PROTOCOL

# **APPENDIX B**

## **Breakpoint Chlorination Study Results**

## Appendix B BREAKPOINT CHLORINATION STUDY RESULTS

Bench-scale testing was performed to determine the dose and contact times for chlorination and dechlorination. The breakpoint chlorination study protocol was used as a basis for testing but adjusted based on initial testing of the potable water which showed the background ammonia and total chlorine concentrations of 0.48 mg/L-N and 2.0 mg/L, respectively. **Table B-1** presents a summary of the breakpoint chlorination bench-scale testing results; results showed that a chlorine (as Cl<sub>2</sub>) to ammonia (as N) ratio of 12.5:1 was sufficient for complete oxidation of ammonia at a contact time of 12 minutes.

**Table B-1 – Breakpoint Chlorination Testing Results**

Time (min)	Ammonia (mg/L-N)			
	Chlorine Dose = 5 mg/L	Chlorine Dose = 6 mg/L (Run 1)	Chlorine Dose = 6 mg/L (Run 2)	Chlorine Dose = 7.5 mg/L
0	0.48	0.47	0.47	0.48
3	0.24	0.12	0.12	0.12
6	0.20	0.12	0.19	0.09
9	0.14	0.11	0.10	0.06
12	0.14	0.07	0.08	ND
15	0.11	0.07	0.06	--
18	0.08	0.05	0.05	--
	Free Chlorine (mg/L-Cl <sub>2</sub> )			
0	0.23	N/A	N/A	0.19
3	2.2	2.9	3.0	4.4
6	1.9	2.7	2.7	3.8
9	1.5	2.3	2.4	3.5
12	1.5	2.1	2.2	3.3
15	1.4	1.9	2.0	--
18	1.2	1.8	1.9	--
	Total Chlorine (mg/L-Cl <sub>2</sub> )			
0	2.0	2.0	2.0	2.0
3	4.3	4.8	5.0	6.2
6	3.8	4.1	4.1	5.0
9	3.1	3.5	3.5	4.4
12	2.8	3.0	2.9	4.0
15	2.4	2.6	2.6	--
18	2.2	2.4	2.4	--

# **APPENDIX C**

## **Reference Drawings**

## Appendix C REFERENCE DRAWINGS

List of Reference Drawings:

- **Pipeline**

- Tapia WRF Regional Facilities Expansion IV – Access Gates [1994] (selected drawings from set)
- Tapia WRF Regional Facilities Expansion IV – Filtration / Disinfection Addition [1990] (selected drawings from set – yard piping, demolition, landscaping)
- Unit “A” – Sewage Treatment Plant [1964] (selected drawing- Access Road Profile & Alignment)
- Water System Construction Plans for Improvement District No 9 [1963] (Las Virgenes Valley) Unit “A” Pipelines (full drawing set of potable water pipeline in Las Virgenes Rd and Piuma Rd)
- LA County Road Department Bridge Division Plans for Bridge on Malibu Canyon Road over Malibu Creek [1952] (full drawing set)
- LA County Road Department Plans for Guard Rail on Malibu Canyon Road [1976] (full drawing set)
- LA County DPW Plans for the Seismic Retrofit of Bridge on Malibu Canyon Road over Malibu Creek [1998] (full drawing set)

- **Contactors**

- Tapia WRF Regional Facilities Expansion IV – Filtration/Disinfection Addition [1990] (selected drawings from set – structural and mechanical)
- Tapia WRF Phase I Hypochlorite Bisulfite Disinfection Facilities [1999] (selected drawings from set – yard piping)
- Ammonia Storage and Feed Facilities [2015] (selected drawings from set)

**CEQA Initial Study  
And Mitigated Negative Declaration**

**Summer Flow Augmentation of Malibu Creek**

January 2019

**Prepared by:**

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# Table of Contents

Section Name	Page Number
<b>Section 1 Project and Agency Information.....</b>	<b>1-1</b>
1.1 Project Title and Lead Agency .....	1-1
1.2 Project Background and Objectives.....	1-1
1.2.1 Project Background.....	1-2
1.2.2 Project Objective.....	1-2
1.3 Project Location and Environmental Setting .....	1-3
1.4 Project Description.....	1-3
1.4.1 Conveyance Pipeline.....	1-3
1.4.2 Water Treatment .....	1-4
1.4.3 Construction.....	1-6
1.4.4 Operations.....	1-6
1.5 Public Agency Review and/or Approval .....	1-6
<b>Section 2 Environmental Analysis.....</b>	<b>2-1</b>
2.1 Environmental Factors Potentially Affected.....	2-1
2.2 Agency Determination .....	2-1
2.3 Environmental Checklist.....	2-2
2.3.1 Aesthetics .....	2-2
2.3.2 Agricultural and Forest Resources.....	2-3
2.3.3 Air Quality .....	2-4
2.3.4 Biological Resources .....	2-10
2.3.5 Cultural Resources .....	2-19
2.3.6 Geology and Soils.....	2-23
2.3.7 Greenhouse Gas Emissions.....	2-25
2.3.8 Hazards and Hazardous Materials .....	2-29
2.3.9 Hydrology and Water Quality.....	2-31
2.3.10 Land Use and Planning .....	2-34
2.3.11 Mineral Resources .....	2-37
2.3.12 Noise .....	2-38
2.3.13 Population and Housing.....	2-44
2.3.14 Public Services.....	2-45
2.3.15 Recreation .....	2-46
2.3.16 Transportation and Traffic .....	2-47
2.3.17 Tribal Cultural Resources .....	2-50
2.3.18 Utilities and Service Systems.....	2-52
2.3.19 Mandatory Findings of Significance.....	2-54
<b>Section 3 References, Abbreviations and Report Preparation .....</b>	<b>3-1</b>
3.1 References and Bibliography .....	3-1
3.2 Acronyms and Abbreviations .....	3-6
3.3 Preparers of the Initial Study .....	3-9

<b>Table Name</b>	<b>Page Number</b>
Table 1 SCAQMD Air Quality Significance Thresholds .....	2-5
Table 2 Estimated Peak Day Construction Air Pollutant Emissions .....	2-7
Table 3 Estimated Fugitive Dust Emissions .....	2-8
Table 4 Localized Significance Threshold Analysis Before Mitigation.....	2-8
Table 5 Estimated Annual Construction Air Pollutant Emissions .....	2-27
Table 6 Estimated Annual GHG Emissions from Project Construction.....	2-28
Table 7 Los Angeles County Construction Noise Ordinance .....	2-40
Table 8 Construction Equipment Noise Levels .....	2-42

<b>Figure Name</b>	<b>Page Number</b>
Figure 1 Location Map.....	1-8
Figure 2 Area Plan .....	1-9
Figure 3 Pipeline Alignment.....	1-10
Figure 4 View Under LA County Bridge: Method of Pipe Mounting.....	1-10

**Appendices**

A	Biological Resources Technical Report
B	Cultural Resources Technical Report
C	Native American Consultation Summary Table

# Section 1

## Project and Agency Information

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### 1.1 PROJECT TITLE AND LEAD AGENCY

<b>Project Title:</b>	Summer Flow Augmentation of Malibu Creek
<b>Lead Agency Name:</b>	Las Virgenes – Triunfo Joint Powers Authority
<b>Lead Agency Address:</b>	4232 Las Virgenes Road, Calabasas, CA 91302-1994
<b>Contact Person:</b>	Mr. Brett Dingman
<b>Contact Phone Number:</b>	(818) 251-2330
<b>Project Sponsor:</b>	Same as Lead Agency

### 1.2 PROJECT BACKGROUND AND OBJECTIVES

The Las Virgenes Municipal Water District (LVMWD) provides potable water, wastewater treatment, recycled water and biosolids composting to more than 75,000 residents in the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village, and unincorporated areas of western Los Angeles County. The Triunfo Sanitation District serves approximately 33,000 residents of east Ventura County, including Oak Park, Lake Sherwood, Bell Canyon, and the Westlake Village and North Ranch portions of Thousand Oaks. In 1964, the Las Virgenes - Triunfo Joint Powers Authority (JPA) was established between LVMWD and Triunfo to treat wastewater within the Malibu Creek watershed. The JPA owns and operates the Tapia Water Reclamation Facility (Tapia WRF), which currently treats approximately 7 million gallons per day (mgd) of wastewater. The JPA is the lead agency for the proposed Summer Flow Augmentation of Malibu Creek project (proposed project) under the California Environmental Quality Act (CEQA).

The JPA has prepared this Initial Study (IS) and proposed Mitigated Negative Declaration (MND) to address the impacts of construction and operation of conveyance of potable water to Tapia WRF, and facilities for ammonia removal at Tapia WRF prior to discharge to Malibu Creek for augmentation of summer stream flows. The IS has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq. The IS serves to identify the site-specific environmental impacts, evaluate their potential significance, and determine the appropriate document needed to comply with CEQA. As described in this IS, with mitigation incorporated into the proposed project, the augmentation of summer flows in Malibu Creek would not have a significant impact on the environment. Based on the information reviewed and contained herein, a MND is the appropriate CEQA document.

### **1.2.1 Project Background**

Wastewater treated at the Tapia WRF is either reused (60-70 percent) or discharged to the Los Angeles River (Outfall 005), Malibu Creek (Outfalls 001, 002, 003), or to JPA-operated spray irrigation fields at the Rancho Las Virgenes Farm. Discharges to Malibu Creek and the Los Angeles River are regulated under National Pollutant Discharge Elimination System (NPDES) permit CA0056014 issued by the Los Angeles Regional Water Quality Control Board (Regional Board) in 2017. Discharge of treated water to Malibu Creek is allowed from November 15<sup>th</sup> to April 14<sup>th</sup> each year, with the rest of the year referred to as the prohibition period. During the prohibition period, discharges are only allowed for emergency situations (e.g., pipe break or other malfunction), for extreme wet weather flows, or for the purpose of maintaining minimum flows in Malibu Creek as set forth in the NPDES guidelines (augmentation flows). The discharge permit for Tapia WRF requires a minimum of 2.5 cubic feet per second (cfs) constant flow in Malibu Creek to sustain steelhead trout habitat, and requires LVMWD to supplement the creek flow, as needed, during the summertime period (April 15<sup>th</sup> – November 15<sup>th</sup>) to maintain the minimum flow volume. Based on historical flow records, the average summer flow rate discharged to the creek by LVMWD is less than 1.5 cfs. From November 15<sup>th</sup> through April 14<sup>th</sup>, excess Tapia WRF flows not consumed by the JPA’s recycled water customers have been discharged, with the majority going to the Malibu Creek outfalls.

The JPA Board is moving forward with the “Pure Water Project Las Virgenes – Triunfo” in order to maximize beneficial reuse of the Tapia WRF’s effluent. This will decrease discharge to Malibu Creek during the wintertime and shoulder periods of the year. However, Tapia WRF will still be required to augment flows to Malibu Creek such that 2.5 cfs of flow is maintained at gaging station F-130-R. By May 16, 2022, summer discharges from the Tapia WRF to Malibu Creek must not exceed 1.0 mg/L total nitrogen (TN) and 0.10 mg/L total phosphorus (TP). The nutrient limitations were developed in response to impairment of surface waters in the watershed (including Malibu Creek). The effluent limitations correspond to Waste Load Allocations (WLA) and Total Maximum Daily Loads (TMDLs) defined for nutrients for the Malibu Creek Watershed (USEPA, 2003).

A technical memorandum was prepared in 2016 to review treatment and operations scenarios for meeting lower nutrient discharge limits for the augmentation flow to Malibu Creek (Stantec, 2016). After review of various options, the use of potable water with ammonia removal was identified as the preferred alternative to meet the Malibu Creek summer augmentation discharge requirements.

### **1.2.2 Project Objective**

The objective of the proposed project is to augment summertime flows in Malibu Creek with the required volumes of water meeting the nutrient discharge limits for nitrogen and phosphorus as defined in the NPDES permit for the Tapia WRF.

### 1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

Tapia WRF is located on Malibu Canyon Road in unincorporated Los Angeles County (**Figure 1**). Treatment facilities for the proposed project would be located at the existing WRF. The proposed potable water pipeline would be located from the intersection of Piuma Road and Malibu Canyon Road to the overflow structure at Tapia WRF (**Figure 2**). Access to the project site is via U.S. Highway 101 (Ventura Freeway) or California State Route 1 (Pacific Coast Highway). The project site is located on the Malibu Beach 7.5 minute U. S. Geological Survey (USGS) quadrangle and the approximate latitude/longitude of the overflow structure to be used as a chlorination / dechlorination basin at Tapia WRF is 34.081441°N / -118.706725°W.

The WRF site, including the area proposed for treatment of summer augmentation water, is developed. The area surrounding the WRF is primarily open space, with Malibu Creek State Park north and west of the treatment plant. The closest residence to the treatment plant is on Piuma Road, approximately 1,330 feet east of the overflow structure, and approximately 630 feet east of the proposed pipeline. The proposed pipeline would be within an existing roadway, vegetated on both sides, across an existing County bridge (above the heavily vegetated Malibu Creek), and within the road shoulder of Las Virgenes Road. The bridge across Malibu Creek, Bridge 989, is owned and maintained by the Los Angeles County Department of Public Works (LACDPW).

### 1.4 PROJECT DESCRIPTION

This summer augmentation ammonia removal project is composed of two components: conveyance of potable water to Tapia WRF, and facilities for ammonia removal at Tapia WRF prior to discharge to Malibu Creek.

#### 1.4.1 Conveyance Pipeline

A new 8-inch potable water line (approximately 1,270 feet in length) will be extended from an existing pipeline at the intersection of Las Virgenes Road and Piuma Road and installed as follows (**Figure 3**):

- Via open trench (approximately 2 feet wide) along the west side of Malibu Canyon Road until the bridge. Open trench work will be confined to a single lane of traffic.
- Mounted using pipe hangers on the underside of the bridge to cross over Malibu Creek (within 2-ft by 2-ft utility openings on the underside of the bridge, **Figure 4**), with flexible couplings at each abutment.
- Via open trench from the bridge in the Tapia WRF access road, offset approximately 5 feet from the north side of the roadway (pending confirmation of utility locations).

Design criteria for the pipeline are:

- Pipe diameter – 8 inches

- Velocity – at maximum flow of 2.5 cfs, velocity would be 7.2 feet per second
- Material – cement mortar lined and coated (CMLC) welded steel
- Depth of cover – minimum 3 feet
- Valves – At least one pressure reducing valve, in the roadway shoulder, surface mounted; one flow control valve at the discharge location; and one isolation valve at the discharge location; combined air release/vacuum relief valves along the pipeline at high points; pipe blow-offs at low points.
- Pipe bedding and backfill requirements – LVMWD standards would be followed for backfill. It is anticipated that the trench backfill will be screened native soils to remove rocks larger than 1 inch. The pipe bedding would be sand, crushed aggregate base, or similar material to provide a stable base.
- Air gap – An air gap is required at the discharge location between the potable water pipeline and chlorination basin.

Other pipeline alignments considered were directional drilling under Malibu Creek and construction of a new pipe bridge across Malibu Creek. To avoid direct impacts to riparian vegetation along Malibu Creek, mounting the pipeline on the existing County bridge was selected as the preferred pipeline alignment.

#### **1.4.2 Water Treatment**

At Tapia WRF, potable water would be treated to remove ammonia through breakpoint chlorination – the process of removing ammonia through oxidation with chlorine. The existing potable water contains ammonia at approximately 0.38 mg/L-N, nitrate plus nitrite of 0.4 mg/L-N and organic N of less than 0.2 mg/L. To ensure compliance with the discharge limitation of 1.0 mg/L TN, ammonia would be reduced to approximately 0.1 mg/L-N, for a TN of approximately 0.7 mg/L-N in water discharged to Malibu Creek. Through bench-scale breakpoint chlorination testing, a chlorine concentration of 6 mg/L and a contact time of 12 minutes was identified as the design criteria for the maximum flow of 2.5 cfs. Dechlorination would require 4.8 mg/L of sodium bisulfate. Both sodium hypochlorite and sodium bisulfite are currently used for water treatment at Tapia WRF. For the proposed project, an approximately 300 gallon day tank or chemical tote for sodium hypochlorite would be installed in a small fiberglass building. Secondary containment of at least 100 percent of the contents would be provided for stored chemicals. A small chemical feed pump located on top of the tank would be used to meter the hypochlorite into the water. A new day tank for sodium bisulfite could also be included in the building adjacent to the overflow structure and either fed by existing sodium bisulfite pumps or as a standalone chemical tote. The existing effluent pump station would house:

- Sodium hypochlorite feed equipment
- Sodium bisulfite feed equipment

- Analyzers for total chlorine, ammonia, nitrate and deox (dechlorination)
- A new Programmable Logic Controller (PLC) connected to the plant's existing supervisory control and data acquisition (SCADA) system

Chemical treatment would occur in the existing 26,000 gallon overflow structure at Tapia WRF. The overflow structure is currently used during the winter, typically during heavy rain events or when recycled water demand is low. Therefore, use during the summer for water treatment would not conflict with its current function. To provide adequate contact time for chlorination and dechlorination, the following modifications are proposed for the overflow structure:

- Demolish the existing concrete wall that includes a weir for flow measurement. Flow measurement during overflow operations can still be achieved by the inclusion of a new meter on the existing discharge pipe out of the channel.
- Install the following new facilities:
  - 8-inch influent line mounted above grade near the south wall of the overflow structure
  - flow meter and flow control valve on the exposed influent pipe before penetration into tank for easy access for operations and maintenance
  - one colorimetric ammonia analyzer, one nitrate ion selective electrode (ISE) analyzer, one total chlorine analyzer and one dechlorination analyzer (e.g., Deox/2000® analyzer)
  - four 10-inch thick concrete walls (4.75 ft high) to channelize flow through the contactor
  - five wood baffles to dissipate energy and unify flow
  - 4.3 ft high weir near the contactor discharge to provide flow control and monitoring
  - sodium hypochlorite and sodium bisulfite injection
  - 12-inch effluent pipe with motorized valve for discharge from contactor to existing Outfall 003 channel leaving the plant
  - pipe and valve penetrating through common wall between overflow structure and effluent pond for off-spec water release

Readings from the deox (dechlorination) analyzer installed before the final weir would be used to divert off-spec water to the effluent pond if chlorine is detected in the water. This would be accomplished by closing the influent and effluent valves automatically.

Treated water would be discharged via existing pipelines to existing Outfall 003 on Malibu Creek. No structural modifications to the pipeline from the plant to the outfall or to the outfall would be required for the project.

### **1.4.3 Construction**

Installation of the proposed potable water pipeline would require the following construction equipment: backhoe, excavator, concrete mixer, roller compactor, articulated aerial lift (or access scaffolding), air compressor, welder, generator and asphalt paving equipment. Vehicles would include a pickup truck, dump truck, haul truck, delivery truck, and construction workers' personal vehicles. An estimated six construction workers would be required over the approximately 7 to 8 month construction period.

Pipeline installation in Malibu Canyon Road may be conducted at night to reduce traffic impacts. In that case, temporary lighting, shielded toward the construction activity and away from adjacent habitat areas, would be required for approximately 5 weeks.

### **1.4.4 Operations**

Minimally, chlorination/dechlorination treatment would be conducted at the WRF from April 15<sup>th</sup> to November 15<sup>th</sup>. Additional employees to operate the treatment system are not anticipated to be required. Routine maintenance of the pipeline would be minimal, consisting of periodic inspections of the visible portions of the pipeline attached to the County bridge.

## **1.5 PUBLIC AGENCY REVIEW AND/OR APPROVAL**

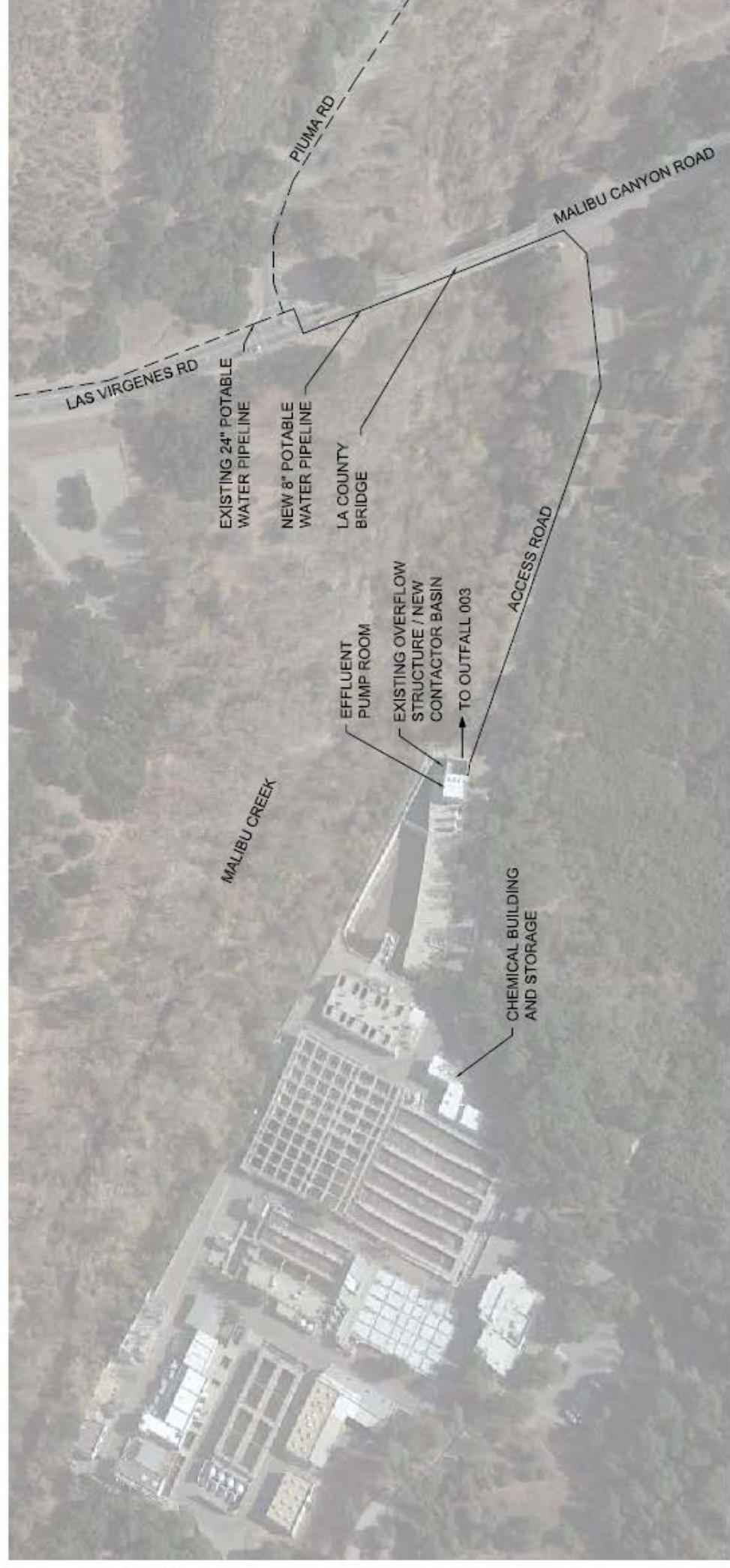
The project is being implemented in compliance with the NPDES permit CA0056014 for the Tapia WRF. Permit conditions are prescribed by the Regional Board in compliance with the Los Angeles Basin Plan (Regional Board, 2014). Public agency reviews and approvals are anticipated to include:

- Las Virgenes-Triunfo JPA – Approval of the project and execution of a contract for construction
- California Department of Transportation, District 7 – Permits for transportation of heavy construction equipment and materials that require the use of oversized-transport vehicles on State highways, as applicable
- South Coast Air Quality Management District (SCAQMD) – Compliance with Rule 403 (dust control) during construction activities; permit for temporary electric generation during construction, as applicable



- Los Angeles County Department of Public Works permit for pipeline installation in the right-of-way of a County Road (Malibu Canyon Road) and on Bridge 989; approval of a Traffic Control Plan
- Los Angeles County Department of Regional Planning Coastal Development Permit or Waiver for construction in the Santa Monica Mountains Coastal Zone
- Los Angeles County Department of Regional Planning Oak Tree Permit

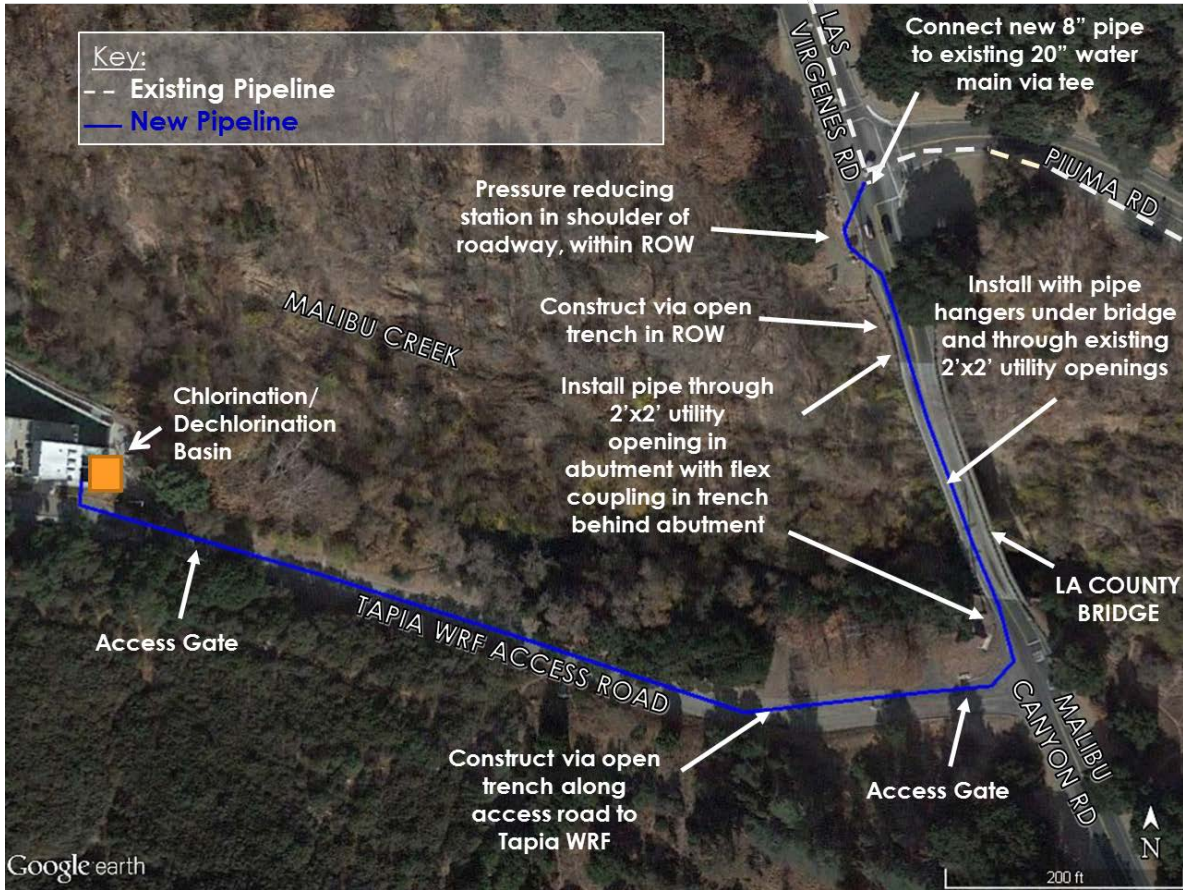




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NO. 1	DATE	BY	DESCRIPTION																



Figure 2  
Area Plan



**Figure 3  
 Pipeline Alignment**



**Figure 4  
 View Under LA County Bridge: Method of Pipe Mounting**

# Section 2

## Environmental Analysis

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### 2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> Population and Housing
<input type="checkbox"/> Agricultural Resources	<input type="checkbox"/> Hazards and Hazardous Materials	<input type="checkbox"/> Public Services
<input type="checkbox"/> Air Quality	<input type="checkbox"/> Hydrology and Water Quality	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Land Use and Planning	<input checked="" type="checkbox"/> Transportation and Traffic
<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Mineral Resources	<input type="checkbox"/> Utilities and Service Systems
<input type="checkbox"/> Geology and Soils	<input checked="" type="checkbox"/> Noise	<input checked="" type="checkbox"/> Mandatory Findings of Significance

### 2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

- I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature: Brett —

Title: Water Reclamation Manager

Printed Name: Brett Dingman

Date: 1-7-19

## 2.3 ENVIRONMENTAL CHECKLIST

### 2.3.1 Aesthetics

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion:

- a) and c) **Less than Significant Impact.** The proposed project would modify an existing structure at a wastewater treatment plant and install an 8-inch potable water pipeline (buried and hung on the underside of an existing bridge). During construction, views of the site would be of construction activity, construction vehicles and equipment. Once construction is complete, the visual character and vistas from the project area would be essentially the same as existing conditions. Overall, the impact of the project on visual resources would be temporary and less than significant.
- b) **No Impact.** Scenic roadways are designated by Caltrans and the Federal Highway Administration. In the project area, Highway 101 west of State Route 27 is an eligible but not officially designated State Scenic Highways (Caltrans, 2018). The closest officially designated (as of March 22, 2017) State Scenic Highway is State Route 27 from post miles 1.0-3.5, over 5 miles east of the project area. Therefore, the project would have no impact on visual resources near a State scenic highway.
- d) **Less than Significant Impact.** The proposed project does not include permanent installation of new sources of lighting. However, pipeline installation in Malibu Canyon Road may be conducted at night to reduce traffic impacts. In that case, temporary lighting, shielded toward the construction activity and away from adjacent habitat areas, would be required for approximately 5 weeks. The impact would be temporary and less than significant on nighttime views of the project area.

### 2.3.2 Agricultural and Forest Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) and b) **No Impact.** The proposed project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDC, 2017a). The project site is not associated with a Williamson Act contract (CDC, 2017b). The project site is zoned for Public and Semi-Public (PS) land use, and not for agricultural use. Surrounding zoning is for single family residential (RS), PS and open space (O-S). Therefore, the project would not impact Prime Farmland, Unique Farmland, Farmland of Statewide Importance, existing zoning for agricultural use, or a Williamson Act contract.
- c) d) and e) **No Impact.** The project site is not zoned as forested land and the proposed project would not result in conversion of forest land to non-forest use. Public Resources Code Section 12220 (g) defines "Forest land" as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Removal of trees is not proposed. Therefore, the proposed project would have no impact on forest lands.

### 2.3.3 Air Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion:

The project area is within the South Coast Air Basin (SCAB), which is bounded by the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and the Pacific Ocean to the south and west. The climate is warm and temperate. The mild climate is occasionally disrupted by periods of hot weather, winter storm, and Santa Ana winds.

The Los Angeles County portion of the SCAB is regulated by the SCAQMD and is state-designated as a non-attainment area for ozone (8-hour), particulate matter 10 microns or less in diameter (PM<sub>10</sub>), and particulate matter 2.5 microns or less in diameter (PM<sub>2.5</sub>) (California Air Resources Board (CARB), 2017). Based on the federal standards, the SCAB is a non-attainment area for ozone (8-hour), attainment for PM<sub>10</sub>, and nonattainment for the 24-hour PM<sub>2.5</sub> standard. The SCAB is state and federal-designated as in attainment for nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and carbon monoxide (CO).

SCAQMD has established thresholds of significance for air quality impacts for construction and operation (**Table 1**). SCAQMD also publishes localized significance thresholds (LSTs) that are a function of a project's location, size, and sensitive receptor distance. Based on the project location within Northwest Coastal Los Angeles County (Source Receptor Area Zone 2), a project size of approximately 1 acre, and 200 meters to the nearest receptor, LSTs are listed in **Table 1**.



**Table 1**  
**SCAQMD Air Quality Significance Thresholds**

<b>Mass Daily Thresholds</b>			
<b>Pollutant</b>	<b>Construction</b>	<b>Operation</b>	<b>Construction LST</b>
NOx	100 lbs/day	55 lbs/day	156
VOC	75 lbs/day	55 lbs/day	--
PM <sub>10</sub>	150 lbs/day	150 lbs/day	57
PM <sub>2.5</sub>	55 lbs/day	55 lbs/day	18
SOx	150 lbs/day	150 lbs/day	--
CO	550 lbs/day	550 lbs/day	2,367

NOx = Nitrogen oxide, VOC = Volatile Organic Compounds, PM<sub>10</sub> = Particulate matter 10 microns or less in diameter, PM<sub>2.5</sub> = Particulate matter 2.5 microns or less in diameter, SOx = Sulfur oxides, CO = Carbon monoxide

LST = localized significance thresholds for Source Receptor Area 2 (Northwest Coastal LA County), project site of 1 acre and nearest receptor 200 meters (SCAQMD, 2009)

Source: SCAQMD CEQA Handbook (SCAQMD, 1993; revised 2006)

- a) **No Impact.** The applicable air quality plan for the project area is the 2016 Air Quality Management Plan (AQMP), approved by the SCAQMD on March 3, 2017 (SCAQMD, 2017). The AQMP is designed to satisfy the planning requirements of both the federal and California Clean Air Acts. The AQMP outlines strategies and measures to achieve federal and state standards for healthful air quality for all areas under SCAQMD’s jurisdiction. The 2016 AQMP demonstrates attainment of the 1-hr and 8-hr ozone National Ambient Air Quality Standards (NAAQS) as well as the latest 24-hr and annual PM<sub>2.5</sub> standards.

A project is deemed inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. Since the project does not include construction of homes or businesses, it would not directly impact population growth. Additionally, the project pipeline would not connect to additional potable water users, therefore the project would not significantly impact population growth or conflict with or obstruct the implementation of the AQMP. The project would have no impact on the relevant air quality plan.

- b), c) **Less than Significant Impact.** Construction activities as well as operation of the proposed project would generate air pollutants.

Project Operation

Operation of the proposed project would not cause a measurable increase in air pollutant emissions. Currently, chemical feed systems use electric power for operation. Under the proposed project, a minor increase in electric use is predicted. Other emissions related to project operation include vehicle emissions from maintenance staff visiting the site; these emissions would be the same as existing conditions. Overall, operation of the proposed project would have a less than significant impact on air quality.

### Project Construction

The proposed project would temporarily generate air pollutants from construction activities. Construction of the proposed project would include implementation of modifications at the existing overflow structure and installation of the proposed pipeline. These construction activities would generate air pollutants from equipment exhaust, earth disturbance, and off-gassing from asphalt. **Table 2** summarizes estimated emissions based on estimated maximum day emissions during construction. Additional particulate matter emissions would result from earthwork as summarized in **Table 3**.

**Table 2  
Estimated Peak Day Construction Air Pollutant Emissions**

Emissions Source (on-road vehicles)	Vehicle Type	No.	Est Max miles per day	Emission Factor (lbs/mi) <sup>1</sup>						Est Peak Day Emissions (lbs/day)					
				VOC	CO	NOx	SOx	PM10	PM2.5	VOC	CO	NOx	SOx	PM10	PM2.5
Light Duty Truck	PV	1	40	0.0005	0.0044	0.0004	0.0000	0.0001	0.0001	0.02	0.18	0.02	0.00	0.00	0.00
Haul Truck	HHDT	1	200	0.0011	0.0053	0.0127	0.0000	0.0006	0.0005	0.22	1.06	2.55	0.01	0.13	0.10
Delivery Truck	DT	1	160	0.0012	0.0080	0.0083	0.0000	0.0004	0.0003	0.20	1.28	1.33	0.00	0.06	0.04
Dump Truck	HHDT	1	200	0.0011	0.0053	0.0127	0.0000	0.0006	0.0005	0.22	1.06	2.55	0.01	0.13	0.10
Workers Personal Vehicles	PV	6	60	0.0005	0.0044	0.0004	0.0000	0.0001	0.0001	0.19	1.60	0.15	0.00	0.03	0.02
Emissions Source (construction equipment)	No.	Est Max hrs of use per day	Emissions Factor (lbs/hr) <sup>2</sup>						Est Peak Day Emissions (lbs/day)						
			VOC	CO	NOx	SOx	PM10	PM2.5 <sup>3</sup>	VOC	CO	NOx	SOx	PM10	PM 2.5	
Backhoe (50 hp)	1	8	0.0407	0.2760	0.2179	0.0004	0.0087	0.0078	0.33	2.21	1.74	0.00	0.07	0.06	
Excavator (250)	1	8	0.0828	0.3276	0.4493	0.0018	0.0154	0.0137	0.66	2.62	3.59	0.01	0.12	0.11	
Concrete Mixer	2	8	0.0086	0.0415	0.0536	0.0001	0.0021	0.0019	0.14	0.66	0.86	0.00	0.03	0.03	
Roller Compactor	1	4	0.0584	0.3837	0.3793	0.0008	0.0232	0.0207	0.23	1.53	1.52	0.00	0.09	0.08	
Articulated Aerial Lift	1	8	0.0261	0.1696	0.1866	0.0004	0.0092	0.0082	0.21	1.36	1.49	0.00	0.07	0.07	
Air Compressor	1	4	0.0483	0.3077	0.3255	0.0007	0.0185	0.0164	0.19	1.23	1.30	0.00	0.07	0.07	
Welder	1	4	0.0310	0.1816	0.1735	0.0003	0.0102	0.0091	0.12	0.73	0.69	0.00	0.04	0.04	
Generator	1	6	0.0395	0.2732	0.3232	0.0007	0.0150	0.0133	0.24	1.64	1.94	0.00	0.09	0.08	
Asphalt Paving Equipment	1	4	0.0757	0.4084	0.4807	0.0008	0.0315	0.0281	0.30	1.63	1.92	0.00	0.13	0.11	
Fugitive Dust from grading, material handling and truck travel for soil hauling (see Table 3)													1.46	1.21	
<b>Total</b>									<b>3.3</b>	<b>18.8</b>	<b>21.7</b>	<b>0.1</b>	<b>2.5</b>	<b>2.1</b>	

PV: passenger vehicles, HHDT: heavy-heavy-duty trucks, DT: delivery trucks

<sup>1</sup> SCAQMD. 2007a. EMFAC2007 v. 2.3 Emission Factors for On-Road PV & DT. Scenario Year 2020

<sup>2</sup> SCAQMD. 2007b. SCAB Fleet Average Emission Factors (Diesel). Scenario year 2020

<sup>3</sup> SCAQMD. 2006. Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance

**Table 3  
Estimated Fugitive Dust Emissions**

Emissions Type	Emissions Factor	Units	Source of Emission Factor	Graded Area (acres per day)	PM10 Emissions (lbs per day)	PM2.5 Emissions (lbs per day)
Grading	26.4	lbs/acre	SCAQMD, 1993	0.05	1.32	1.17
				<b>Material Handled (tons per day)</b>		
Material Handling	0.000449	lbs/ton	AP-42 13.2.4	32	0.014	
Material Handling	0.000068	lbs/ton	AP-42 13.2.4	32		0.002
				<b>Miles per day</b>		
Travel on paved roadways - haul truck	0.000627	lbs/VMT	AP-42 13.2.1	200	0.125	
Travel on paved roadways - haul truck	0.000154	lbs/VMT	AP-42 13.2.1	200		0.031
<b>Totals</b>					<b>1.46</b>	<b>1.21</b>

AP-42 Source: EPA, 1995

**Table 4** compares the peak-day onsite construction emissions (before mitigation) to the relevant LSTs. Project-related emissions would not exceed the screening-level LSTs. However, with implementation of Mitigation Measure AQ-1 (site watering) to further reduce less than significant impacts, particulate matter emitted during the earthwork phase of project construction from grading and excavation would be reduced an estimated 61 percent (SCAQMD, 2007). The project would have a less than significant impact on air quality.

**Table 4  
Localized Significance Threshold Analysis Before Mitigation (lbs/day)**

	CO	NOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Unmitigated Construction Emissions	18.8	21.7	2.5	2.1
SCAQMD Localized Significance Threshold	2,367	156	57	18
Significant?	No	No	No	No

d) **Less than Significant Impact.** Certain residents, such as the very young, the elderly and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution

and are considered sensitive receptors. In addition, active park users, such as participants in sporting events, are sensitive air pollutant receptors due to increased respiratory rates. Land uses where sensitive air pollutant receptors congregate include schools, day care centers, parks, recreational areas, medical facilities, rest homes, and convalescent care facilities

As described above, the proposed project would result in temporary dust emissions during construction below established SCAQMD thresholds. However, mitigation to reduce dust emissions during construction will be implemented. Project-related impacts on air quality, including impacts to sensitive receptors, would be less than significant. Operation of the proposed facilities would result in similar air pollutant emissions as under existing conditions.

In addition to the priority pollutants discussed in b) and c) above, toxic air emissions are of potential concern to sensitive receptors. The proposed project would generate emissions from construction equipment during construction activities, including emissions from diesel trucks and heavy construction equipment. CARB classifies diesel particulate emissions as a toxic air contaminant (TAC). Significant impacts associated with exposure to diesel particulate emissions are not expected because construction would occur 5 days per week for approximately 7 to 8 months. Quantitative cancer risk analyses are based on exposure of 70 years for residential exposures and 46 years for occupational exposures; exposure to project-related emissions will be for a much shorter period of time (i.e., during the construction phase). The maximum particulate emissions for diesel engines are estimated at approximately 1 pound per day during the peak construction phase. Based on the short exposure period and small amount of emissions, toxic air contaminant emissions would be less than significant during the construction phase. As discussed above, project operation would not result in substantial air pollutant emissions over existing conditions. Due to the limited duration of project construction, project related air quality impacts on sensitive receptors would be less than significant.

e) **Less than Significant Impact.** During construction, equipment exhaust and certain construction materials (e.g., asphalt) may be mildly odorous. However, such odors would be limited to the immediate vicinity of the project site, would dissipate rapidly, and would cease at the end of construction. Operation of the proposed project would not result in the generation of odor noticeable to offset receptors. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and project-related impacts related to odors would be less than significant.

### **Mitigation Measure**

Incorporation of Mitigation Measure AQ-1 would further reduce less than significant air quality impacts from project construction.

**AQ-1 Site Watering.** Disturbed areas of the project site shall be watered a minimum of three times per day during the demolition, excavation, grading and site preparation phases of project construction.

### 2.3.4 Biological Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:** A survey for biological resources and habitat assessment within the project site was conducted on June 20, 2018. The project area was defined as a corridor sufficiently wide to encompass all potential areas of project disturbance for pipeline installation. Since improvements at the WRF will be implemented at an existing process unit, no area within the treatment plant boundary is considered for biological resources review. Biological resources assessment included a literature review, reconnaissance-level survey, focused non-protocol surveys for special-status plant and wildlife species, non-protocol focused surveys for listed song birds, and preliminary jurisdictional delineation. Surveys were conducted on foot within the project site where accessible based on terrain and vegetative cover.

Sources used to identify significant biological resources potentially present on the site were: special status plant and wildlife species lists published by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife’s (CDFW) California Natural Diversity Database (CNDDB; CDFW, 2018), and the California Native Plant Society’s (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2018). The entire project area was

surveyed by walking meandering transects throughout all accessible portions at an average pace of approximately 1.5 km/hr, while visually searching for and listening to wildlife songs and calls and observing for animal signs. The walking survey was halted approximately every 50 meters to listen for wildlife or as necessary to identify, record, or enumerate any other detected species. The primary goals of wildlife surveys were to identify and assess habitat capable of supporting special-status wildlife species and/or to document the presence/absence of special-status wildlife species.

Vegetation maps were prepared by drawing tentative vegetation type boundaries onto high-resolution aerial images while in the field, then digitizing these polygons into GIS. Vegetation descriptions and names are based on Sawyer et al. (2009) and were defined at least to the alliance level.

The project site is within existing roadways and at an existing wastewater treatment plant. Vegetation types adjacent to project roadways consist primarily of common plant species and vegetation communities characteristic of the coastal ranges and valleys of southern California. Habitat conditions within undeveloped portions of the project area are generally good, with well-established monocultures of native tree species dominating the riparian areas adjacent to Malibu Canyon Road and the Tapia WRF entrance road. Within the project area, Stantec biologists mapped six plant communities defined by Sawyer et al. (2009) and one additional land cover type (Figure 2 of Appendix A; Stantec, 2018b).

- a) **Less than Significant Impact with Mitigation Incorporated.** In general, direct impacts to special-status plants and terrestrial wildlife include ground-disturbing activities associated with construction of the project (e.g., trenching) and increased human presence (e.g., crushing, trampling, trapping). Potential indirect impacts include increased noise levels from construction equipment (wildlife only), increased human disturbance, exposure to fugitive dust, and the spread of noxious weeds.

One special status plant, Southern California black walnut, was observed in the project area during the June 2018 survey. Located away from the roadways and the area of ground disturbance, no impacts to Southern California black walnut would occur. Other special-status plant species were not observed but were determined to have low (8 species), moderate (28 species) or high (5 species) potential to occur in the project area. Construction would be confined to existing developed areas including the Tapia WRF access road and Malibu Canyon Road and their disturbed margins. As such, implementation of the project is not expected to result in direct impacts to native vegetation communities that surround these developed areas.

However, since there is still some limited potential for sensitive plant species to occur at the project site, additional focused botanical surveys will be conducted prior to construction (mitigation measure **BIO-3**) to reduce potential impacts on sensitive plant species to less than significant levels. Additionally, mitigation measures **BIO-1** (best management practices) and **BIO-2** (worker environmental education program) will be implemented to avoid or minimize impacts on biological resources.

Although no special status animal species were observed during the surveys, 32 sensitive animal species (14 low, 6 moderate, and 12 high) have the potential to occur in the project region (Table 4 of Appendix A). Since construction would be confined to existing developed

areas including the Tapia WRF access road and Malibu Canyon Road and their disturbed margins, significant direct impacts to these species are not anticipated. However, installation of the proposed pipeline in Malibu Canyon Road may occur at night for approximately 5 weeks. Noise impacts to sensitive wildlife could occur during this period but would be less than significant with implementation of noise mitigation measure NOI-1. Additionally, wildlife surveys will be conducted prior to construction (mitigation measure **BIO-3**) to reduce potential impacts on sensitive animals to less than significant levels.

The Migratory Bird Treaty Act (MBTA) and Sections 3503, 3503.5, and 3513 of the Fish and Game Code (FGC) protect the nests of essentially all bird species (native and non-native), including common species such as mourning dove, Anna's hummingbird, and house finch. Nesting birds have potential to occur in vegetation throughout the project area. If project construction were to occur during the avian nesting season (generally considered to be between February 15th through September 15th, although some raptors species may nest as early as January), indirect impacts to nesting birds could occur. With implementation of mitigation measure **BIO-4**, impacts on migratory birds would be less than significant.

- b) **Less than Significant Impact with Mitigation Incorporated.** Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Based on the vegetation mapping, one CDFW sensitive vegetation community, southern coast live oak riparian forest (coast live oak woodland), occurs within the project area; this community has a state rank of S4 (Apparently Secure).

In addition, the SMM LUP defines the project area as H1 habitat, considered a Sensitive Environmental Resource Area (SERA) containing habitats of the highest biological significance, rarity, and sensitivity. H1 habitats include: alluvial scrub; coastal bluff scrub; dune; native grassland and scrub with a strong component of native grasses or forbs; riparian; native oak, sycamore, walnut and bay woodlands; rock outcrop habitat types; and wetlands.

The canopies of several coast live oak trees extend over the Tapia WRF access road, and construction may result in some minor trimming of branches or cutting of roots. These activities would encroach into the "Protected Zone" of one or more of those trees, which would constitute a direct impact to those individual trees. No oaks or other trees would be directly removed as a result of the project, however, impacts to roots and branches may occur. With implementation of mitigation measures **BIO-1** to **BIO-3**, and **BIO-5**, impacts on sensitive vegetation communities would be less than significant.

- c) **Less than Significant Impact with Mitigation Incorporated.** Two types of jurisdictional features were documented within the project area associated with Malibu Creek: USACE non-wetland Waters of the U.S. and CDFW State Waters. Malibu Creek is considered a Relatively Permanent Water and flows directly into the Pacific Ocean, which is a Traditionally Navigable Water (TNW). Based on this connectivity to a TNW, Malibu Creek is federally jurisdictional and the creek and associated contiguous areas of riparian vegetation are State jurisdictional. In addition, there are small v-ditches adjacent to the Tapia WRF access road that facilitate



stormwater runoff. These contribute flow to Malibu Creek and therefore would also likely be considered jurisdictional resources. Approximately 0.55 acre of Waters of the U.S. and 1.14 acres of CDFW State Waters occur within the Project Site. Figure 5 in Appendix A depicts the extent of the jurisdictional areas within the Project Site.

Installation of the proposed pipeline across the County bridge may be accomplished from scaffolding attached to the bridge and/or through the use of an aerial lift placed below the bridge. Installation of the pipeline under the bridge is anticipated to be completed in approximately 3 weeks. No construction equipment would enter the creek, and if an aerial lift is used, it would be placed directly below the bridge impacting a few square feet of area. Implementation of mitigation measure **BIO-3** would reduce impacts on vegetation adjacent to Malibu Creek from use of an aerial lift. Additionally, implementation of mitigation measure **BIO-1** would reduce impacts from erosion and inadvertent discharges of disturbed soils, as well as spread of weed species, to Malibu Creek. As mitigated, impacts on wetlands would be less than significant.

- d) **Less Than Significant Impact with Mitigation Incorporated.** Although wildlife movement is hampered by rural development in some portions of the Santa Monica Mountains, animals are still able to move through in many areas. Due to its large size and topographic complexity, many linkages are certain to occur within the Santa Monica Mountains at various bottlenecks. These linkages allow movement between large open space areas within the Santa Monica Mountains as well as between areas outside the Santa Monica Mountains such as the Simi Hills. Within the Project Area, the Malibu Creek riparian corridor serves as an important wildlife travel route. This corridor is free of development and connects other undeveloped lands along its length. Wildlife would be expected to use this route frequently to travel through the Project Area and surrounding region.

The proposed project would improve the water quality of the discharge to Malibu Creek, a beneficial impact on the stream. The improvement in water quality would not impact discharge volumes or otherwise adversely impact migratory fish species.

Effects on bird migration patterns, if any, will be temporary and only during the construction phase of the project. Implementation of mitigation measure **BIO-4** for the protection of nesting migratory birds would reduce impacts to less than significant levels.

- e) **Less than Significant Impact with Mitigation Incorporated.** Biological resource management and regulation in the Santa Monica Mountains Coastal Zone, including the Project Site, are implemented through the County Santa Monica Mountains Local Coastal Program (SMM LCP). Together, the Santa Monica Mountains Land Use Plan (SMM LUP; Los Angeles County, 2018a) and the Santa Monica Mountains Local Implementation Program (SMM LIP; Los Angeles County, 2018b) constitute the County's State-mandated LCP for the Santa Monica Mountains segment of the County's coastal zone.

Since project facilities are proposed for an existing wastewater treatment plant and existing roadways and road right-of-ways, substantial vegetation removal would not be required for project construction. However, mature trees, including native oak trees, are located along the

project alignment and trenching for pipeline installation may encroach into the protected zone, as defined by the SMM LIP, of one or more of these trees. With implementation of mitigation measure **BIO-5**, impacts on relevant ordinances, including tree ordinances, would be less than significant.

- f) **Less than Significant Impact with Mitigation Incorporated.** The project area is located within the SMM LUP and mapped as H1 habitat - SERA; the project site is also within Significant Ecological Area (SEA) number 22. SMM LUP policies (see Section 2.3.10) call for infrastructure to be located within legally existing roadways and road rights-of-way in a manner that avoids adverse impacts to coastal resources to the maximum extent feasible; for best management practices (BMPs) to be implemented to minimize environmental effects; for facility design to minimize environmental effects; and for facilities to be sized to support existing and approved land uses, and not induce further development.

The proposed water treatment and pipeline project would be located in existing roadways and road rights-of-way, and at an existing wastewater treatment plant. BMPs and mitigation measures will be implemented to reduce construction-impacts to less than significant levels (see mitigation measures **BIO-1** through **BIO-5**). As designed, the pipeline would cross Malibu Creek mounted on the underside of an existing bridge. This stream crossing was selected to minimize environmental effects. Finally, operation of the proposed pipeline would not serve new potable water customers but would ensure compliance with the Tapia WRF discharge permit requirements, a beneficial impact on water quality in Malibu Creek.

Overall, the impact of the proposed on relevant habitat plans in the project area is less than significant with incorporation of mitigation measures for the protection of biological resources.

## **Mitigation Measures**

With implementation of the following mitigation measures, project-related impacts on biological resources would be less than significant.

**BIO-1 Implement BMPs.** BMPs shall be implemented as standard operating procedures during all ground disturbance and construction-related activities to avoid or minimize project impacts on biological resources. BMPs shall include:

- Restrict non-essential equipment to the existing roadways and/or ruderal areas to avoid disturbance to native vegetation.
- All excavation, steep-walled holes or trenches in excess of 6 inches in depth shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earthen fill or wooden planks with a 2:1 slope ratio. Trenches will also be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they will be thoroughly inspected for entrapped wildlife. Any wildlife discovered will be allowed to escape before construction

activities are allowed to resume or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).

- Minimize mechanical disturbance of soils to reduce impact of habitat manipulation on small mammals, reptiles, and amphibians.
- Removal/disturbance of vegetation shall be minimized to the greatest extent feasible.
- Install and maintain appropriate erosion/sediment control measures as needed throughout the duration of work activities. Sediment control measures shall be sufficient to prevent soils disturbed for pipeline installation from entering Malibu Creek. Materials used in implementing stormwater Best Management Practices, including straw wattles or soil fill, shall be certified weed-free to avoid introducing invasive plant species into native habitat.
- Construction-related vehicles shall be clean and maintained free of weeds to avoid spreading noxious weeds across the project or transporting new weeds to the Project Site. Vehicles or equipment brought from different areas of the country, state, or other weed zones shall be cleaned, or documentation provided that they are weed free.
- No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Spill kits shall be maintained on the Project Site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven and/or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of materials.

**BIO-2 Implement a Worker Environmental Education Program.** Prior to the start of any construction related activities within the Project Site (i.e., mobilization, fencing, grading, or construction), a Worker Environmental Education Program (WEEP) shall be implemented. Briefings for project personnel shall include: a discussion of the Federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the MBTA; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event wildlife needs to be relocated or dead or injured wildlife is discovered; and a review of mitigation requirements.

### **BIO-3 Pre-Construction Surveys (Plants and Wildlife) and Biological Monitoring**

**Wildlife Surveys:** Prior to ground disturbance or tree trimming (if applicable) within the Project Site, a qualified biologist shall conduct surveys for wildlife (no more than 14 days prior to Project Site disturbing activities) where suitable habitat is present and may be directly impacted by construction activities. Wildlife found within the Project Site or in areas potentially affected by the project will be relocated to the nearest suitable habitat that will not be affected by the project prior to the start of construction. Special-status species found within a project impact area shall be relocated by an authorized biologist to suitable habitat outside the impact area.

The wildlife survey shall include a focused survey for bats within 500 feet of the Project Site. To the extent feasible, maternity roosts, if present, shall be left undisturbed with a buffer of 300 feet from March 15 to September 30. To the extent feasible, hibernation roosts, if present in winter, shall be left undisturbed with a buffer of 100 feet. Where avoidance is infeasible, and a bat roost would be disturbed and/or bats expelled, consultation with CDFW shall be conducted.

**Plant Surveys:** Prior to initial ground disturbance within the Project Site, a qualified biologist shall conduct pre-construction surveys for special-status plant species in all undeveloped areas subject to ground-disturbing activity. If construction starts in the fall and will extend into the spring, additional surveys shall be conducted in all areas where new ground disturbing activities would occur during the spring (after March 1). All listed plant species found shall be marked and avoided. Any populations of special-status plants found during surveys will be fully described, mapped, and a CNPS Field Survey Form or written equivalent shall be prepared.

Prior to Site trenching, any populations of special-status plant species identified during the surveys shall be protected by a buffer zone. The buffer zone shall be established around these areas and shall be of sufficient size to eliminate potential disturbance to the plants from human activity and any other potential sources of disturbance including human trampling, erosion, and dust. The size of the buffer depends upon the proposed use of the immediately adjacent lands and includes consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, physical and chemical characteristics of soils) that are identified by the qualified plant ecologist or botanist. The buffer for herbaceous and shrub species shall be, at minimum, 50 feet from the perimeter of the population or the individual. A smaller buffer may be established, provided there are adequate measures in place to avoid the take of the species. Highly visible flagging shall be placed along the buffer area and remain in good working order during the duration of any construction activities in the area.

Where impacts to listed plants cannot be avoided, the USFWS and/or CDFW shall be consulted for authorization, as appropriate.

**Biological Monitoring:** A qualified biologist shall be present during initial ground disturbance within the Project Site and periodically during the bird nesting season. If required, during pre-construction surveys and/or monitoring efforts, the qualified biologist will relocate common and special-status species that enter the Project Site. Some special-status species may require specific permits prior to handling and/or have established protocols for relocation. Records of all detections, captures, and releases shall be reported to CDFW.

**BIO-4 Nesting Bird Surveys and Avoidance Measures.** Where possible, vegetation removal activities (e.g., tree trimming, if required) should occur after September 15 but prior to February 15 to avoid impacts to nesting birds. Prior to initial site disturbance/issuance of grading permits, seasonally timed presence/absence surveys for nesting birds shall be conducted by a qualified biologist. If construction occurs outside of avian nesting season, only a single presence/absence survey for special status species will be conducted. If

construction is scheduled to begin during the avian nesting season (February 15 through September 15; January 1 to August 15 for raptors), a minimum of three survey events, three days apart, shall be conducted, with the last survey no more than three days prior to the start of site disturbance. Surveys shall be conducted within 500 feet of all proposed project activities.

If least Bell's vireo, coastal California gnatcatcher, or other special-status species are observed, consultation with USFWS and/or CDFW will be conducted. If breeding birds with active nests are found prior to or during construction, a qualified biologist shall establish a 300-foot buffer around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails.

**BIO-5 Oak and Other Native Tree Avoidance Measures.** The project shall comply with measures outlined in the SMM LCP and Los Angeles County Oak Woodlands Conservation Management Plan (OWCMP). This will include the following:

- A Protected Tree Survey shall be conducted by a Certified Arborist prior to construction activities in order to document planned and specific impacts to individual trees protected by the SMM LCP, which on the project site include coast live oaks, California ash, California sycamore, and black cottonwood with a single trunk diameter of 6 inches or greater, or a combination of any two trunks measuring 8 inches or greater, at four and one-half feet above natural grade.
- A Los Angeles County Coastal Development Permit-oak tree shall be obtained for encroachment into the protected zone of protected native trees. The permit application shall include a description of the construction; the location of all ordinance/plan oak trees proposed to be removed and/or relocated, or within 200 feet of proposed construction, grading, landfill or other activity; and an oak tree report that evaluates each tree's dimensions, health, aesthetic appearance, and potential impacts. The permit application shall also substantiate that the construction will not endanger the health of remaining oaks on the property, result in soil erosion through diversion or increased flow of surface waters.
- Removal of ordinance trees, pruning structural roots (roots greater than 1 inch in diameter), or trimming more than 25 percent of a tree's canopy, and/or removal of more than 50 percent of the root zone shall be avoided to the extent feasible.
- Root or crown pruning activities shall be as minimal as feasible and monitored by a Certified Arborist; pruning shall be done using International Society of Arboriculture (ISA) standards. Any roots larger than 1 inch in diameter that must be pruned shall be cut flush immediately with proper equipment.

- Excavation and grading shall, to the extent possible, avoid cutting or damaging roots. As recommended by the arborist, hand tools shall be employed when excavating in the root zone. Hand tools or an air spade shall be employed to dig in the protected zone of all protected native trees in the unincorporated areas. Roots of 1-inch diameter or larger shall be preserved. To the extent feasible, construction shall be threaded through the roots or the roots shall be pushed aside. Roots shall be covered with a moist cloth or burlap while they are exposed.
- Root pruning shall be conducted as far from the trunk as possible.
- Parking equipment, staging construction materials, and excessive foot traffic within the protected zone of the affected trees (defined in the unincorporated SMM Coastal Zone as the greater distance between 5 feet from the dripline or 15 feet from the trunk) shall be avoided, as feasible, to prevent soil compaction or damage to roots. As applicable, protected trees near construction shall be protected by substantial (chain-link), temporary, protective fencing.
- Creating holes around tree roots deeper than 3 inches shall be avoided, as feasible. When excavations are unavoidable, backfill shall not use subsurface or clay soils; fill shall be with well-draining soils high in organic matter that do not exceed the surrounding soil surface level.
- Altering the grade within the protected zone shall be avoided to prevent imminent and long-term damage to roots. Any grade changes shall occur beyond the protected zone.
- The Los Angeles County SMM Coastal Zone has no in lieu fee for protected tree impacts. Mitigation trees, where applicable, shall be planted in an area legally protected from development and in the same watershed as the impact. Mitigation trees, as applicable, shall be planted on conserved land under maintenance of an organization with experience in managing land for conservation and preservation.

### 2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:** The Santa Monica Mountains are the ethnographic Traditional Use Areas of both the Chumash and Gabrielino (*Tongva*) Tribes. A records search and literature review for the project area plus a 0.5-mile radius around the project area (the study area) was conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton, California on June 27, 2018. As part of the records search, the following inventories in and/or adjacent to the Project Area were reviewed:

- California Inventory of Historic Resources (California Department of Parks and Recreation, 1976)
- California Historical Landmarks (California Office of Historic Preservation, 1996)
- California Points of Historical Interest (California Office of Historic Preservation, 1992)
- Directory of Properties in the Historic Property Data File (includes listings of the National Register of Historic Places (NRHP) and the CRHR) (California Office of Historic Preservation, 2004)

Thirteen previous cultural resources investigations have been conducted within the study area, including an evaluation report for Cultural Resources Near the Proposed Fill Zone at Malibu Creek State Park (Kelly, 1981) and an interpretive plan for the Malibu Creek State Park Day-use and Campground Areas (Hook and Hare, 1983). The other 11 studies include one monitoring report (King, 2010) and 10 survey reports that span from 1977 to 2006. Four of the 13 previously documented studies include portions of the project area.

The records search identified 10 previously documented cultural resources within the study area; however, none are located directly within the project area. The four historic era resources are a single 1954 glass bottle, pipe, a rock and concrete marker, and the Malibu Boys Camp. Prehistoric resources include Bedrock Mortar Milling Stations (BRMs), lithic debitage scatters, and a shell scatter. The majority of these sites are located in excess of 0.25-miles from the project area; two

resources, a BRM site and a rock and concrete marker are located within 0.1-mile of the project area.

On June 27, 2018, Stantec conducted an intensive, 100 percent coverage pedestrian survey of the 4.8-acre project area. The project area was surveyed by walking east-west and north-south transects spaced approximately 10-15 meters apart. Due to the overall archaeological sensitivity of the area, banks of the nearby drainage (Sleeper Canyon) were examined for presence of surface deposits. Additionally, per the California Office of Historic Preservation (OHP, 1995) guidelines, Stantec examined surface and subsurface exposures such as rodent burrows and cut banks for physical manifestations of human activity greater than 45 years in age. Ground visibility was relatively good to very good (between 60 and 80 percent). Several modern fire pits, with modern refuse, were observed immediately south of Piuma Road and east of Malibu Canyon Road. No cultural resources were observed during the course of the survey.

Results of the investigation are documented in the Cultural Resources Evaluation for the Summer Flow Augmentation of Malibu Creek (Appendix B; Stantec, 2018c).

- a) **No Impact.** No historical resources have been identified within the project area. Construction of the project would be confined to existing roadways; trench depth is estimated at less than 5 feet. Pipeline installation would occur in soils previously disturbed for roadway and utility construction. Since no change to the significance of an historical resource would occur, the project would have no impacts on historical resources.
- b) **Less than Significant Impact with Mitigation Incorporated.** Based on the cultural resources investigation for the project, no cultural resources were identified within the project area. However, 10 resources are located within 0.5-miles of the project area and two of these resources are located within 0.10-mile of the project area. Intact archaeological resources are not anticipated since any surficial resources that may have been present at one time have been disturbed. However, there is limited potential for project construction to unearth or otherwise adversely impact unidentified archaeological resources. With implementation of mitigation measure **CR-1**, impacts on unknown archaeological resources would be less than significant.
- c) **No Impact.** There are no known paleontological resources within the project area. In addition, project construction would be limited to shallow (less than 5-feet) excavation in soils that were previously disturbed during construction for Malibu Canyon Road and the Tapia WRF access roadway, a distance of approximately 1,270-feet (210 feet mounted on the bridge). Since ground-disturbing activities during construction are unlikely to uncover any previously unknown paleontological resources, there would be no project-related impacts on paleontological resources.
- d) **Less than Significant Impact with Mitigation Incorporated.** No known human burials have been identified on the project site or in the vicinity of the project. The project site is not part of a formal cemetery and is not known to have been used for disposal of historic or prehistoric human remains. Thus, human remains are not expected to be encountered during



construction of the proposed project. In the unlikely event that human remains are encountered during project construction, mitigation measure **CR-2** shall be implemented, and impacts from project site development on human remains would be less than significant.

**CR-1 Worker Education Awareness Program.** The WEAP shall be prepared and presented to construction workers prior to the start of the project. The WEAP materials shall communicate the cultural significance of the project area to local Tribes and establish procedures to temporarily halt or redirect work in the event that cultural resources are found during ground disturbing activities. The training shall include the types of potential discoveries (e.g., artifact types, features) and proper procedures for notification in the event of an unanticipated discovery. A qualified archaeologist approved by the JPA shall be identified as the contact person in the event of an unanticipated discovery.

If, during excavation or earth moving activities within the project site, the construction contractor identifies potential historic or archaeological resources, all excavation and/or grading within 60 feet of the discovery area shall be halted immediately and work redirected until a qualified archaeologist meeting the Secretary of Interior standards has evaluated the nature and significance of the find. The Fernandño Tataviam Band of Mission Indians (FTBMI) shall be contacted to consult if any such find occurs.

The archaeologist shall determine whether the resource is a “unique archaeological resource” pursuant to Section 21083.2(g) of the *California Public Resources Code* (PRC) or a “historical resource” pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 *California CCR*). If the archaeological resource is determined to be a “unique archaeological resource” or a “historical resource”, the archaeologist shall formulate a mitigation plan in consultation with JPA that satisfies the requirements of the above-listed Sections and that reduces the adverse effects of the project to a less than significant level. The archaeologist shall prepare a report of the results of any study prepared as part of a testing or mitigation plan, following accepted professional practice. If the archaeologist determines that the archaeological resource is not a “unique archaeological resource” or “historical resource”, s/he need only record the site and submit the recordation form to the South Central Coastal Information Center (SCCIC).

The archaeologist shall complete all relevant California State Department of Parks and Recreation (DPR) 523 Series forms to document the find and submit this documentation to the JPA, Lead Agency, and FTBMI. If the Native American cultural resource is determined to be significant, as defined by consulting Tribes, a Native American archaeological monitor procured by the FTBMI shall be present for all ground disturbing activities that occur within the proposed project area.

- The archaeologist and Tribal monitor shall have the authority to request ground disturbing activities to cease within the area of a discovery to assess potential finds in real time.
- The JPA shall, in good faith, consult with FTBMI on the disposition and treatment of any artifacts or other cultural materials encountered during the project.

**CR-2 Treatment of Previously Unidentified Human Remains.** In the unexpected event that human remains or funerary objects are encountered during excavation activities, all work shall halt within a 60-foot buffer of the find and the County Coroner shall be notified (California Public Resources Code §5097.98). The Coroner shall determine whether the remains are of forensic interest. If the Coroner, with the aid of the project Archaeologist, determines that the remains are prehistoric, s/he will contact the Native American Heritage Commission (NAHC), the Fernandeano Tataviam Band of Mission Indians, and consulting tribes. The NAHC will be responsible for designating the Most Likely Descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code. The MLD shall make his/her recommendation within 48 hours of being granted access to the site. The recommendation of the MLD shall be followed if feasible and may include scientific removal and non-destructive analysis. If the landowner rejects the recommendations of the MLD, the landowner shall rebury the remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (California Public Resources Code §5097.98).

### 2.3.6 Geology and Soils

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems, where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

The project area is located in the Santa Monica Mountains, bounded to the south by the Los Angeles Basin and the Pacific Ocean, to the north by the Simi Hills, to the north and east by the San Fernando Valley and to the west by the Oxnard Plain. Part of the Transverse Ranges geomorphic province of California, the project area is underlain by Holocene-age alluvial soil (Qa) (Converse, 2012). Faults in the project area considered capable of seismic activity include the Malibu Coast Fault, Las Flores Canyon Thrust and the Dark Canyon Fault (State of California, 2001).

- a) **Less than Significant Impact.** The project site is not located within a currently designated Alquist-Priolo Special Studies Zone for surface fault rupture, although the project area is located in a seismically active area. Seismic activity associated with active faults in the area can be expected to generate moderate to strong ground shaking. However, no construction of habitable structures is proposed that would expose people to potential adverse effects of seismic activity. Impacts to the proposed potable water pipeline from a

seismic event would be repaired as necessary. Since project-related discharges would be the same as existing conditions, the project would not impact shallow groundwater or have the potential to cause landslides or increase the potential for liquefaction. Therefore, the proposed project would have less than significant impacts related to geology.

- b) **Less than Significant Impact.** Installation of the proposed pipeline would require trenching and therefore disturbance to surface soils. BMPs would be employed to reduce wind and water erosion of soils during construction. Discharges to Malibu Creek would be through an existing outfall and the same volume as under existing conditions, therefore no increases in soil erosion related to operational discharges would result. Overall, the impact on soil erosion would be less than significant.
- c) **Less than Significant Impact.** Soils within the project area are fills, alluvial deposits and weathered bedrock (Converse, 2012). The project area is within an area of potential liquefaction but is not within an earthquake-induced landslide area. The Tapia WRF site is considered susceptible to liquefaction between 15 and 25 feet below ground surface (Converse, 2012); no excavation to those depths would be conducted for the proposed project. Pipeline design will be based on geologic conditions along the alignment. Since the project does not include any habitable structures, and since failure of the pipeline would be repaired as necessary, the project would have a less than significant impact related to unstable soils.
- d) **Less than Significant Impact.** Habitable structures will not be built as part of the proposed project. Based on previous geotechnical study of the Tapia WRF facility, site soils have low expansion potential, although within the range where measures to improve expansive soils are recommended. Design of project pipelines will specify necessary soil compaction, bedding material, and trench backfill. Therefore, impacts related to expansive soils would be less than significant.
- e) **No Impact.** The project includes modification and use of an existing structure at a wastewater treatment plant. Since none are proposed, the project would have no impact on septic systems or alternative wastewater disposal facilities.

### 2.3.7 Greenhouse Gas Emissions

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion:** Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO<sub>2</sub>, which has a value of one. For example, CH<sub>4</sub> has a global warming potential of 21, which means that it has a global warming effect 21 times greater than CO<sub>2</sub> on an equal-mass basis. Total GHG emissions from a source are often reported as a CO<sub>2</sub> equivalent (CO<sub>2</sub>e). The CO<sub>2</sub>e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and Executive Orders. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006, was signed into law on September 27, 2006. AB 32 requires CARB, in coordination with State agencies as well as members of the private and academic communities, to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. Under the provisions of the bill, by 2020, statewide greenhouse gas emissions would be limited to the equivalent emission levels in 1990. On December 12, 2008, CARB adopted its Climate Change Scoping Plan pursuant to AB 32 (CARB, 2008). The Scoping Plan was re-approved by CARB on August 24, 2011. The scoping plan indicates how these emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

The potential effects of proposed GHG emissions are by nature global and have cumulative impacts. As individual sources, project GHG emissions are not large enough to have an appreciable

effect on climate change. Therefore, the impact of proposed GHG emissions on climate change is discussed in the context of cumulative impacts.

The SCQAMD has adopted an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. While the SCAQMD is not the lead agency for the proposed project, the SCAQMD's threshold is identified in this CEQA document as a reference for comparative purposes. The SCAQMD's draft GHG significance threshold establishes a 5-tier threshold flowchart, with Tier 3 identifying screening thresholds of 10,000 metric tons per year (MT/yr) of CO<sub>2</sub>e for stationary source industrial projects and 3,000 MT/yr of CO<sub>2</sub>e for commercial and residential projects.

- a) and b) **Less than Significant.** The only GHG emissions attributable to the project would be those resulting from construction equipment and the negligible increase in electricity used at Tapia WRF for chemical feed pumps. Maintenance activities would be limited to periodic inspection of the portion of the pipeline installed on the County bridge, therefore no additional emissions would result, and the operation of the project would have no impact on GHGs.

**Tables 5 and 6** summarize anticipated GHG emissions from construction of the project based on worst-case assumptions for vehicles, equipment and personnel. Per SCQAMD guidance, predicted greenhouse gas emissions from construction can be amortized over 30 years, and added to the operations emissions to compare to the SCAQMD threshold of 10,000 MT CO<sub>2</sub>e per year (SCAQMD, 2008). Since emissions from the proposed project would be substantially below this threshold, the cumulative impact on emissions of GHGs, and thus climate change, would be less than significant.

**Table 5  
Estimated Annual Construction Air Pollutant Emissions**

Emissions Source (on-road vehicles and ATVs)	Vehicle Type	No.	Est.Avg miles per yr	Emission Factor (lbs/mi) <sup>1</sup>							Estimated Project Emissions (lbs/yr)										
				VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Light Duty Truck	PV	1	6400	0.0005	0.0044	0.0004	0.0000	0.0001	0.0001	1.104562	0.000045	0.000038	3.36	28.43	2.59	0.07	0.61	0.40	7069.19	0.29	0.25
Haul Truck	HHDT	1	2000	0.0011	0.0053	0.0127	0.0000	0.0006	0.0005	4.205414	0.000052	0.001211	2.21	10.64	25.50	0.08	1.29	1.02	8410.83	0.10	2.42
Delivery Truck	DT	1	1280	0.0012	0.0080	0.0083	0.0000	0.0004	0.0003	2.851481	0.000053	0.000790	1.57	10.24	10.65	0.03	0.45	0.35	3649.90	0.07	1.01
Dump Truck	HHDT	1	2000	0.0011	0.0053	0.0127	0.0000	0.0006	0.0005	4.205414	0.000052	0.001211	2.21	10.64	25.50	0.08	1.29	1.02	8410.83	0.10	2.42
Workers Personal Vehicles	PV	6	6400	0.0005	0.0044	0.0004	0.0000	0.0001	0.0001	1.104562	0.000045	0.000038	20.15	170.59	15.55	0.41	3.67	2.41	42415.16	1.73	1.48
Emissions Source (construction equipment)	No.	No. Days in use per yr	Est.Avg hrs of use per day	Emissions Factor (lbs/hr) <sup>2</sup>							Estimated Project Emissions (lbs/yr)										
				VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Backhoe (50 hp)	1	100	8	0.0407	0.2760	0.2179	0.0004	0.0087	0.0078	30.3	0.0037	0.0207	32.60	220.83	174.28	0.31	6.97	6.21	24277.68	2.94	16.56
Excavator (250)	1	2	8	0.0828	0.3276	0.4493	0.0018	0.0154	0.0137	159	0.0075	0.0427	1.32	5.24	7.19	0.03	0.25	0.22	2538.92	0.12	0.88
Concrete Mixer	2	5	8	0.0086	0.0415	0.0536	0.0001	0.0021	0.0019	7.2	0.0008	0.0051	0.69	3.32	4.29	0.01	0.17	0.15	579.85	0.06	0.41
Roller Compactor	1	2	4	0.0584	0.3837	0.3793	0.0008	0.0232	0.0207	67.0	0.0053	0.0360	0.47	3.07	3.03	0.01	0.19	0.17	536.32	0.04	0.29
Articulated Aerial Lift	1	15	8	0.0261	0.1696	0.1866	0.0004	0.0092	0.0082	34.7	0.0024	0.017722	3.14	20.35	22.39	0.05	1.10	0.98	4166.60	0.28	2.13
Air Compressor	1	100	4	0.0483	0.3077	0.3255	0.0007	0.0185	0.0164	63.6	0.0044	0.030918	19.30	123.10	130.18	0.28	7.39	6.58	25442.93	1.74	12.37
Welder	1	50	4	0.0310	0.1816	0.1735	0.0003	0.0102	0.0091	25.6	0.0028	0.016482	6.20	36.33	34.70	0.06	2.04	1.82	5120.54	0.56	3.30
Generator	1	100	6	0.0395	0.2732	0.3232	0.0007	0.0150	0.0133	61.0	0.0038	0.030705	23.70	163.90	193.93	0.42	8.98	7.99	36595.61	2.14	18.42
Asphalt Paving Equipment	1	5	4	0.0989	0.4820	0.5450	0.0009	0.0355	0.0316	77.9	0.0089	0.051772	1.98	9.84	10.90	0.02	0.71	0.63	1588.66	0.18	1.04
<b>Total</b>												<b>119</b>	<b>817</b>	<b>661</b>	<b>2</b>	<b>35</b>	<b>30</b>	<b>170773</b>	<b>10</b>	<b>63</b>	

Notes: PV: passenger vehicles, HHDT: heavy-heavy-duty trucks, DT: delivery truck

<sup>1</sup> SCAQMD, 2007a

<sup>2</sup> SCAQMD, 2007b

**Table 6**  
**Estimated Annual GHG Emissions from Project Construction**

	<b>Units</b>	<b>CO<sub>2</sub></b>	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>
Pipeline installation and overflow structure modification	lbs per year	170,773	10	63
Global Warming Potential		1	25	298
CO <sub>2</sub> -Equivalent Construction-related Emissions	lbs per year	170,773	250	18,774
<b>Total GHG Emissions</b>	metric tons per year	86		
<b>Amortized GHG Emissions</b>	metric tons per year	3		

Global Warming Potential conversion to CO<sub>2</sub>e per USEPA, 2010



### 2.3.8 Hazards and Hazardous Materials

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion:

a) and b) **Less than Significant Impact.** Operation of the project would include the treatment of potable water with sodium hypochlorite and sodium bisulfite, compounds typically used at wastewater treatment plants. Storage of these compounds would be in a building, in appropriate containers with secondary containment for 100 percent of the container volume. Since chemicals would be properly stored and used, the impact of the project on hazardous materials use, transport or storage would be less than significant.

c) **No Impact.** There are no schools within ¼ mile of project site, and the project does require an increase in the use of fuels or other hazardous materials. The closest schools, Muse and

Calmont Schools, are located off Las Virgenes Canyon Road, approximately 0.9 miles north of the project area. Water treatment chemicals would be periodically transported to Tapia WRF, the same as under existing conditions. Therefore, the project would have no impact on schools from hazardous materials use, transport or storage.

- d) **No Impact.** Section 65962.5 of the California Government Code requires the California Environmental Protection Agency (CalEPA) to update a list of known hazardous materials sites, which is also called the “Cortese List.” The sites on the Cortese List are designated by the State Water Resources Control Board, the Integrated Waste Management Board, and the Department of Toxic Substances Control.

Based on a search of hazardous waste and substances sites listed in the Department of Toxic Substances Control (DTSC) “EnviroStor” database; a search of leaking underground storage tank (LUST) sites listed in the State Water Resources Control Board (SWRCB) “GeoTracker” database; and a search of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit, there were no sites listed on or adjacent to the project site. Therefore, the project would have no impact related to hazardous waste sites.

- e) and f) **No Impact.** Airports in the project vicinity are located in Van Nuys (15 miles northeast), Santa Monica (15 miles southeast), and Los Angeles (20 miles southeast). The project does not propose new tall structures and the project area is not located sufficiently near either a private airstrip or public airport to pose a safety risk. Therefore, there would be no project-related impacts on airport safety.
- g) **Less than Significant Impact with Mitigation Incorporated.** Installation of approximately 430 feet of the proposed pipeline will require closure of a single lane of traffic of Malibu Canyon Road for approximately 5 weeks. Access through this area will be slowed for the duration of the lane closure. With notification to police, fire and schools in the area as prescribed by mitigation measure **TR-1**, the impact on emergency access and evacuation routes will be temporary and less than significant. Additionally, construction in Malibu Canyon Road may occur at night to further limit impacts to traffic and emergency access.
- h) **Less than Significant Impact.** Installation of the proposed pipeline will require externally welded joints. Do to the extensive vegetation in the project area, fire-prevention precautions will be taken during welding activities, including applicable Occupational Safety and Health Administration (OSHA) worker safety requirements. With adherence to requirements, the impact on the proposed project on wildland fires would be less than significant.

### 2.3.9 Hydrology and Water Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:** The Malibu Creek watershed is 109 square miles of primarily open space that extends from the Santa Monica Mountains and adjacent Simi Hills to the Pacific coast at Santa Monica Bay. Malibu Creek drains into Malibu Lagoon, a 13-acre tidal lagoon, which in turn drains into Santa Monica Bay when the lagoon is open. Over 8 miles of Malibu Creek, and three of its tributaries (Las Virgenes Creek, Medea Creek, and Lindero Creek), exceed the water quality objectives (WQOs) for nuisance effects such as algae, odors, and scum (Regional Board, 2014). The United States Environmental Protection Agency (USEPA) established the Malibu Creek

Watershed Nutrients TMDL (in compliance with 40 CFR 130.2, Section 303(d) of the Clean Water Act) in 2003 to address water body impairments due to ammonia, nutrients, dissolved oxygen, algae, scum and odor in Malibu Lagoon, Malibu Creek and its tributaries, and four lakes in the watershed. Allowable nutrient loads are allocated among the discharge sources, including Tapia WRF. Historically, Malibu Creek has little flow in the summer months, therefore different TMDLs were established for summer and winter conditions. In 2013, USEPA established sedimentation and nutrient TMDLs to address impairments of Malibu Creek and Las Virgenes Creek related to impacted benthic macroinvertebrates and sedimentation/siltation and impairs of Malibu Lagoon.

- a) and f) **Less than Significant Impact.** Beneficial uses and water quality objectives are specified in the Water Quality Control Plan for the Los Angeles Region (Basin Plan) prepared by the Regional Board (2014). Beneficial uses designated for Malibu Creek are water contact recreation; noncontact water recreation; wildlife habitat, warm freshwater habitat; cold freshwater habitat; wetland habitat; rare, threatened, or endangered species; migration of aquatic organisms; and spawning, reproduction, and/or early development. Municipal use is identified as a potential beneficial use. Per the Basin Plan, watershed-specific numeric objectives for the protection of beneficial uses are:

Watershed	Total Dissolved Solids (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron (mg/L)	Nitrogen (mg/L)
Malibu Creek Watershed	2000	500	500	2.0	10

Construction. During construction, wind and water erosion of disturbed soils would be controlled with implementation of applicable BMPs. Therefore, construction-related impacts on water quality would be less than significant.

Operations. The purpose of the project is meet new summertime water quality objectives established in the NPDES permit for Tapia WRF to support improvement in Malibu Creek and Malibu Lagoon as specified by the TMDLs. The TMDLs are:

Waterbody	Summer (April 15 to November 15)		Winter (November 16 to April 14)	
	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)
Lakes	1.0	0.1	4	0.2
Streams	1.0	0.1	4	0.2
Lagoon	1.0	0.1	4	0.2

These TMDLs for summer compliance go into effect May 16, 2022, while TMDLs for winter compliance go into effect November 16, 2030. Currently, interim water quality limits are in effect for Total Nitrogen (10.3 mg/L) and Total Phosphorus (3 mg/L) during both the summer and winter seasons. With implementation of the proposed project, water quality in Malibu Creek would improve over existing conditions; the impact would be beneficial.

- b) **Less Than Significant Impact.** The project does not include any groundwater pumping or withdrawals. The project would improve the quality of water discharged to Malibu Creek during summer months; the volume of surface water discharges which may percolate to the groundwater would be the same as existing conditions. The project would have no impact on groundwater volumes and a beneficial impact on groundwater quality. Overall, impacts on groundwater are considered less than significant.
- c) d) and e) **Less Than Significant Impact.** The project does not involve the permanent alteration of an existing drainage pattern of the site or area. During construction, drainage in the immediate area of active construction, if any, would be diverted around the construction area, and stormwater quality would be maintained through the implementation of stormwater BMPs. Since discharge volumes to Malibu Creek would be the same as existing conditions, the project would have no impact on the course of Malibu Creek. Overall, the impact of the project on drainage and stormwater quality would be less than significant.
- g) h) and i) **No Impact.** Portions of the Tapia WRF, including the overflow structure and access roadway, are not located within a mapped flood plain (FEMA, 2008). FEMA maps the area adjacent to Malibu Creek as Zone A - areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Portions of the proposed pipeline are located within the mapped Zone A floodplain. However, the proposed project does not include the placement of housing or structures that will impede flows within the flood plain or create levees or dams. Summer augmentation flows would be discharged to an existing channel, Malibu Creek, with adequate capacity to carry the flows; volumes would be the same as existing conditions. No levees or dams are present at the project site and no off-site levees or dams would be modified as part of the project. The project would have no impact on housing or structures in a 100-year flood hazard area.
- j) **No Impact.** Tsunamis are tidal waves generated by major ground movement or fault displacement. At an elevation over 450 feet above ground level and over 3 miles to the ocean, tsunamis do not pose a hazard. Since the project site is not located near a large enclosed body of water, large waves, or seiches, generated in response to ground shaking do not pose a hazard. Mudflows are not known for the project area and the project would not create conditions that would cause mudflows, nor include housing or structures that would be impacted by mudflows. Summer augmentation flows would be discharged to an existing channel, Malibu Creek, with adequate capacity to carry the flows. The proposed project would have no impact on seiche, tsunami or mudflows.

### 2.3.10 Land Use and Planning

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:** The project area is located in the Santa Monica Mountains Coastal Zone; regulations for this area are described in the SMM LUP (Los Angeles County, 2018a) and the SMM LIP (Los Angeles County, 2018b). The SMM LUP designates land use classifications, type and density of allowable development, and goals and policies concerning development. The Coastal Zone is divided into three habitat categories: H1, H2, and H3. H1 habitat and H2 habitat are defined as SERAs - areas containing habitats of the highest biological significance, rarity, and sensitivity. Environmental Review Board (ERB) evaluation is conducted for development within certain SERAs. H1 habitats include: alluvial scrub; coastal bluff scrub; dune; native grassland and scrub with a strong component of native grasses or forbs; riparian; native oak, sycamore, walnut and bay woodlands; rock outcrop habitat types; and wetlands. H1 habitat also includes populations of plant and animal species (1) listed by the State or Federal government as rare, threatened or endangered, listed by NatureServe as State or Global-ranked 1, 2, or 3, and identified as California Species of Special Concern, and/or (2) CNPS-listed 1B and 2 plant species, normally associated with H1 habitats, where they are found within H2 or H3 habitat areas. H2 habitat includes large, contiguous areas of coastal sage scrub and chaparral-dominated habitats. A subcategory of H2 habitat is H2 “High Scrutiny” habitat, which comprises (1) CNDDDB-identified rare natural communities; (2) plant and animal species listed by the State or Federal government as rare, threatened, or endangered; listed by NatureServe as State or Global-ranked 1, 2, or 3, and identified as California Species of Special Concern; and/or (3) CNPS-listed 1B and 2 plant species, normally associated with H2 habitats. H3 habitat consists of disturbed or isolated habitat areas that provide some important biological functions, but do not rise to a level of a SERA. The Project Area is mapped as H1 habitat.

Related to public work facilities, SMM LUP policies state:

- LU-12 Require that the extension of water, sewer, or utility infrastructure to serve development be located within legally existing roadways and road rights-of-way in a manner that avoids adverse impacts to coastal resources to the maximum extent feasible. Such infrastructure shall be sized and otherwise

designed to provide only for the approved development to avoid growth-inducing impacts.

- CO-20 Require that public agencies use the most effective BMPs to protect natural resources at project sites and maintenance yards when the maintenance and modification of public infrastructure involves the removal of vegetation and/or earth.
- CO-48 New and replacement infrastructure may be permitted provided that it complies with applicable provisions of this plan and is designed to avoid and, if feasible, minimize adverse impacts to environmental and scenic resources. New roads shall only be construction to provide access to lawfully-approved proposed new development and shall comply with the road standards found in the LIP. New and replacement utilities shall only be developed to serve legally-established uses.

Per the public facilities element of the LUP, the guiding principal to ensure the provision of adequate services and facilities is:

*Public facilities should support existing and approved land uses, and are not intended to induce further development, consistent with environmental carrying capacities and the need to protect the unique character of existing communities.*

Zoning ordinances required to implement the LUP are contained in the SMM LIP, a component of the SMM LCP and a segment of Los Angeles County Code Title 22 (Planning and Zoning Ordinance). The SMM LIP establishes regulations for new development and for the protection and management of the Santa Monica Mountains Coastal Zone's unique resources.

- a) **No Impact.** The proposed project would not disrupt or divide the physical arrangement of an established community. The project site has been in continuous use as a wastewater treatment facility since the 1960s. Therefore, there would be no impact on established communities.
- b) **Less than Significant Impact with Incorporation of Mitigation.** The treatment plant and access roadway are zoned Institutional (I), surrounding land uses are O-S and open space parks (O-S-P). Per the Municipal Code, allowable uses in the I zone are uses and structures accessory to the principal permitted use. Since the proposed project includes modification of existing treatment plant facilities and installation of a pipeline (buried and mounted on the underside of a bridge), the project would not conflict with the general plan or zoning ordinance.

The applicable planning document for the project area is the SMM LCP. The SMM LCP was developed in compliance with the California Coastal Act of 1976, which established a comprehensive coastal protection program focused on public access and recreation, visitor accommodations, sensitive habitats, visual resources, agricultural lands, commercial fisheries, industrial uses, water quality, and offshore oil and gas development. Zoning ordinances required to implement the LUP are contained in the SMM LIP (Los Angeles County, 2018b), a component of the SMM LCP and a segment of Los Angeles County Code Title 22 (Planning and Zoning Ordinance). The SMM LIP establishes regulations for new development and for

the protection and management of the Santa Monica Mountains Coastal Zone's unique resources.

The proposed pipeline would not serve new development, would not require the installation of new roads, and would not induce new development. Implementation of mitigation measures identified for the protection of biological resources (see Section 2.3.4) would reduce project-related impacts on the sensitive resources of the Santa Monica Mountains. Operation of the project would improve the water quality of Malibu Creek, a beneficial effect. As mitigated, the project would be consistent with the SMM LCP policies and have a less than significant impact on land use planning.

- c) **Less than Significant Impact with Mitigation Incorporated.** The project site is within SEA 22 (Santa Monica Mountains). However, the management and review of biological resources in the SMM Coastal Zones differs from the countywide SEA regulatory program. Biological resources management and regulation in the Santa Monica Mountains Coastal Zone is implemented through the Santa Monica Mountains LCP. Please see Section 2.3.4 Biological Resources, item f.



### 2.3.11 Mineral Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:**

a) and b) **No Impact.** The California Department of Conservation (2018) does not map any mines in the project area, and no active mining operations are known in the immediate vicinity. The closest mapped mine is located in Ventura County, approximately 19 miles west of the project site. Construction of the project will require minor amounts of concrete and gravel bedding. However, since the project would not result in the loss of a known mineral resources or resource recovery site, the proposed project would have no impact on mining or mineral resource availability.

### 2.3.12 Noise

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:** The County of Los Angeles General Plan 2035 Noise Element lists the following policies for the reduction of excessive noise impacts:

- Policy N 1.1** Utilize land uses to buffer noise-sensitive uses from sources of adverse noise impacts.
- Policy N 1.2** Reduce exposure to noise impacts by promoting land use compatibility.
- Policy N 1.3** Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies (BAT).
- Policy N 1.4** Enhance and promote noise abatement programs in an effort to maintain acceptable levels of noise as defined by the Los Angeles County Exterior Noise Standards and other applicable noise standards.
- Policy N 1.5** Ensure compliance with the jurisdictions of State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code), such as noise insulation of new multifamily dwellings constructed within the 60 dB (CNEL or Ldn) noise exposure contours.
- Policy N 1.6** Ensure cumulative impacts related to noise do not exceed health-based safety margins.

- Policy N 1.7** Utilize traffic management and noise suppression techniques to minimize noise from traffic and transportation systems.
- Policy N 1.8** Minimize noise impacts to pedestrians and transit-riders in the design of transportation facilities and mobility networks.
- Policy N 1.9** Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.
- Policy N 1.10** Orient residential units away from major noise sources (in conjunction with applicable building codes).
- Policy N 1.11** Maximize buffer distances and design and orient sensitive receptor structures (hospitals, residential, etc.) to prevent noise and vibration transfer from commercial/light industrial uses.
- Policy N 1.12** Decisions on land adjacent to transportation facilities, such as the airports, freeways and other major highways, must consider both existing and future noise levels of these transportation facilities to assure the compatibility of proposed uses.

**Construction Noise Standards.** Title 12, Chapter 12.08 of the Los Angeles County Code contains regulations pertaining to construction noise. It generally prohibits generation of construction noise between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound creates a noise disturbance across a residential or commercial real-property line. Exceptions to this prohibition are made for emergency work of public service utilities and if a variance is issued by the health officer. It also establishes maximum noise levels at the affected buildings that should not be exceeded for two scenarios: 1) nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment and 2) repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment (**Table 7**). Construction of project facilities would be scheduled, and noise-generating equipment would be mobile construction equipment.

In addition, Title 12, Chapter 12.12 prohibits use of noise-generating equipment (e.g., compressors, jackhammers, power-driven drill, riveting machine, excavator, diesel-powered truck, tractor or other earth moving equipment, hand hammers on steel or iron) on any Sunday or at any other time between the hours of 8:00 p.m. and 6:30 a.m. if it results in disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobile home, or other place of residence. Exemption may be granted by the county engineer if:

1. The work proposed to be done is in the public interest; or
2. Hardship, injustice or unreasonable delay would result from the interruption thereof during the hours and days specified in Section 4204; or
3. The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense.

**Table 7  
Los Angeles County Construction Noise Ordinance**

Time	Single Family Residential	Multi-Family Residential	Semi-residential/ Commercial
	Maximum Noise Levels		
<b>Nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment</b>			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
<b>Repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment</b>			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: Los Angeles County Code, Section 12.08.440

- a) b) and d) **Less Than Significant Impact with Mitigation Incorporated.** Installation of proposed pipeline and modification of the overflow structure would result in short-term construction noise. The dominant source of noise from most construction equipment is the engine, usually diesel, without sufficient muffling. In a few cases, such as impact pile driving or pavement breaking, noise generated by the process dominates (FTA, 1995). During project construction, the highest noise-generating activities are expected to be excavation and filling. Typical noise levels from construction equipment are shown in **Table 8**.

Construction noise represents a short-term impact on ambient noise levels. Noise from the proposed project would be generated by construction equipment including trucks, bulldozers, concrete mixers and portable generators. Installation of the proposed project would require the following construction equipment: backhoe, excavator, concrete mixer, roller compactor, articulated aerial lift (or access scaffolding), air compressor, welder, generator and asphalt paving equipment. The peak noise level for most of the equipment that would be used during construction is 75 to 96 dBA at a distance of 50 feet. Noise levels at further distances would be less than this. For example, based on the noise attenuation calculation of Canter (1977), at 630 feet (distance from the pipeline to the nearest residence), the peak construction noise levels would range from 53 to 74 dBA.

Construction of proposed facilities would be conducted in the vicinity of sensitive noise receptors such as residences. However, construction noise for pipeline installation would be temporary – estimated at approximately 12 weeks. To limit traffic disruption to Malibu Canyon Road, installation of the pipeline in that road, including across the County bridge, may occur at night (for approximately 5 weeks). Construction at the Tapia WRF and access roadway would be conducted during the daytime. Noise-generating construction activity conducted

outside the hours permitted by County ordinance (7 p.m. to 7 a.m.) could be disruptive to sensitive receptors and therefore potentially significant. With implementation of mitigation measure **NOI-1**, impacts would be less than significant with mitigation incorporated.

- c) **No Impact.** Operation of the proposed pipeline and existing overflow structure for water treatment would not increase ambient noise levels over existing conditions. Operation of the proposed project would have no impact on noise.
  
- e) and f) **No Impact.** Airports in the project vicinity are located in Van Nuys (15 miles northeast), Santa Monica (15 miles southeast), and Los Angeles (20 miles southeast). The project area is not located sufficiently near either a private airstrip or public airport to expose people residing or working in the area to excessive noise levels. There would be no project-related impacts on noise near an airport/airstrip.

**Table 8  
Construction Equipment Noise Levels**

	Equipment	Noise Level Range (dBA at a distance of 50 feet)
Earth Moving	Compactors (Rollers)	72-75
	Front Loaders	72-87
	Backhoes	72-96
	Tractors	77-98
	Scrapers, Graders	81-92
	Pavers	85-88
	Trucks	82-96
Materials Handling	Concrete Mixers	75-89
	Concrete Pumps	81-84
	Cranes (Mobile)	75-88
	Cranes (Derrick)	87-89
Stationary Equipment	Pumps	69-72
	Generators	71-82
	Compressors	76-87
Impact Equipment	Pneumatic Wrenches	83-88
	Jack Hammers/Rock Drills	81-98
	Pile Drivers	96-106
Other Equipment	Vibrators	68-81
	Saws	72-82

Source: USEPA, 1971

**Mitigation Measures**

With implementation of the following mitigation measure, **NOI-1**, project-related impacts on noise would be less than significant.

**NOI-1 Noise Mitigation Plan.** Prior to the start of construction, the construction contractor shall develop a noise mitigation plan based on an updated estimate of construction equipment and schedule. The objective of the mitigation plan shall be to reduce interior noise levels

at sensitive receptors to within acceptable limits as outlined in the County of Los Angeles municipal code. The mitigation plans shall detail measures to limit construction noise, including:

- Equip all construction equipment, with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards.
- If construction activity is proposed between 7 p.m. and 7 a.m., the JPA shall obtain express written permission from the County of Los Angeles.
- During nighttime construction (7 p.m. to 7 a.m.) (if permissible by the County of Los Angeles) the construction contractor shall install temporary sound walls or acoustic blankets with a height as required to reduce construction noise.

### 2.3.13 Population and Housing

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) **No Impact.** The proposed project does not involve construction of new homes or businesses. Under the project, potable water treatment and pipeline conveyance are proposed in order to discharge water of adequate quality for habitat maintenance in Malibu Creek. No additional connections of potable water service are proposed for existing or new residential, commercial, or industrial customers. The project does not include demolition or construction of homes or businesses. Operation of the project would not require additional workers at the Tapia WRF. Therefore, the project would have no impact on population growth or housing.
- b) **No Impact.** No housing would be displaced by the proposed project. Therefore, no impacts would occur.
- c) **No Impact.** No individuals would be displaced by the proposed project. Therefore, no impacts would occur.



### 2.3.14 Public Services

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:**

- i) – v) **No Impact.** No additional connections of potable water service are proposed for existing or new residential, commercial, or industrial customers. Since it would not influence population growth, the project would not create the need for new or expanded public services. There are no fire stations, police stations or schools in the immediate vicinity of project site. Therefore, the project would have no impacts on public services.

### 2.3.15 Recreation

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:**

- a) **No Impact.** The proposed project involves the modification of an existing structure at a wastewater treatment plant and installation of a potable water pipeline. Since no new customers would be served by the potable water line, the proposed project would not directly or indirectly cause population growth. Therefore, the proposed project would not increase the use of any neighborhood or regional parks or facilities and would have no associated impacts on recreational facilities.
- b) **No Impact.** The proposed project does not include the development of any recreational facilities. Since no new customers would be served by the potable water line, the proposed project would not lead to the need for the construction or expansion of any recreation facilities.

### 2.3.16 Transportation and Traffic

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion:** The Los Angeles County Metropolitan Transportation Authority (Metro) is the Congestion Management Agency for Los Angeles County. Metro is responsible for transportation planning, design, construction, and operation of transportation systems. Access to the project area is from U.S. Highway 101, then south on Las Virgenes Road, or from U.S. Highway 1, then north on Malibu Canyon Road.

a) and b) **Less than Significant with Mitigation Incorporated.** The proposed project includes installation of 1,270 feet of potable water pipeline; approximately 430 feet would be installed in Malibu Canyon Road or hung on an existing County bridge. During construction, the project would generate an increase in vehicle trips from construction workers accessing the site, delivery trucks carrying pipeline and bedding materials, concrete deliveries, and haul trucks removing soil.

Pursuant to the 2010 Los Angeles County Congestion Management Plan “Guidelines for CMP Transportation Impact Analysis”, projects that generate fewer than 50 peak hour trips are not required to conduct a detailed traffic impact analysis.

The number of construction trips forecast to be generated by this project is as follows: up to 4 trips/day for construction vehicles/delivery trucks and up to 6 trips/day for construction workers commuting to the site. A maximum of 10 trips/day are expected on a weekday. Since these trips would be distributed throughout the day, peak hour trips would be significantly less and would not exceed the minimum guideline for conducting a detailed traffic impact analysis of 50 trips in a peak hour.

Pipeline installation would require closure of one lane of traffic during installation of approximately 430 feet of pipeline in Malibu Canyon Road. Based on existing utilities information, it is assumed that the northbound lane would be the lane closed. Pipeline construction would take an estimated 12 weeks. Pipeline installation that necessitates lane closure would take an estimated 5 weeks (25 work days). To limit disturbance to traffic in the project area, nighttime pipeline installation for the portions of the pipeline in Malibu Canyon Road, including the bridge, will be considered. With implementation of a Construction Traffic Management Plan, as required by mitigation measure **TR-1**, the proposed project would have a less than significant impact on the surrounding roadway network during project construction.

Staging areas for construction personnel and materials are available at the Tapia WRF. Therefore, impacts related to construction vehicles and personnel parking along Malibu Canyon Road are not anticipated.

Since the project would not change the use of the site or increase the need for operation, maintenance, or service personnel to access the site, the project would not result in any long term increases in vehicle trips generated by the facility. The proposed project would have no long-term traffic impacts.

- c) **No Impact.** There are no public airports located in the immediate vicinity of the project area. Additionally, the project does not involve structures of significant height that would result in a change in air traffic location. The project would not result in any increase in air traffic levels. Therefore, no impacts would occur.
- d) **Less than Significant with Mitigation Incorporated.** Construction of the project would temporarily close one lane of traffic on Malibu Canyon Road. Once the pipeline is installed, the road surface would be restored in the area of the pipeline trench. The project would not result in any long-term roadway hazards. With implementation of mitigation measure **TR-1**, the impact of the proposed project on roadway hazards would be less than significant.
- e) **Less than Significant with Mitigation Incorporated.** Construction of the project would temporarily close one lane of traffic on Malibu Canyon Road. With implementation of mitigation measure **TR-1**, the impact on emergency access would be less than significant.
- f) **Less Than Significant Impact.** Malibu Canyon Road and Las Virgenes Road are not designated as bikeways by Los Angeles County (2018). However, bike travel is known for roadways in the project area and construction of the proposed pipeline would require close of one lane of traffic along approximately 430 feet of Malibu Canyon Road for approximately 5 weeks. The impact of lane closure on alternative transportation would be temporary and less than significant. The proposed project would not conflict with adopted policies, plans or

programs supporting alternative transportation. Operation of the project would have no impact on alternative transportation.

## **Mitigation Measures**

**TR-1 Construction Traffic Management Plan.** The contractor shall prepare and implement a Construction Traffic Management Plan. Specifically, the intent of this plan is to minimize disturbance to the neighborhood, identify those activities to be monitored, and make the contractor responsible for failure to adhere to the requirements. The elements of the Construction Management Plan shall include (but not be limited to) the following:

- Require contractor to obtain all necessary hauling, traffic control and/or transportation permits.
- Require contractor to maintain a 24-hour hotline for complaints and questions from the public.
- Designate a construction haul route, and require any large vehicles not classified as passenger vehicles or light trucks to use the haul route.
- Allow hauling and deliveries between 8 a.m. and 4 p.m. on weekdays only and no County holidays, unless otherwise authorized.
- Submit a traffic control plan for temporary lane closures to be approved by Los Angeles County.
- Require removal of any delivered materials and delivery trucks from streets immediately upon delivery.
- Require notification to residential properties located within 300 feet of any construction activities that occur outside of normal working hours and that generate significant or sustained noise.
- Require notification to the Malibu Unified School District, Calabasas Unified School District, local police, and fire departments prior to start of construction, prior to any lane closures, and prior to any hauling or deliveries outside of designated hours.
- Prohibit staging or queuing of trucks at the project site. At no time shall construction vehicles, materials or equipment obstruct residential driveways.
- Designate an area for remote parking and staging at Tapia WRF.

### 2.3.17 Tribal Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:** Consultation with Native American organizations and individuals was conducted to satisfy the requirements of Assembly Bill (AB) 52. Consultation with the Native American Heritage Commission (NAHC) began on August 16, 2018 to request information about sacred or traditional cultural properties that may be located within the project site. A search of the Sacred Lands file housed at the NAHC, dated August 27, 2018, did not result in the identification of traditional cultural places within or surrounding the project area. The NAHC also provided a list of 16 local groups and individuals to contact for further information regarding their knowledge of cultural resources within and near the project site. On September 27, 2018, letters were mailed to these 16 groups and individuals, as well as 3 additional Native American contacts, to request information regarding local knowledge about cultural resources, traditional gathering areas, or sacred lands in or near the project site. Follow-up via phone and emails was also conducted (Appendix C).

The Fernandeño Tataviam Band of Mission Indians notified the JPA that the project area is within traditional Tataviam ancestral territory and that the Tribe is interested in consultation. Since the project area is along a creek, and a trail which connects Native villages, cultural sites, and natural resources, the Tribe considers the area to be sensitive for Native American cultural resources. Among the number of Tataviam Villages in the region, the Tataviam Village of Humaliwo is located along at the mouth of the creek. Tribal records indicate the presence of lithic scatter sites, rock shelters, habitation locations, and Native burial sites in the project vicinity. Although the surface expressions of these sites do not overlap the project boundary, the subsurface extent of these cultural resources have not been well defined and have the potential to extend into the project

area. Additional information has been provided to the Tribal Historic and Cultural Preservation Officer of the FTBMI. Mitigation measures CR-1 and CR-2 reflect input provided by the FTBMI. As of December 10 2018, consultation is complete.

- i) and ii) **Less Than Significant with Mitigation Incorporated.** Installation of the proposed pipeline and modification of the existing overflow structure at the Tapia WRF would not disturb areas not previously disturbed for the installation of the existing roadways and utilities. No cultural resources have been identified for the project site, and no impacts to CRHR-listed or eligible resources are anticipated. Therefore, the proposed project is not anticipated to impact resources significant to a California Native American tribe. However, the project area is within traditional Tataviam ancestral territory. Therefore, mitigation measures **CR-1** and **CR-2** shall be implemented to prevent substantial adverse changes to any cultural resources or human remains in the unlikely event they are discovered during project implementation.

### 2.3.18 Utilities and Service Systems

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion:** Existing utilities in the project area were identified from record drawings, information from LVMWD, and from the DigAlert online database. Storm drains, electrical conduits, overflow pipeline, sewers, recycled water pipeline, natural gas, communications cables, and electrical lines are known for the area. An existing utilities base mapping file will be developed to protect existing utilities during pipeline installation.

- a) **Less than Significant Impact.** The objective of the proposed project is to meet applicable Regional Board water quality limitations for discharges to Malibu Creek. The impact is beneficial.
- b) **Less than Significant Impact with Mitigation Incorporated.** The project will provide water treatment (chlorination and dechlorination) and conveyance of potable water to an existing outfall to Malibu Creek. With the mitigation measures identified in this Initial Study, impacts on the environment from construction and operation of the proposed project would be less than significant.
- c) **Less than Significant Impact.** There are two stormdrain culverts that cross the access roadway to Tapia WRF. The proposed pipeline will cross these at 350 feet and at 700 feet



from Malibu Canyon Road. Once the pipeline is installed, stormdrain infrastructure will operate as under existing conditions. The impact of the proposed project on stormdrain infrastructure would be less than significant.

- d) **Less than Significant Impact.** The proposed project would treat up to 2.5 cfs of potable water for discharge to Malibu Creek from April 15<sup>th</sup> to November 15<sup>th</sup>. LVMWD has sufficient water supplies to meet this requirement. The project would not result in connections to new water customers or otherwise increase water demands. The impact on water supplies would be less than significant.
- e) **Less than Significant Impact.** The project involves the modification of an existing structure at an existing wastewater treatment facility for use as a chlorination/dechlorination basin. The Tapia WRF has adequate capacity to treat the proposed summer augmentation flows. The impact on wastewater systems would be less than significant.
- f) **Less Than Significant Impact.** Installation of the proposed pipeline and modification of the existing overflow structure would generate minimal waste. Limited volumes of excess soil may require disposal offsite. The disposal location will be identified by the construction contractor. Due to the limited volumes of waste and excess soil anticipated, the impact of the proposed project on solid waste would be less than significant.
- g) **Less than Significant Impact.** The project would comply with all federal, state, and local statutes and regulations related to solid wastes. The impact is less than significant.

### 2.3.19 Mandatory Findings of Significance

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have impacts that are individually limited, but cumulatively considerable (“cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:**

- a) **Less Than Significant Impact with Mitigation Incorporated.** Operation of the project would improve the water quality of summer augmentation flow to Malibu Creek – a beneficial impact on biological resources. Potential adverse impacts on biological resources during project construction would be temporary, limited to the small area of the project site, and reduced to less than significant levels by implementation of mitigation measures. Cultural resources are not known for the project site and none are anticipated to be disturbed during project construction or operation. However, in the unlikely event that resources are discovered during project construction, mitigation measures would reduce impacts to less than significant levels.
- b) **No Impact.** The goal of the project is to improve the water quality of Malibu Creek for the long-term maintenance of beneficial uses. There are no short-term goals related to the project that would be disadvantageous to this long-term goal.
- c) **Less Than Significant Impact.** Construction of the project would require closure of one lane of Malibu Creek Road during installation of approximately 430 feet of pipeline. The proposed project is anticipated to be constructed in 2020. Other roadway projects are not specifically known for this time period, and the JPA would coordinate the construction schedule with Los Angeles County. Therefore, cumulative traffic related impacts would be less than significant.

Since the proposed project would generate only minor air pollutant emissions during construction, and negligible emissions during operations, the project would have a less than significant cumulative impact on GHG emissions.

- d) **Less Than Significant Impact with Mitigation Incorporated.** The goal of the project is to improve the water quality of summer augmentation flow to Malibu Creek – a beneficial impact on biological resources. Improvements to the habitat of the creek would improve recreation beneficial uses of the surface water, a beneficial impact on human beings. Temporary traffic and noise impacts during construction would be reduced to less than significant levels by implementation of mitigation measures.

# Section 3

## References, Abbreviations and Report Preparation

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### 3.1 REFERENCES AND BIBLIOGRAPHY

- Baldwin, K.P. 1996. A history of Channel Islands archaeology. Unpublished Master's thesis. Department of Anthropology, California State University, Northridge.
- Bean, L.J. and C.R. Smith. 1978. Gabrielino in *Handbook of North American Indians*, Volume 8. *California*, volume edited by Robert F. Heizer, pp. 538-549 (W. T. Sturtevant, general editor). Smithsonian Institution, Washington, D.C.
- California Air Resources Board (CARB). 2008. Climate Change Scoping Plan. Adopted December 12, 2008.
- California Department of Conservation. 2018. Division of Mine Reclamation. Mines Online. Accessed October 16, 2018. Available: <https://maps.conservation.ca.gov/mol/index.html>
- California Department of Conservation. 2017. Division of Land Resource Protection Farmland Mapping and Monitoring Program. Map of Important Farmland in California, 2006. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2006/>
- , 2017. Williamson Act Program - Reports and Statistics. Available: [http://www.conservation.ca.gov/dlrp/lca/stats\\_reports/Pages/index.aspx](http://www.conservation.ca.gov/dlrp/lca/stats_reports/Pages/index.aspx)
- California Department of Toxic Substances and Control (DTSC). 2018. Hazardous waste and substances sites (EnviroStor) database. Accessed October 17, 2018. Available: [http://www.dtsc.ca.gov/SiteCleanup/Cortese\\_List.cfm](http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm)
- California Department of Transportation (Caltrans). 2018. Eligible (E) and Officially Designated (OD) Scenic Highways. Accessed October 16, 2018. Available: <http://www.dot.ca.gov/hq/LandArch/scenic/cahisys4.htm>
- Cal EPA. 2009. Sites identified with waste constituents above hazardous waste levels outside the waste management unit. Available: <http://www.calepa.ca.gov/SiteCleanup/CorteseList/CurrentList.pdf>
- California Geological Survey. 2007. Fault-Rupture Hazard Zones in California. Special Publication 42. Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. by W.A. Bryant and E.W. Hart. Available: [http://www.conservation.ca.gov/cgs/rghm/ap/Map\\_index/Pages/F4I.aspx](http://www.conservation.ca.gov/cgs/rghm/ap/Map_index/Pages/F4I.aspx)

- California, State of. 2001. Seismic Hazard Zones, Official Map, Malibu Beach Quadrangle, dated October 17, 2001.
- California State Water Resources Control Board. 2009. Leaking Underground Storage Tank Sites Database (Geotracker).  
Available: [https://geotracker.waterboards.ca.gov/sites\\_by\\_county.asp](https://geotracker.waterboards.ca.gov/sites_by_county.asp)
- Canter, Larry W. 1977. Environmental Impact Assessment. Chapter 6. Impacts on the Noise Environment. McGraw-Hill, New York.
- Converse Consultants. 2012. Geotechnical Study Report Ammonia Station Tapia Water Reclamation Facility Las Virgenes Municipal Water District. Project No. 11-31-349-01.
- Erlandson, John. 1994. California's Coastal Prehistory: A Circum-Pacific Perspective. Proceedings from the Society of California Archaeology, Vol. 6: 23-36.
- Federal Emergency Management Agency (FEMA). 2008. Flood insurance rate map 06037C1529F, Los Angeles County, California. Effective September 26, 2008.
- Federal Transportation Authority. 1995. FTA Guidance Manual – Transit Noise and Vibration Impact Assessment. Available: <http://www.hmmh.com>.
- Grant, Campbell. 1978. Chumash: Introduction. In Handbook of North American Indians, Volume 8 California. R. F. Heizer (ed.): 505-508. Washington DC: Smithsonian Institute Press.
- Harvey, Victoria. 2000. Cemetery Tales: Six Prehistoric Human Burials from CA-KER-303, Western Mojave Desert, California. Paper presented at the 2000 Annual Meeting for the Society for California Archaeology, Riverside, and on-file with the author.
- Hook, Eileen M. and Robert G. Hare. 1993. Malibu Creek State Park Day-Use and Campground Areas Interpretive Plan and Research Package. Report #LA-03505, on file at the SCCIC, California State University, Fullerton.
- Kelly, John. H. 1981. The Following Is an Evaluation of Cultural Resources Near the Proposed Fill Zone at Malibu Creek State Park. Report # LA-03764, on file at the SCCIC, California State University, Fullerton.
- King, Chester. 2006. Archaeological Assessment of King Gillette Ranch, Los Angeles County, California. Report # LA-07576, on file at the SCCIC, California State University, Fullerton.
- . 2010. Archaeological Report of Monitoring of the 24" Recycled Water Pipeline from Tapia Park to Mulholland Highway, Los Angeles County, California. Report # LA-10740, on file at the SCCIC, California State University, Fullerton.
- Kroeber, A.L. 1976. Handbook of the Indians of California. Dover Publications, Inc., New York. Reprint of 1925 book.

- Los Angeles, County of. 2018. LA County Bikeways Map. Available:  
<http://dpw.lacounty.gov/pdd/bike/map.cfm>
- . 2014a. Department of Regional Planning. General Plan 2035. Flood Zone Hazards Policy Map. Available: [http://planning.lacounty.gov/assets/upl/project/gp\\_2035\\_2014-FIG\\_12-2\\_flood\\_zones.pdf](http://planning.lacounty.gov/assets/upl/project/gp_2035_2014-FIG_12-2_flood_zones.pdf)
- . 2014b. Department of Regional Planning. SEA Program. Available:  
<http://planning.lacounty.gov/sea/>
- 2014c. Santa Monica Mountains Land Use Plan. A Component of the Santa Monica Mountains Local Coastal Program. Adopted 2014. Available:  
[http://planning.lacounty.gov/assets/upl/project/coastal\\_adopted-LUP.pdf](http://planning.lacounty.gov/assets/upl/project/coastal_adopted-LUP.pdf)
- . 2014d. Santa Monica Mountains Local Implementation Plan. A Component of the Santa Monica Mountains Local Coastal Program. Adopted 2014. Available:  
[http://planning.lacounty.gov/assets/upl/project/coastal\\_adopted-LIP.pdf](http://planning.lacounty.gov/assets/upl/project/coastal_adopted-LIP.pdf)
- Los Angeles Regional Water Quality Control Board (RWQCB). 1996. Water Quality Assessment and Documentation.
- . 2014. Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. As amended. Available:  
[https://www.waterboards.ca.gov/losangeles/water\\_issues/programs/basin\\_plan/](https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/)
- McCawley, William. 1996. First Angelinos: the Gabrielino Indians of Los Angeles. Malki Museum Press/Ballena Press, Banning, California.
- Moratto, Michael J. 1984. California Archaeology. Academic Press.
- Sawyer, J.O., T. Keeler-Wolf and J.M. Evens. 2009. Manual of California Vegetation, Second Edition. California.
- South Coast Air Quality Management District (SCAQMD). 2017. Final 2016 Air Quality Management Plan. March 2017. Available: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15>
- . 2010. Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15. September 28, 2010. Available: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2)

- , 2009. Localized Significance Thresholds. Available:  
<http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>
- , 2008b. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. October 2008. Available: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf)
- , 2007a. EMFAC2007 v. 2.3 Emission Factors for On-Road PV & DT. Scenario Year 2018
- , 2007b. SCAB Fleet Average Emission Factors (Diesel). Scenario year 2020.
- , 2007. OFFROAD Emission Factors.  
 Available: <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html>.
- , 2006. Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds. October.
- , 1993. CEQA Air Quality Handbook, revised 2006.
- Stantec. 2018a. Compliance Method Study. April 2018. Prepared for Las Virgenes – Triunfo Joint Powers Authority.
- , 2018b. Biological Resources Technical Report Summer Flow Augmentation of Malibu Creek. Prepared for Las Virgenes – Triunfo Joint Powers Authority. October 2018.
- , 2018c. Cultural Resources Evaluation for the Summer Flow Augmentation of Malibu Creek. Prepared for Las Virgenes – Triunfo Joint Powers Authority. August 2018.
- , 2016. Treatment and operations scenarios for meeting lower nutrient discharge limits for the augmentation flow to Malibu Creek. Technical Memorandum prepared for Las Virgenes – Triunfo Joint Powers Authority.
- Tejada, Barbara S. 2016. Cultural Resources Survey Report for the Malibu Creek Ecosystem Restoration Study, Los Angeles and Ventura Counties. Appendix K in the Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report (IFR) with Environmental Impact Statement/Environmental Impact Report (EIR/EIS), Los Angeles and Ventura Counties. Report on file at <https://usace.contentdm.oclc.org>. Site accessed June 22, 2018.
- United States Environmental Protection Agency (USEPA). 2013. Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments.
- , 2003. Total Maximum Daily Loads for Nutrients Malibu Creek Watershed. Region 9. Available:

[https://www.waterboards.ca.gov/losangeles/water\\_issues/programs/tmdl/Established/Malibu%20Creek%20Nutrient%20TMDL/final\\_nutrients.pdf](https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Malibu%20Creek%20Nutrient%20TMDL/final_nutrients.pdf)

----- 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. NTID300.1. December 31, 1971.



### 3.2 ACRONYMS AND ABBREVIATIONS

<b>AB</b>	Assembly Bill
<b>AQMP</b>	Air Quality Management Plan
<b>BAT</b>	Best Available Technology
<b>BMPs</b>	Best Management Practices
<b>BRM</b>	Bedrock Mortar Milling Station
<b>Cal/EPA</b>	California Environmental Protection Agency
<b>CARB</b>	California Air Resources Board
<b>CCR</b>	California Code of Regulations
<b>CDC</b>	California Department of Conservation
<b>CDFW</b>	California Department of Fish and Wildlife
<b>CEQA</b>	California Environmental Quality Act
<b>cfs</b>	cubic feet per second
<b>CFR</b>	Code of Federal Regulations
<b>CH<sub>4</sub></b>	methane
<b>CMLC</b>	cement mortar lined and coated
<b>CNDDDB</b>	California Natural Diversity Database
<b>CNEL</b>	Community Noise Equivalent Level
<b>CNPS</b>	California Native Plant Society
<b>CO</b>	carbon monoxide
<b>CO<sub>2e</sub></b>	carbon dioxide equivalent
<b>CRHR</b>	California Register of Historical Resources
<b>dBA</b>	Decibel, A-weighted scale
<b>DPR</b>	Department of Parks and Recreation
<b>DTSC</b>	Department of Toxic Substances Control
<b>EIR</b>	Environmental Impact Report
<b>ERB</b>	Environmental Review Board
<b>F</b>	Fahrenheit
<b>Farmland</b>	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
<b>FEMA</b>	Federal Emergency Management Agency
<b>FGC</b>	Fish and Game Code

<b>FMMP</b>	Farmland Mapping and Monitoring Program
<b>FTBMI</b>	Fernandeño Tataviam Band of Mission Indians
<b>GHG</b>	Greenhouse Gas
<b>I</b>	Institutional
<b>IS</b>	Initial Study
<b>ISA</b>	International Society of Arboriculture
<b>ISE</b>	ion selective electrode
<b>JPA</b>	Joint Powers Authority
<b>LACDPW</b>	Los Angeles County Department of Public Works
<b>LCP</b>	Local Coastal Program
<b>Ldn</b>	Day-Night Average Sound Level
<b>LIP</b>	Local Implementation Program
<b>LST</b>	Localized Significance Threshold
<b>LUP</b>	Land Use Plan
<b>LUST</b>	Leaking Underground Storage Tank
<b>LVMWD</b>	Las Virgenes Municipal Water District
<b>MBTA</b>	Migratory Bird Treaty Act
<b>mgd</b>	million gallons per day
<b>mg/L</b>	milligrams per liter
<b>MLD</b>	Most Likely Descendant
<b>MND</b>	Mitigated Negative Declaration
<b>MT</b>	metric tons
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NAHC</b>	Native American Heritage Commission
<b>NO<sub>2</sub></b>	nitrogen dioxide
<b>NO<sub>3</sub></b>	nitrate
<b>N<sub>2</sub>O</b>	nitrous oxide
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NRHP</b>	National Register of Historic Places
<b>OHP</b>	Office of Historic Preservation
<b>O-S</b>	Open Space
<b>O-S-P</b>	Open Space Parks

<b>OSHA</b>	Occupational Safety and Health Administration
<b>OWCMP</b>	(Los Angeles County) Oak Woodlands Conservation Management Plan
<b>PLC</b>	Programmable Logic Controller
<b>PM10</b>	particulate matter 10 microns or less in diameter
<b>PM2.5</b>	particulate matter 2.5 microns or less in diameter
<b>PRC</b>	Public Resources Code
<b>PS</b>	Public and Semi-Public
<b>RS</b>	Residential, Single-Family
<b>RWQCB</b>	Regional Water Quality Control Board
<b>SCAB</b>	South Coast Air Basin
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SCAQMD</b>	South Coast Air Quality Management District
<b>SCCIC</b>	South Central Coastal Information Center
<b>SEA</b>	Significant Ecological Area
<b>SERA</b>	Significant Environmental Resource Area
<b>SMM</b>	Santa Monica Mountains
<b>SO<sub>2</sub></b>	sulfur dioxide
<b>SO<sub>x</sub></b>	sulfur oxides
<b>SWRCB</b>	State Water Resources Control Board
<b>TAC</b>	Toxic Air Contaminants
<b>TMDL</b>	Total Maximum Daily Load
<b>TN</b>	total nitrogen
<b>TNW</b>	Traditionally Navigable Water
<b>TP</b>	total phosphorus
<b>USEPA</b>	United States Environmental Protection Agency
<b>USGS</b>	United States Geological Survey
<b>USFWS</b>	United States Fish and Wildlife Service
<b>VOC</b>	volatile organic compound
<b>WEPP</b>	Worker Environmental Education Program
<b>WLA</b>	Waste Load Allocation
<b>WQO</b>	Water Quality Objective
<b>WRF</b>	Water Reclamation Facility

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Appendix A  
Biological Resources Technical Report



**Biological Resources Technical  
Report**

Summer Flow Augmentation of Malibu  
Creek

**October 30, 2018**

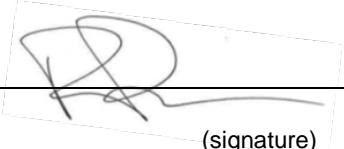
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# Table of Contents

<b>ACRONYMS</b> .....	<b>iii</b>
<b>1.0 INTRODUCTION</b> .....	<b>1</b>
1.1 PROJECT DESCRIPTION .....	1
<b>2.0 METHODOLOGIES</b> .....	<b>1</b>
2.1 LITERATURE REVIEW .....	2
2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENTS .....	2
2.2.1 Wildlife .....	3
2.2.2 Special-Status Plants .....	3
2.2.3 Vegetation Mapping .....	3
<b>3.0 REGULATORY ENVIRONMENT</b> .....	<b>4</b>
3.1 FEDERAL REGULATIONS .....	4
3.1.1 Federal Endangered Species Act.....	4
3.1.2 Migratory Bird Treaty Act.....	5
3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668) .....	5
3.1.4 Federally Regulated Habitats .....	5
3.1.5 National Environmental Policy Act.....	6
3.2 STATE REGULATIONS .....	6
3.2.1 California Environmental Quality Act .....	6
3.2.2 California Endangered Species Act.....	6
3.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913).....	7
3.2.4 Section 3503 & 3503.5 of the Fish and Game Code.....	7
3.2.5 Porter-Cologne Water Quality Control Act .....	7
3.2.6 State-Regulated Habitats .....	7
3.2.7 California Coastal Act.....	8
3.3 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS .....	9
3.3.1 California Native Plant Society Rare Plant Program .....	9
3.3.2 County of Los Angeles Oak Tree Ordinances .....	10
3.3.3 County of Los Angeles Significant Ecological Areas.....	11
<b>4.0 EXISTING CONDITIONS</b> .....	<b>11</b>
4.1 SETTING.....	11
4.2 GENERAL VEGETATION AND LAND COVERS.....	11
4.2.1 Vegetation Communities and Land Cover Types.....	11
4.2.2 Common Plant Species Observed.....	13
4.2.3 Jurisdictional Waters/Wetlands .....	14
4.3 COMMON WILDLIFE .....	15
<b>5.0 SPECIAL-STATUS SPECIES</b> .....	<b>17</b>
5.1 SPECIAL-STATUS NATURAL COMMUNITIES .....	18
5.2 DESIGNATED CRITICAL HABITAT .....	18
5.3 SPECIAL-STATUS PLANTS .....	18
5.4 SPECIAL-STATUS WILDLIFE.....	24



5.5	WILDLIFE CORRIDORS AND SPECIAL LINKAGES .....	34
5.5.1	Wildlife Movement in the Project Site .....	35
<b>6.0</b>	<b>PROJECT IMPACTS AND AVOIDANCE AND MINIMIZATION MEASURES.....</b>	<b>35</b>
6.1	PROJECT IMPACTS.....	35
6.1.1	Native Vegetation and Trees.....	35
6.1.2	Wildlife .....	36
6.2	AVOIDANCE AND MINIMIZATION MEASURES.....	36
6.2.1	Avoidance and Minimization Measure 1 - Implement BMPs .....	36
6.2.2	Avoidance and Minimization Measure 2 - Implement a Worker Environmental Education Program.....	37
6.2.3	Avoidance and Minimization Measure 3 - Pre-Construction Surveys (Plants and Wildlife) and Biological Monitoring.....	37
6.2.4	Avoidance and Minimization Measure 4 - Nesting Bird Surveys and Avoidance Measures.....	38
6.2.5	Avoidance and Minimization Measure 5 – Oak and Other Native Tree Avoidance Measures.....	39
<b>7.0</b>	<b>REFERENCES.....</b>	<b>40</b>

**LIST OF APPENDICES**

<b>APPENDIX A</b>	<b>FIGURES.....</b>	<b>A.1</b>
<b>APPENDIX B</b>	<b>PHOTOGRAPHIC LOG .....</b>	<b>B.1</b>

## Acronyms

BMP	Best Management Practice
CCH	Consortium of California Herbaria
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
gpm	gallons per minute
ISA	International Society of Arboriculture
LCP	Local Coastal Program
LVMWD	Las Virgenes Municipal Water District
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
OWCMP	Oak Woodlands Conservation Management Plan
RWQCB	Regional Water Quality Control Board
SEA	Significant Ecological Area
SERA	Sensitive Environmental Resource Area
SMM LCP	Santa Monica Mountains Local Coastal Program
TNW	Traditionally Navigable Water

USACE	United States Army Corps of Engineers
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements
WEEP	Worker Environmental Education Program
WRF	Water Reclamation Facility

## 1.0 INTRODUCTION

This report is intended to document the biological resources that occur at the Project Site for the Las Virgenes – Triunfo Joint Powers Authority’s proposed Summer Flow Augmentation of Malibu Creek at the Las Virgenes Municipal Water District’s (LVMWD) Tapia Water Reclamation Facility (Tapia WRF). The Project Site is along Malibu Canyon Road and the Tapia WRF access road in unincorporated Los Angeles County, California (refer to Appendix A, Figure 1). The surveys and discussions presented in this report were conducted/prepared to support California Environmental Quality Act (CEQA) analysis and associated documentation. The entrance to the Tapia WRF is located at 731 Malibu Canyon Road, approximately 0.09 mile south of Piuma Road, and the Project Site encompasses the entry access road (between Malibu Canyon Road and the facility gate) and the section of Malibu Canyon Road between the facility entrance and Piuma Road (refer to Appendix A, Figure 2).

### 1.1 PROJECT DESCRIPTION

The Las Virgenes -Triunfo Joint Powers Authority owns and operates the Tapia WRF. The discharge permit for Tapia WRF requires a minimum of 2.5 cubic feet per second constant flow in Malibu Creek and requires that the LVMWD supplement the creek flow as needed during the summer (April 15th – November 15th) to maintain this flow level. New, more stringent nutrient requirements have been implemented as the Total Maximum Daily Loads for nutrients in the Malibu Creek Watershed by the United States Environmental Protection Agency, Region 9. These limits will go into effect for Tapia WRF discharges on May 16, 2022. The use of potable water with ammonia removal is the preferred alternative to meet the Malibu Creek summer augmentation discharge requirements.

This summer flow augmentation project is composed of two components: conveyance of potable water to Tapia WRF, and facilities for ammonia removal at Tapia WRF prior to discharge to Malibu Creek. LVMWD plans to install a new 8-inch potable water line extending from the existing 20-inch pipeline at the intersection of Las Virgenes Road and Piuma Road, routed along Las Virgenes Road/Malibu Canyon Road across the bridge over Malibu Creek, and along the entrance roadway to Tapia WRF. The pipeline will be constructed via open trench along the roadways and will be mounted on the underside of the bridge to cross over Malibu Creek. At Tapia WRF, the potable water will be treated to remove the ammonia from the water through chlorination, followed by dechlorination, and then the existing outfall at the WRF will be used to discharge flows to Malibu Creek. This will involve modifications and reuse of the existing overflow structure and chemical feed facilities at Tapia WRF. New water quality monitoring and controls will prevent the water from being discharged to Malibu Creek if the system does not meet water quality requirements. When completed, the project will enable the augmentation of summer flows to Malibu Creek that meet discharge requirements.

## 2.0 METHODOLOGIES

Stantec biologists conducted a survey for biological resources and habitat assessment within and immediately adjacent to the Project Site on June 20, 2018. The study area was defined as a corridor sufficiently wide to encompass all potential areas of project disturbance for pipeline installation. The area of the Project Site encompasses 2.45 acres, with elevations in the study area ranging from approximately 450 to 475 feet above mean sea level. Since improvements at the WRF will be implemented at an existing process unit, no area within the treatment plant boundary is considered

as part of the Project Site for biological resources review. Surveys were conducted by Stantec Principal Biologist Jared Varonin and Associate Biologist Rocky Brown. This included, but was not limited to, a literature review, reconnaissance-level survey, focused non-protocol surveys for special-status plant and wildlife species, non-protocol focused surveys for listed song birds, and preliminary jurisdictional delineation. Surveys were conducted on foot within the Project Site where accessible based on terrain and vegetative cover.

## 2.1 LITERATURE REVIEW

A literature search was performed in conjunction with field surveys conducted for the Project Site. The Project Site is located within the U.S. Geological Survey's (USGS) Malibu Beach, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) was conducted for this quadrangle to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the Project Site (CDFW, 2018a). The following five adjacent quadrangles were also included in the database search due to their proximity to the Project Site (note: due to the Project's proximity to the coastline, no quadrangles occur to the south):

- Thousand Oaks
- Calabasas
- Canoga Park
- Point Dume
- Topanga

Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and federally listed endangered and threatened animals of California (CDFW, 2018b);
- Special Animals List (CDFW, 2018c);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2018); and
- Consortium of California Herbaria (CCH, 2018).

## 2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENTS

In order to document the existing biological resources that are present in the Project Site, on June 20, 2018, Stantec conducted a habitat assessment and reconnaissance-level survey, focused non-protocol surveys for special-status plant and wildlife species, a non-protocol focused survey for listed song birds, and a preliminary jurisdictional delineation. The primary goals of wildlife surveys were to identify and assess habitat capable of supporting special-status wildlife species and/or to document the presence/absence of special-status wildlife species. To the extent possible, surveys were conducted when special-status plant species would be in bloom or identifiable, migratory birds were present at the Project Site, resident bird species were nesting and fledging, small mammals were present and active, and above-ground amphibian and reptile movement would be detectable. However, it is acknowledged that some wildlife species and/or individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior.

The Project Site was investigated on foot by experienced field biologists. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.). Where necessary, samples of selected plant species were taken to the laboratory and identified microscopically or in consultation with a local herbarium. Species identifications conform to the most up-to-date field guides and technical literature.

### 2.2.1 Wildlife

A reconnaissance-level survey was performed by walking meandering transects through the entirety of the Project Site at an average pace of approximately 1.5 km/hr while visually searching for and listening to wildlife songs and calls and observing for animal signs. The walking survey was halted approximately every 50 meters to listen for wildlife or as necessary to identify, record, or enumerate any other detected species. Table 4 (Section 5.4) lists special-status wildlife species that have the potential to occur in the Project Area.

Terrestrial insects and other invertebrates were searched for on flowers and leaves, under loose bark, and under stones and logs on the ground throughout the Project Site. Randomly selected areas within appropriate micro habitats (e.g., leaf litter, underneath felled logs, etc.) were hand raked or visually inspected to determine the presence/absence of gastropods.

Surveys were conducted during daylight hours when temperatures were such that reptiles would be active (i.e., between 75° – 95° Fahrenheit). Visual observations were made to locate basking reptiles, and potential refuge areas, such as debris piles (e.g., woody debris, trash, etc.), were searched. All refugia sites search were returned to their original state upon survey completion.

### 2.2.2 Special-Status Plants

Before the field survey, Stantec reviewed available literature to identify special-status plants or natural communities known from the Project Site and vicinity. Database queries included a CNDDDB search (CDFW 2018a) of the Malibu Beach and five surrounding USGS topographic quadrangles and the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2018) for the same six quadrangles. Table 3 (Section 5.3) lists special-status plant species that have a potential to occur in the Project Site.

The entire Project Site was assessed by walking “meandering transects” (Nelson, 1987) throughout all accessible portions, with particular attention given to areas of suitable habitat for special-status plant species. All plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in Baldwin et al. (2012), applicable volumes of the Flora of North America (1993+), and other regional references. All species identified during the survey are listed in Section 4.3.2. In conformance with CDFW protocols (2009), surveys were (a) floristic in nature, (b) consistent with conservation ethics, (c) systematically covered all habitat types on the sites, and (d) well documented by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. No specimens were vouchered as a result of the surveys described in this report.

### 2.2.3 Vegetation Mapping

Vegetation descriptions and names are based on Sawyer et al. (2009) and have been defined at least to the alliance level. Vegetation maps were prepared by drawing tentative vegetation type boundaries onto high-resolution aerial images while in the field, then digitizing these polygons into GIS. Mapping was done electronically using ArcGIS (version 10.4) with aerial photos with an accuracy of 1 foot. Most boundaries shown on the maps are accurate within approximately 3 feet; however, boundaries between some vegetation types are less precise due to difficulties interpreting aerial imagery and accessing stands of vegetation.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type. For this Study Area, the minimum mapping unit was approximately 3 feet, and smaller inclusions are described in the text but are not visible on the maps.

## 3.0 REGULATORY ENVIRONMENT

### 3.1 FEDERAL REGULATIONS

#### 3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (ESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Critical habitat is defined in Section 3(5)(A) of the ESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. USFWS*. Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

### 3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

### 3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this project if such resources are affected. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

### 3.1.4 Federally Regulated Habitats

Areas meeting the regulatory definition of “Waters of the U.S.” (Jurisdictional Waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The Project Site falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.



Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources.

### **3.1.5 National Environmental Policy Act**

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and utilize public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans/documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 U.S.C. 4321- 4327) (40 CFR 1500-1508).

## **3.2 STATE REGULATIONS**

### **3.2.1 California Environmental Quality Act**

CEQA establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

### **3.2.2 California Endangered Species Act**

Provisions of the California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is “unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of

any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

### **3.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913)**

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

### **3.2.4 Section 3503 & 3503.5 of the Fish and Game Code**

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

### **3.2.5 Porter-Cologne Water Quality Control Act**

Regional water quality control boards (RWQCBs) regulate the "discharge of waste" to "waters of the State." All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both of the terms "discharge of waste" and "waters of the State" are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other "discharge." Isolated wetlands within California, which are no longer considered "waters of the United States" as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

### **3.2.6 State-Regulated Habitats**

The State Water Resources Control Board is the State agency (together with the RWQCBs) charged with implementing water quality certification in California. The Project Site falls under the jurisdiction of the Los Angeles RWQCB.

The CDFW extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project Applicant enter into a Streambed Alteration Agreement with the CDFW.

### 3.2.7 California Coastal Act

The California Coastal Act of 1976 was borne out of the Coastal Conservation Initiative, passed in 1972 by California voters concerned about coastal development and its impact on public access and coastal resources. This initiative resulted in the creation of the Coastal Commission and, four years after the initiative was passed, the State Legislature enacted the Coastal Act. The act is designed to balance the right to develop with strict policies to protect resources.

The Coastal Zone encompasses 1.5 million acres of land along the length of the 1,100-mile California coastline and stretches from 3 miles at sea to an inland boundary that varies from several blocks in urban areas to as much as 5 miles inland in less developed areas. It also includes 287 miles of shoreline surrounding nine offshore islands.

The Coastal Act is umbrella legislation designed to encourage local governments to create Local Coastal Programs (LCPs) to govern decisions that determine the short- and long-term conservation and use of coastal resources. These LCPs can be thought of as the equivalent of General Plans for areas within the Coastal Zone. LCPs must be consistent with the policies of Coastal Act and protect public access and coastal resources. Until the Coastal Commission certifies an LCP, the Commission makes the final decisions on all development within a jurisdiction (city or county) within the Coastal Zone. Once an LCP is certified for a jurisdiction, decisions are handled locally, but can be appealed to the Commission.

Biological resource management and regulation in the Santa Monica Mountains Coastal Zone, including the Project Site, is implemented through the County Santa Monica Mountains LCP (SMM LCP). Together, the Santa Monica Mountains Land Use Plan (SMM LUP; Los Angeles County, 2018a) and the Santa Monica Mountains Local Implementation Program (SMM LIP; Los Angeles County, 2018b) constitute the County's State-mandated LCP for the Santa Monica Mountains segment of the County's coastal zone.

The SMM LUP is the component of the SMM LCP that designates land use classifications, type and density of allowable development, and goals and policies concerning development. The Coastal Zone is divided into three habitat categories: H1, H2, and H3. H1 habitat and H2 habitat are defined as Sensitive Environmental Resource Areas (SERAs) - areas containing habitats of the highest biological significance, rarity, and sensitivity. Environmental Review Board evaluation is conducted for development within certain SERAs. H1 habitats include: alluvial scrub; coastal bluff scrub; dune; native grassland and scrub with a strong component of native grasses or forbs; riparian; native oak, sycamore, walnut and bay woodlands; rock outcrop habitat types; and wetlands. H1 habitat also includes populations of plant and animal species (1) listed by the State or Federal government as rare, threatened or endangered, listed by NatureServe as State or Global-ranked 1, 2, or 3, and identified as California Species of Special Concern, and/or (2) CNPS-listed 1B and 2 plant species, normally associated with H1 habitats, where they are found within H2 or H3 habitat areas. H2 habitat includes large, contiguous areas of coastal sage scrub and chaparral-dominated habitats. A subcategory of H2 habitat is H2 "High Scrutiny" habitat, which comprises (1) CNDDDB-identified rare natural communities; (2) plant and animal species listed by the State or Federal government as rare, threatened, or endangered; listed by NatureServe as State or Global-ranked 1, 2, or 3, and identified as California Species of Special Concern; and/or (3) CNPS-listed 1B and 2 plant species, normally associated with H2 habitats. H3 habitat consists of disturbed or isolated habitat areas that provide some important biological functions, but do not rise to a level of a SERA. The Project Site is mapped as H1 habitat.

Related to public work facilities, SMM LUP policies state:

- LU-12 Require that the extension of water, sewer, or utility infrastructure to serve development be located within legally existing roadways and road rights-of-way in a manner that avoids adverse impacts to coastal resources to the maximum extent feasible. Such infrastructure shall be sized and otherwise designed to provide only for the approved development to avoid growth-inducing impacts.
- CO-20 Require that public agencies use the most effective Best Management Practices (BMPs) to protect natural resources at project sites and maintenance yards when the maintenance and modification of public infrastructure involves the removal of vegetation and/or earth.
- CO-48 New and replacement infrastructure may be permitted provided that it complies with applicable provisions of this plan and is designed to avoid and, if feasible, minimize adverse impacts to environmental and scenic resources. New roads shall only be construction to provide access to lawfully-approved proposed new development and shall comply with the road standards found in the LIP. New and replacement utilities shall only be developed to serve legally-established uses.

Per the public facilities element of the LUP, the guiding principal to ensure the provision of adequate services and facilities is:

Public facilities should support existing and approved land uses, and are not intended to induce further development, consistent with environmental carrying capacities and the need to protect the unique character of existing communities.

Zoning ordinances required to implement the LUP are contained in the SMM LIP, a component of the SMM LCP and a segment of Los Angeles County Code Title 22 (Planning and Zoning Ordinance). The SMM LIP establishes regulations for new development and for the protection and management of the Santa Monica Mountains Coastal Zone's unique resources.

### **3.3 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS**

#### **3.3.1 California Native Plant Society Rare Plant Program**

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California

- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered. These are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known).

### 3.3.2 County of Los Angeles Oak Tree Ordinances

Los Angeles County has recognized oak trees as significant historical, aesthetic, and ecological resources and has enacted the Los Angeles County Oak Tree Ordinance to preserve and maintain healthy oak trees in the development process. However, trees in the Santa Monica Mountains unincorporated Coastal Zone fall under protections of the SMM LCP, as detailed in the SMM LIP. All locally native trees with a single trunk diameter of 6 inches or greater, or a combination of any two trunks measuring a total of eight inches or more in diameter, measured at four and one-half feet above natural grade, are protected. As detailed in Section 22.44.950 of the SMM LIP, removals and encroachments into the protected zone of oak trees require the procurement of a Coastal Development Permit-oak tree, a specific type of administrative Coastal Development Permit, and likely mitigation, which may require replacement plantings in an area protected from further development. The schedule and mitigations are further detailed in Section 22.44.1920.K of the SMM LIP.

While these standards protect individual standing oak trees, the Los Angeles County Oak Woodlands Conservation Management Plan (OWCMP; 2011) is designed to manage oak woodlands and the values they provide to residents of the County (wildlife habitats, watershed, and soil protection). The Plan has the following goal:

Oak Woodlands are preserved and restored so that they are conserved in perpetuity with no net loss of oak woodlands.

An oak stand of at least two native oaks with touching zones of influence with greater than 10 percent canopy cover shall be considered an oak woodland, and, any oak stand consisting of any of the oak associations documented in the OWCMP which can be shown to historically have had a greater than 10 percent canopy cover shall also be considered an oak woodland. Determination of zone of influence is described in the OWCMP. Oak tree canopies cover approximately 10 percent of the zone of influence. Oak trees used to determine zone of influence extent are minimum 5 inches in diameter measured at 4.5 feet from the ground.

### 3.3.3 County of Los Angeles Significant Ecological Areas

Los Angeles County first designated Significant Ecological Areas (SEAs) in 1970. Identified for their biological value, SEAs warrant special management because they contain biotic resources that are considered to be rare or unique; are critical to the maintenance of wildlife; represent relatively undisturbed areas of County habitat types; or serve as linkages. The County considers the biological resources in the Santa Monica Mountains Coastal Zones to be of significance, and the Project Site is located within SEA 22. Development in SEAs is usually reviewed by the Significant Ecological Areas Technical Advisory Committee. However, the management and review of biological resources in the SMM Coastal Zone differs from the countywide SEA regulatory program. Biological resources management and regulation in the Santa Monica Mountains Coastal Zone is implemented through the SMM LCP.

## 4.0 EXISTING CONDITIONS

### 4.1 SETTING

The Project Site is located in the Santa Monica Mountains in an unincorporated portion of southwestern Los Angeles County (refer to Appendix A, Figure 1). It is situated adjacent to and crosses Malibu Creek at its intersection with Malibu Canyon Road, just south of Piuma Road. The proposed pipeline will be installed within the existing roadway and disturbed margins of the Tapia WRF access road and the section of Malibu Canyon Road between the access road and Piuma Road, including beneath the bridge spanning Malibu Creek. Land use surrounding the Project Site includes open space with semi-rural residential development to the east.

### 4.2 GENERAL VEGETATION AND LAND COVERS

Within the non-developed portions of the Project Site, biological resources consist primarily of common plant species and vegetation communities characteristic of the coastal ranges and valleys of southern California. Habitat conditions within undeveloped portions of the Project Site are generally good, with well-established monocultures of native tree species dominating the riparian areas adjacent to Malibu Canyon Road and the Tapia WRF entrance road. Within the Project Site, Stantec biologists mapped six plant communities defined by Sawyer et al. (2009) and one additional land cover type. These are described further in Section 4.2.1 below. Figure 2 (Appendix A) illustrates the land cover types occurring in the Project Site.

#### 4.2.1 Vegetation Communities and Land Cover Types

##### 4.2.1.1 Vegetation Communities

###### Non-Native Grasslands

Non-native grasslands, dominated by a mix of non-native annual grasses including wild oats (*Avena fatua*) and brome species (*Bromus diandrus* and *B. madritensis rubens*), occur along the disturbed margins adjacent to the Tapia WRF entrance road and Malibu Canyon Road. Other non-native annual herbaceous species are also common within this community, including summer mustard (*Hirschfeldia incana*), Italian thistle (*Carduus pyconcephalus*), and red-stem

filaree (*Erodium cicutarium*). Sparsely interspersed within this community are native shrubs common to adjacent areas of native scrub including toyon (*Heteromeles arbutifolia*), mountain mahogany (*Cercocarpus betuloides*), and sugar bush (*Rhus ovata*). Approximately 0.38 acre of this community occurs within the Project Site.

### **Coyote Brush Scrub**

This community occurs at one distinct location within the Project Site at the southwest corner of the intersection of Malibu Canyon Road and the Tapia WRF entrance road. This area is dominated by coyote brush (*Baccharis pilularis*) with an understory of non-native grasses and forbs consistent with those found in adjacent areas of non-native grassland as described above. Approximately 0.05 acre of this community occurs within the Project Site.

### **Black Cottonwood Forest**

Several tree-dominated riparian plant communities intergrade with each other along the stretch of the Malibu Creek riparian corridor that passes through and adjacent to the Project Site. This community occurs in a strip bordering the northern edge of the Tapia WRF entrance road in the western portion of the Project Site. It is dominated by mature black cottonwood (*Populus trichocarpa*) trees but also includes other riparian tree species such as California sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia*), California ash (*Fraxinus dipetala*), and arroyo willow (*Salix lasiolepis*). Throughout the Malibu Creek riparian corridor, this vegetation type intergrades with the other tree-dominated riparian communities discussed below. Approximately 0.13 acre of this community occurs within the Project Site.

### **Black Cottonwood Forest/Arroyo Willow Thickets**

This plant community occurs in the portion of the riparian corridor that borders the Malibu Canyon Road bridge spanning Malibu Creek. Within it, black cottonwood and arroyo willow are co-dominant with other riparian tree species interspersed including California walnut (*Juglans californica*) and California sycamore. In more open portions of this community, the understory consists of a mixture of native and non-native shrub and forb species such as mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), mugwort (*Artemisia douglasiana*), tree tobacco (*Nicotiana glauca*), and fennel (*Foeniculum vulgare*). Approximately 0.53 acre of this community occurs within the Project Site.

### **Coast Live Oak Woodland**

This plant community occurs at various locations within the Project Site, including along sections adjacent to the Tapia WRF access road and toward its northern portion, just south of the intersection of Malibu Canyon Road and Piuma Road. These areas are dominated by a near-monoculture of coast live oak (*Quercus agrifolia*) with a sparse understory consisting primarily of non-native annual grasses and some native shrubs and forbs such as poison oak (*Toxicodendron diversilobum*) and California blackberry (*Rubus ursinus*). Approximately 0.46 acre of this community occurs within the Project Site.

### **California Sycamore Woodland**

As noted above, tree-dominated vegetation types intergrade throughout the Malibu Creek riparian corridor and a small area at the northwest corner of the intersection of Malibu Canyon Road and the Tapia WRF entrance road is dominated by California sycamore. Approximately 0.04 acre of this community occurs within the Project Site.

#### 4.2.1.2 Other Land Cover Types

##### Disturbed/Developed

This classification was used to map portions of the Project Site that are developed, primarily existing paved roadways (Malibu Canyon Road, Piuma Road, and the Tapia WRF access road). Where vegetated, these areas are generally composed of sparse ruderal pioneer plant species that readily colonize open disturbed soil and thrive as a result of anthropogenic impacts. Some of the plants present within this cover type included red-stem filaree, tocalote (*Centaurea melitensis*), wild oats, and other non-native grasses and forbs. Approximately 0.86 acre of this land cover type occurs within the Project Site.

#### 4.2.2 Common Plant Species Observed

The Project Site was assessed for common and rare vascular plants during the June 2018 survey, though a focused, floristic-level survey was not conducted. The survey resulted in the documentation of 55 species of native and non-native plants within the Project Site. Table 1, below, presents a list of all plants observed within the Project Site.

**Table 1 – Plant Species Observed in the Project Site**

Scientific Name	Common Name
<i>Alnus rhombifolia</i>	white elder
<i>Ambrosia psilostachya</i>	ragweed
<i>Apium graveolens</i> *	wild celery
<i>Artemisia douglasiana</i>	California mugwort
<i>Avena fatua</i>	wild oats
<i>Baccharis pilularis</i>	coyote brush
<i>Baccharis salicifolia</i>	mulefat
<i>Bolboschoenus robustus</i>	steady bulrush
<i>Bromus diandrus</i> *	ripgut brome
<i>Bromus madritensis</i> ssp. <i>rubens</i> *	foxtail brome
<i>Camissonia</i> sp.	camissonia
<i>Carduus pycnocephalus</i> *	Italian thistle
<i>Ceanothus</i> sp.	ceanothus
<i>Centaurea melitensis</i> *	toocalote
<i>Cercocarpus betuloides</i>	mountain mahogany
<i>Claytonia parviflora</i>	narrow leaved miner's lettuce
<i>Conium maculatum</i> *	poison hemlock
<i>Corethrogyne filaginifolia</i>	common sandaster
<i>Cucurbita foetidissima</i>	Missouri gourd
<i>Datura wrightii</i>	jimsonweed
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	golden yarrow
<i>Erodium cicutarium</i> *	redstem filaree



Scientific Name	Common Name
<i>Foeniculum vulgare*</i>	fennel
<i>Fraxinus dipetala</i>	California ash
<i>Gallium</i> sp.	gallium
<i>Gazania linearis*</i>	treasure flower
<i>Heteromeles arbutifolia</i>	toyon
<i>Hirschfeldia incana*</i>	summer mustard
<i>Hordeum murinum*</i>	foxtail barley
<i>Juglans californica</i>	Southern California black walnut
<i>Juniperus californica</i>	California juniper
<i>Keckiella cordifolia</i>	heart leaved penstemon
<i>Lactuca serriola*</i>	prickly lettuce
<i>Lupinus bicolor</i>	bicolored lupine
<i>Malacothrix saxatilis</i>	cliff aster
<i>Marah macrocarpus</i>	wild cucumber
<i>Melilotus alba*</i>	white sweetclover
<i>Mimulus aurantiacus</i>	sticky monkeyflower
<i>Nicotiana glauca*</i>	tree tabaco
<i>Platanus racemosa</i>	California sycamore
<i>Phacelia</i> sp.	phacelia
<i>Pinus</i> sp.	pine tree
<i>Plantago lanceolata*</i>	ribwort
<i>Populus trichocarpa</i>	black cottonwood
<i>Quercus agrifolia</i>	coast live oak
<i>Rhus ovata</i>	sugar bush
<i>Rubus ursinus</i>	California blackberry
<i>Salix lasiolepis</i>	arroyo willow
<i>Sambucus nigra</i>	black elderberry
<i>Spartium junceum*</i>	spanish broom
<i>Stephanomeria virgata</i>	twiggy wreath plant
<i>Stipa miliacea*</i>	smilo grass
<i>Toxicodendron diversilobum</i>	poison oak

\* Non-native Species

### 4.2.3 Jurisdictional Waters/Wetlands

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal CWA; the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Two types of jurisdictional features were documented within the Project Site associated with Malibu Creek: USACE non-wetland Waters of the U.S. and CDFW State Waters. Malibu Creek is considered a Relatively Permanent Water and flows directly into the Pacific Ocean, which is a Traditionally Navigable Water (TNW). Based on this connectivity to a TNW, Malibu Creek is federally jurisdictional and the creek and associated contiguous areas of riparian vegetation are State jurisdictional. In addition, there are small v-ditches adjacent to the Tapia WRF access road that facilitate stormwater runoff. These contribute flow to Malibu Creek and therefore would also likely be considered jurisdictional resources. Approximately 0.55 acre of Waters of the U.S. and 1.14 acres of CDFW State Waters occur within the Project Site. Figure 5 in Appendix A depicts the extent of the jurisdictional areas within the Project Site.

## 4.3 COMMON WILDLIFE

### Invertebrates and Gastropods

Focused insect surveys within the boundaries of the Project Site were not performed during the June 2018 survey event; however, a variety of common insects are known to occur in the area. Habitat conditions in the Project Site provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the Project Site play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. General surveys of the Project Site detected a wide variety of common and non-native invertebrates. Some of the orders identified in the Project Site included *Odonata* (dragonflies, damselflies), *Hemiptera* (true bugs), *Coleoptera* (beetles), *Diptera* (flies), *Plecoptera* (stone flies), *Lepidoptera* (moths and butterflies), *Hymenoptera* (wasps, bees and ants), and *Orthoptera* (grasshoppers). In addition, crayfish (order *Decapoda*) were observed in Malibu Creek. No gastropod species were observed in the Project Site.

### Fish

A number of native and non-native fish species are known to occur in the streams of the Santa Monica Mountains. One fish species was observed during the June 2018 survey: largemouth bass (*Micropterus salmoides*). The waters of Malibu Creek are known to support a number of other common, though primarily non-native, fish species including bluegill (*Lepomis macrochirus*), goldfish (*Carassius auratus*), green sunfish (*Lepomis cyanellus*), and redear sunfish (*Lepomis microlophus*). Additionally, steelhead trout (*Oncorhynchus mykiss*) are known to occur in the lowest 2 miles of Malibu Creek, over 2 miles downstream from the Project Site.

### Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Amphibian species were not observed during surveys within the Project Site. Species not observed in the Project Site but known to occur in the Malibu Creek watershed include the Pacific treefrog [chorus frog] (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), and the non-native bullfrog (*Lithobates catesbeiana*). These species all require aquatic habitat for all or part of their life cycle, which is present in the Project Site, and therefore are likely to occur. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material, present in very limited portions of the Project Site, in various stages of decay (often referred to as coarse

woody debris) provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988).

## Reptiles

The number and type of reptile species that may occur at a given site are related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

Western fence lizard (*Sceloporus occidentalis*) was the only reptile species observed in the Project Site. Although not observed, several other common reptiles likely occur in the Project Site. Many reptile species, even if present in an area, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Although not detected in the Project Site, habitat conditions are suitable for a number of common reptiles including western skink (*Plestiodon skiltonianus*), California whipsnake (*Masticophis lateralis*), coachwhip (*Masticophis flagellum*), California black-headed snake (*Tantilla planiceps*), and western rattlesnake (*Crotalus oreganus*).

## Birds

Birds were identified by sight and sound and were observed throughout the Project Site. Some of these included black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), song sparrow (*Melospiza melodia*), Anna's hummingbird (*Calypte anna*), and common raven (*Corvus corax*). All species identified in the Project Site during the June 2018 survey are listed in Table 2. It is possible that many other birds use the Project Site either as wintering habitat, seasonal breeding, or as occasional migrants. Special-status bird species are further discussed in Section 5.4.

## Mammals

Generally, the distribution of mammals on a given site is associated with the presence of such factors as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide for cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). While no mammal species were detected during the June 2018 survey, a number would be expected to occur given the habitat conditions and species that are known to occur in the Santa Monica Mountains. These may include: California ground squirrel (*Spermophilus beecheyi*), Audubon's cottontail (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), and raccoon (*Procyon lotor*), which are all known to occur in the region. No special-status mammal species were observed in the Project Site. Special-status mammal species with the potential to occur are further discussed in Section 5.4.

Although bats were not detected in the Project Site (including associated with the County bridge crossing Malibu Creek), they likely forage and roost within the Malibu Creek riparian corridor. Many bats tend to concentrate foraging activities in riparian and wetland habitats similar to those present within the Project Site where insect abundance is high (CDFW, 2000).

**Table 2 – Wildlife Species Observed on the Project Site\***

<b>Scientific Name</b>	<b>Common Name</b>
<i>Baeolophus inornatus</i>	oak titmouse
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Calypte anna</i>	Anna's hummingbird
<i>Carpodacus mexicanus</i>	house finch
<i>Corvus corax</i>	common raven
<i>Decapoda</i> (order)	crayfish
<i>Haemorhous mexicanus</i>	house finch
<i>Melospiza crissalis</i>	California towhee
<i>Melospiza melodia</i>	song sparrow
<i>Micropterus salmoides</i>	largemouth bass
<i>Mimus polyglottos</i>	northern mockingbird
<i>Myiarchus cinerascens</i>	ash-throated flycatcher
<i>Petrochelidon pyrrhonota</i>	cliff swallow
<i>Phainopepla nitens</i>	phainopepla
<i>Psaltriparus minimus</i>	bushtit
<i>Sayornis nigricans</i>	black phoebe
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Zenaida macroura</i>	mourning dove

\*No special-status wildlife species were observed in the Project Site

## 5.0 SPECIAL-STATUS SPECIES

The background information presented above, combined with field observations taken during the survey, was used to generate a list of special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the Project Site and/or adjacent habitats. For the purposes of this report, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California or Federal ESAs;
- Are candidate species being considered or proposed for listing under these same acts;
- Are recognized as Species of Special Concern by the CDFW;
- Are ranked as CRPR 1, 2, 3 or 4 plant species;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions.

## 5.1 SPECIAL-STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Based on the vegetation mapping, one CDFW sensitive vegetation community, southern coast live oak riparian forest (coast live oak woodland), occurs within the Project Site; this community has a state rank of S4 (Apparently Secure).

In addition, as noted in Section 3.2.7, the SMM LUP defines the Project Site as H1 habitat, considered a SERA containing habitats of the highest biological significance, rarity, and sensitivity. H1 habitats include: alluvial scrub; coastal bluff scrub; dune; native grassland and scrub with a strong component of native grasses or forbs; riparian; native oak, sycamore, walnut and bay woodlands; rock outcrop habitat types; and wetlands.

## 5.2 DESIGNATED CRITICAL HABITAT

Literature review conducted prior to conducting field surveys determined that critical habitat does not occur within the Project Site or immediate vicinity. The nearest critical habitat is for steelhead in the lower reaches of Malibu Creek, which begins approximately 1.8 miles downstream of the Project Site and extends to the Pacific Ocean. Approximately 2.1 miles south of the Project Site and extending to the ocean is critical habitat for tidewater goby (*Eucyclogobius newberryi*). Other nearby critical habitat for Lyon's pentachaeta (*Pentachaeta lyonii*) occurs approximately 2.7 miles northwest of the Project Site.

## 5.3 SPECIAL-STATUS PLANTS

Table 3 lists special-status plants, including federally- and State-listed and CRPR 1-4 species that are known to occur in the vicinity of the Project Site. Based on the protections for native trees outlined in Section 22.44.1920.K of the SMM LIP, native trees on the Project Site with a single trunk diameter of 6 inches or greater, or a combination of any two trunks measuring 8 inches or greater, at four and one-half feet above natural grade would be considered special-status as defined by the criteria outlined in Section 5.0, above. Within the Project Site, these would include coast live oak, California ash, California sycamore, and black cottonwood.

A records search using the CNDDDB, the CNPS Online Inventory, and the CCH was performed for special-status plant taxa and botanical surveys were conducted within the Project Site (refer to Appendix A, Figures 3 and 4). Each of the taxa identified in the record searches was assessed for their potential to occur within the Project Site based on the following criteria:

- Present: Taxa were observed within the Project Site during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- High: Both a documented recent record (within 10 years) exists of the taxa within the Project Site or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the Project Site.

- Moderate: Both a documented recent record (within 10 years) exists of the taxa within the Project Site or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the Project Site or the Project Site is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the Project Site.
- Low: A historical record (over 10 years) exists of the taxa within the Project Site or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the Project Site.

**Table 3. Known and Potential Occurrence of Special-Status Plant Taxa within the Project Site**

<b>Taxa</b>	<b>Status</b>	<b>Blooming Period</b>	<b>Habitat Association and Elevation Limits</b>	<b>Potential to Occur in Project Site</b>
<i>Asplenium vespertinum</i> <b>western spleenwort</b>	4.2	Feb-Jun	Chaparral, coastal sage scrub, southern oak woodland; about 180-1000 m.	<b>Moderate:</b> The Project Site contains suitable soils/habitat for the species, though it is slightly outside of the known elevation range.
<i>Astragalus brauntonii</i> <b>Braunton's milk-veitch</b>	FE, 1B.1	Jan- Aug	Chaparral, valley grasslands, coastal sage scrub, closed-cone pine forest. Occurs in disturbed habitat; about 4-640 m.	<b>Not Expected to Occur:</b> Occurrences of this perennial species are well-documented, and it is not known to occur in the immediate vicinity of the Project Site. Ideal soil conditions do not exist. Not observed during June 2018 survey.
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i> <b>Ventura Marsh milk-veitch</b>	FE, SE, 1B.1	(Jun) Aug-Oct	Coastal salt marsh, wetland-riparian; about 1-35 m.	<b>Not Expected to Occur:</b> Project Site is outside of the known elevation range of this species, which is limited to coastal areas.
<i>Astragalus tener</i> var. <i>titi</i> <b>coastal dunes milk-veitch</b>	FE, SE, 1B.1	Mar-May	Coastal strand, northern coastal scrub, coastal sage scrub, wetland-riparian; about 1-50 m.	<b>Not Expected to Occur:</b> Project Site is outside of the known elevation range of this species, which is limited to coastal areas.
<i>Atriplex coulteri</i> <b>Coulter's saltbush</b>	1B.2	Mar-Oct	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; about 3-460 m.	<b>Not Expected to Occur</b> Preferred alkaline soils do not occur within the Project Site.
<i>Atriplex pacifica</i> <b>South Coast saltscale</b>	1B.2	Mar-Oct	Coastal bluff scrub, coastal dunes, coastal scrub, playas; about 0-140 m.	<b>Not Expected to Occur:</b> Suitable habitat does not occur within the Project Site. No alkaline soils present.
<i>Atriplex parishii</i> <b>Parish's brittlebush</b>	1B.1	Jun-Oct	Chenopod scrub, playas, vernal pools; about 25-1900 m.	<b>Not Expected to Occur:</b> Suitable habitat does not occur within the Project Site.
<i>Atriplex serenana</i> var. <i>davidsonii</i> <b>Davidson's saltscale</b>	1B.2	Apr-Oct	Coastal bluff scrub, coastal scrub; about 10-200 m.	<b>High:</b> Marginally suitable habitat present and species is known to occur within 2 miles of the Project Site.
<i>Baccharis malibuensis</i> <b>Malibu baccharis</b>	1B.1	Aug	Chaparral, cismontane woodland, coastal scrub, riparian woodland; about 150-305 m.	<b>High:</b> Suitable habitat conditions are present and nearest known occurrence is within 2 miles of the Project Site.
<i>Calandrinia breweri</i> <b>Brewer's calandrina</b>	4.2	(Jan) Mar-Jun	Sandy or loamy, disturbed sites and burns; chaparral, coastal scrub; about 10-1220 m.	<b>Moderate:</b> Suitable habitat conditions are present, and the Project Site is within the known distribution range.

<b>Taxa</b>	<b>Status</b>	<b>Blooming Period</b>	<b>Habitat Association and Elevation Limits</b>	<b>Potential to Occur in Project Site</b>
<i>Calochortus catalinae</i> <b>Catalina mariposa lily</b>	4.2	(Feb) Mar-Jun	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; about 15-700 m.	<b>Moderate:</b> Suitable habitat conditions are present, and the Project Site is within the known distribution range.
<i>Calochortus clavatus</i> var. <i>clavatus</i> <b>club-haired mariposa-lily</b>	4.3	(Mar) May-Jun	Chaparral, valley grassland, foothill woodland; about 75-1300 m.	<b>Moderate:</b> Suitable habitat conditions are present, and the Project Site is within the known distribution range.
<i>Calochortus clavatus</i> var. <i>gracilis</i> <b>slender mariposa-lily</b>	1B.2	(Mar) Jun-Nov	Chaparral; about 320-1000 m.	<b>Moderate:</b> Marginally suitable habitat present; however, Project Site is well outside of the known elevation range. Species is known to occur within 2 miles of the Project Site.
<i>Calochortus plummerae</i> <b>Plummer's mariposa-lily</b>	4.2	May-Jul	Shrublands, woodlands, lower pine forests; mountains, foothills, and valleys; Ventura to Orange Cos., inland to Riverside and San Bernardino Cos.; about 60-2500 m.	<b>Moderate:</b> Suitable habitat conditions are present, and the Project Site is within the known distribution range.
<i>Camissoniopsis lewisii</i> <b>Lewis' evening-primrose</b>	3	Mar-May (Jun)	Sandy or clay; coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; about 0-300 m.	<b>Moderate:</b> Suitable habitat conditions are present, and the Project Site is within the known distribution range.
<i>Cercocarpus betuloides</i> var. <i>blancheae</i> <b>island mountain-mahogany</b>	4.3	Feb-May	Chaparral; about 30-600 m.	<b>Moderate:</b> Marginally suitable habitat conditions are present in the vicinity, and the Project Site is within the known distribution range. Perennial shrub species was not observed during the June 2018 survey.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> <b>salt marsh bird's-beak</b>	FE, SE, 1B.2	May-Oct (Nov)	Coastal strand, coastal salt marsh, wetland-riparian; about 0-30 m.	<b>Not Expected to Occur:</b> Project Site is outside of the known elevation range of this species, which is limited to coastal areas.
<i>Chorizanthe parryi</i> var. <i>fernandina</i> <b>San Fernando Valley spineflower</b>	FPT, SE, 1B.1	Apr-Jul	Sandy areas in coastal scrub and native grasslands; Los Angeles and Ventura Cos.; 135-1070 m.	<b>Moderate:</b> Suitable habitat is present, and the Project Site is within the known distribution range.
<i>Chorizanthe parryi</i> var. <i>parryi</i> <b>Parry's spineflower</b>	1B.1	Apr-Jun	Chaparral, coastal sage scrub; about 275-1220 m.	<b>Low:</b> Marginally suitable habitat is present; however, the Project Site is outside of the known elevation range of this species.
<i>Convolvulus simulans</i> <b>small-flowered morning-glory</b>	4.2	Mar-Jul	Clay, serpentinite seeps; chaparral (openings), coastal scrub, valley and foothill grassland; about 30-740 m.	<b>Not Expected to Occur:</b> Suitable substrate does not occur within the Project Site.
<i>Deinandra minthornii</i> <b>Santa Susana tarplant</b>	1B.2	Jul- Nov	Chaparral, coastal sage scrub; about 280-760 m.	<b>Low:</b> Marginally suitable habitat is present; however, the Project Site is outside of the known elevation range of this species.



<b>Taxa</b>	<b>Status</b>	<b>Blooming Period</b>	<b>Habitat Association and Elevation Limits</b>	<b>Potential to Occur in Project Site</b>
<i>Delphinium parryi</i> ssp. <i>blochmaniae</i> <b>dune larkspur</b>	1B.2	Apr- Jun	Coastal strand, chaparral; about 0-200 m.	<b>Not Expected to Occur:</b> Species is generally limited to coastal areas.
<i>Delphinium parryi</i> ssp. <i>purpureum</i> <b>Mt. Pinos larkspur</b>	4.3	May-Jun	Coastal bush scrub, chaparral, Pinyon-Juniper woodland; about 1000-2600 m.	<b>Not Expected to Occur:</b> Project Site is well outside the known elevation range of this species.
<i>Dithyrea maritima</i> <b>beach spectaclepod</b>	ST, 1B.1	Mar- May	Coastal strand, coastal sage scrub; about 3-50 m.	<b>Not Expected to Occur:</b> Project Site is outside of the known elevation range of this species, which is limited to coastal areas.
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> <b>Blochman's dudleya</b>	1B.1	Apr- Jun	Coastal bush scrub, chaparral, about 5-450 m.	<b>Moderate:</b> Suitable habitat conditions are present in the vicinity, and the Project Site is within the known distribution range.
<i>Dudleya cymosa</i> ssp. <i>agourensis</i> <b>Agoura Hills dudleya</b>	FT, 1B.2	May-Jun	Chaparral, cismontane woodland; about 200-500 m.	<b>Low:</b> Marginally suitable habitat is present; however, the Project Site is outside of the known elevation range for this species.
<i>Dudleya cymosa</i> ssp. <i>marcescens</i> <b>marcescent dudleya</b>	FT, SR, 1B.2	Apr- Jul	Chaparral; about 150-520 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range. Species is known to occur within 2 miles of the Project Site. Perennial species not observed during June 2018 survey.
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i> <b>Santa Monica dudleya</b>	FT, 1B.1	Mar-Jun	Chaparral, coastal scrub; about 150-1675 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range. Species is known to occur within 2 miles of the Project Site. Perennial species not observed during June 2018 survey.
<i>Dudleya multicaulis</i> <b>many-stemmed dudleya</b>	1B.2	Apr-Jul	Chaparral, coastal scrub, valley and foothill grassland; about 15-790 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Dudleya parva</i> <b>Conejo dudleya</b>	FT, 1B.2	May- Jun	Coastal sage scrub, valley and foothill grassland; about 60-450 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Eriogonum crocatum</i> <b>Conejo buckwheat</b>	SR, 1B.2	Apr- Jul	Chaparral, valley grassland, coastal sage scrub; about 50-580 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.

Taxa	Status	Blooming Period	Habitat Association and Elevation Limits	Potential to Occur in Project Site
<i>Hordeum intercedens</i> <b>vernal barley</b>	3.2	Mar-Jun	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools; about 5-1000 m.	<b>Not Expected to Occur:</b> Species is limited to coastal areas. No saline soils present within the Project Site.
<i>Horkelia cuneata</i> var. <i>puberula</i> <b>mesa horkelia</b>	1B.1	Feb-Jul (Sep)	Chaparral (maritime), cismontane woodland, coastal scrub; about 70-810 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Isocoma menziesii</i> var. <i>decumbens</i> <b>decumbent goldenbush</b>	1B.2	Apr- Nov	Chaparral, coastal scrub (sandy, often in disturbed areas); about 10-135 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Juglans californica</i> <b>Southern California black walnut</b>	4.2	Mar-Aug	Chaparral, cismontane woodland, coastal scrub, riparian woodland; about 50-900 m.	<b>Present:</b> Species was observed within the Project Site during the June 2018 survey.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> <b>Coulter's goldenfields</b>	1B.1	Feb-Jun	Marshes and swamps (coastal salt), playas, vernal pools; about 1-1220 m.	<b>Not Expected to Occur:</b> Saline substrate preferred by this species not present within Project Site.
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> <b>ocellated Humboldt lily</b>	4.2	Mar- Jul (Aug)	Openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; about 30-1800 m.	<b>High:</b> Suitable habitat present and Project Site is within the species known range.
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i> <b>white-veined monardella</b>	1B.3	(Apr) May-Aug (Sep-Dec)	Chaparral, Cismontane woodland; about 50-1525 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Navarretia ojaiensis</i> <b>Ojai navarretia</b>	1B.1	May- Jul	Chaparral, Coastal scrub, valley and foothill grassland; 275-620 m.	<b>Low:</b> Marginally suitable habitat; however, Project Site is outside of the known elevation range for this species.
<i>Nolina cismontana</i> <b>chaparral nolina</b>	1B.2	(Mar) May-Jul	Chaparral, Coastal Scrub; about 140-1275 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Orcuttia californica</i> <b>California Orcutt grass</b>	FE, SE, 1B.1	Apr-Aug	Vernal pools, valley grassland, freshwater wetlands, wetland-riparian; about 15-660 m.	<b>High:</b> Suitable habitat present and Project Site is within the species known range.
<i>Pentachaeta lyonii</i> <b>Lyon's pentachaeta</b>	FE, SE, 1B.1	(Feb) Mar-Aug	Chaparral, Coastal scrub, valley and foothill grassland; about 30-690 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Phacelia hubbyi</i> <b>Hubby's phacelia</b>	4.2	Apr-Jul	Gravelly, rocky, talus; chaparral, coastal scrub, valley and foothill grassland; about 0-1000 m.	<b>Low:</b> Marginally suitable habitat present; however, no preferred substrate within Project Site.
<i>Phacelia ramosissima</i> var. <i>austrolitoralis</i> <b>South Coast branching phacelia</b>	3.2	Mar-Aug	Sandy, sometimes rocky; chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); about 5-300 m.	<b>Not Expected to Occur:</b> Project Site is outside of the known elevation range of this species, which is limited to coastal areas.

Taxa	Status	Blooming Period	Habitat Association and Elevation Limits	Potential to Occur in Project Site
<i>Senecio aphanactis</i> <b>chaparral ragwort</b>	2B.2	Jan-Apr (May)	Chaparral, cismontane woodland, coastal scrub; about 15-800 m.	<b>Moderate:</b> Marginally suitable habitat present and Project Site is within the species known range.
<i>Sidalcea neomexicana</i> <b>salt spring checkerbloom</b>	2B.2	Mar-Jun	Chaparral, lower montane coniferous forest, Mojavean desert scrub, playas, coastal scrub; about 15-1530 m.	<b>Not Expected to Occur:</b> Saline substrate preferred by this species not present within Project Site.
<i>Spermolepis lateriflora</i> <b>western bristly scaleseed</b>	2A	Mar-Apr	Sonoran Desert scrub; about 365-670 m.	<b>Not Expected to Occur:</b> Suitable habitat not present and Project Site is outside of the known elevation range of this species.
<i>Thelypteris puberula</i> var. <i>sonorensis</i> <b>Sonoran maiden fern</b>	2B.2	Jan-Sep	Riparian seeps, meadows, wetland-riparian; about 50-610 m.	<b>High:</b> Suitable habitat present and Project Site is within the species known range.
<i>Tortula californica</i> <b>California screw moss</b>	1B.2		Chenopod scrub, valley and foothill grassland; about 10-1460 m.	<b>Low:</b> Marginally suitable habitat present; however, no preferred substrate within Project Site.

Source: Baldwin et al. 2012; CDFW, 2018a; CNPS, 2018.

Note: Months listed in parentheses () indicate uncommon blooming periods.

**Status Codes**

**US Fish and Wildlife Service (Fed.) Designations:**

FE: Federally listed, endangered.

FT: Federally listed, threatened.

FPT: Federally proposed, threatened.

**California Department of Fish and Wildlife (Calif.) Designations:**

SE: State listed, endangered.

ST: State listed, threatened.

**California Rare Plant Rank (CRPR) designation**

1A Plants presumed extinct in California.

1B Plants rare, threatened, or endangered in California and elsewhere.

2A Plants rare, threatened, or endangered in California, but more common elsewhere.

2B Plants presumed extinct in California but more common elsewhere.

3 Plants about which we need more information – a review list.

4 Plants of limited distribution – a watch list.

.1 Seriously threatened in California (high degree/immediacy of threat).

.2 Fairly threatened in California (moderate degree/immediacy of threat).

.3 Not very threatened in California (low degree/immediacy of threats or no current threats known).

## 5.4 SPECIAL-STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the federal or California ESAs, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the Project Site. No special-status wildlife species were either observed within or immediately adjacent to the Project Site during the survey conducted in June 2018.

The CNDDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the Project Site occurs and the five surrounding quadrangles, as discussed above in Section 2.0 (refer to Appendix A, Figures 3 and 4). The specific habitat requirements and the locations of known occurrences of each

special-status wildlife taxa were the principal criteria used for inclusion in the list of taxa potentially occurring within the Project Site. Table 4 summarizes the special-status wildlife taxa known to regionally occur and their potential for occurrence in the Project Site; refer to Appendix A, Figures 3A and 3B for a graphical depiction of species locations. Each of the taxa identified in the database reviews/searches was assessed for its potential to occur within the Project Site based on the following criteria:

- Present: Taxa (or sign) were observed in the Project Site or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- High: Habitat (including soils) for the taxa occurs on site and there is a known occurrence within the Project Site or adjacent areas (within 5 miles of the Project Site) within the past 20 years; however, these taxa were not detected during the June 2018 surveys.
- Moderate: Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the Project Site or within the past 20 years; or there is a known occurrence within 5 miles of the Project Site and within the past 20 years and marginal or limited amounts of habitat occur on site; or the taxa's range includes the geographic area and suitable habitat exists.
- Low: Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area.

Table 4. Known and Potential Occurrence of Special-Status Wildlife within the Project Site

Scientific Name	Taxa		Status	Habitat Type	Comments	Occurrence Potential
	Common Name					
<b>INVERTEBRATES</b>						
<i>Aglaothorax longipennis</i>	Santa Monica shieldback katydid			Chaparral	Marginally suitable habitat and Project Site is within known geographic distribution for species. The nearest recorded occurrence of this species to the Project Site is approximately 6 miles to the southeast.	Low
<i>Bombus crotchii</i>	Crotch bumble bee	<b>SA</b>		This bee lives in grassland and scrub habitat types. It nests underground. Its food plants include milkweeds, dusty maidens, lupines, medics, phacelias, and sages.	Marginally suitable habitat and plant species preferred for foraging occur within the Project Site. The nearest recorded occurrence (from the 1950s) of this species to the Project Site is 2 miles to the east.	Low
<i>Coelus globosus</i>	globose dune beetle	<b>SA</b>		Coastal dunes	No suitable coastal dune habitat occurs within the Project Site. Species is generally limited to coastal areas. The nearest recorded occurrence of this species to the Project Site is approximately 7.5 miles to the southeast.	Not Likely to Occur
<i>Danaus plexippus pop. 1</i>	monarch - California overwintering population	<b>SA</b>		Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Preferred roosting trees are not present within the Project Site but may occur nearby. Winter roost sites are generally well documented and have not been observed previously within the Project Site. The nearest recorded occurrence of this species to the Project Site is 3 miles to the south near Malibu.	Low
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	<b>FE, SA</b>		Historically occurred primarily in Los Angeles, San Bernardino, Riverside, and San Diego Counties of California to northwestern Baja California, Mexico; current known locations are in Riverside and San Diego Counties. Associated with openings in scrub, coastal sage scrub, chaparral, oak woodland, and grassland communities characterized by native bunch grasses and forbs. Mating occurs on hilltops.	Marginally suitable shrub-dominated habitat with open areas occurs within the Project Site; however, Project Site is outside the currently known geographic range of this species. The nearest recorded occurrence of this species (from the 1950s) to the Project Site is approximately 8 miles to the southwest.	Not Likely to Occur

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Socalchemmis gertschi</i>	Gertsch's socalchemmis spider	<b>SA</b>	Known from only two locations (Brentwood and Topanga). Habitat consists of sage scrub, chaparral, oak woodland, coniferous forest; generally in rocky outcrops or talus slopes in non-arid climates.	Marginally suitable shrub scrub and oak woodland habitat occur within the Project Site; however, Project Site is outside of the current known geographic range of this species. The nearest recorded occurrence of this species to the Project Site is approximately 5 miles to the east.	<b>Low</b>
<i>Trimerotropis occidentiliorides</i>	Santa Monica grasshopper	<b>SA</b>	Known only from the Santa Monica Mountains. Found on bare hillsides and along dirt trails in chaparral.	Suitable habitat occurs, and Project Site is within the known geographic distribution for this species. The nearest documented occurrence of this species (from the 1970s) in the region is approximately 5 miles to the northwest of the Project Site.	<b>Moderate</b>
<b>FISH</b>					
<i>Eucyclogobius newberryi</i>	tidewater goby	<b>FE, SSC</b>	Known to live only in California; found primarily in brackish waters of coastal lagoons, estuaries, and marshes where water is slow-moving but not stagnant. Naturally absent from steep areas of coastline where streams do not form lagoons or estuaries.	No suitable brackish lagoon or estuarine habitat occurs within the Project Site. Species is limited to more coastal areas. The nearest recorded occurrence of this species to the Project Site is 2 miles to the south.	<b>Not Likely to Occur</b>
<i>Gila orcuttii</i>	arroyo chub	<b>SSC</b>	Los Angeles Basin southern coastal streams; slow water stream sections with mud or sand bottoms; feeds heavily on aquatic vegetation and associated invertebrates.	Suitable habitat is present within the Project Site in Malibu Creek. There are records of this species from within Malibu Creek where it passes through the Project Site.	<b>High</b>
<i>Oncorhynchus mykiss irideus</i> pop. 10	steelhead – southern California Distinct Population Segment	<b>FE</b>	Federal listing refers to populations from Santa Maria river south to southern extent of range (San Mateo Creek in San Diego County); southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	Suitable habitat is present within Malibu Creek, areas of which are listed as Critical Habitat, approximately 1.8 miles downstream of the Project Site. This species has been documented within 2 miles of the Project Site. However, multiple barriers to upstream passage are present downstream which make it unlikely (but not impossible) that this species would occur within the Project Site.	<b>Low</b>

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Rana draytonii</i>	California red-legged frog	<b>FT, SSC</b>	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development; must have access to aestivation habitat.	Suitable habitat is present within the Project Site; however, the morphology of Malibu Creek and vegetation characteristics are not ideal. The nearest recorded occurrence of this species to the Project Site is approximately 6.5 miles to the north.	<b>Low</b>
<i>Spea hammondi</i>	western spadefoot	<b>SSC</b>	Occurs in numerous habitat types, primarily in grasslands but can be found in valley-foothill hardwood woodlands, sage scrubs, chaparral where pooled/pounded water, supporting typically clay-rich soils, remains through early spring (April/May); in certain locations, vernal pools, stock ponds, and road pools are essential for breeding, egg-laying, and larval development.	Within the Project Site, suitable breeding habitat is present within Malibu Creek and suitable upland habitat is present for the terrestrial portion of their life cycle. The nearest recorded occurrence of this species to the Project Site is approximately 10 miles to the north.	<b>Low</b>
<b>REPTILES</b>					
<i>Anniella</i> sp.	California legless lizard	<b>SSC</b>	Contra Costa County south to San Diego, within a variety of open habitats, this element represents California records of <i>anniella</i> not yet assigned to new species within the <i>anniella pulchra</i> complex; variety of habitats; generally, in moist, loose soil, they prefer soils with a high moisture content.	Suitable habitat and high-moisture substrates are present within the Project Site. The nearest recorded occurrence of this species to the Project Site is approximately 7.5 miles to the northwest.	<b>Low</b>
<i>Anniella stebbinsi</i>	Southern California legless lizard	<b>SSC</b>	Generally south of the transverse range, extending to northwestern Baja California, occurs in sandy or loose loamy soils under sparse vegetation; disjunct populations in the Tehachapi and Plute mountains in Kern County; variety of habitats; generally in moist, loose soil, they prefer soils with a high moisture content.	Suitable habitat and high-moisture substrates are present within the Project Site. This species has been documented immediately downstream of the Project Site.	<b>High</b>

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	<b>SSC</b>	Found in deserts and semi-arid areas with sparse vegetation and open areas; also found in woodland and riparian habitats; substrates may be firm soil, sandy, or rocky. Most common in open relatively rocky areas; often in somewhat moist microhabitats near intermittent streams; avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous vegetation.	Suitable semi-arid and riparian habitat occurs within the Project Site. This species has been documented approximately 2 miles northwest of the Project Site.	<b>High</b>
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	<b>SA</b>	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 feet elevation.	Suitable habitat occurs in the Malibu Creek riparian corridor within the Project Site. This species has been documented within approximately 1 mile of the Project Site.	<b>High</b>
<i>Emys marmorata</i>	western pond turtle	<b>SSC</b>	A habitat generalist in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub. Wooded areas near streams with rock outcrops, talus, or rotting logs exposed to the sun. From 1,500 – 8,000 feet elevation.	Suitable aquatic and riparian habitat occurs in the Malibu Creek riparian corridor within the Project Site. This species has been documented within 1 mile of the Project Site.	<b>High</b>
<i>Lampropeltis zonata (pulchra)</i>	California mountain kingsnake (San Diego population)	<b>WL</b>	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes; open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Suitable foraging habitat with refuge for basking and hiding are present and the Project Site is within the species' known geographic distribution. However, the Project Site is well outside elevation range in which the species is usually found. The nearest recorded occurrence of this species (from the 1980s) to the Project Site is 2.5 miles to the east.	<b>Low</b>
<i>Phrynosoma blainvillii</i>	coast horned lizard	<b>SSC</b>		Suitable habitat and friable soils are present within the Project Site. A historic occurrence of this species has been reported immediately upstream of the Project Site with more recent occurrences approximately 3 miles to the east.	<b>High</b>



Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Thamnophis hammondi</i>	Two-striped gartersnake	<b>SSC</b>	Coastal California from vicinity of Salinas to northwest Baja California; from sea to about 7,000 feet elevation; highly aquatic, found in or near permanent fresh water; often along streams with rocky beds and riparian growth.	Suitable aquatic and riparian habitat is present within the Malibu Creek riparian corridor within the Project Site. The nearest recorded occurrence of this species to the Project Site is approximately 4.5 miles to the east.	<b>High</b>
<b>BIRDS</b>					
<i>Accipiter cooperii</i> (nesting)	Cooper's hawk	<b>WL</b>	Woodland, chiefly of open, interrupted or marginal type; nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also live oaks.	Suitable open woodland habitat with preferred nesting sites is present within the Malibu Creek riparian corridor and the Project Site is within this species' known range. The nearest recorded occurrence of this species to the Project Site is approximately 8.5 miles to the west.	<b>Moderate (foraging and nesting)</b>
<i>Agelaius tricolor</i> (nesting colony)	tricolored blackbird	<b>SC, SSC</b>	Highly colonial species, most numerous in central valley and vicinity, largely endemic to California; requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of colony.	The Project Site is located within the known geographic range for this species, though suitable breeding and foraging habitat does not occur within the Project Site. The nearest recorded occurrence of this species to the Project Site is approximately 7 miles to the west.	<b>Not Likely to Occur</b>
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	<b>WL</b>	Resident in southern California coastal sage scrub and sparse mixed chaparral; frequents relatively steep, often rocky hillsides with grass and forb patches.	Marginally suitable scrub habitat occurs within the Project Site and the Project Site is within this species' known geographic range. The Project Site does not contain steep, rocky hillsides. The nearest recorded occurrences of this species to the Project Site are approximately 5 miles to the north.	<b>Low</b>
<i>Athene cunicularia</i>	burrowing owl	<b>SSC</b>	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean nester, dependent upon burrowing mammals, mostly notably, the California ground squirrel.	While marginally suitable habitat is present within the Project Site, site conditions are not ideal. This species prefers open areas with sparse, low vegetation growth – conditions that do not occur within the Project Site. The nearest recorded occurrence of this species (from 1998) to the Project Site is approximately 6 miles to the north.	<b>Not Likely to Occur</b>
<i>Aquila chrysaetos</i>	golden eagle	<b>FP</b>	Rolling foothills, mountain area, sage-juniper flats, and desert; cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Suitable foraging and/or nesting habitat does not occur within the Project Site – species requires more open areas for foraging. There is a historic occurrence of this species immediately downstream of the Project Site.	<b>Not Likely to Occur (nesting or foraging)</b> <b>Moderate (flyover)</b>

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Falco peregrinus anatum</i>	American peregrine falcon	<b>CFP</b>	Occurs in various open habitats, especially where suitable nesting cliffs present.	The Project Site is within the known year-round geographic distribution for this species and marginally suitable foraging habitat occurs in portions of the Project Site. The CNDDB reports an occurrence of this species within a general 5.5 mile radius of the Project Site.	<b>Not Likely to Occur (nesting)</b> <b>Low (foraging)</b>
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	<b>FT, SSC</b>	Obligate, permanent resident of coastal sage scrub below 2500 feet in southern California; low, coastal sage scrub in and washes, on mesas and slopes, not all areas classified as coastal sage scrub are occupied.	Marginally suitable scrub habitat occurs within the Project Site; however, proximity to existing roadways and limited expanse of habitat greatly reduces the potential for this species to occur in the Project Site. The nearest recorded occurrence of this species to the Project Site is approximately 5.5 miles to the north.	<b>Low</b>
<i>Riparia riparia</i>	bank swallow	<b>ST</b>	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Marginally suitable riparian habitat is present within the Project Site; however, no suitable nesting habitat occurs. The nearest recorded occurrence of this species to the Project Site is approximately 9 miles to the northwest.	<b>Not Likely to Occur</b>
<i>Vireo bellii pusillus (nesting)</i>	least Bell's vireo	<b>FE, SE</b>	Summer resident of southern California in low riparian habitats in vicinity of water or dry river bottoms; found below 2000 ft; nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mesquite.	Suitable nesting and foraging habitat are present within the Malibu Creek riparian corridor within the Project Site. The nearest recorded occurrence, historic in nature, of this species to the Project Site is approximately 12 miles to the southeast.	<b>High</b>
<b>MAMMALS</b>					
<i>Antrozous pallidus</i>	pallid bat	<b>SSC</b>	Deserts, grasslands, shrublands, woodlands and forests; most common in open, dry habitats with rocky areas for roosting; roosts must protect bats from high temperatures; very sensitive to disturbance of roosting sites.	Marginally suitable shrubland and woodland habitat present within the Project Site; however, level of development and human activity in the vicinity greatly reduces the likelihood for this species to occur. No roosting habitat present. The nearest recorded occurrence of this species to the Project Site is approximately 9.5 miles to the north.	<b>Not Likely to Occur (roosting)</b> <b>Low (foraging)</b>

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Euderma maculatum</i>	spotted bat	<b>SSC</b>	Occupies a wide variety of habitats from arid deserts and grasslands, to mixed conifer forests; feeds over water and along washes; needs rock crevices in cliffs or caves for roosting.	Suitable foraging habitat is present within the Malibu Creek riparian corridor; however, no suitable roosting habitat occurs in the immediate vicinity. The nearest recorded occurrence of this species to the Project Site is approximately 2 miles to the northwest.	<b>Not Likely to Occur (roosting) High (foraging)</b>
<i>Eumops perotis californicus</i>	western mastiff bat	<b>SSC</b>	Many open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, chaparral; roosts in crevices in cliff faces, high buildings, trees, tunnels.	Marginally suitable scrub and woodland habitat present within the Project Site as well as trees for roosting. Project Site is within species' known range. This species has been documented within 2 miles of the Project Site.	<b>High</b>
<i>Lasiurus blossevillii</i>	western red bat	<b>SSC</b>	Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests; prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Suitable tree-dominated habitat is present within the Project Site with open areas for foraging. Project Site is within species' known range. The nearest recorded occurrence of this species to the Project Site is approximately 3 miles to the east.	<b>Moderate</b>
<i>Lasiurus cinereus</i>	hoary bat	<b>SA</b>	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding; roosts in dense foliage of medium to large trees, feeds primarily on moths, requires water.	Suitable tree-dominated habitat and surface water present within the Project Site with open areas for foraging. Project Site is within species' known range. The nearest recorded occurrence of this species to the Project Site is approximately 5 miles to the northwest.	<b>Moderate</b>
<i>Macrotus californicus</i>	California leaf-nosed bat	<b>SSC</b>	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats; needs rocky, rugged terrain with mines or caves for roosting.	Suitable desert habitat does not occur within the Project Site. No rocky terrain, mines, or caves present. The nearest recorded occurrence of this species (from the early 1990s) to the Project Site is approximately 7.5 miles to the north.	<b>Not Likely to Occur</b>
<i>Myotis yumanensis</i>	Yuma myotis	<b>SA</b>	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water, maternity colonies in caves, mines, buildings or crevices.	Suitable open riparian habitat and surface water occur within the Project Site. This species has been documented within 2 miles of the Project Site. The nearest recorded occurrence of this species to the Project Site is approximately 1.5 miles to the northwest.	<b>High</b>

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Myotis ciliolabrum</i>	western small-footed myotis	<b>SA</b>	Wide range of habitats mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines and crevices; prefers open stands in forests and woodlands, requires drinking water, feeds on a wide variety of small flying insects.	Suitable open riparian woodland habitat and surface water occur within the Project Site. This species has been documented within 2 miles of the Project Site.	<b>High</b>
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	<b>SSC</b>	Coastal scrub; prefers moderate to dense canopies; particularly abundant in rock outcrops, rocky cliffs, and slopes.	Marginally suitable scrub habitat occurs and the Project Site is within the known geographic distribution of this species. The nearest recorded occurrence of this species to the Project Site is approximately 3 miles to the south.	<b>Moderate</b>
<i>Taxidea taxus</i>	American badger	<b>SSC</b>	Most abundance in dried open stages of most shrub, forest, and herbaceous habitats, with friable soils; needs sufficient food, friable soils and open, uncultivated ground; preys on burrowing rodents, digs burrows.	Marginally suitable habitat is present; however, proximity of roadways and human disturbance greatly reduces the potential of this species to occur. The nearest recorded occurrence of this species to the Project Site is approximately 6 miles to the west.	<b>Low</b>

**Federal Rankings:**

FE = Federally Endangered  
 FT = Federally Threatened  
 FP = Federally Protected  
 FC = Federal Candidate for Listing  
 BCC = USFWS Bird of Conservation Concern

**State Rankings:**

SE = State Endangered  
 ST = State Threatened  
 SC = State Candidate for Listing  
 CFP = California Fully Protected  
 SA = CDFW Special Animal  
 WL = CDFW Watch List  
 SSC = Species of Special Concern

## 5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor" (Hunt, 1993; Rathbun et al., 1992; Bulger et al., 2002; Trentham, 2002; Ramirez, 2002, 2003a, 2003b). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark, 1995; Beier, 1993, 1995; Noss, et al., 1996; Noss et al., no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.
- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).
- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent

“choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

### 5.5.1 Wildlife Movement in the Project Site

Although wildlife movement is hampered by rural development in some portions of the Santa Monica Mountains, animals are still able to move through in many areas. Due to its large size and topographic complexity, many linkages are certain to occur within the Santa Monica Mountains at various bottlenecks. These linkages allow movement between large open space areas within the Santa Monica Mountains as well as between areas outside the Santa Monica Mountains such as the Simi Hills. The genetic flow through these areas is crucial in maintaining the diversity and viability of certain species within the Santa Monica Mountains. Open space linkages between Kanan Road and Calabasas Parkway along Highway 101, as indicated by the National Park Service, are of particular importance for continued wildlife movement, due to the lack of alternative routes and encroachment of development. Although there are significantly large open spaces within the Santa Monica Mountains, contiguous habitat linkages between them is critical in reducing bottlenecks and providing for long-term sustainability. [L.A. County Department of Regional Planning, 2009]

Within the Project Site, the Malibu Creek riparian corridor serves as an important wildlife travel route. This corridor is free of development and connects other undeveloped lands along its length. Wildlife would be expected to use this route frequently to travel through the Project Site and surrounding region.

## 6.0 PROJECT IMPACTS AND AVOIDANCE AND MINIMIZATION MEASURES

### 6.1 PROJECT IMPACTS

In general, direct impacts to special-status plants and terrestrial wildlife include ground-disturbing activities associated with construction of the project (e.g., trenching) and increased human presence (e.g., crushing, trampling, trapping). Potential indirect impacts include increased noise levels from heavy equipment (wildlife only), increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine maintenance activities (wildlife only).

#### 6.1.1 Native Vegetation and Trees

Construction within the Project Site will be confined to existing developed areas including the Tapia WRF access road and Malibu Canyon Road and their disturbed margins. As such, implementation of the project is not expected to result in direct impacts to native vegetation communities that surround these developed areas. However, because the canopies of several coast live oak trees extend over the Tapia WRF access road, construction may result in some minor trimming of the branches and would encroach into the “Protected Zone” of one or more of those trees, which would constitute a direct impact to those individual trees. No trees will be removed as a result of project implementation.

Damage to a tree’s ability to protect, stabilize, and metabolize would be considered a direct impact. Direct effects are impacts to above or below ground portions of the tree, such as removal of bark, branch breakage, surface grading, and

trenching injury to roots. These impacts could result in wounds, making the tree susceptible to disease, death from wounds or from damage to the tree, or later removal of a tree. Negative impacts to a tree from construction activities often are not immediately apparent and may take several years to manifest. Avoidance and minimization measures to mitigate impacts to protected trees are discussed in Section 6.2, below.

Bryophytes (e.g., moss) and lichens are considered H1 category (most sensitive) habitat by the SMM LIP. These plants are part of the basis of nutrient provisions to natural communities. Since the proposed pipeline would be installed within existing streets, direct impacts to rock outcrops with bryophytes and/or lichen growth are not anticipated.

### 6.1.2 Wildlife

If project construction were to occur during the avian nesting season (generally considered to be between February 15th through September 15th, although some raptors species may nest as early as January), indirect impacts to nesting birds could occur. The MBTA of 1918 (16 U.S.C. 703-711) does not allow for take of migratory birds.

Due to the fact that direct impacts to native vegetation will be largely avoided and construction will be limited to existing disturbed areas with limited habitat value, it is anticipated that the effect on wildlife will be minimal and limited primarily to indirect temporary impacts. Avoidance and minimization measures to further mitigate these potential impacts are discussed below.

## 6.2 AVOIDANCE AND MINIMIZATION MEASURES

### 6.2.1 Avoidance and Minimization Measure 1 - Implement BMPs

BMPs shall be implemented as standard operating procedures during all ground disturbance and construction-related activities to avoid or minimize project impacts on biological resources. BMPs shall include:

- Restrict non-essential equipment to the existing roadways and/or ruderal areas to avoid disturbance to native vegetation.
- All excavation, steep-walled holes or trenches in excess of 6 inches in depth shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earthen fill or wooden planks with a 2:1 slope ratio. Trenches will also be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they will be thoroughly inspected for entrapped wildlife. Any wildlife discovered will be allowed to escape before construction activities are allowed to resume or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).
- Minimize mechanical disturbance of soils to reduce impact of habitat manipulation on small mammals, reptiles, and amphibians.
- Removal/disturbance of vegetation shall be minimized to the greatest extent feasible.
- Install and maintain appropriate erosion/sediment control measures as needed throughout the duration of work activities. Sediment control measures shall be sufficient to prevent soils disturbed for pipeline installation from entering Malibu Creek. Materials used in implementing stormwater Best Management Practices,

including straw wattles or soil fill, shall be certified weed-free to avoid introducing invasive plant species into native habitat.

- Construction-related vehicles shall be clean and maintained free of weeds to avoid spreading noxious weeds across the project or transporting new weeds to the Project Site. Vehicles or equipment brought from different areas of the country, state, or other weed zones shall be cleaned, or documentation provided that they are weed free.
- No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Spill kits shall be maintained on the Project Site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven and/or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of materials.

### 6.2.2 Avoidance and Minimization Measure 2 - Implement a Worker Environmental Education Program

Prior to the start of any construction related activities within the Project Site (i.e., mobilization, fencing, grading, or construction), a Worker Environmental Education Program (WEEP) shall be implemented. Briefings for project personnel shall include: a discussion of the Federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the MBTA; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event wildlife needs to be relocated or dead or injured wildlife is discovered; and a review of mitigation requirements.

### 6.2.3 Avoidance and Minimization Measure 3 - Pre-Construction Surveys (Plants and Wildlife) and Biological Monitoring

**Wildlife Surveys:** Prior to ground disturbance or tree trimming (if applicable) within the Project Site, a qualified biologist shall conduct surveys for wildlife (no more than 14 days prior to Project Site disturbing activities) where suitable habitat is present and may be directly impacted by construction activities. Wildlife found within the Project Site or in areas potentially affected by the project will be relocated to the nearest suitable habitat that will not be affected by the project prior to the start of construction. Special-status species found within a project impact area shall be relocated by an authorized biologist to suitable habitat outside the impact area.

The wildlife survey shall include a focused survey for bats within 500 feet of the Project Site. To the extent feasible, maternity roosts, if present, shall be left undisturbed with a buffer of 300 feet from March 15 to September 30. To the extent feasible, hibernation roosts, if present in winter, shall be left undisturbed with a buffer of 100 feet. Where avoidance is infeasible and a bat roost would be disturbed and/or bats expelled, consultation with CDFW shall be conducted.

**Plant Surveys:** Prior to initial ground disturbance within the Project Site, a qualified biologist shall conduct pre-construction surveys for special-status plant species in all undeveloped areas subject to ground-disturbing activity. If construction starts in the fall and will extend into the spring, additional surveys shall be conducted in all areas where new ground disturbing activities would occur during the spring (after March 1). All listed plant species found shall be



marked and avoided. Any populations of special-status plants found during surveys will be fully described, mapped, and a CNPS Field Survey Form or written equivalent shall be prepared.

Prior to Site trenching, any populations of special-status plant species identified during the surveys shall be protected by a buffer zone. The buffer zone shall be established around these areas and shall be of sufficient size to eliminate potential disturbance to the plants from human activity and any other potential sources of disturbance including human trampling, erosion, and dust. The size of the buffer depends upon the proposed use of the immediately adjacent lands and includes consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, physical and chemical characteristics of soils) that are identified by the qualified plant ecologist or botanist. The buffer for herbaceous and shrub species shall be, at minimum, 50 feet from the perimeter of the population or the individual. A smaller buffer may be established, provided there are adequate measures in place to avoid the take of the species. Highly visible flagging shall be placed along the buffer area and remain in good working order during the duration of any construction activities in the area.

Where impacts to listed plants cannot be avoided, the USFWS and/or CDFW shall be consulted for authorization, as appropriate.

**Biological Monitoring:** A qualified biologist shall be present during initial ground disturbance within the Project Site and periodically during the bird nesting season. If required, during pre-construction surveys and/or monitoring efforts, the qualified biologist will relocate common and special-status species that enter the Project Site. Some special-status species may require specific permits prior to handling and/or have established protocols for relocation. Records of all detections, captures, and releases shall be reported to CDFW.

#### 6.2.4 Avoidance and Minimization Measure 4 - Nesting Bird Surveys and Avoidance Measures

Where possible, vegetation removal activities (e.g., tree trimming, if required) should occur after September 15 but prior to February 15 to avoid impacts to nesting birds. Prior to initial site disturbance/issuance of grading permits, seasonally timed presence/absence surveys for nesting birds shall be conducted by a qualified biologist. If construction occurs outside of avian nesting season, only a single presence/absence survey for special status species will be conducted. If construction is scheduled to begin during the avian nesting season (February 15 through September 15; January 1 to August 15 for raptors), a minimum of three survey events, three days apart, shall be conducted, with the last survey no more than three days prior to the start of site disturbance. Surveys shall be conducted within 500 feet of all proposed project activities.

If least Bell's vireo, coastal California gnatcatcher, or other special-status species are observed, consultation with USFWS and/or CDFW will be conducted. If breeding birds with active nests are found prior to or during construction, a qualified biologist shall establish a 300-foot buffer around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails.

## 6.2.5 Avoidance and Minimization Measure 5 – Oak and Other Native Tree Avoidance Measures

The Project shall comply with measures outlined in the SMM LCP and OWCMP. This will include the following:

- A Protected Tree Survey shall be conducted by a Certified Arborist prior to construction activities in order to document planned and specific impacts to individual trees protected by the SMM LCP, which on the Project Site include coast live oaks, California ash, California sycamore, and black cottonwood with a single trunk diameter of 6 inches or greater, or a combination of any two trunks measuring 8 inches or greater, at four and one-half feet above natural grade.
- A Los Angeles County Coastal Development Permit-oak tree shall be obtained for encroachment into the protected zone of protected native trees. The permit application shall include a description of the construction; the location of all ordinance/plan oak trees proposed to be removed and/or relocated, or within 200 feet of proposed construction, grading, landfill or other activity; and an oak tree report that evaluates each tree's dimensions, health, aesthetic appearance, and potential impacts. The permit application shall also substantiate that the construction will not endanger the health of remaining oaks on the property, result in soil erosion through diversion or increased flow of surface waters.
- Removal of ordinance trees, pruning structural roots (roots greater than 1 inch in diameter), or trimming more than 25 percent of a tree's canopy, and/or removal of more than 50 percent of the root zone shall be avoided to the extent feasible.
- Root or crown pruning activities shall be as minimal as feasible and monitored by a Certified Arborist; pruning shall be done using International Society of Arboriculture (ISA) standards. Any roots larger than 1 inch in diameter that must be pruned shall be cut flush immediately with proper equipment.
- Excavation and grading shall, to the extent possible, avoid cutting or damaging roots. As recommended by the arborist, hand tools shall be employed when excavating in the root zone. Hand tools or an air spade shall be employed to dig in the protected zone of all protected native trees in the unincorporated areas. Roots of 1-inch diameter or larger shall be preserved. To the extent feasible, construction shall be threaded through the roots or the roots shall be pushed aside. Roots shall be covered with a moist cloth or burlap while they are exposed.
- Root pruning shall be conducted as far from the trunk as possible.
- Parking equipment, staging construction materials, and excessive foot traffic within the protected zone of the affected trees (defined in the unincorporated SMM Coastal Zone as the greater distance between 5 feet from the dripline or 15 feet from the trunk) shall be avoided, as feasible, to prevent soil compaction or damage to roots. As applicable, protected trees near construction shall be protected by substantial (chain-link), temporary, protective fencing.
- Creating holes around tree roots deeper than 3 inches shall be avoided, as feasible. When excavations are unavoidable, backfill shall not use subsurface or clay soils; fill shall be with well-draining soils high in organic matter that do not exceed the surrounding soil surface level.

- Altering the grade within the protected zone shall be avoided to prevent imminent and long-term damage to roots. Any grade changes shall occur beyond the protected zone.
- The Los Angeles County SMM Coastal Zone has no in lieu fee for protected tree impacts. Mitigation trees, where applicable, shall be planted in an area legally protected from development and in the same watershed as the impact. Mitigation trees, as applicable, shall be planted on conserved land under maintenance of an organization with experience in managing land for conservation and preservation.

## 7.0 REFERENCES

- Aubry, K. B., L. L. C. Jones, and P. A. Hall. 1988. Use of woody debris by plethodontid salamanders in Douglas-fir in Washington. Pages 32-37 in R. C. Szabo, K. E. Severson, and D. R. Patton, technical coordinators. Management of amphibians, reptiles and small mammals in North America. General technical report RM-166. U.S. Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado.
- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, D.H. Wilken (eds.) 2012. The Jepson Manual: Vascular Plants of California, 2nd ed. University Press, Berkeley, California.
- Beier, P. 1993. Determining minimum habitat areas and habitat corridors for cougars. *Conservation Biology*, 7: 94-108.
- Beier, P. and S. Loe. 1992. A checklist for evaluating impacts to wildlife movement corridors. *Wildlife Society Bulletin* 20: 434-440.
- Beier, P. 1995. Dispersal of juvenile cougars in fragmented habitat. *Journal of Wildlife Management* 59:228–237.
- Bulger, J., N. Scott, and R. Seymour. 2002. Terrestrial activity and conservation of adult California red-legged frogs (*Rana aurora draytonii*) in coastal forests and grasslands. *Biol. Conservation* 15: 234-245.
- CDFW (California Department of Fish and Wildlife). 2018a. RAREFIND database ed.3.1.1. Electronic database managed by the California Natural Diversity Data Base, Wildlife Data and Habitat Analysis Branch, California Department of Fish and Wildlife. Sacramento, CA.
- \_\_\_\_\_. 2018b. State and Federally Listed Endangered and Threatened Animals of California. May
- \_\_\_\_\_. 2018c. Special Animals List. April.
- \_\_\_\_\_. 2018d. California Sensitive Natural Communities. <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>
- \_\_\_\_\_. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Sacramento, California.

- \_\_\_\_\_. 2000. "Spotted Bat." California Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group.
- \_\_\_\_\_. 1994. A Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607, California Department of Fish and Game Code. Environmental Services Division. Sacramento, California. January.
- CNPS (California Native Plant Society). 2018. Inventory of rare and endangered plants. California Native Plant Society. Sacramento. Online: <http://www.cnps.org/inventory>. Accessed July 2018.
- CCH (Consortium of California Herbaria). 2018. California Vascular Plant Online Database. [online]: <http://ucjeps.berkeley.edu/consortium/>
- Dunning, J.B., B.J. Danielson, and H.R. Pulliam. 1992. Ecological processes that affect populations in complex landscapes. *Oikos* 65:169-175.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1). Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- FAA, 2015. Advisory Circular for Obstruction Marking and Lighting. AC No: 70/7460-1L. Available: [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_70\\_7460-1L\\_.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_.pdf)
- Flora of North America (1993+), Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. Vol. 1, 1993; vol. 2, 1993; vol. 3, 1997; vol. 4, 2003; vol. 5, 2005; vol. 7, 2010; vol. 8, 2009; vol. 19, 2006; vol. 20, 2006; vol. 21, 2006; vol. 22, 2000; vol. 23, 2002; vol. 24, 2007; vol. 25, 2003; vol. 26, 2002; vol. 27, 2007.
- Hunt, L.E. 1993. Relocation and movements of southwestern pond turtles (*Clemmys marmorata pallida*), upper Santa Ynez River, Santa Barbara County, California. Prep. for the City of Santa Barbara and U.S. Forest Service. 135 pp.
- Los Angeles County Department of Regional Planning. 2018a. Santa Monica Mountains Land Use Plan. A Component of the Santa Monica Mountains Local Coastal Program. Amended February 2018. Available: [http://planning.lacounty.gov/assets/upl/project/coastal\\_amended-LUP-maps.pdf](http://planning.lacounty.gov/assets/upl/project/coastal_amended-LUP-maps.pdf)
- \_\_\_\_\_. 2018b. Santa Monica Mountains Local Implementation Plan. A Component of the Santa Monica Mountains Local Coastal Program. Amended February 2018. Available: [http://planning.lacounty.gov/assets/upl/project/coastal\\_amended-LIP-maps.pdf](http://planning.lacounty.gov/assets/upl/project/coastal_amended-LIP-maps.pdf)
- \_\_\_\_\_. 2011. Oak Woodlands Conservation Management Plan. Prepared by the Los Angeles County Oak Woodlands Habitat Conservation Strategic Alliance. May 2011. Available: [http://planning.lacounty.gov/assets/upl/case/oak\\_woodland\\_conservation-management-plan.pdf](http://planning.lacounty.gov/assets/upl/case/oak_woodland_conservation-management-plan.pdf)

- \_\_\_\_\_. 2009. Significant Ecological Areas. Available at:  
[http://planning.lacounty.gov/sea/regional\\_habitat\\_linkages\\_and\\_wildlife\\_corridors/](http://planning.lacounty.gov/sea/regional_habitat_linkages_and_wildlife_corridors/)
- Mader, H.J. 1984. Animal habitat isolation by roads and agricultural fields. *Biological Conservation* 29:81-96. Magney, D.L. 2005. Atlas of Native California Terrestrial Snails in Ventura County.
- Maser, C. and J.M. Trappe, tech eds. 1984. The seen and unseen world of the fallen tree. Gen. Tech. Rep. PNW-164. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 56 p.
- Meffe, G.K. and C.R. Carroll. 1997. Principles of conservation biology. Sinauer Associates, New York, NY.
- Moyle, PB, Yoshiyama RM, Williams JE, Wikramanayake ED (1995) Fish species of special concern in California, second edition. Technical Report. California Department of Fish and Game, Sacramento (USA)
- Nelson, J.R. 1987. Rare plant surveys: techniques for impact assessment. Pages 159-166 in T.S. Elias (ed.), Conservation and Management of Rare and Endangered Plants. California Native Plant Society, Sacramento, California.
- Newmark, W. 1995. Extinction of mammal populations in western North American national parks. *Conservation Biology*, 9: 512-526.
- Noss, R., P. Beier, and W. Shaw. No date. Evaluation of the Coal Canyon biological corridor, Los Angeles, Orange, Riverside, and San Bernardino counties, California. Unpub. ms. 19 pp
- Noss, R., H. Quigley, M. Hornocker, T. Merrill, and P. Paquet. 1996. Conservation biology and carnivore conservation in the Rocky Mountains. *Conservation Biology*, 10:949-963.
- Penrod, K., R. Hunter, and M. Merrifield. 2001. Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings. Co-sponsored by California Wilderness Coalition, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.
- Ramirez, R. 2003a. Arroyo toad (*Bufo californicus*) radio telemetry study, San Juan Creek, Orange County, California. Prep. for Rancho Mission Viejo LLC, San Juan Capistrano, CA. October. 64 pp.
- \_\_\_\_\_. 2003b. Arroyo toad (*Bufo californicus*) hydrogeomorphic habitat baseline analysis/radio telemetry study, Rancho Las Flores, San Bernardino County, CA. November. 110 pp.
- \_\_\_\_\_. 2002. Arroyo toad (*Bufo californicus*) radio telemetry and pitfall trapping studies, Little Horsethief Canyon, Summit Valley Ranch, San Bernardino County, California. Prep. for CALTRANS, Dept. of Transportation, San Bernardino, CA. April. 92 pp.

- Rathbun, G.N. Siepel, and D. Holland. 1992. Nesting behavior and movements of western pond turtles (*Clemmys marmorata*). *Southwestern Naturalist* 37(3):319-324.
- Sawyer, J.O., T. Keeler-Wolf and J.M. Evens. 2009. *Manual of California Vegetation, Second Edition*. California Native Plant Society, Sacramento, California.
- Simberloff, D., J.A. Farr, J. Cox and D.W. Mehlman. 1992. Movement corridors: Conservation bargains or poor investments? *Conservation Biology* 6(4): 493-504.
- Swihart, R.K.; Slade, N.A. 1984. Road crossing in *Sigmodon hispidus* and *Microtus ochrogaster*. *Journal of Mammology*. 65: 357-360. Tactarian, G. 2001. California bat management plan – Bats in structures. California bat working group.
- Trenham, P. 2002. *Herpetologist*, USGS. Conversation regarding dispersal movements of radio-tagged California newts (*Taricha torosa*) in Monterey County, California. June.
- USACE and CDFG (United States Army Corps of Engineers and California Department of Fish and Game). 2010. Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Joint Environmental Impact Statement and Environmental Impact Report. SCH No. 2000011025.
- USFWS (United States Fish and Wildlife Service). 2000. Final Listing, Threatened Status for the Santa Ana sucker. Vol 65., April 12, 2000.

# **APPENDIX A**

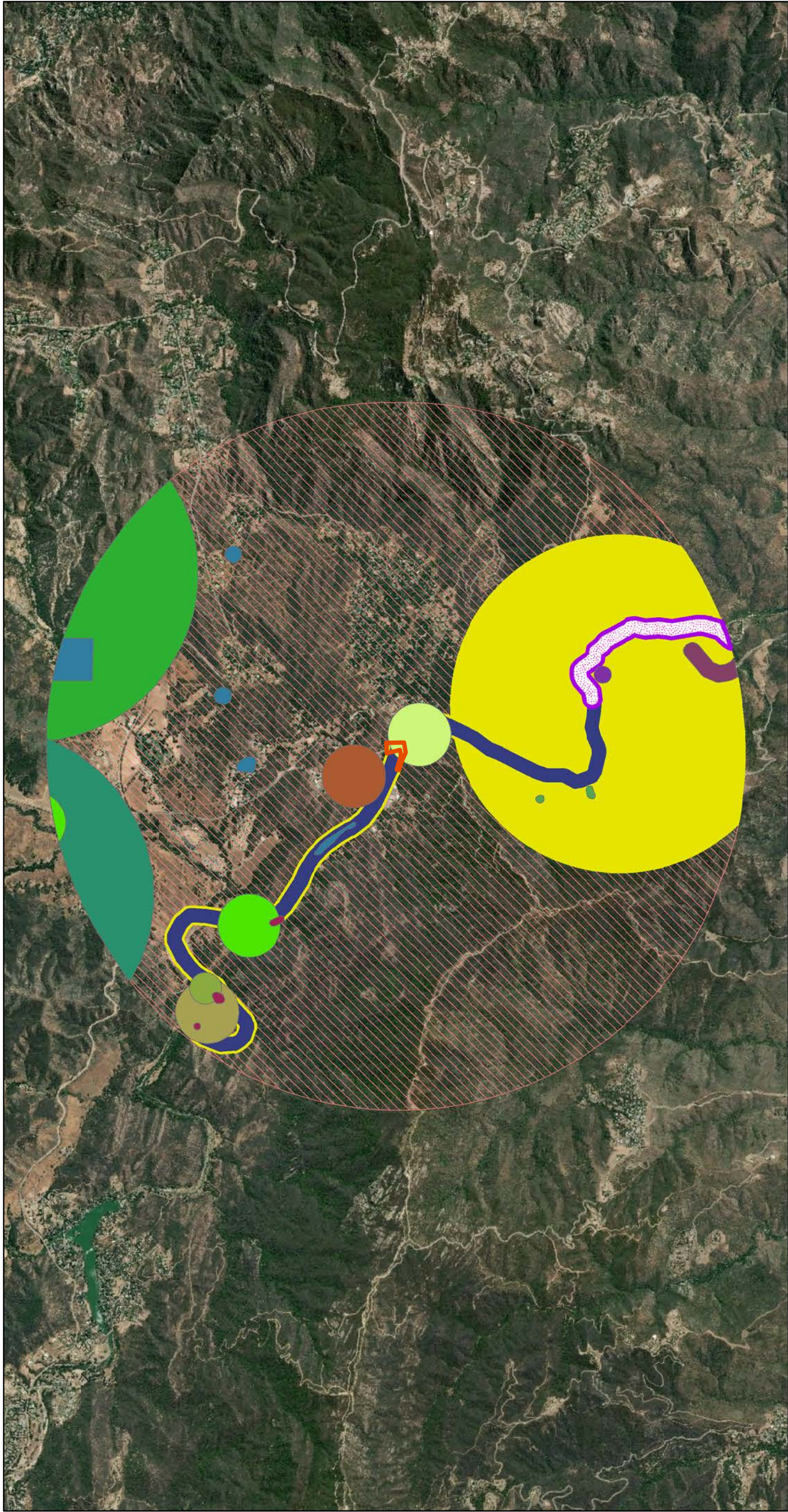
## **Figures**











Project Location  
 Agoura Hills, CA

Client/Project  
 Las Virgenes - Thunro Joint Powers Authority  
 Summer Flow Augmentation of Malibu Creek  
 Inapa Water Reclamation Facility  
 Biological Resources Technical Report

Prepared by JV on 2018-08-16  
 Technical Review by RB on 2018-08-20  
 Independent Review by MW on 2018-08-20

Figure No.  
 4

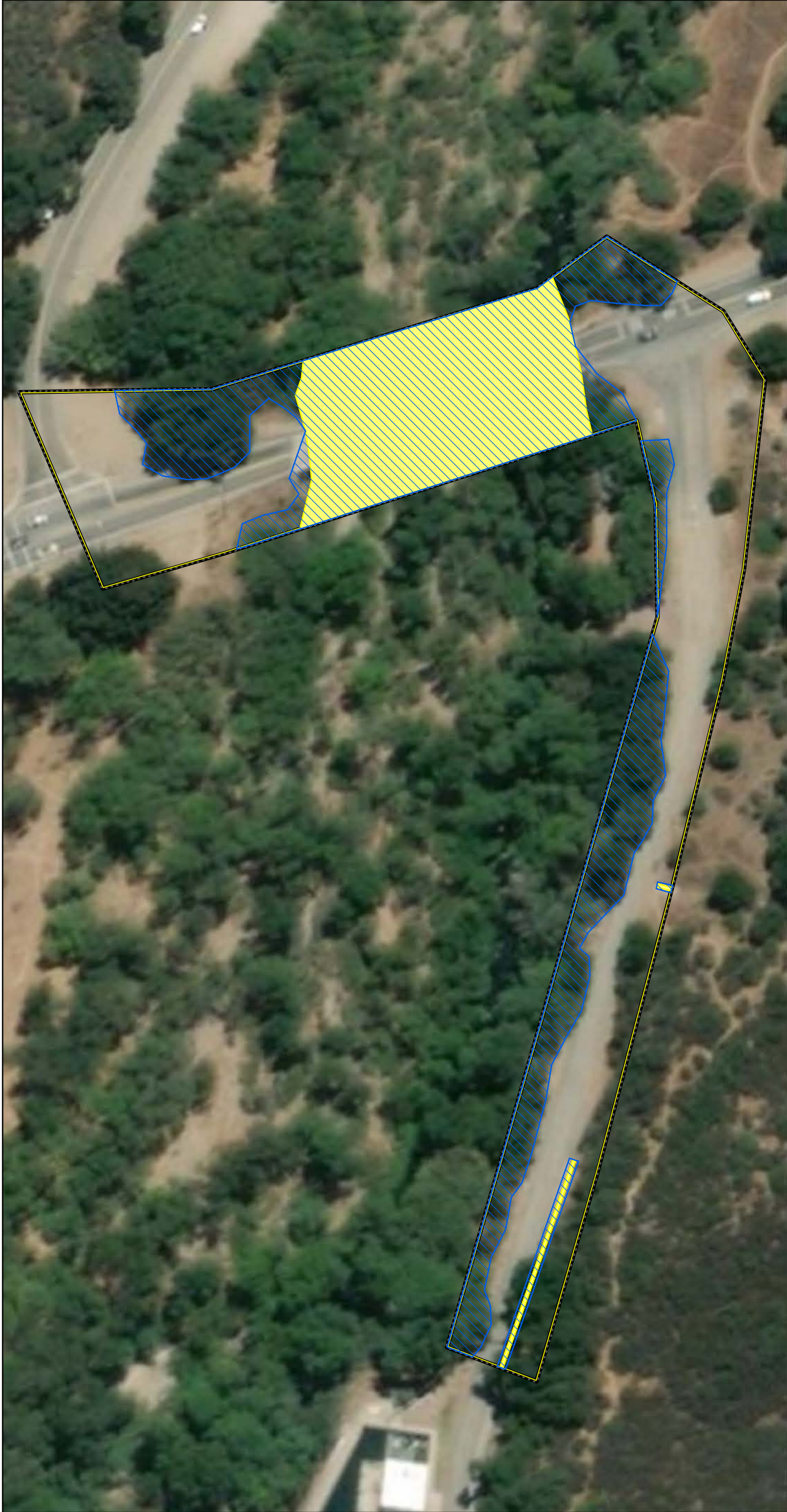
Title  
 CNDDB Species Occurrence Information- 2 Mile Radius




- Project Area
- steelhead - southern California DPS
- Southern California Steelhead Stream
- American peregrine falcon
- Davidson's saltscale
- Malibu baccharis
- San Bernardino ringneck snake
- Santa Monica dudleya
- Valley Oak Woodland
- Yuma myotis
- arroyo chub
- coast horned lizard
- coastal whiptail
- golden eagle
- marcescent dudleya
- slender mariposa-lily
- southern California legless lizard
- spotted bat
- western mastiff bat
- western pond turtle
- western small-footed myotis
- white-veined monarchella



Notes  
 1. NAD 1983 Coordinate System: California V PRS 0.403 FI US  
 2. Source: Esri, DigitalGlobe, GeoEye, IGN, Aerotech, GEBCO, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the  
 GIS User Community





-  Project Area
-  CDFW Waters
-  USACE Waters of the U.S.



1:875 (at original document size of 8.5x11)  
 0 30 60 Feet

Notes:  
 1. NAD 1983, CORS96 StatePlane California V FIPS 0403 F1 US  
 Geographic Coordinate System, GCSNAD83, datum: GRS80,  
 projection: NAD83 / NAD83, UTM, UTM Zone Number: 10N, and the  
 G8 User Community

Project Location:  
 Agoura Hills, CA  
 Prepared by JW on 2018-08-16  
 Technical Review by RB on 2018-08-20  
 Independent Review by MW on 2018-08-20

Client/Project:  
 Los Virgenes - Thunlo Joint Powers Authority  
 Summer Flow Augmentation of Malibu Creek  
 Inapa Water Reclamation Facility  
 Biological Resources Technical Report

Figure No. 5  
 Title: Jurisdictional Features



# **APPENDIX B**

## **Photographic Log**

STANTEC CONSULTING SERVICES INC.  
PHOTOGRAPHIC RECORD

**Client:** Las Virgenes Municipal Water District  
**Site Name:** Tapia Water Reclamation  
Facility Project

**Job Number:** 224501147  
**Photographer:** J. Varonin

**Photo 1: June 20, 2018**



Tapia WRF access road, looking west toward the facility from Malibu Canyon Road. Note: riparian woodland habitat to north (right) side of road and coastal scrub habitat interspersed with coast live oak trees to south (left) side.

**Photo 2: June 20, 2018**



Representative riparian woodland habitat adjacent to north side of Tapia WRF access road.

STANTEC CONSULTING SERVICES INC.  
PHOTOGRAPHIC RECORD

**Client:** Las Virgenes Municipal Water District  
**Site Name:** Tapia Water Reclamation  
Facility Project

**Job Number:** 224501147  
**Photographer:** J. Varonin

**Photo 3: June 20, 2018**



Representative open coastal scrub habitat with non-native grass understory adjacent to south side of Tapia WRF access road.

**Photo 4: June 20, 2018**



Wetted portion of Malibu Creek within Project Area, under Malibu Canyon Road bridge, looking upstream (west-northwest).

STANTEC CONSULTING SERVICES INC.  
PHOTOGRAPHIC RECORD

**Client:** Las Virgenes Municipal Water District

**Job Number:** 224501147

**Site Name:** Tapia Water Reclamation  
Facility Project

**Photographer:** J. Varonin

**Photo 5: June 20, 2018**



Dry area of Malibu Creek riparian corridor within the Project Area, looking downstream (east-southeast).

**Photo 6: June 20, 2018**



Open grass-dominated ruderal habitat along western margin of Malibu Canyon Road just south of intersection with Puma Road.



Appendix B  
Cultural Resources Technical Report



**Cultural Resources Evaluation for  
the Summer Flow Augmentation  
of Malibu Creek**

August 2018

Prepared for:

Las Virgenes Municipal Water District –  
Triunfo Sanitation District Joint Powers  
Authority

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# Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>i</b>
<b>ABBREVIATIONS .....</b>	<b>ii</b>
<b>1.0 PROJECT DESCRIPTION .....</b>	<b>1</b>
<b>2.0 REGULATORY BACKGROUND .....</b>	<b>1</b>
<b>3.0 CULTURAL BACKGROUND .....</b>	<b>6</b>
3.1 ARCHAEOLOGICAL BACKGROUND .....	6
3.1.1 Topanga I - 8,500 to 5,000 ybp .....	6
3.1.2 Topanga II - 5,000 to 3,500 ybp .....	6
3.1.3 Angeles I - 3,500 to 2,600 ybp.....	7
3.1.4 Angeles II - 2,600 to 1,600 ybp.....	7
3.1.5 Angeles III - 1,600 to 1,250 ypb.....	7
3.1.6 Angeles IV - 1,250 to 800 ybp .....	7
3.1.7 Angeles V - 800 to 450 ypb .....	7
3.1.8 Angeles VI - 450 to 150 ypb .....	7
3.2 ETHNOGRAPHIC BACKGROUND .....	8
3.2.1 Chumash.....	8
3.2.2 Tongva.....	9
3.3 HISTORIC BACKGROUND.....	10
3.3.1 Regional Historic Overview .....	10
3.3.2 Las Virgenes Municipal Water District.....	11
<b>4.0 RECORD SEARCH AND LITERATURE REVIEW .....</b>	<b>12</b>
4.1 PREVIOUS STUDIES WITHIN THE STUDY AREA .....	12
4.2 PREVIOUSLY DOCUMENTED RESOURCES WITHIN THE STUDY AREA.....	13
<b>5.0 ARCHAEOLOGICAL SURVEY/FIELD RECONNAISSANCE .....</b>	<b>13</b>
<b>6.0 TRIBAL CONSULTATION.....</b>	<b>15</b>
<b>7.0 PALEONTOLOGICAL RESOURCES .....</b>	<b>16</b>
<b>8.0 CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>16</b>
<b>9.0 REFERENCES.....</b>	<b>17</b>

**LIST OF TABLES**

Table 1. Previously Documented Reports within the Study Area .....12  
Table 2. Previously Documented Resources within the Study Area.....13

**LIST OF FIGURES**

Figure 1. Vicinity Map..... 2  
Figure 2. Location Map ..... 3  
Figure 3. Proposed Traditions for the Los Angeles Region of Southern California From  
Sutton 2010:9. .... 8  
Figure 4. Vegetation.....15  
Figure 5. Overview.....15

## Executive Summary

On June 27, 2018 Stantec Consulting Services, Inc. (Stantec), at the request of the Las Virgenes Municipal Water District (LVMWD) conducted a cultural resources study of an area of approximately 4.8 acres located on the west side of Malibu Creek in unincorporated Los Angeles County, California. The study was conducted as part of California Environmental Quality Act (CEQA) Initial Study for the Summer Augmentation of Malibu Creek Project. This report describes the cultural resources study methodology with conclusions and recommendations based on the results.

The proposed project is subject to compliance with CEQA requirements regarding the project's impacts on cultural resources. CEQA (Public Resources Code Sections 21000 etc.) requires that, before approving most discretionary projects, the Lead Agency must identify and examine any significant adverse environmental effects that may result from activities associated with such projects (Public Resources Code Sections 21083.2 and 21084.1). CEQA explicitly requires that the Initial Study examine whether the project may result in a significant adverse change to "historical resources" and "unique archaeological resources." Under these requirements, a cultural resources inventory was conducted to determine impacts of future projects on any cultural resources potentially eligible for nomination to the California Register of Historical Resources (CRHR) and/or the National Register of Historic Places (NRHP).

This preliminary cultural resource assessment included a record search and literature review conducted at the South-Central Coastal Information Center (SCCIC) of the California Historic Resource Information System (CHRIS) located at California State University, Fullerton. The background research included review of previously conducted cultural resource surveys and inventories, excavation reports, and regional overviews that were previously conducted within a ½-mile radius of the current Project Area as well as presence of previously documented cultural resources.

The records search results revealed that 13 cultural resources studies were previously conducted within portions of the current Project Area and within a ½-mile radius of the Project Area. Of those 13 studies, two are evaluation and interpretive plans for Malibu Creek State Park, located adjacent to the Project Area. There have been no previous studies conducted within the Project Area. Additionally, four are surveys, all conducted before 2006, and one is a monitoring report. The results of the background research revealed that no cultural resources were previously documented within the Project Area; however, there have been 10 cultural resources previously identified within a ½-mile radius of the Project Area.

In addition, the cultural resources study included an intensive pedestrian survey of the Project Area on June 27, 2018. The survey was conducted at transect intervals of 15-meters or less and areas with exposed washes, erosional banks, and/or animal burrows that could potential expose buried cultural deposits were inspected. During the survey no new or previously documented cultural resources were identified within the Project Area.

Based on the results of this study, no significant and/or archaeological resources were identified within the Project Area. Therefore, less than significant impacts to cultural resources as defined in Section 15064.5 are expected. The Project will require no additional investigation or evaluation at this time.

## Abbreviations

BRM	Bedrock Mortar Milling Station
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
GPS	Global Positioning System
IS	Initial Study
LA	Los Angeles
LVMWD	Las Virgenes Municipal Water District
LACDPW	Los Angeles Department of Public Works
MND	Mitigated Negative Declaration
Metropolitan	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NAHC	Native American Heritage Commission
SCCIC	South Central Coastal Information Center
SWP	State Water Project
TCR	Tribal Cultural Resources
USGS	United States Geological Survey
WRF	Water Reclamation Facility
ybp	years before present



## 1.0 PROJECT DESCRIPTION

The Las Virgenes-Triunfo Joint Powers Authority (JPA) owns and operates the Tapia Water Reclamation Facility (Tapia WRF). The discharge permit for Tapia WRF requires a minimum of 2.5 cubic feet per second (cfs) constant flow in Malibu Creek, and requires that the LVMWD supplement the creek flow, as needed, during the summertime period (April 15th – November 15th) to maintain this flow. New, more stringent nutrient summertime requirements of 1.0 mg/L total nitrogen (TN) and 0.1 mg/L total phosphorus (TP) have been implemented as the Total Maximum Daily Loads for Nutrients in the Malibu Creek Watershed by the United States Environmental Protection Agency, Region 9. These limits will go into effect for Tapia WRF discharges on May 16, 2022. The use of potable water with ammonia removal is the preferred alternative to meet the Malibu Creek summer augmentation discharge requirements.

This summer augmentation project is composed of two components: conveyance of potable water to Tapia WRF, and facilities for ammonia removal at Tapia WRF prior to discharge to Malibu Creek. A new 8-inch potable water line will be extended from the existing 20-inch pipeline at the intersection of Las Virgenes Road and Piuma Road, routed along Las Virgenes Road/Malibu Canyon Road across the bridge over Malibu Creek, and along the entrance roadway to Tapia WRF. The pipeline will be constructed via open trench along the roadways and will be mounted on the underside of the bridge to cross over Malibu Creek. At Tapia WRF, the potable water will be treated to remove the ammonia from the water through chlorination and dechlorination and will be discharged through the existing outfall to Malibu Creek. This will involve modifications and reuse of the existing overflow structure and chemical feed facilities at Tapia WRF, and the addition of new water quality monitoring and controls. There will be safeguards to prevent the water from being discharged to Malibu Creek if the system does not meet water quality requirements. When completed, the project will enable the augmentation of summer flows to Malibu Creek that meet discharge requirements and help preserve the environment.

## 2.0 REGULATORY BACKGROUND

This archaeological study was conducted to meet CEQA requirements regarding cultural resources on lands proposed for development. CEQA (Public Resources Code Sections 21000 etc.) requires that before approving most discretionary projects, the Lead Agency must identify and examine any significant adverse environmental effects that may result from activities associated with such projects (Public Resources Code Sections 21083.2 and 21084.1). CEQA explicitly requires that the initial study examine whether the project may have a significant effect on “historical resources” and “unique archaeological resources.” Under these requirements, a cultural resources inventory was conducted in order to determine impacts of the proposed project on cultural resources potentially eligible for nomination to the CRHR.

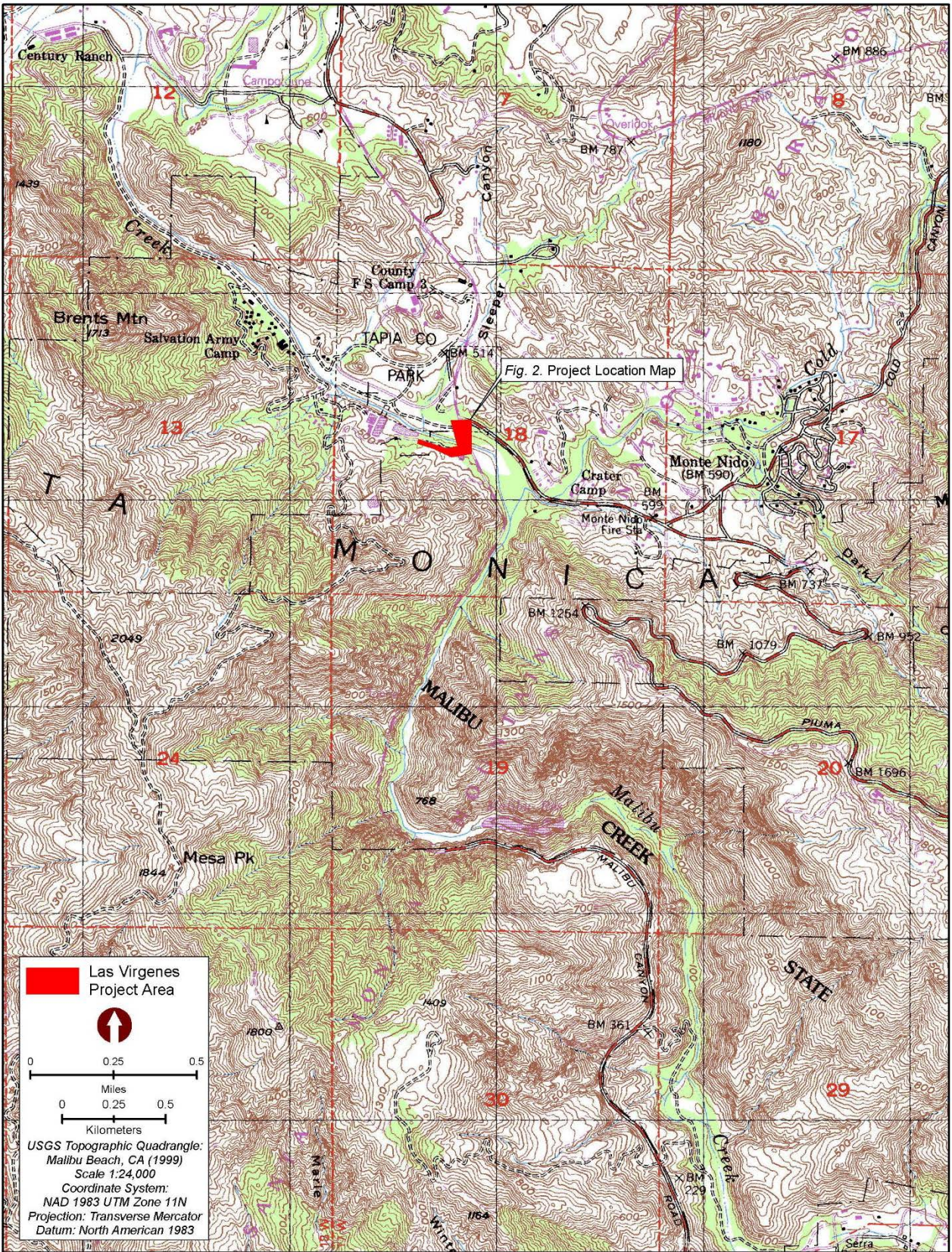


Figure 1. Vicinity Map



Figure 2. Location Map

CEQA (California Public Resources Code Section 21000 et seq.) (1970) establishes that historical and archaeological resources are afforded consideration and protection (14 CCR Section 21083.2, 14 CCR Section 15064). The CEQA Guidelines define significant cultural resources under three regulatory designations: historical resources, tribal cultural resources, and unique archaeological resources. These designations permit for a fair amount of overlap.

A historical resource is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR"; or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code"; or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]). Historical resources automatically listed in the CRHR include California cultural resources listed in or formally determined eligible for the NRHP and California Registered Historical Landmarks from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Tribal Cultural Resources (TCRs) are similar to the traditional cultural property designation within the National Historic Preservation Act (NHPA) guidance. These can be sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, it must either be 1) listed on or eligible for listing on the California Register or a local historic register or, 2) or is a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC Section 21074). TCRs can include "non-unique archaeological resources" (see "unique archaeological resource" below) that, rather than being important for "scientific" value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of tribal cultural resources within their traditionally and culturally affiliated geographic area (PRC Section 21080.3.1(a)).

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds, "is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States."
2. Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, "is associated with the lives of persons important to local, California, or national history."
3. Embodies the distinctive characteristics of a type, period, region, or method of construction; or represents the work of an important creative individual; or possesses high artistic values. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.

4. Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of “the local area, California, or the nation.”

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

An archaeological artifact, object, or site can meet CEQA’s definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if “it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.”

Public Resources Code 5097.98. This section discusses the procedures that need to be followed upon the discovery of Native American human remains. The NAHC, upon notification of the discovery of human remains is required to contact the County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code and shall immediately notify those persons it believes to be most likely descended from the deceased Native American.

Health and Safety Code 7050.5. This code establishes that any person, who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American human remains.

The Project Area is confined to the Tapia WRF access road and across Malibu Creek along a bridge owned and maintained by the Los Angeles County Department of Public Works (LACDPW), identified as Bridge 989 along LA County Road N-1. The Project Area begins at the existing 20-inch pipeline in Las Virgenes Road, and is constructed via open trench to the bridge. The pipe is then mounted under the existing LA County Bridge. After the bridge, the pipe is constructed via open trench in the roadway across Las Virgenes Road and then along the entrance road to Tapia WRF and the chlorination / dechlorination basin. It is expected that any potential adverse impacts, including ground disturbance, will be contained within this acreage. The Study Area for this project consists of the Project Area and a ½-mile radius surrounding the Project Area.

## **3.0 CULTURAL BACKGROUND**

Regional human occupation chronologies for parts of southern California and the Southwest have been employed for this locality (Elsasser 1978; Warren and Crabtree 1986). Such sequences are generally based on the presence of temporally diagnostic artifacts, such as projectile points, pottery, or beads. The most recent chronological clarification of the prehistory of the southern California area has been presented by Sutton (2010) and Sutton and Gardner (2010). The more recent chronology is presented below.

### **3.1 ARCHAEOLOGICAL BACKGROUND**

The earliest period of human occupation in southern California is referred to by various terms, including Clovis, Paleoindian, and Early Systems Period. This is a time believed to have commenced about 12,000 years before present (ybp), lasting until about 10,000 years BP. While some scholars have championed the idea of a Pre-Projectile Point Tradition predating this time, it is not considered here, as there are no documented sites of this age near the current Study Area. The following cultural periods reflect human adaptations that occurred among prehistoric societies in inland California. While these are broad generalizations, there appear to be similarities among various populations in southern California, particularly in the inland areas.

Prehistoric chronological sequences for the area can be represented by the Encinitas Tradition and the Del Rey Tradition. The Del Rey Tradition is proposed to have begun with the influx of Takiic speakers into the Los Angeles Basin approximately 3,500 years ago and is named for the Del Rey archaeological site near Santa Monica (Sutton 2010). Two patterns within the Del Rey Tradition, the Angeles and Island, reflect geographic variability; although, geographic boundaries for this time period are not clearly delineated. The Del Rey Tradition can be divided into six phases (Phases I-VI) with Angeles I approximately 3,500 years before present (ybp) (Sutton 2010:10). Before the emergence of the Angeles I, the coastal Los Angeles area is defined by Topanga I and II of the Encinitas Tradition (Figure 3). The traits associated with each phase discussed briefly below is from Sutton 2010 and Sutton and Gardener 2010.

#### **3.1.1 Topanga I - 8,500 to 5,000 ybp**

During the Topanga I Phase of the Encinitas Tradition there were numerous ground stone artifacts (manos and metates), core tools, charmstones, cogged stones, and large, but not abundant, flaked stone points. Shellfish was an important resource at this time. Mortuary practices include secondary inhumations under metates, some extended burials, but no cremations.

#### **3.1.2 Topanga II - 5,000 to 3,500 ybp**

During the Topanga II Phase there was still an abundance of ground stone artifacts but the numbers seem to be decreasing. Mortars and pestles are now being used and some stone balls and charmstones are found in archaeological sites dating to this period. Shellfish is still an important resources and acorns are being added to the diet. Secondary reburial of long bones only is noted, and flexed inhumations are now being adopted. Cremations are rare.

### 3.1.3 Angeles I - 3,500 to 2,600 ybp

This phase marks the arrival of Takic speaking groups from the north, accompanied by a population increase and a shift to fewer and larger settlements along the coast. There appears to be less dependence on shellfish and more fishing and hunting subsistence strategies. This includes an increase in the number of projectile points and the appearance of the Elko style dart point and donut stones. This phase introduces an extensive trade in steatite artifacts such as beads and pipes and *Olivella* shell beads. Obsidian from the Coso volcanic fields becomes important.

### 3.1.4 Angeles II - 2,600 to 1,600 ybp

The Angeles II Phase continues with the Angeles I phase settlement and subsistence patterns and material culture. Fish hooks become more common during this phase and there is an addition of mortuary features that contain broken tools and cremated human bone.

### 3.1.5 Angeles III - 1,600 to 1,250 ypb

The Angeles III Phase is marked by the introduction of bow-and-arrow technology and changes in *Olivella* shell bead types. There is a reduction in obsidian use at the same time that Coso obsidian from the northeast is replaced in importance by obsidian from Obsidian Butte to the southeast, showing a shift in trade patterns. Larger, seasonal villages become more common. Funerary practices are primarily flexed inhumation and obsidian grave goods begin to be seen. There is also an increase in cremations.

### 3.1.6 Angeles IV - 1,250 to 800 ybp

Angeles IV Phase introduces the smaller Cottonwood style point type and imported ceramics begin to be seen. This phase may mark the appearance of ceramic pipes as well. There is a continued shift to larger but fewer permanent settlements and an expansion into the San Gabriel Mountains, displacing other groups that occupied the areas.

### 3.1.7 Angeles V - 800 to 450 ypb

During the Angeles V Phase there is an intensification of trade in steatite artifacts with the southern Channel Islands, with the artifact variety increasing to include larger artifacts such as vessels and comals. This brings with it a strengthening of trade relationships with the Channel Islands. Expansion continues with expansion into the Santa Ana Mountains and San Joaquin Hills.

### 3.1.8 Angeles VI - 450 to 150 ybp

The Angeles VI Phase introduces Euromerican goods such as glass beads and metal tools into the Native material culture. *Olivella* shell beads are found in archaeological sites with evidence of having been drilled with metal needles. Settlement patterns change as well, with movement closer to missions and ranches. Domesticated animals from the Euromerican settlers are being introduced into Native lifestyle. It is during this time that the *Chingichngish* religion is introduced.

General Dates (BP)	Tradition	Los Angeles Basin and Northern Orange Counties		Southern Channel Islands
450-150	D E L R E Y	Angeles VI		Island IV
800 to 450		Angeles V		Island III
1,250 to 800		Angeles IV		Island II
1,600 to 1,250		Angeles III		
2,600 to 1,600		Angeles II		Island I
3,500 to 2,600	E N C I N I T A S	Topanga III	Angeles I	
		Topanga II		
5,000 to 3,500		Topanga I		Early Holocene (no cultural tradition yet defined)
8,500 to 5,000		San Dieguito		unknown
10,000 to 8,500		undefined	Paleocoastal	
to 10,000		undefined	Paleocoastal	

Figure 3. Proposed Traditions for the Los Angeles Region of Southern California From Sutton 2010:9.

### 3.2 ETHNOGRAPHIC BACKGROUND

The Santa Monica Mountains are the ethnographic Traditional Use Areas of both the Chumash and Gabrielino (referred to herein as the *Tongva*) Tribes. Ethnographic geographic boundaries, as mentioned above, are not as clearly defined as the political boundaries we define today. For this reason, it is important to consider both groups as having occupied this area of the Santa Monica Mountains as their Traditional Use Area.

#### 3.2.1 Chumash

The Chumash occupied the coastal and inland areas of southern California from Malibu north to San Luis Obispo (Wishtoyo 2018). The Chumash are a maritime culture, utilizing the abundant



resources of both the sea and the land (Wishtoyo 2018). The Chumash people can be divided into six groups based on language variation that are related under the more comprehensive Chumashan Language Family (Sampson n.d.). The name Chumash, as it is used today, represents the complex Native population that occupied the areas along the coast from San Luis Obispo to Malibu and inland as far as the San Joaquin Valley, including four islands off the California coast. Chumash was not the name used by these people and appears to have been derived by Powell in 1891 from a word used by the Native people living along the coast to identify Santa Cruz Island and its inhabitants (Grant 1978:507), but was introduced to the public by anthropologist Alfred E. Kroeber in his 1925 work (reprinted 1976) *Handbook of California Indians* (Sampson n.d.).

The Chumash were likely the first group of Native Californians “discovered” by early explorers, beginning with Juan Cabrillo in 1542 and later, in 1602, when Sebastian Vizcaino named the Santa Barbara Channel (Grant 1978). Other explorations followed, all noting the heavily populated Santa Barbara coastal regions while describing the people who inhabited the region. Kroeber estimated the population within the large Chumash territory to be between 8 and 10 thousand (Grant 1978:506).

The Chumash had a high level of material culture and craftsmanship, including intricate basketry, woodcarving, fine stone objects, well-developed rock art, and excellent oceangoing plank canoes (tomol) that highly impressed Spanish explorers. The Chumash had an extensive trade network that reached well beyond the Santa Barbara Channel region. Shell beads made from *Olivella biplicata* shells found along the Santa Barbara coast have been identified in large amounts in archaeological sites in the Western Mojave Desert (Harvey 2000). In 1775, Spaniard Pedro Fages commented that the Chumash were very inclined to trade, barter, and engage in general commerce (Erlandson 1994).

Several Chumash villages have been identified in the Malibu area during extensive research by Doctors Chester King and John Johnson into the Spanish Mission archives, accounts from early explorers, and early anthropological writings (Sampson n.d.). These villages include Humaliwo, near the Malibu Lagoon and *Ta'lopop* in Malibu Canyon (Sampson n.d.).

### 3.2.2 Tongva

Early Native American peoples of this area are poorly understood. The presence of occupation in this area by the ethnohistoric Gabrielino (*Tongva*) people began to be demonstrated about 1,000 years ago. Ethnohistorically the *Tongva* were semi-sedentary hunters and gatherers whose language is one of the Cupan languages in the Takic family, part of the Uto-Aztecan linguistic stock (Bean and Smith 1978).

The *Tongva* territory encompassed a vast area that stretched from Topanga Canyon in the northwest, to the base of Mount Wilson in the north, to San Bernardino in the east, Aliso Creek in the southeast and the Southern Channel Islands, in all, an area of more than 2,500 square miles (Bean and Smith 1978, McCawley 1996). At European contact, the tribe consisted of more than 5,000 people living in various settlements throughout the area (McCawley 1996). Some of the villages could be quite large, housing up to 150 people. The *Tongva* are considered to have been one of the wealthiest tribes and they appear to have greatly influenced tribes they traded with (Kroeber 1976:621).

The *Tongva* practiced a hunting and gathering economy and subsistence zones exploited were marine, woodland and grassland (Bean and Smith 1978). At the time of contact, plant foods were the more significant part of the *Tongva* diet with acorns being the most important food source exploited. Therefore, it was necessary that villages be located near water sources to allow for the leaching or removal of tannic acids from the acorns. Grass seeds and chia were also heavily utilized. Seeds were parched, then ground and cooked as mush in various combinations according to taste and availability. Other fruit and plant foods would be eaten raw or cooked and they could be dried for storage. Bulbs, roots, and tubers were dug in the spring and summer and usually eaten fresh. Mushrooms and tree fungus were prized as delicacies. Various teas were made from flowers, fruits, stems, and roots for medicinal cures as well as beverages (Bean and Smith 1978:538-540).

The principal game animals were deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, dove, ducks, and other birds (Bean and Smith 1978). Predators were largely avoided as food, as were tree squirrels and most reptiles (Bean and Smith 1978). Fresh water fish were caught in the streams and rivers, while salmon were available when they ran in the larger creeks (Bean and Smith 1978). Sea mammals, fish, and crustaceans were hunted and gathered from both the shoreline and the open ocean, using reed and dugout canoes by coastal *Tongva* groups. Shellfish were the most common resource, including abalone, turban, mussels, clams, scallops, bubble shells, and others (Bean and Smith 1978:538-540).

Houses were domed, circular structures thatched with tule or similar materials (Bean and Smith 1978:542). The *Tongva* are renowned for their workmanship of steatite and these artifacts were highly prized (Bean and Smith 1978). Common everyday items were often decorated with inlaid shell or carvings reflecting the intricately developed skill (Bean and Smith 1978:542).

*Tongva* cosmology centered on the creator *Chingichngish* (Bean and Smith 1978). *Chingichngish* was a new leader who appeared to the people as if in a vision, fulfilling the role vacated by the god *Wiyot* who had been murdered by his sons because of his cruelty. *Chingichngish* dictated the laws and religion for the people and created, out of mud, a new race of people. An open-air, ceremonial enclosure called a *yuva'r* was erected near the chief's home as centers relating to the *Chingichngish* religion. The *yuva'r* was made of willow, oval in shape, and decorated with feathers, animal skins, and flowers (Smith and Bean 1978:542). An image representing *Chingichngish* was a part of the most sacred spot within the *yuva'r* (Bean and Smith 1978:542). By the time the Spanish arrived in *Tongva* territory, the *Chingichngish* religion had become formalized and had spread into neighboring groups (Smith and Bean 1978:548).

### **3.3 HISTORIC BACKGROUND**

#### **3.3.1 Regional Historic Overview**

The first written accounts of the southern California coastal area occurred when Juan Cabrillo visited the Pueblo de las Canoas, believed to be the ethnographic village of Muwu near Point Magu or possibly even the village of Humaliwo at the mouth of the Malibu Lagoon (ACOE 2017). In 1602, the Vizcaino expedition was met by representatives from the Chumash Tribe, from the

Muwu village (ACOE 2017:129). The Chumash took a canoe, a tomol, out to welcome the foreigners, though the Europeans did not come ashore. Land expeditions began in 1770 when the Portola Expedition passed through the southern California area. In 1776, the Anza Expedition camped near Las Virgenes Creek along the newly established north-south trending El Camino Real that passes through the current City of Calabasas. Local Tongva and Chumash people from the area were removed from their Traditional Use Area to the San Buenaventura Mission (established in 1782) in the current City of Ventura, about 40-miles north along the Pacific coast, or Mission San Fernando (established 1797), about 40-miles north-east along existing roads. By the end of the mission period in California, 1834, Native populations had been drastically depleted by disease and villages once large and productive, were gone.

Several large land grants surrounded the Project Area, including the Rancho de Santa Gertrudis de Las Virgenes just north of the Project Area, and Topanga Malibu Sequit along the coast. Rancho de las Virgenes was one that was given to the San Fernando Mission in 1817 to be used for grazing land as it was considered abandoned. Once the missions were secularized the land was sold or granted to former mission Indians (ACOE 2017). Early enterprise in the area centered on ranching, making use of the areas abundant natural resources. Land holdings remained relatively intact until the 1920s-1930s when they began being sub-divided and sold to people such as the wealthy businessmen and "Hollywood stars" who were discovering the joys of having beachfront property for weekend get-aways, building the exclusive enclaves of Malibu and Calabasas and other incorporated cities of today (ACOE 2017:130). One of the largest land owners in the area, the Rindge Family managed to acquire almost 30,000-acres of land grants in the 1890s. They sold off lots but also donated land for conservation in the 1960s and 70s (ACOE 2017).

### **3.3.2 Las Virgenes Municipal Water District**

The Metropolitan Water District of Southern California (Metropolitan) was formed in 1928 to create a united effort among individual city water districts to assure that these southern California cities were able to provide their residents with an adequate water supply. The first proposal from the Metropolitan was to build an aqueduct stretching across 242-miles of desert, from the Colorado River at the California-Arizona border west to Lake Matthews in Riverside County. The bond was approved by voters in 1931 and two years later construction began, one of the largest public works projects during the Great Depression. Today, Metropolitan consists of 26 members in six counties and provides water imported from northern California. LVMWD is one of Metropolitan's members.

LVMWD provides potable water, wastewater treatment, recycled water and biosolids composting to more than 65,000 residents in the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village, and unincorporated areas of western Los Angeles County for an area that encompasses 122-square miles (97,4640 acres). LVMWD's potable water is provided almost entirely through: wholesale purchases from Metropolitan, which imports water from the State Water Project (SWP) and the Colorado River, recycled water from the Tapia WRF, groundwater from the Russell Valley Basin (which is only used to supplement the Tapia WRF), and surface runoff into Las Virgenes Reservoir. In addition, LVMWD's potable water distribution system includes 25 storage tanks, 24 pump stations, and about 339 miles of pipelines. LVMWD maintains 22 main pressure zones due to the mountainous topography of its service area.

The Tapia WRF is constructed at a low spot in Malibu Creek watershed, utilizing gravity and decreasing the need for pumps (LVMWD n.d.). The facility was built in 1965 and expanded in 1968, 1972, 1984, 1986, and 1994 (LVMWD n.d.).

## 4.0 RECORD SEARCH AND LITERATURE REVIEW

A records search and literature review for the Project Area plus a 0.5-mile radius around the Project Area (the “Study Area”) was conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton, California on June 27, 2018. As an affiliate of the California Historical Resources Information System, the SCCIC is the official state repository of cultural resource records and reports for the region that includes Los Angeles County.

As part of the records search, Stantec reviewed the following inventories for cultural resources in and/or adjacent to the Project Area:

- California Inventory of Historic Resources (California Department of Parks and Recreation 1976);
- California Historical Landmarks (California Office of Historic Preservation 1996);
- California Points of Historical Interest (California Office of Historic Preservation 1992); and
- Directory of Properties in the Historic Property Data File (California Office of Historic Preservation 2004). The directory includes listings of the NRHP and the CRHR.

### 4.1 PREVIOUS STUDIES WITHIN THE STUDY AREA

There have been 13 previous studies within the Study area, including an evaluation report for Cultural Resources Near the Proposed Fill Zone at Malibu Creek State Park (Kelly 1981) and an interpretive plan for the Malibu Creek State Park Day-use and Campground Areas (Hook and Hare 1983). The other 11 studies include one monitoring report (King 2010) and ten survey reports that span the years 1977 to 2006. Four of the 13 previously documented studies include portions of the Project Area (Cooley et al 2003, Wlodarski and Conrad 2007, Romani and Larson 2003, Mason 2003). The documented studies are summarized in Table 1.

**Table 1. Previously Documented Reports within the Study Area**

Author(s)	Year	Level of Investigation	Results	Report Reference No.
Frederick J. Bove	1977	Survey	Positive	LA-00337
Robert J. Wlodarski	1992	Survey	Positive	LA-02563
Eileen M. Hook and Robert G. Hare	1983	Interpretive Plan	Positive	LA-03505
John H. Kelly	1981	Evaluation Report	Positive	LA-03764
Theodore G. Cooley, Stacey C. Jordan, and Laura J. Barrie	2003	Survey	Positive	LA-06536
Chester King	2006	Survey	Positive	LA-07576
Robert J. Wlodarski and Matthew Conrad	2007	Survey	Positive	LA-08128

Author(s)	Year	Level of Investigation	Results	Report Reference No.
James J. Schmidt	2000	Survey	Positive	LA-10201
Stacey C. Jordan and Joshua D. Patterson	2006	Survey	Positive	LA-10202
Chester King	2010	Monitoring	Positive	LA-10740
Robert J. Wlodarski	2008	Survey	Positive	LA-11033
John Romani and Dan Larson	2003	Survey	Positive	LA-11151
Roger Mason	2002	IS	Negative	LA-11152

**4.2 PREVIOUSLY DOCUMENTED RESOURCES WITHIN THE STUDY AREA**

The records search indicated 10 previously documented cultural resources within the Study Area; however, none are located directly within the Project Area. The four historic era resources are a single 1954 glass bottle, pipe, a rock and concrete marker, and the Malibu Boys Camp. Prehistoric resources include Bedrock Mortar Milling Stations (BRMs), lithic debitage scatters and a shell scatter. The majority of these sites are located in excess of 0.25-miles from the Project Area. Two resources, a BRM site and a rock and concrete marker are located within 0.1-mile of the Project Area. The cultural resources documented within the Study area are summarized in Table 2.

**Table 2. Previously Documented Resources within the Study Area**

Quad. (7.5")	Primary Number	Component	Description	Within
Malibu Beach	P-19-000785	Prehistoric	BRMs	Study Area
Malibu Beach	P-19-003107	Prehistoric	Lithic Debitage scatter	Study Area
Malibu Beach	P-19-000417	Prehistoric	BRMs	Study Area
Malibu Beach	P-19-001350	No Data	No Data	Study Area
Malibu Beach	P-19-000817	Prehistoric	Flaked stone tool scatter	Study Area
Malibu Beach	P-19-186812	Historic	Rock and concrete marker	Study Area
Malibu Beach	P-19-003106	Prehistoric	shell scatter	Study Area
Malibu Beach	P-19-003105	Historic	Malibu Boys Camp/Rehab center	Study Area
Malibu Beach	P-19-100890	Historic	1954 glass bottle	Study Area
Malibu Beach	P-19-190760	Historic	Pipe	Study Area

**5.0 ARCHAEOLOGICAL SURVEY/FIELD RECONNAISSANCE**

On June 27, 2018, Stantec archaeologist, Hubert Switalski, conducted an intensive, 100 percent pedestrian survey of the entire 4.8-acre Project Area. The Project Area was surveyed by walking east-west and north-south transects spaced approximately 10-15 meters apart. Due to the overall archaeological sensitivity of the area, banks of the nearby drainage (Sleeper Canyon)

were examined for presence of surface deposits. Additionally, per the California Office of Historic Preservation (OHP 1995) guidelines, Stantec examined surface and subsurface exposures such as rodent burrows and cut banks for physical manifestations of human activity greater than 45 years in age. Documentation included field notes and photographs.

A hand-held Garmin Global Positioning System (GPS) was used to document features and record data during the survey. Photographs were taken with a Nikon Coolpix digital camera to document the survey area and any sites, features, or resources encountered. The extent of the survey coverage was drawn on the Malibu Beach, CA (1999) United State Geological Survey (USGS) 7.5-minute series topographic quadrangle (see Figs. 1).

The archaeological survey commenced on the south side of the Tapia WRF access road, immediately east of the Tapia WRF, and proceeded east along the south side of the road towards Malibu Canyon Road. Once this portion was completed, the survey continued on the north side of the access road and along the southern bank of Sleeper Canyon. This portion of the Project Area appeared relatively steep and heavily overgrown with native vegetation. Several hiking trails (part of the Tapia Park) originating at a nearby parking lot (located approximately 150 meters south of the access roadway) were observed within this portion of the Project Area. Ground visibility within this portion of the Project Area was very good between 70 and 80 percent, albeit in an already disturbed context (previous construction of roadways and underground utilities).

Once this portion of the Project Area was surveyed, the survey continued on the east and west side of Malibu Creek and north towards Puma Road. As the survey transects traversed Sleeper Canyon, the vegetation within this natural drainage was dense; however, ground visibility was relatively good (between 60 and 70 percent). Similarly, this portion of the Project Area also appeared to contain several hiking trails with two trails running parallel to the drainage and one hiking trail intersecting the drainage, just east of Malibu Canyon Road. Several modern fire pits, with modern refuse, were observed immediately south of Puma Road and east of Malibu Canyon Road. No cultural resources were observed during the course of the survey.



Figure 4. Vegetation

Typical vegetation within the southern portion of the Project Area, along Sleeper Canyon, view north with an active hiking trail in foreground (Stantec IMG\_142754).



Figure 5. Overview

Overview of the Project Area east of the intersection of Puma Road and Malibu Canyon Road, view west (Stantec IMG\_144726).

## 6.0 TRIBAL CONSULTATION

On August 16, 2018, Stantec Consulting Services Inc., requested a Sacred Lands File search from the Native American Heritage Commission (NAHC). The letter included project background information and maps. The NAHC responded on August 27, 2018 that their files did not identify any sites within the project area. However, they stated that the absence of site information does

not preclude the presence of sites. Therefore, they requested that Native American Tribes with specific information of the project area be contacted. The letter contained a list of 16 Tribal contacts. On September 27, 2018, letters requesting consultation under AB 52 were sent to these 16 Tribal contacts as well as three additional contacts.

## 7.0 PALEONTOLOGICAL RESOURCES

There are no known paleontological resources within the project area. In addition, project construction would be limited to shallow (less than 5-feet) excavation in soils that were previously disturbed during construction for Malibu Canyon Road and the Tapia WRF access roadway, a distance of roughly 1,270-feet (210 feet mounted on the bridge). Therefore, ground-disturbing activities during construction are unlikely to uncover any previously unknown paleontological resources.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

During the background research and the cultural resources inventory of the Project Area, no cultural resources were identified. However, 10 previously documented resources were identified within the 0.5-mile Study Area. Two of these resources, a BRM and a rock monument, are located within 0.1-mile of the Project Area.

Under the proposed Project, a new potable water pipeline will be installed via open trench from an existing 20-inch pipeline in Las Virgenes Road, to an existing bridge. The trench would be excavated beneath existing roadway in fill material; native soil would not be impacted. At the bridge over Malibu Creek, the pipe would be mounted in 2-foot-by-2-foot utility openings underneath the existing LA County Bridge with no new ground disturbance. From the bridge, the pipe would be installed via open trench, in fill soils, in the entrance road to the Tapia WRF. Open trench work will be kept in a single lane of the roadway to avoid complete disruption of traffic. Therefore, significant impacts to previously documented or undiscovered cultural resources are not expected during Project implementation.

The methods and techniques used by Stantec are considered sufficient for the identification and evaluation of cultural resources visible at the ground surface. However, there is always a possibility that buried archaeological deposits could be found during construction and/or earth disturbing activities. In the event that cultural resources are encountered during construction activities, all work must stop, and a qualified archaeologist shall be contacted immediately. Further, in the event that any human remains are encountered or in the event that unassociated funerary objects or grave goods are discovered, State Health and Safety Code Section 7050.5 requires that no further work shall continue at the location of the find until the County Coroner has made all the necessary findings as to the origin and distribution of such remains pursuant to Public Code Resources Code Section 5097.98.



## 9.0 REFERENCES

Army Corps of Engineers

- 2017 Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report (IRF) with Environmental Impact Statement/Environmental Impact Report (EIR/EIS) Los Angeles and Ventura Counties, California. Report on file at <https://usace.contentdm.oclc.org/digital/collection/p16021coll7/id/3660/>. Site assessed July 28, 2018.

Baldwin, K.P.

- 1996 A History of Channel Islands archaeology. Unpublished Master's thesis. Department of Anthropology, California State University, Northridge.

Bean, L.J. and C.R. Smith

- 1978 Gabriellino in *Handbook of North American Indians, Volume 8. California*, volume edited by Robert F. Heizer, pp. 538-549 (W. T. Sturtevant, general editor). Smithsonian Institution, Washington, D.C.

Bove, Frederick J.

- 1977 An Archaeological Resource Survey and Impact Assessment of Tentative Tract No. 33186, Los Angeles County, California, Report # LA-00337, on file at the SCCIC, California State University, Fullerton.

Cooley, Theodore G., Stacey C. Jordan, and Laura J. Barrie

- 2003 Cultural Resources Inventory Survey of 94 Acres Within the Malibu Creek State Park, Tapia Sub-unit, Los Angeles County, California. Report # LA-06536, on file at the SCCIC, California State University, Fullerton.

Elsasser, A. B.

- 1978 Development of Regional Prehistoric Cultures. In *Handbook of North American Indians*, Vol. 8, California, edited by R. F. Heizer, pp. 37-57. Washington: Smithsonian Institution.

Erlandson, John

1994. *California's Coastal Prehistory: A Circum-Pacific Perspective*. Proceedings from the Society of California Archaeology, Vol. 6: 23-36

Grant, Campbell

- 1978 Chumash: Introduction. In *Handbook of North American Indians, Volume 8 California*. R. F. Heizer (ed.): 505-508. Washington DC: Smithsonian Institute Press.

Harvey, Victoria

- 2000 Cemetery Tales: Six Prehistoric Human Burials from CA-KER-303, Western Mojave Desert, California. Paper presented at the 2000 Annual Meeting for the Society for California Archaeology, Riverside, and on-file with the author.

Hook, Eileen M. and Robert G. Hare 1993 Malibu Creek State Park Day-Use and Campground Areas Interpretive Plan and Research Package. Report # LA-03505, on file at the SCCIC, California State University, Fullerton.

John H. Kelly

1981 The Following Is an Evaluation of Cultural Resources Near the Proposed Fill Zone at Malibu Creek State Park. Report # LA-03764, on file at the SCCIC, California State University, Fullerton.

King, Chester

2006 Archaeological Assessment of King Gillette Ranch, Los Angeles County, California. Report # LA-07576, on file at the SCCIC, California State University, Fullerton.

2010 Archaeological Report of Monitoring of the 24" Recycled Water Pipeline from Tapia Park to Mulholland Highway, Los Angeles County, California. Report # LA-10740, on file at the SCCIC, California State University, Fullerton.

Kroeber, A.L

1976 *Handbook of the Indians of California*. Dover Publications, Inc., New York. Reprint of 1925 book.

LVMWD

n.d. Tapia Water Reclamation Facility. <https://www.lvmwd.com/about-us/joint-powers-authority/wastewater-services/tapia-water-reclamation-facility> Site assessed August 13, 2013.

McCawley, William

1996 *First Angelinos: the Gabrielino Indians of Los Angeles*. Malki Museum Press/Ballena Press, Banning, CA.

Moratto, Michael J.

1984 *California Archaeology*. Academic Press.

Sampson, M.

n.d. *Humaliwo: Where the Surf Sounds Loudly*. [https://www.parks.ca.gov/?page\\_id=24435](https://www.parks.ca.gov/?page_id=24435). Site assessed July 31, 2018.

Sutton, Mark Q.

2010 The Del Rey Tradition and its Place in the Prehistory of Southern California. *Pacific Coast Archaeological Society Quarterly* 44(2):1-54.

Sutton, Mark Q. and Jill K. Gardner

2010 Reconceptualizing the Encinitas Tradition of Southern California. *Pacific Coast Archaeological Society Quarterly* 42(4):1-64.

Wlodarski, Robert J.

1992 A Phase 1 Archaeological Study for the Las Virgenes Municipal Water District Regional Facility Expansion Iv, Sludge Force Main Las Virgenes Canyon, Los Angeles

County, California. Report # LA-02563, on file at the SCCIC, California State University, Fullerton.

- 2008 Results of an Extended Phase 1 Archaeological Investigation for CA-LAN-3106 Located within the Tapia Park Portion of Malibu Creek State Park, City of Malibu, County of Los Angeles, California. Report # LA-11033, on file at the SCCIC, California State University, Fullerton.

Wlodarski, Robert J. and Matthew Conrad

- 2007 A Phase 1 Archaeological Study for the Tapia State Park Portion of the LVMWD Rew Recycled Water Pipeline Project, County of Los Angeles, California. Report # LA-08128, on file at the SCCIC, California State University, Fullerton.

Warren, Claude N. and R. H. Crabtree

- 1986 Prehistory of the Southwestern Area. In *Handbook of North American Indians*, Vol. 8, California, edited by R. F. Heizer, pp. 183-193. Washington: Smithsonian Institution.

Wishtoyo

- 2018 Wishtoyo Chumash Foundation. <http://www.wishtoyo.org/cp-chumash-history/>  
Site accessed July 3, 2018.

Appendix C  
Native American Consultation  
Summary Table

Appendix C - Summer Flow Augmentation of Malibu Creek Tribal Consultation Summary

Recipient	Position	Recipient Affiliation	Tribes	Contact Information	Letter Date	Phone Call	Comments
Mike Mirelez	Cultural Resources Coordinator	Torres Martinez Desert Cahujilla Indians	Cahuilla	P.O. Box 1160, Thermal, CA 92274 (760) 397-0300 x 1213; (760) 399-0022 celi; mmirelez@tmdci.org	9/27/2018		Follow up email on 10/16/18
Julie Lynn Tumamait-Stenslie	Chairperson	Barbareno/Ventureno Band of Mission Indians	Chumash	365 North Poi Avenue, Ojai, CA 93023 (805) 646-6214 jumamait@hotmail.com	9/27/2018	10/16/2018	(email bounced) Follow up email on 10/16/18, resent email with corrected address. No comment over the phone
Patric Tumamait	Not stated	Barbareno/Ventureno Band of Mission Indians	Chumash	992 El Camino Corto Ojai, CA 93023 (805) 216-1253	9/27/2018	10/16/2018	No comment, sent follow-up email after phone call. (natchumash@yahoo.com) Only requested that the Native American Heritage Commission be notified if "anything is found".
Eleanor Arrellanes	Not stated	Barbareno/Ventureno Band of Mission Indians	Chumash	P.O. Box 5687 Ventura, CA 93005 (805) 701-3246	9/27/2018	10/16/2018	Left phone message to respond with comments or questions.
Raudel Joe Banuelos, Jr.	Not stated	Barbareno/Ventureno Band of Mission Indians	Chumash	331 Mira Flores Court Camarillo, CA 93012 (805) 427-0015	9/27/2018	10/16/2018	Left phone message to respond with comments or questions.
Kenneth Kahn	Chairperson	Santa Ynez Band of Chumash Indians	Chumash	P.O. Box 517 Santa Ynez, CA. 93460 (805) 688-7997kkahn@santaynezchumash.org	9/27/2018		Follow up email on 10/16/18
Rudy Ortega, Jr.	Tribal President	Fernandeno Tataviam Band of Mission Indians	Fernandeno/Tataviam	1019 Second Street, Suite 1 San Fernando, CA 91340 (818) 837-0794 rortega@tataviam-nsn.us	9/27/2018	10/22/2018	Follow up email on 10/16/18. Received a follow-up call from Jairo Avila (jairo.avila@tataviam-nsn.us) Requested more information on the Cultural Survey conducted. Email with suggested mitigation measures received from J. Avila on December 10, 2018. Measures incorporated into document.
Caitlin B. Gulley	Tribal Historic and Cultural Preservation Officer	Fernandeno Tataviam Band of Mission Indians	Fernandeno/Tataviam	1019 Second Street, Suite 1 San Fernando, CA 91340 (818) 837-0794 cgulley@tataviam-nsn.us	9/27/2018		Follow up email on 10/16/18
Andrew Salas	Chairperson	Gabrieleno Band of Mission Indians-Kizh nation	Gabrieleno	P.O. Box 393, Covina, California 91723 (626) 926-4131; admin@gabrielenoindians.org	9/27/2018		Follow up email on 10/16/18
Anthony Morales	Chairperson	Gabrieleno/Tongva San Gabriel Band of Mission Indians	Gabrieleno	P.O. Box 693, San Gabriel, California 91778 (626) 483-3465	9/27/2018	10/16/2018	Phone number disconnected.
Sandonne Goad	Chairperson	Gabrielino/Tongva Nation	Gabrielino	106 1/2 Judge John Aiso Street, #231, Los Angeles, California 90012 (951) 807-0479; sgoad@gabrielino-tongva.com	9/27/2018		Follow up email on 10/16/18
Linda Candelaria	Councilwoman	Gabrielino-Tongva Tribe	Gabrielino	(626) 676-1184; LCandelaria1@GabrielinoTribe.org No current address on file	emailed		Follow up email on 10/16/18
Charles Alvarez	Council member	Gabrielino-Tongva Tribe	Gabrielino	23454 Vanowen Street, West Hills, California 91307 (310) 403-6048; roadkingcharles@aol.com	9/27/2018		Follow up email on 10/16/18
Julie Turner	Secretary	Kern Valley Indian Community (KVIC)	Kawaiisu; Tubatulabal	P.O. Box 1010, Lake Isabella, CA 93240 (661) 340-0032	9/27/2018	10/16/2018	Left phone message to respond with comments or questions.
Robert Robinson	Chairperson	Kern Valley Indian Community (KVIC)	Kawaiisu; Tubatulabal	P.O. Box 1010, Lake Isabella, CA 93240 (760) 378-2915 brobinson@wvisp.com	9/27/2018	10/16/2018	(email bounced) Follow up email on 10/16/18, phone number disconnected
Delia Dominguez	Chairperson	Kitanemuk & Yowlumne Tejon Tribe	Kitanemuk & Yowlumne	115 Radio Street Bakersfield, CA 93305 (626) 339-6785 deedominguez@juno.com	9/27/2018	10/16/2018	(email bounced) Follow up email on 10/16/18, left a message to call back with comments or questions, returned call same day to comment "there should be a cultural resources monitor", I described the project area again and referenced the cultural resources study, which did not identify cultural resources within the Project Area. She seemed satisfied, but reiterated that the tribes should be notified immediately if anything of cultural value is observed.
Joseph Ontiveros	Cultural Resources Department	Soboba Band of Luiseno Indians	Luiseno and Cahulla	P.O. Box 487 San Jacinto, CA 92581 (951) 663-5279, (951) 654-5544 ext 4137, jontiveros@soboba-nsn.gov	9/27/2018		Follow up email on 10/16/18
Lee Clauss	Director-CRM Department	San Manuel Band of Mission Indians	Serrano	26569 Community Center drive, Highland, CA. 92346 (909) 864-8933 lclauss@sanmanuel-nsn.gov	9/27/2018		Follow up email on 10/16/18. Jmauck@sanmanuel-nsn.gov Responded to Brett on Oct. 2, 2018. Declined consulting party status. Outside their territory.
Lynn Valbuena	Not stated	San Manuel Band of Mission Indians	Serrano	26569 Community Center drive, Highland, CA. 92346 (909) 864-8933 lvalbuena@sanmanuel-nsn.gov	9/27/2018		Follow up email on 10/16/18

# **Mitigation Monitoring and Reporting Program**

for the

## **Summer Flow Augmentation of Malibu Creek**

**February 2019**

**Las Virgenes – Triunfo Joint Powers Authority  
4232 Las Virgenes Road  
Calabasas, California 91302**

## **MITIGATION MONITORING AND REPORTING PROGRAM**

### **Summer Flow Augmentation of Malibu Creek Mitigated Negative Declaration SCH#2019011019**

#### **Introduction**

The Las Virgenes Municipal Water District (LVMWD) / Triunfo Sanitation District Joint Powers Authority (JPA) prepared an Initial Study for the Summer Flow Augmentation of Malibu Creek Project. Based on the information contained in the Initial Study, the JPA intends to adopt a Mitigated Negative Declaration (MND) for the project under the California Environmental Quality Act (CEQA). This Mitigation Monitoring and Reporting Program (MMRP) has been developed to ensure implementation of the mitigation measures outlined in the MND (State Clearinghouse No. 2019011019). The MMRP has been prepared by the JPA, the lead agency for the project under CEQA, in conformance with Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097. Adoption of a MMRP is required for projects in which the Lead Agency has required changes or adopted mitigation to avoid significant environmental effects.

#### **Project Description Summary**

The summer flow augmentation project will convey potable water to Tapia Water Reclamation Facility (WRF) in a new 8-inch pipeline (approximately 1,270 feet in length). The pipeline will be installed from an existing pipeline at the intersection of Las Virgenes Road and Piuma Road. At Tapia WRF, potable water will be treated in the existing 26,000 gallon overflow structure to remove ammonia through breakpoint chlorination. Treated water will be discharged via existing pipelines to existing Outfall 003 on Malibu Creek. No structural modifications to the pipeline from the plant to the outfall or to the outfall will be required for the project.

The Initial Study describes potentially significant impacts of the proposed project on biological resources, cultural resources, noise, and traffic. Mitigation measures have been defined to reduce impacts to less than significant levels. Other effects found to be less than significant are also described in the Initial Study.

#### **Mitigation Monitoring and Reporting Responsibility**

The JPA shall have primary responsibility for administrating the MMRP activities to staff, consultants, or contractors. The JPA has the responsibility of ensuring that monitoring is documented through periodic reports and that deficiencies are promptly corrected. The JPA's designated environmental monitor will track and document compliance with mitigation measures, note any problems that may result, and take appropriate action to remedy problems. Specific responsibilities of the JPA include:

- Coordination of all mitigation monitoring activities

- Management of the preparation, approval, and filing of monitoring or permit compliance reports
- Maintenance of records concerning the status of all approved mitigation measures
- Coordination with other agencies and relevant Tribal representatives

### **Resolution of Noncompliance Complaints**

The JPA will act as the contact for interested parties who wish to register comments or complaints. Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the Summer Flow Augmentation of Malibu Creek project. The complaint shall be directed to the JPA (4232 Las Virgenes Road, Calabasas, California 91302) in written form, providing detailed information on the purported violation. The JPA shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, the JPA shall take the necessary action(s) to remedy the violation. The complainant shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented to respond to the specific noncompliance issue.

### **Mitigation Monitoring and Reporting Plan Matrix**

The MMRP is organized in a matrix format and includes: mitigation measure by number, impact summary, text of the mitigation measures, time frame for monitoring, agency responsible, and space to indicate verification that the measures were implemented. The verification columns will be used to document the person who verified the implementation of the mitigation measure, the date on which this verification occurred, and any other notable remarks.



# MITIGATION MONITORING AND REPORTING PROGRAM

SCH#2019011019

## Summer Flow Augmentation of Malibu Creek Project Mitigated Negative Declaration

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
<b>AQ-1</b>	Dust will be generated during soil disturbance for project construction.	<b>Site Watering.</b> Disturbed areas of the project site shall be watered a minimum of three times per day during the demolition, excavation, grading and site preparation phases of project construction.	demolition, excavation, grading and site preparation phases of construction	JPA			
<b>BIO-1</b>	Construction activities could impact on-site biological resources.	<b>Implement BMPs.</b> BMPs shall be implemented as standard operating procedures during all ground disturbance and construction-related activities to avoid or minimize project impacts on biological resources. BMPs shall include: <ul style="list-style-type: none"> <li>• Restrict non-essential equipment to the existing roadways and/or ruderal areas to avoid disturbance to native vegetation.</li> <li>• All excavation, steep-walled holes or trenches in excess of 6 inches in depth shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earthen fill or wooden planks with a 2:1 slope ratio. Trenches will also be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they will be thoroughly inspected for entrapped wildlife. Any wildlife discovered will be allowed to escape</li> </ul>	During construction	JPA			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>before construction activities are allowed to resume or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).</p> <ul style="list-style-type: none"> <li>• Minimize mechanical disturbance of soils to reduce impact of habitat manipulation on small mammals, reptiles, and amphibians.</li> <li>• Removal/disturbance of vegetation shall be minimized to the greatest extent feasible.</li> <li>• Install and maintain appropriate erosion/sediment control measures as needed throughout the duration of work activities. Sediment control measures shall be sufficient to prevent soils disturbed for pipeline installation from entering Malibu Creek. Materials used in implementing stormwater Best Management Practices, including straw wattles or soil fill, shall be certified weed-free to avoid introducing invasive plant species into native habitat.</li> <li>• Construction-related vehicles shall be clean and maintained free of weeds to avoid spreading noxious weeds across the project or transporting new weeds to the Project Site. Vehicles or equipment brought from different areas of the country, state, or other weed zones shall be cleaned, or documentation provided that they are weed free.</li> <li>• No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Spill kits shall be maintained on the</li> </ul>					

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>Project Site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven and/or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of materials.</p>					
<b>BIO-2</b>	Construction activities could impact on-site biological resources.	<p><b>Implement a Worker Environmental Education Program.</b> Prior to the start of any construction related activities within the Project Site (i.e., mobilization, fencing, grading, or construction), a Worker Environmental Education Program (WEEP) shall be implemented. Briefings for project personnel shall include: a discussion of the Federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the MBTA; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event wildlife needs to be relocated or dead or injured wildlife is discovered; and a review of mitigation requirements.</p>	Prior to the start of construction	JPA			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
BIO-3	Construction activities could impact on-site biological resources.	<p><b>Pre-Construction Surveys (Plants and Wildlife) and Biological Monitoring</b></p> <p><b>Wildlife Surveys:</b> Prior to ground disturbance or tree trimming (if applicable) within the Project Site, a qualified biologist shall conduct surveys for wildlife (no more than 14 days prior to Project Site disturbing activities) where suitable habitat is present and may be directly impacted by construction activities. Wildlife found within the Project Site or in areas potentially affected by the project will be relocated to the nearest suitable habitat that will not be affected by the project prior to the start of construction. Special-status species found within a project impact area shall be relocated by an authorized biologist to suitable habitat outside the impact area.</p> <p>The wildlife survey shall include a focused survey for bats within 500 feet of the Project Site. To the extent feasible, maternity roosts, if present, shall be left undisturbed with a buffer of 300 feet from March 15 to September 30. To the extent feasible, hibernation roosts, if present in winter, shall be left undisturbed with a buffer of 100 feet. Where avoidance is infeasible, and a bat roost would be disturbed and/or bats expelled, consultation with CDFW shall be conducted.</p> <p><b>Plant Surveys:</b> Prior to initial ground disturbance within the Project Site, a qualified biologist shall conduct pre-construction surveys for special-status plant species in all undeveloped areas subject to ground-disturbing activity. If construction starts in the fall and will extend into the spring, additional surveys shall be conducted in all areas where new ground disturbing</p>	<p>Prior to the start of construction activities for surveys</p> <p>Monitoring during initial ground disturbance within the Project Site and periodically during the bird nesting season</p>	<p>JPA</p> <p>Based on survey results, consultations with CDFW and/or USFWS may be necessary.</p>			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>activities would occur during the spring (after March 1). All listed plant species found shall be marked and avoided. Any populations of special-status plants found during surveys will be fully described, mapped, and a CNPS Field Survey Form or written equivalent shall be prepared.</p> <p>Prior to Site trenching, any populations of special-status plant species identified during the surveys shall be protected by a buffer zone. The buffer zone shall be established around these areas and shall be of sufficient size to eliminate potential disturbance to the plants from human activity and any other potential sources of disturbance including human trampling, erosion, and dust. The size of the buffer depends upon the proposed use of the immediately adjacent lands and includes consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, physical and chemical characteristics of soils) that are identified by the qualified plant ecologist or botanist. The buffer for herbaceous and shrub species shall be, at minimum, 50 feet from the perimeter of the population or the individual. A smaller buffer may be established, provided there are adequate measures in place to avoid the take of the species. Highly visible flagging shall be placed along the buffer area and remain in good working order during the duration of any construction activities in the area.</p> <p>Where impacts to listed plants cannot be avoided, the USFWS and/or CDFW shall be consulted for authorization, as appropriate.</p>					

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p><b>Biological Monitoring:</b> A qualified biologist shall be present during initial ground disturbance within the Project Site and periodically during the bird nesting season. If required, during pre-construction surveys and/or monitoring efforts, the qualified biologist will relocate common and special-status species that enter the Project Site. Some special-status species may require specific permits prior to handling and/or have established protocols for relocation. Records of all detections, captures, and releases shall be reported to CDFW.</p>					
BIO-4	Project construction may directly impact nesting birds.	<p><b>Nesting Bird Surveys and Avoidance Measures.</b> Where possible, vegetation removal activities (e.g., tree trimming, if required) should occur after September 15 but prior to February 15 to avoid impacts to nesting birds. Prior to initial site disturbance/issuance of grading permits, seasonally timed presence/absence surveys for nesting birds shall be conducted by a qualified biologist. If construction occurs outside of avian nesting season, only a single presence/absence survey for special status species will be conducted. If construction is scheduled to begin during the avian nesting season (February 15 through September 15; January 1 to August 15 for raptors), a minimum of three survey events, three days apart, shall be conducted, with the last survey no more than three days prior to the start of site disturbance. Surveys shall be conducted within 500 feet of all proposed project activities.</p> <p>If least Bell's vireo, coastal California gnatcatcher, or other special-status species are observed, consultation with USFWS and/or</p>	Prior to initial site disturbance for surveys	<p>JPA will conduct surveys</p> <p>Based on survey results, consultations with CDFW and/or USFWS may be necessary.</p>			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>CDFW will be conducted. If breeding birds with active nests are found prior to or during construction, a qualified biologist shall establish a 300-foot buffer around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails.</p>					
<b>BIO-5</b>	Project construction may impact existing Oak and other native tree species.	<p><b>Oak and Other Native Tree Avoidance Measures.</b> The project shall comply with measures outlined in the SMM LCP and Los Angeles County Oak Woodlands Conservation Management Plan (OWCMP). This will include the following:</p> <ul style="list-style-type: none"> <li>• A Protected Tree Survey shall be conducted by a Certified Arborist prior to construction activities in order to document planned and specific impacts to individual trees protected by the SMM LCP, which on the project site include coast live oaks, California ash, California sycamore, and black cottonwood with a single trunk diameter of 6 inches or greater, or a combination of any two trunks measuring 8 inches or greater, at four and one-half feet above natural grade.</li> </ul>	Survey to be conducted prior to construction  Protective measures to be implemented during construction	JPA  Review by Los Angeles County			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<ul style="list-style-type: none"> <li>A Los Angeles County Coastal Development Permit-oak tree shall be obtained for encroachment into the protected zone of protected native trees. The permit application shall include a description of the construction; the location of all ordinance/plan oak trees proposed to be removed and/or relocated, or within 200 feet of proposed construction, grading, landfill or other activity; and an oak tree report that evaluates each tree's dimensions, health, aesthetic appearance, and potential impacts. The permit application shall also substantiate that the construction will not endanger the health of remaining oaks on the property, result in soil erosion through diversion or increased flow of surface waters.</li> <li>Removal of ordinance trees, pruning structural roots (roots greater than 1 inch in diameter), or trimming more than 25 percent of a tree's canopy, and/or removal of more than 50 percent of the root zone shall be avoided to the extent feasible.</li> <li>Root or crown pruning activities shall be as minimal as feasible and monitored by a Certified Arborist; pruning shall be done using International Society of Arboriculture (ISA) standards. Any roots larger than 1 inch in diameter that must be pruned shall be cut flush immediately with proper equipment.</li> <li>Excavation and grading shall, to the extent possible, avoid cutting or damaging roots. As recommended by</li> </ul>					



No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>the arborist, hand tools shall be employed when excavating in the root zone. Hand tools or an air spade shall be employed to dig in the protected zone of all protected native trees in the unincorporated areas. Roots of 1-inch diameter or larger shall be preserved. To the extent feasible, construction shall be threaded through the roots or the roots shall be pushed aside. Roots shall be covered with a moist cloth or burlap while they are exposed.</p> <ul style="list-style-type: none"> <li>• Root pruning shall be conducted as far from the trunk as possible.</li> <li>• Parking equipment, staging construction materials, and excessive foot traffic within the protected zone of the affected trees (defined in the unincorporated SMM Coastal Zone as the greater distance between 5 feet from the dripline or 15 feet from the trunk) shall be avoided, as feasible, to prevent soil compaction or damage to roots. As applicable, protected trees near construction shall be protected by substantial (chain-link), temporary, protective fencing.</li> <li>• Creating holes around tree roots deeper than 3 inches shall be avoided, as feasible. When excavations are unavoidable, backfill shall not use subsurface or clay soils; fill shall be with well-draining soils high in organic matter that do not exceed the surrounding soil surface level.</li> <li>• Altering the grade within the protected zone shall be avoided to prevent</li> </ul>					

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>imminent and long-term damage to roots. Any grade changes shall occur beyond the protected zone.</p> <ul style="list-style-type: none"> <li>The Los Angeles County SMM Coastal Zone has no in lieu fee for protected tree impacts. Mitigation trees, where applicable, shall be planted in an area legally protected from development and in the same watershed as the impact. Mitigation trees, as applicable, shall be planted on conserved land under maintenance of an organization with experience in managing land for conservation and preservation.</li> </ul>					
<b>CUL-1</b>	Implementation of the project could result in disturbance of unknown cultural resources.	<p><b>Worker Education Awareness Program.</b> The WEAP shall be prepared and presented to construction workers prior to the start of the project. The WEAP materials shall communicate the cultural significance of the project area to local Tribes and establish procedures to temporarily halt or redirect work in the event that cultural resources are found during ground disturbing activities. The training shall include the types of potential discoveries (e.g., artifact types, features) and proper procedures for notification in the event of an unanticipated discovery. A qualified archaeologist approved by the JPA shall be identified as the contact person in the event of an unanticipated discovery.</p> <p>If, during excavation or earth moving activities within the project site, the construction contractor identifies potential historic or archaeological resources, all excavation and/or grading within 60 feet of the discovery area shall be halted immediately and work redirected until a qualified</p>	Prior to the start of construction	JPA If any cultural resources are discovered, coordination with the Fernandeño Tataviam Band of Mission Indians will be conducted.			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>archaeologist meeting the Secretary of Interior standards has evaluated the nature and significance of the find. The Fernandeño Tataviam Band of Mission Indians (FTBMI) shall be contacted to consult if any such find occurs.</p> <p>The archaeologist shall determine whether the resource is a "unique archaeological resource" pursuant to Section 21083.2(g) of the California Public Resources Code (PRC) or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 California CCR). If the archaeological resource is determined to be a "unique archaeological resource" or a "historical resource", the archaeologist shall formulate a mitigation plan in consultation with JPA that satisfies the requirements of the above-listed Sections and that reduces the adverse effects of the project to a less than significant level. The archaeologist shall prepare a report of the results of any study prepared as part of a testing or mitigation plan, following accepted professional practice. If the archaeologist determines that the archaeological resource is not a "unique archaeological resource" or "historical resource", s/he need only record the site and submit the recordation form to the South Central Coastal Information Center (SCCIC).</p> <p>The archaeologist shall complete all relevant California State Department of Parks and Recreation (DPR) 523 Series forms to document the find and submit this documentation to the JPA, Lead Agency, and FTBMI. If the Native American cultural resource is determined to be significant, as defined by consulting Tribes, a Native American archaeological monitor</p>					

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>procured by the FTBMI shall be present for all ground disturbing activities that occur within the proposed project area.</p> <ul style="list-style-type: none"> <li>The archaeologist and Tribal monitor shall have the authority to request ground disturbing activities to cease within the area of a discovery to assess potential finds in real time.</li> <li>The JPA shall, in good faith, consult with FTBMI on the disposition and treatment of any artifacts or other cultural materials encountered during the project.</li> </ul>					
<b>CUL-2</b>	Although unlikely, implementation of the project could result in disturbance of previously unidentified human remains.	<p><b>Treatment of Previously Unidentified Human Remains.</b> In the unexpected event that human remains or funerary objects are encountered during excavation activities, all work shall halt within a 60-foot buffer of the find and the County Coroner shall be notified (California Public Resources Code §5097.98). The Coroner shall determine whether the remains are of forensic interest. If the Coroner, with the aid of the project Archaeologist, determines that the remains are prehistoric, s/he will contact the Native American Heritage Commission (NAHC), the Fernandeño Tataviam Band of Mission Indians, and consulting tribes. The NAHC will be responsible for designating the Most Likely Descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code. The MLD shall make his/her recommendation within 48 hours of being granted access to the site. The recommendation of the MLD shall be followed if feasible and may include scientific removal and non-destructive analysis. If the landowner rejects the recommendations of the</p>	During construction	JPA If resources are discovered, coordination with the Fernandeño Tataviam Band of Mission Indians will be conducted.			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		MLD, the landowner shall rebury the remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (California Public Resources Code §5097.98).					
NOI-1		<p><b>Noise Mitigation Plan.</b> Prior to the start of construction, the construction contractor shall develop a noise mitigation plan based on an updated estimate of construction equipment and schedule. The objective of the mitigation plan shall be to reduce interior noise levels at sensitive receptors to within acceptable limits as outlined in the County of Los Angeles municipal code. The mitigation plans shall detail measures to limit construction noise, including:</p> <ul style="list-style-type: none"> <li>• Equip all construction equipment, with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards.</li> <li>• If construction activity is proposed between 7 p.m. and 7 a.m., the JPA shall obtain express written permission from the County of Los Angeles.</li> </ul> <p>During nighttime construction (7 p.m. to 7 a.m.) (if permissible by the County of Los Angeles) the construction contractor shall install temporary sound walls or acoustic blankets with a height as required to reduce construction noise.</p>	<p>Prior to the start of construction to develop plan</p> <p>During construction for implementation of plan</p>	JPA			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
TR-1		<p><b>Construction Traffic Management Plan.</b> The contractor shall prepare and implement a Construction Traffic Management Plan. Specifically, the intent of this plan is to minimize disturbance to the neighborhood, identify those activities to be monitored, and make the contractor responsible for failure to adhere to the requirements. The elements of the Construction Management Plan shall include (but not be limited to) the following:</p> <ul style="list-style-type: none"> <li>• Require contractor to obtain all necessary hauling, traffic control and/or transportation permits.</li> <li>• Require contractor to maintain a 24-hour hotline for complaints and questions from the public.</li> <li>• Designate a construction haul route, and require any large vehicles not classified as passenger vehicles or light trucks to use the haul route.</li> <li>• Allow hauling and deliveries between 8 a.m. and 4 p.m. on weekdays only and no County holidays, unless otherwise authorized.</li> <li>• Submit a traffic control plan for temporary lane closures to be approved by Los Angeles County.</li> <li>• Require removal of any delivered materials and delivery trucks from streets immediately upon delivery.</li> <li>• Require notification to residential properties located within 300 feet of any construction activities that occur outside of normal working hours and that generate significant or sustained noise.</li> <li>• Require notification to the Malibu Unified School District, Calabasas Unified</li> </ul>	<p>Prior to the start of construction to develop plan</p> <p>During construction for implementation of plan</p>	<p>JPA</p> <p>Plan to be reviewed by Los Angeles County</p> <p>Plan to be reviewed by Caltrans</p>			

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency (Reviews)	Verification of Compliance		
					Initials	Date	Remarks
		<p>School District, local police, and fire departments prior to start of construction, prior to any lane closures, and prior to any hauling or deliveries outside of designated hours.</p> <ul style="list-style-type: none"> <li>• Prohibit staging or queuing of trucks at the project site. At no time shall construction vehicles, materials or equipment obstruct residential driveways.</li> <li>• Designate an area for remote parking and staging at Tapia WRF.</li> </ul>					

March 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

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**Subject : Rancho Solar Generation Project Phase II: Mitigated Negative Declaration**

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**SUMMARY:**

On March 5, 2018, the JPA Board accepted a proposal from Terra Verde Renewable Partners, LLC to prepare a Request for Proposals and solicit proposals for a four megawatt (MW) solar generation facility in the North Canyon of Rancho Las Virgenes Farm through a Power Purchase Agreement (PPA) and utilizing the RES-BCT tariff. The Board also appropriated funds to solicit proposals for an environmental review under CEQA and to conduct required public outreach for the proposed project. Envicom was selected to perform the CEQA study. The Mitigated Negative Declaration was completed in January 2019.

A total of 645 Notices of Intent to Adopt a Mitigated Negative Declaration were sent to public agencies, homeowners associations and residents of the Las Virgenes Valley for the 30-day comment period. A second notice was sent to all homeowners in the Las Virgenes Valley because the original hearing date of December 3, 2018 was rescheduled to March 4, 2019 due to the Woolsey Fire. No significant comments or opposition was received from the notifications. As a result, the Mitigated Negative Declaration, which is available on-line at [www.lvmwd.com/SolarPanelProject](http://www.lvmwd.com/SolarPanelProject), is ready for adoption by the Board.

**RECOMMENDATION(S):**

Adopt the Mitigated Negative Declaration and authorize the Administering Agent/General Manager to file a Notice of Determination with the County Clerk for the Rancho Solar Generation Project Phase II.

**FISCAL IMPACT:**

No

**ITEM BUDGETED:**

Yes

**FINANCIAL IMPACT:**

There is no financial impact associated with this action.



## **DISCUSSION:**

The CEQA Initial Study/Environmental Checklist indicated that the proposed project would not have significant adverse effects on the environment. However, some potentially significant impacts were identified, such as those to aesthetics, biological resources, cultural and tribal cultural resources and due to noise. Mitigation measures have been incorporated into the project to ensure that the potential impacts remain to "less than significant."

One phone call from the public was received during the 30-day comment period to inquire about the economics of the proposed project. A second call was received from a homeowner who lives across from the project site, asking about a proposed mitigation measure involving planting additional shrubs to screen the project from the housing tract. Both callers were satisfied with the answers provided by staff.

Staff also met with representatives of the City of Calabasas to provide them with updated information on the proposed project and the proposed Board action on March 4, 2019. City of Calabasas staff expressed no concerns with the proposed project. At the meeting, staff will provide the Board with a verbal update on any additional comments that may be received after publication of the agenda.

Attached for reference are copies of the public notices that were distributed for the Mitigated Negative Declaration, a map of the notice distribution area and the proposed Notice of Determination.

Prepared by: John Zhao, P.E., Principal Engineer

## **ATTACHMENTS:**

Notice of Intent to Adopt a Mitigated Negative Declaration - October 2018

Notice of Intent to Adopt a Mitigated Negative Declaration - February 2019

Map of Notice Distribution Area

Proposed Notice of Determination



**Las Virgenes – Triunfo Joint Powers Authority**  
4232 Las Virgenes Road, Calabasas, CA 91302  
818.251.2100



**Las Virgenes-Triunfo Joint Powers Authority  
Notice of Intent to Adopt a Mitigated Negative Declaration**

Date: October 11, 2018

To: Responsible Agencies/  
Trustee Agencies/  
State Clearinghouse  
Interested Parties/HOA and homeowners  
Los Angeles County Clerk  
(please post for 30 days)

From: Las Virgenes-Triunfo Joint Powers Authority  
4232 Las Virgenes Rd.  
Calabasas, CA 91302

Notice is hereby given that the Las Virgenes-Triunfo Joint Powers Authority (JPA) (a Joint Powers Authority of the Las Virgenes Municipal Water District (LVMWD) and the Triunfo Sanitation District), will consider adoption of a Mitigated Negative Declaration (MND) pursuant to the California Environmental Quality Act (CEQA) for the project identified below. The JPA, as lead agency, requests comments regarding the environmental evaluation of the project by Thursday, November 15, 2018. The JPA will contemplate adoption of the MND after considering the initial study, supporting documents, studies, and comments received within the comment period herein specified.

**Project**

JPA Solar Generation Project Phase II – Clean Energy to Power Water and Wastewater Utilities

**Location**

The project site is approximately 1.15 miles south of U.S. 101 along the east side of Las Virgenes Road within the City of Calabasas. The site lies immediately south of the Calabasas Bark Park located at 4232 Las Virgenes Road and east of Las Virgenes Road, along a segment between the intersection of Meadow Creek Lane and Arthur E. Wright Middle School, as shown in the enclosed figure.

**Project Description**

The JPA Solar Generation Project Phase II (“project”), consists of the construction and operation of a four to five megawatt (4-5 MW) solar electricity generation facility with ground-mounted photovoltaic solar panels on mechanical sun-tracking rack systems and associated electrical equipment on approximately 20 acres in the northeast portion of the North Canyon portion of the Rancho Las Virgenes property, an approximately 150-acre property owned by the JPA. The JPA previously used the project site as a spray field for disposal of surplus recycled water during low demand seasons but no longer needs the site for that purpose.

**Glen Peterson**

Chair, Las Virgenes-Triunfo  
Joint Powers Authority  
President, Las Virgenes Municipal Water District  
Board of Directors

**Michael Paule**

Vice Chair, Las Virgenes-Triunfo  
Joint Powers Authority  
Chair, Triunfo Sanitation District  
Board of Directors

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**Applicant**

Las Virgenes-Triunfo JPA

**Comment Period**

The MND review period for State Agencies is 30 days pursuant to California Public Resources Code Section 21091(b). The public review period shall commence on October 15, 2018, and end on November 15, 2018.

**Public Hearing**

A public hearing for the Las Virgenes-Triunfo JPA Board of Directors to consider of the project and environmental review document is tentatively scheduled for Monday December 3, 2018, at 5:00 p.m. This meeting date may be subject to change to a future date, please refer to the JPA website (<https://www.lvmwd.com/about-us/joint-powers-authority/jpa-meeting-agendas-minutes>) for the most current public hearing information. If confirmed, the December 3<sup>rd</sup> hearing would be held at the Las Virgenes Municipal Water District Headquarters, 4232 Las Virgenes Rd., Calabasas, CA.

**Location of Documents Available for Public Review**

An electronic copy of the MND and supporting documents can be downloaded from the JPA (<https://www.lvmwd.com/about-us/management/facilities-and-operations/technical-services-planning-engineering>). The MND and all supporting documents are also available for public review at LVMWD Headquarters, 4232 Las Virgenes Rd., Calabasas, CA (Hours M-F, 8:00 AM – 5:00 PM).

To review a paper copy of the MND, please contact Mr. John Zhao at [jzhao@lvmwd.com](mailto:jzhao@lvmwd.com), or by phone at (818) 251-2230.

**Cortese List Status**

The project site is not listed on the California Department of Toxic Substances Control Envirostor database of hazardous waste sites (California Government Code Section 65962.5).

**Description of Significant Effects on the Environment**

The JPA finds the proposed project would not have a significant adverse effect on the environment based on the Environmental Checklist and Environmental Evaluation Discussion of the Checklist Questions in the MND. For potentially significant effects, mitigation measures have been incorporated into the project to ensure these impacts remain at less than significant levels. An MND is therefore proposed to satisfy the requirements of CEQA (PRC 21000 et. seq. 14 Cal. Code Resolution 15000 et. seq.). Therefore, the JPA intends to adopt an MND for the project.

Written questions or concerns regarding this project may be forwarded to the LVMWD, 4232 Las Virgenes Rd., Calabasas, CA, or to Mr. John Zhao at [jzhao@lvmwd.com](mailto:jzhao@lvmwd.com) or by phone at (818) 251-2230.

Signed:



John Zhao, P.E  
Principal Engineer

Attachments: Project Map



**Las Virgenes – Triunfo Joint Powers Authority**  
4232 Las Virgenes Road, Calabasas, CA 91302  
818.251.2100



Dear LVMWD Valued Customer,

**PROJECT NOTICE  
SOLAR GENERATION PROJECT PHASE II**

The Las Virgenes – Triunfo Joint Powers Authority (JPA) Solar Generation Project Phase II will be located on 20-acres of land in western Los Angeles County within the City of Calabasas south of the Calabasas Bark Park located at 4232 Las Virgenes Road. The project consists of the construction and operation of ground-mounted solar panels using an automated sun-tracking system and the corresponding electrical equipment such as transformers and underground electrical transmission lines. A map showing the location of the project is on the reverse side of this notice.

A previous notice was mailed to residents and businesses within close proximity or view of the project in October of 2018. The JPA Board is scheduled to adopt the Mitigated Negative Declaration (MND) for the project and to approve an agreement for the construction and operation of the facility at the following time and location:

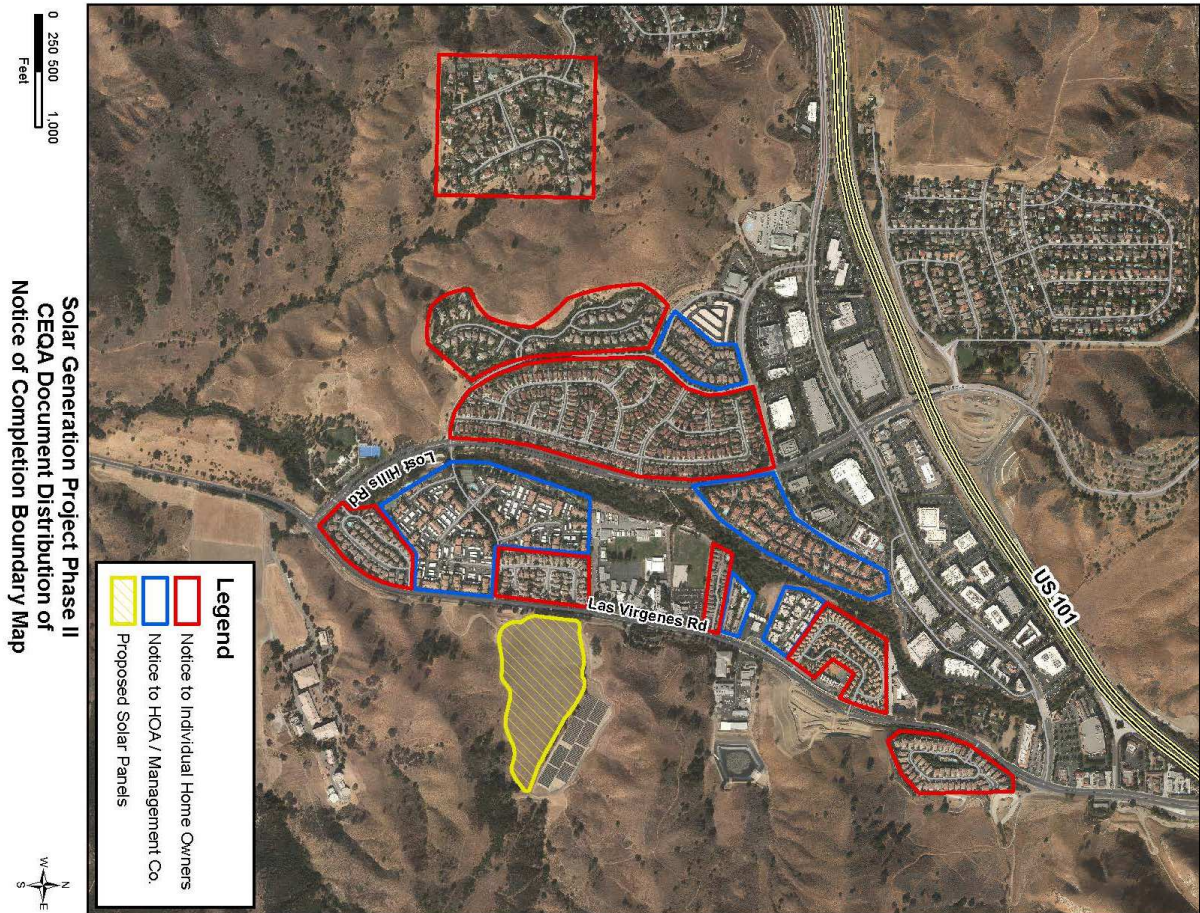
**Monday, March 4, 2019 - 5:00 p.m.**  
**4232 Las Virgenes Road**  
**Calabasas, CA 91302**

If you wish to learn more about the project or have questions or concerns prior to the meeting, you are encouraged to review the Initial Study/MND by visiting [LVMWD.com/SolarPanelProject](http://LVMWD.com/SolarPanelProject) or contact John Zhao, Principal Engineer at 818-251-2230.

**See map and frequently asked questions on the back.**

**Janna Orkney**  
Chair, Las Virgenes-Triunfo  
Joint Powers Authority  
Chair, Triunfo Sanitation District  
Board of Directors

**Jay Lewitt**  
Vice Chair, Las Virgenes-Triunfo  
Joint Powers Authority  
President, Las Virgenes Municipal Water District  
Board of Directors



### Frequently Asked Questions:

1. *Will the project impact any views?*

Due to the site's limited visibility, which is concealed by the terrain or screened by landscaping, the project will not substantially alter the visual character or quality of views from public vantage points.

2. *Will the panels produce glare?*

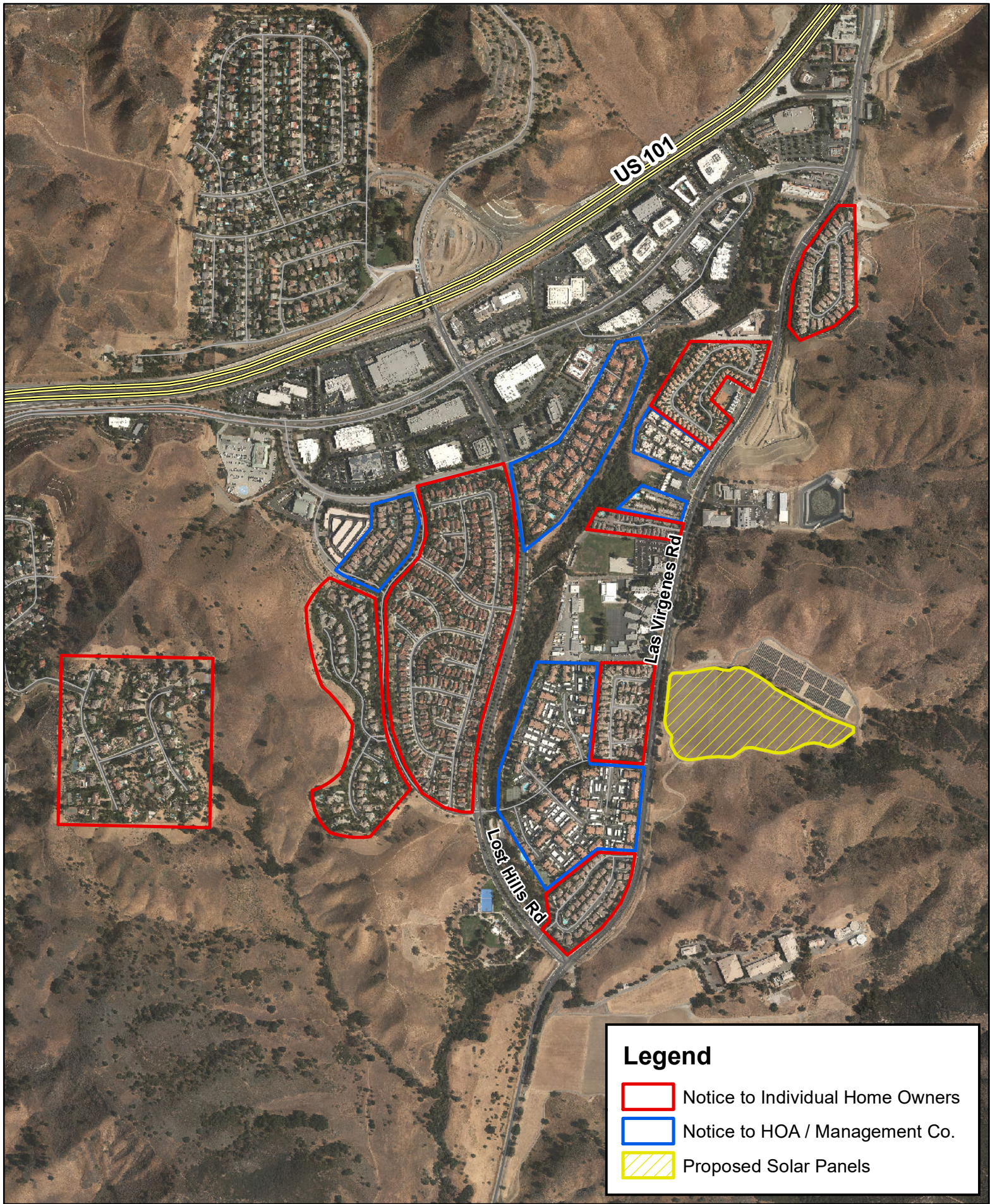
No. The panels will be a similar design to the existing non-glare panels already in place adjacent to this project.

3. *How will the project benefit the community or me?*




The project will reduce electrical costs by an estimated \$10.3 million over a 25-year period for the operation of our wastewater facilities such as the Tapia Water Reclamation Facility. These savings will be passed on to our valued customers. The project will also help us do our part in reducing greenhouse gas emissions – the equivalent of taking 1,200 cars off the road or planting 6,600 acres of trees to sequester the carbon dioxide from an equivalent-sized coal or natural gas plant.

4. *When will the project be under construction and completed?*

Construction is tentatively scheduled to begin in the early summer of 2019 and is set to be completed by the end of the year.



**Legend**

-  Notice to Individual Home Owners
-  Notice to HOA / Management Co.
-  Proposed Solar Panels

0 250 500 1,000  
Feet

**Solar Generation Project Phase II  
CEQA Document Distribution of  
Notice of Completion Boundary Map**



# Notice of Determination

Appendix D

**To:**

Office of Planning and Research  
U.S. Mail: \_\_\_\_\_ Street Address: \_\_\_\_\_  
P.O. Box 3044 1400 Tenth St., Rm 113  
Sacramento, CA 95812-3044 Sacramento, CA 95814

County Clerk  
County of: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_

**From:**

Public Agency: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_ Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_

Lead Agency (if different from above): \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_ Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_

**SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.**

State Clearinghouse Number (if submitted to State Clearinghouse): \_\_\_\_\_

Project Title: \_\_\_\_\_

Project Applicant: \_\_\_\_\_

Project Location (include county): \_\_\_\_\_

Project Description:

This is to advise that the \_\_\_\_\_ has approved the above  
( Lead Agency or  Responsible Agency)

described project on \_\_\_\_\_ and has made the following determinations regarding the above  
(date)  
described project.

1. The project [ will  will not] have a significant effect on the environment.
2.  An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.  
 A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [ were  were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [ was  was not] adopted for this project.
5. A statement of Overriding Considerations [ was  was not] adopted for this project.
6. Findings [ were  were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:

\_\_\_\_\_  
Signature (Public Agency): \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_ Date Received for filing at OPR: \_\_\_\_\_



## Memorandum

To: Las Virgenes-Triunfo Joint Powers Authority  
From: Syrus Devers, Best Best & Krieger  
Date: February 27, 2019  
Re: Monthly State Political Report

### Legislative Report

#### *In General*

The deadline to introduce bills has passed and it's going to be a busy year in water. Total bills introduced tracks most years at just under 2,500. No significant legislation related to water policy has been set for a hearing as of yet.

The Budget Subcommittees, however, have started setting key budget items for hearing. Most importantly, the SWRCB and the DWR budgets are up on March 6th and 7th in the Assembly and Senate, respectively. The trailer bill on the water tax will not be ultimately determined at that time, but the SWRCB's comments and the member's questions will be of obvious interest to all parties.

#### *Tax on Water*

The Assembly Water, Parks & Wildlife Committee, the Environmental Safety and Toxic Substances Committee, and the Assembly Budget Subcommittee #3 held a joint informational hearing on February 6th on "Implementing Safe Drinking Water". The lead witness was the recently appointed head of the Natural Resources Agency Wade Crowfoot. The list of speakers was weighted in favor of the water tax, but little if any new information was presented by proponents. Cindy Paulson from the California Urban Water Agencies and EMWD's Paul Jones closed the panel discussions with well-informed presentations on the scope of the problem and details about what solutions need to look like. As is usually the case, both the committee room and public gallery section were overcrowded and the line of witnesses stretched out of the room, around two corners, and down a long hall.

As this was only an informational hearing, the real action was elsewhere. The administration, as explained below, has launched a public relations campaign while the opponents have been focused



on office meetings. BB&K gave testimony at the hearing about the information gathered by Las Virgenes over the interim recess concerning the administrative costs of implementing a water tax.

As a counter to the water tax, ACWA and CMUA launched SB 414 (Caballero) and the effort so far has been impressive. This bill would create a trust fund to provide a permanent source of funding to bring failing water district up to current drinking water standards. ACWA is coordinating the lobbying effort to make sure make no offices get overlooked.

### **Administrative Report**

The big news is the Governor's State of the State address. Nothing he said was new, but the fact that he said it in his first address to the Legislature makes it news. The two most relevant items were his support for the water tax, which was included in his proposed budget released last month, and his opposition to the two-tunnel WaterFix proposal in favor of a single tunnel, which he publically stated before he was elected. Perhaps the only new information was his acknowledgment that his support for a single tunnel was based on the political perception of MWD, whereas in the past he has been silent on his reasoning.

In one sense nothing has changed; the battle lines drawn months ago have not moved and both sides have been actively pursuing their agendas. In another sense there has been a change in perception, which matters in politics. Newsom has made clear he's not looking for any quarter and the battle now becomes very public. Regarding the WaterFix he holds all the cards. It would take continued attention and resources to bring the twin tunnels to completion, so he wins simply by withholding his support, but he went well beyond that.

Newsom also replaced Felicia Marcus as Chair of SWRCB with Joaquin Esquivel, and appointed Laurel Firestone to her seat. Esquivel was the board member who appeared in support of the water tax at an informational hearing last year, and Firestone was, of course, the lead proponent of the water tax. With these two moves, Newsom has shifted the SWRCB's focus to the water tax and away from the WaterFix.

# Las Virgenes-Triunfo Joint Powers Authority

Prepared by Best Best & Krieger  
February 26, 2019

## A. Priority Support/Oppose

Measure	Author	Topic	Status	Location	Brief Summary	Position	Priority	Notes 1
<a href="#">AB 134</a>	<a href="#">Bloom D</a>	Safe, clean, affordable, and accessible drinking water.	1/7/2019-Resolved at first time.	12/5/2018-A. PRINT	Would state findings and declarations relating to the intent of the Legislature to adopt policies to ensure that every Californian has the right to safe, clean, affordable, and accessible drinking water.	Out for Analysis	A. Priority Support/Oppose	
<a href="#">AB 217</a>	<a href="#">Garcia, Eduardo D</a>	Safe and Affordable Drinking Water Fund.	2/4/2019-Resolved to Com. on E.S. & T.M.	2/4/2019-A. E.S. & T.M.	Would establish the Safe and Affordable Drinking Water Fund in the State Treasury and would provide that moneys in the fund are available, upon appropriation by the Legislature, to the board to provide a stable source of funding to secure access to safe drinking water for all Californians, while also ensuring the long-term sustainability of drinking water service and infrastructure.	Out for Analysis	A. Priority Support/Oppose	
<a href="#">AB 223</a>	<a href="#">Stone, Mark D</a>	California Safe Drinking Water Act: microplastics.	2/25/2019-In committee: Set, first hearing. Hearing canceled at the request of author.	2/4/2019-A. E.S. & T.M.	The California Safe Drinking Water Act requires the State Water Resources Control Board to administer provisions relating to the regulation of drinking water to protect public health. Current law requires the state board, on or before July 1, 2020, to adopt a definition of microplastics in drinking water and, on or before July 1, 2021, to adopt a standard methodology to be used in the testing of drinking water for microplastics and requirements for 4 years of testing and reporting of microplastics in drinking water, including public disclosure of those results. This bill would require the state board, to the extent possible, and where feasible and cost effective, to work with the State Department of Public Health in complying with those requirements.	Out for Analysis	A. Priority Support/Oppose	
<a href="#">AB 292</a>	<a href="#">Quirk D</a>	Recycled water: raw water and groundwater	2/7/2019-Resolved to Coms. on	2/7/2019-A. E.S. & T.M.	Current law requires the State Water Resources Control Board, on or before December 31, 2023, to adopt uniform water recycling criteria for direct	Support	A. Priority Support/Oppose	A support letter is pending

			augmentation.	E.S. & T.M. and W, P, & W.		potable reuse through raw water augmentation, as specified. This bill would eliminate the definition of "direct potable reuse" and instead would substitute the term "groundwater augmentation" for "indirect potable reuse for groundwater recharge" in these definitions. The bill would require, on or before December 31, 2023, the state board to adopt uniform water recycling criteria for raw water augmentation.				
<a href="#">AB 533</a>	<a href="#">Holden D</a>	Income taxes: exclusion: water conservation or efficiency programs: water runoff management improvement program.	2/21/2019-R ferred to Com. on REV. & TAX.	2/21/2019-R A. REV. & TAX		The Personal Income Tax Law and the Corporation Tax Law, in conformity with federal income tax law, generally defines "gross income" as income from whatever source derived, except as specifically excluded, and provides various exclusions from gross income. This bill would provide an exclusion from gross income for any amount received as a rebate, voucher, or other financial incentive issued by a local water agency or supplier for any water conservation or efficiency program or water runoff management improvement program, as provided.	Out for Analysis	A. Priority Support/Oppose		
<a href="#">AB 756</a>	<a href="#">Garcia, Cristina D</a>	Public water systems: perfluorooctanoic acid and perfluorooctane sulfonate.	2/20/2019-F rom printer. May be heard in committee March 22.	2/19/2019-A. PRINT		Would require a public water system to monitor for perfluorooctanoic acid and perfluorooctane sulfonate.	Out for Analysis	A. Priority Support/Oppose		
<a href="#">AB 1220</a>	<a href="#">Garcia, Cristina D</a>	Metropolitan water districts.	2/22/2019-F rom printer. May be heard in committee March 24.	2/21/2019-A. PRINT		Would authorize each member public agency to designate and appoint additional representatives pursuant to the greater of that allowed under either the assessed valuation calculation or, on and after January 1, 2021, for each full 5% of the population within the entire district that is within the member public agency. The bill would require a district to conduct the analysis of additional directors using the Department of Finance population data and any other pertinent population data and would require the number of population-based directors authorized to remain fixed until it is recalculated, every 10 years in the year immediately following each United States census.	Out for Analysis	A. Priority Support/Oppose		
<a href="#">AB 1180</a>	<a href="#">Friedman</a>	Water:recycled	May be			Existing law requires, on or before January 1,	Support	A. Priority		A support letter

				heard in committee March 24.				2020, the state board to adopt standards for backflow protection and cross-connection control through the adoption of a policy handbook, as specified.  This bill would require that handbook to include provisions for the use of a swivel or changeover device to supply potable water to a dual-plumbed system during an interruption in recycled water service.				is pending
<a href="#">AB 1672</a>	<a href="#">Bloom D</a>	Produce labeling:flushable products	May be heard in committee March 25					This bill would express the intent of the Legislature to enact legislation to prohibit the sale or advertisement of any nonwoven disposable product labeled as "flushable" or "sewer and septic safe" if that product fails to meet specified performance standards.	Support	A. Priority Support/Oppose		A support Letter is pending
<a href="#">SB 134</a>	<a href="#">Hertzberg D</a>	Water conservation: water loss performance standards: enforcement.	1/24/2019-R referred to Com. on N.R. & W.					Current law authorizes the State Water Resources Control Board to issue information orders, written notices, and conservation orders to an urban retail water supplier that does not meet its urban water use objective, and existing law authorizes the board to impose civil liability for a violation of an order or regulation issued pursuant to these provisions, as specified. Current law requires the board, no earlier than January 1, 2019, and no later than July 1, 2020, to adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses. This bill would prohibit the board from imposing liability for a violation of the performance standards for the volume of water losses except as part of the enforcement of an urban water use objective.	Out for Analysis	A. Priority Support/Oppose		
<a href="#">SB 200</a>	<a href="#">Monning D</a>	Safe and Affordable Drinking Water Fund.	2/13/2019-R referred to Coms. on EQ, and N.R. & W.					Would establish the Safe and Affordable Drinking Water Fund in the State Treasury and would provide that moneys in the fund are available, upon appropriation by the Legislature, to the State Water Resources Control Board to provide a stable source of funding to secure access to safe drinking water for all Californians, while also ensuring the long-term sustainability of drinking water service and infrastructure.	Out for Analysis	A. Priority Support/Oppose		

<a href="#">SB 204</a>	<a href="#">Dodd D</a>	State Water Project: contracts.	2/13/2019-R referred to Com. on N.R. & W.	2/13/2019-S . N.R. & W.	Would require the Department of Water Resources to provide at least 10 days' notice to the Joint Legislative Budget Committee and relevant policy and fiscal committees of the Legislature before holding public sessions to negotiate any potential amendment of a long-term water supply contract that is of projectwide significance with substantially similar terms intended to be offered to all contractors, or that would permanently transfer a contractual water amount between contractors.	Oppose	A. Priority Support/Oppose	Included on oppose letter with MWD and member agencies
<a href="#">SB 205</a>	<a href="#">Hertzberg D</a>	Business licenses: stormwater discharge compliance.	2/13/2019-R referred to Coms. on GOV. & F. and EQ.	2/13/2019-S . GOV. & F.	Would require, when applying to a city or a county for an initial business license or business license renewal, a person who conducts a business operation that is a regulated industry to demonstrate compliance with the NPDES permit program by providing specified information, under penalty of perjury, on the application, including, among other things, the Standard Industrial Classification code for the business. This bill would apply to all applications for initial business licenses and business license renewals submitted on and after January 1, 2020.	Out for Analysis	A. Priority Support/Oppose	
<a href="#">SB 332</a>	<a href="#">Hertzberg D</a>	Wastewater treatment:recycled water	To Com. on RLS. for assignment. To print.		This bill would declare, except in compliance with the bill's provisions, that the discharge of treated wastewater from ocean outfalls is a waste and unreasonable use of water.	Out for Analysis	A. Priority Support/Oppose	
<a href="#">SB 414</a>	<a href="#">Caballero D</a>	Small System Water Authority Act of 2019.	2/21/2019-F from printer. May be acted upon on or after March 23.	2/20/2019-S . RLS.	Would create the Small System Water Authority Act of 2019 and state legislative findings and declarations relating to authorizing the creation of small system water authorities that will have powers to absorb, improve, and competently operate noncompliant public water systems. The bill, no later than March 1, 2020, would require the state board to provide written notice to cure to all public agencies, private water companies, or mutual water companies that operate a public water system that has either less than 3,000 service connections or that serves less than 10,000 people, and are not in compliance, for the period from July 1, 2018, through December 31, 2019, with one or more state or federal primary drinking water standard maximum contaminant levels, as	Out for Analysis	A. Priority Support/Oppose	

<a href="#">SB 669</a>	<a href="#">Caballero D</a>	Water quality: Safe Drinking Water Fund.	2/25/2019-F from printer. May be acted upon on or after March 27. Read first time.	2/22/2019-S . RLS.	<i>Would establish the Safe Drinking Water Fund in the State Treasury and would provide that moneys in the fund are continuously appropriated to the State Water Resources Control Board. The bill would require the state board to administer the fund to assist community water systems in disadvantaged communities that are chronically noncompliant relative to the federal and state drinking water standards and do not have the financial capacity to pay for operation and maintenance costs to comply with those standards, as specified.</i>	Support	A. Priority Support/Oppose	A support letter is pending
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## B. Watch

Measure	Author	Topic	Status	Location	Brief Summary	Position	Priority	Notes 1
<a href="#">AB 68</a>	<a href="#">Ting D</a>	Land use: accessory dwelling units	Referred to Coms. on H. & C.D. and L. GOV.		Makes changes to existing laws intended to facilitate the development of accessory dwelling units – the bill as written could result in the inability for utilities to collect certain fees	Watch	B. Watch	
<a href="#">AB 129</a>	<a href="#">Bloom D</a>	Waste management: plastic microfiber.	1/7/2019-Read first time.	12/4/2018- A. PRINT	Would declare the intent of the Legislature to, among other things, enact legislation to recognize the emerging threat that microfibers pose to the environment and water quality and would make related findings and declarations.	Out for Analysis	B. Watch	
<a href="#">AB 441</a>	<a href="#">Eggman D</a>	Water: underground storage.	2/21/2019-Deferred to Com. on W, P., & W.	2/21/2019- A. W., P. & W.	Under current law, the right to water or to the use of water is limited to that amount of water that may be reasonably required for the beneficial use to be served. Current law provides for the reversion of water rights to which a person is entitled when the person fails to beneficially use the water for a period of 5 years. Current law declares that the storing of water underground, and related diversions for that purpose, constitute a beneficial use of water if the stored water is thereafter applied to the beneficial purposes for which the appropriation for storage was made. This bill would revise the above declaration to additionally provide that certain uses of stored water while underground constitute beneficial use.	Watch	B. Watch	

<a href="#">AB 636</a>	<a href="#">Gray D</a>	State Water Resources Control Board: water quality objectives.	2/19/2019-F from printer. May be heard in committee March 21.	2/15/2019-A. PRINT	2/15/2019- A. PRINT Would prohibit the State Water Resources Control Board from implementing water quality objectives for which the state board makes a certain finding relating to environmental quality until it has submitted the water quality objectives and a statement of that finding to the appropriate policy committees of the Legislature and each committee has held a hearing on these matters.	Watch	B. Watch	
<a href="#">AB 638</a>	<a href="#">Gray D</a>	Department of Water Resources: water storage capacity.	2/25/2019-R referred to Com. on W., P., & W.	2/25/2019-A. W., P. & W.	2/25/2019- A. W., P. & W. Current law requires the Department of Water Resources to update every 5 years the plan for the orderly and coordinated control, protection, conservation, development, and use of the water resources of the state, which is known as The California Water Plan. This bill would require the department, on or before January 1, 2021, with updates every 2 years thereafter, to identify the statewide water storage capacity, the adverse impacts to the capacity from the effects of climate change, and the mitigation strategies for anticipated adverse impacts.	Watch	B. Watch	
<a href="#">AB 658</a>	<a href="#">Arambula D</a>	Water rights: water management.	2/25/2019-R referred to Com. on W., P., & W.	2/25/2019-A. W., P. & W.	2/25/2019- A. W., P. & W. Would authorize a groundwater sustainability agency or local agency to apply for, and the State Water Resources Control Board to issue, a conditional temporary permit for diversion of surface water to underground storage for beneficial use that advances the sustainability goal of a groundwater basin, as specified.	Watch	B. Watch	
<a href="#">AB 841</a>	<a href="#">Ting D</a>	Drinking water: contaminants: perfluoroalkyl and polyfluoroalkyl substances.	2/21/2019-F from printer. May be heard in committee March 23.	2/20/2019-A. PRINT	2/20/2019- A. PRINT Would require the Office of Environmental Health Hazard Assessment to adopt and complete a work plan within prescribed timeframes to assess which substances in the class of perfluoroalkyl and polyfluoroalkyl substances should be tested as a risk to human health. The bill would require the office, as part of those assessments, to determine which of the substances are appropriate candidates for notification levels to be adopted by the State Water Resources Control Board.	Watch	B. Watch	
<a href="#">AB 955</a>	<a href="#">Gipson D</a>	Water quality.	2/22/2019-F from printer. May be heard in committee	2/21/2019-A. PRINT	2/21/2019- A. PRINT The Porter-Cologne Water Quality Control Act establishes a statewide program for the control of the quality of all the waters in the state and makes related legislative findings and declarations. This bill would make nonsubstantive changes to the	Watch	B. Watch	

<a href="#">AB 1204</a>	<a href="#">Rubio, Blanca D</a>	Public water systems: primary drinking water standards: implementation date.	March 24. 2/22/2019-From printer. May be heard in committee March 24.	2/21/2019-A. PRINT	Would require the adoption or amendment of a primary drinking water standard for a contaminant in drinking water not regulated by a federal primary drinking water standard or that is more stringent than a federal primary drinking water standard to take effect 3 years after the date on which the state board adopts or amends the primary drinking water standard. The bill would authorize the state board to delay the effective date of the primary drinking water standard adoption or amendment by no more than 2 additional years as necessary for capital improvements to comply with a maximum contaminant level or treatment technique.	Watch	B. Watch	
<a href="#">SB 1</a>	<a href="#">Atkins D</a>	California Environmental, Public Health, and Workers Defense Act of 2019.	2/12/2019-Set for hearing March 20.	1/16/2019-S.E.Q.	Current state law regulates the discharge of air pollutants into the atmosphere. The Porter-Cologne Water Quality Control Act regulates the discharge of pollutants into the waters of the state. The California Safe Drinking Water Act establishes standards for drinking water and regulates drinking water systems. The California Endangered Species Act requires the Fish and Game Commission to establish a list of endangered species and a list of threatened species, and generally prohibits the taking of those species. This bill would require specified agencies to take prescribed actions regarding certain federal requirements and standards pertaining to air, water, and protected species, as specified.	Out for Analysis	B. Watch	
<a href="#">SB 19</a>	<a href="#">Dodd D</a>	Water resources: stream gages.	2/20/2019-Set for hearing March 12.	1/16/2019-S.N.R. & W.	Would require the Department of Water Resources and the State Water Resources Control Board, upon an appropriation of funds by the Legislature, to develop a plan to deploy a network of stream gages that includes a determination of funding needs and opportunities for modernizing and reactivating existing gages and deploying new gages, as specified. The bill would require the department and the board, in consultation with the Department of Fish and Wildlife, the Department of Conservation, the Central Valley Flood Protection Board, interested stakeholders, and, to	Out for Analysis	B. Watch	



<a href="#">SB 45</a>	<a href="#">Allen D</a>	Wildfire, Drought, and Flood Protection Bond Act of 2020.	2/20/2019-Set for hearing March 12.	1/16/2019-S.N.R. & W.		the extent they wish to consult, local agencies, to develop the plan to address significant gaps in information necessary for water management and the conservation of freshwater species.	Out for Analysis	B. Watch				
						Would enact the Wildfire, Drought, and Flood Protection Bond Act of 2020, which, if approved by the voters, would authorize the issuance of bonds in an unspecified amount pursuant to the State General Obligation Bond Law to finance projects to restore fire damaged areas, reduce wildfire risk, create healthy forest and watersheds, reduce climate impacts on urban areas and vulnerable populations, protect water supply and water quality, protect rivers, lakes, and streams, reduce flood risk, protect fish and wildlife from climate impacts, improve climate resilience of agricultural lands, and protect coastal lands and resources.						

### C. Spot Bill

Measure	Author	Topic	Status	Location	Brief Summary	Position	Priority	Notes 1
<a href="#">AB 508</a>	<a href="#">Chu D</a>	Drinking water: administrator: consolidation and extension of service.	2/14/2019-From printer. May be heard in committee March 16.	2/13/2019-A. PRINT	The California Safe Drinking Water Act authorizes the State Water Resources Control Board to contract with, or provide a grant to, an administrator to provide administrative, technical, operational, or managerial services, or any combination of those services, to a designated water system to assist with the provision of an adequate supply of affordable, safe drinking water. The act also authorizes the state board to order a designated water system to accept those services from an administrator appointed by the state board for full oversight of construction or development of projects related to a consolidation or extension of service. This bill would make nonsubstantive changes in those provisions.		C. Spot Bill	
<a href="#">AB 722</a>	<a href="#">Bigelow R</a>	Integrated regional water management plans.	2/20/2019-From printer. May be heard in committee March 22.	2/19/2019-A. PRINT	Current law, the Integrated Regional Water Management Planning Act, finds and declares the intent of the Legislature to encourage local agencies to work cooperatively to manage their available local and imported water supplies to improve the quality, quantity, and reliability of	Watch	C. Spot Bill	

<a href="#">AB 1439</a>	<a href="#">Melendez R</a>	State policy for water quality control.	2/25/2019-R ead first time.	2/22/2019- A. <b>PRINT</b>	<i>Under current law, the Porter-Cologne Water Quality Control Act, the state policy for water quality control is required to consist of water quality principles and guidelines for long-range resource planning, water quality objectives, and other principles and guidelines deemed essential by the State Water Resources Control Board for water quality control. This bill would make nonsubstantive changes to that provision.</i>					
<b>Total Measures: 31</b>										
<b>Total Tracking Forms: 31</b>										

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**INFORMATION ONLY**

March 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

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**Subject : Phase 2 White Paper on Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions: Award**

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**SUMMARY:**

This item is presented to the JPA Board as an information item. LVMWD is participating in the preparation of a Phase 2 White Paper on Tapping Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions. The study will explore the opportunity to divert urban runoff and first-flush stormwater to the sanitary sewer systems of the Los Angeles Basin and may generate additional supplies of recycled water. The strategy could potentially benefit the Pure Water Project Las Virgenes-Triunfo by increasing the amount of source water available for the project.

In May 2018, LVMWD participated in the preparation of a Phase 1 White Paper entitled *Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions*. The study was prepared in partnership with the Main San Gabriel Watermaster and Water Replenishment District of Southern California to explore the opportunity for diverting urban runoff and first-flush stormwater to the region's wastewater treatment plants to generate a new source of recycled water. The white paper identified the merits of the strategy, while recognizing the need to engage a broader group of stakeholders to address the potential challenges and complexities.

The Phase 2 White Paper is intended to evaluate the opportunity for controlled and strategic integration of the region's existing stormwater and wastewater systems to achieve multiple benefits: (1) enhance the quality of receiving waters in Los Angeles County, and (2) increase water supplies available for recycling. As proposed, the work will be performed by Jacobs Engineering Group, Inc., with input and oversight from 12 public agency participants including LVMWD. Based on the terms of a proposed cooperative funding agreement, the 11 other participants would provide \$334,500 toward the work. In addition, Metropolitan Water District of Southern California (MWD) approved a Future Supply Actions Funding Program grant in the amount of \$339,500.

**FISCAL IMPACT:**

Yes

## **ITEM BUDGETED:**

No

## **FINANCIAL IMPACT:**

The net cost to LVMWD for the Phase 2 White Paper is \$20,000. The total cost of the study is \$694,000 with \$339,500 provided by MWD through its Future Supply Actions Funding Program and \$334,500 reimbursed by 11 other public agency participants. Sufficient funds are available in the adopted Fiscal Year 2018-19 Budget for the work.

## **DISCUSSION:**

### Background:

Beginning in January 2018, the General Manager participated as a water agency member of the Stakeholder Advisory Committee established by the County of Los Angeles for its Safe, Clean Water Program, which was approved by voters as Measure W on November 6, 2018. Together with other water agency representatives, the General Manager expressed concern that the original focus of the program on stormwater capture and infiltration would provide limited benefits to portions of the County where the geology does not support groundwater recharge. The General Manager urged County representatives and members of the Stakeholder Advisory Committee to consider program provisions that would allow for alternative projects such as those involving diversion of urban runoff and first-flush stormwater.

### Phase 1 White Paper:

The Phase 1 White Paper on Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions was commissioned by the District together with the Main San Gabriel Basin Watermaster and Water Replenishment District of Southern California. The study was intended to illustrate the potential limitations of the "capture and infiltrate" approach and to offer a conceptual basis for an alternative approach, recognizing that only 28 percent of the Los Angeles Basin directly overlies a groundwater basin that can support recharge. The white paper highlighted the merits of diverting urban runoff and first-flush stormwater to the region's wastewater treatment plants but identified the need to engage a larger group of stakeholder in additional study to address the potential challenges and complexities.

The Phase 1 White Paper was completed in May 2018 and is available at [www.lvmwd.com/your-water/water-supply-conditions/white-papers](http://www.lvmwd.com/your-water/water-supply-conditions/white-papers).

### Primary Drivers for Multi-Agency Collaboration on Phase 2 White Paper:

In addition to the findings from the Phase 1 White Paper, the following primary drivers contribute to need for multi-agency collaboration on the Phase 2 White Paper as shown on the attached diagram.

- Declining wastewater flows due to urban water conservation;
- Growing need to invest in local water supplies to improve resiliency; and
- Challenge to improve receiving water quality and comply with stringent MS4

requirements.

#### Public Agency Participants:

The following 12 public agencies propose to collaboratively participate in the preparation of the Phase 2 White Paper through a financial contribution, as indicated, and technical input/feedback on the study.

- Central Basin Municipal Water District (\$7,500)
- City of Los Angeles, LA Sanitation and Environment (\$56,000)
- City of Los Angeles, Department of Water and Power (\$20,000)
- City of Pasadena (\$7,500)
- City of Torrance (\$7,500)
- Las Virgenes Municipal Water District (\$20,000)
- Los Angeles County Flood Control District (\$125,000)
- Main San Gabriel Basin Watermaster (\$20,000)
- Sanitation Districts of Los Angeles County (\$56,000)
- Three Valleys Municipal Water District (\$7,500)
- Upper San Gabriel Valley Municipal Water District (\$7,500)
- Water Replenishment District of Southern California (\$20,000)

#### MWD Future Supply Action Funding Program:

On January 8, 2019, the MWD Board authorized its General Manager to execute a grant funding agreement with the District, in the amount of \$339,500, for preparation of the Phase 2 White Paper under the Future Supply Actions Funding Program. The program is intended to fund actions by MWD Member Agencies that reduce barriers to future water resource development. The Phase 2 White Paper was successful because of the significant regional collaboration and potential to advance the field of knowledge with transferable outcomes.

#### Cooperative Funding Agreement:

Staff proposes to execute the attached cooperative funding agreement with the 11 other public agency participants for the preparation of the study. The agreement, which was approved as to form by LVMWD Legal Counsel, outlines the terms for the study to be prepared by Jacobs Engineering Group, Inc. under contract with LVMWD, formation of both Steering and Technical Review Committees and financial contributions to be provided by each of the parties. A draft of the cooperative agreement was circulated to the parties for review, and their comments were incorporated.

#### Next Steps:

With the Board's approval, the General Manager will execute a professional services agreement with Jacobs Engineering Group, Inc., in the amount of \$694,000; a Future Supply Actions Funding Program grant agreement with MWD, in the amount of \$339,500; and a cooperative funding agreement among 12 public agency participants to collaboratively prepare a Phase 2 White Paper. The study is expected to require 12 months to complete. A kick-off meeting is tentatively scheduled for March 13, 2019.

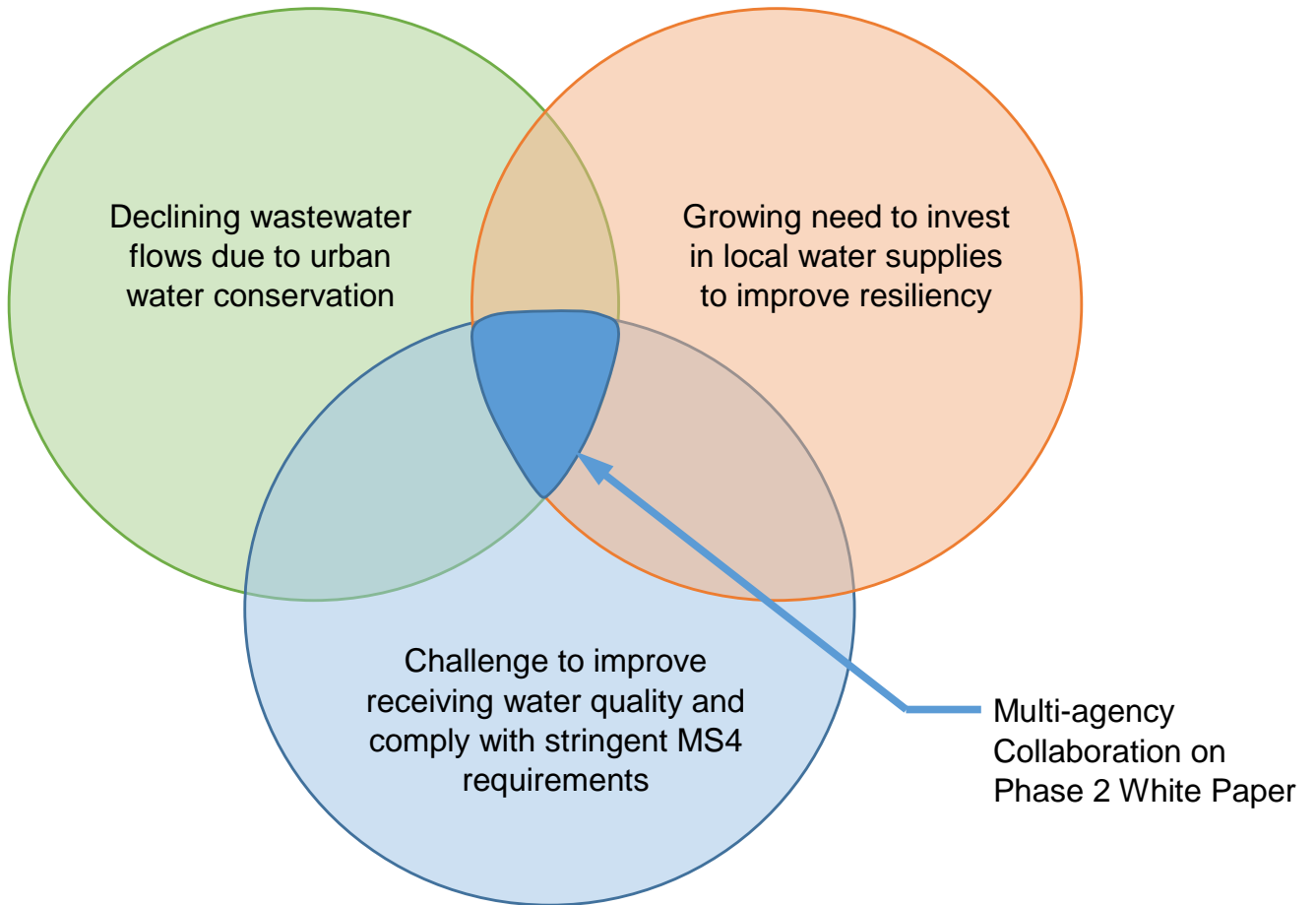
Prepared by: David R. Lippman, P.E., Director of Facilities and Operations

**ATTACHMENTS:**

Primary Drivers for Multi-Agency Collaboration of Phase 2 White Paper  
Draft Cooperative Funding Agreement



## Primary Drivers for Multi-Agency Collaboration on Phase 2 White Paper





## **AGREEMENT**

This Agreement is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2019, by and between the following public agencies (hereinafter referred to individually as "Party" and collectively as "Parties") to cooperatively prepare and fund a study evaluating opportunities to tap into available capacity in existing infrastructure to create water supply and water quality solutions:

- Central Basin Municipal Water District (hereinafter referred to as "Central Basin");
- City of Los Angeles, LA Sanitation and Environment (hereinafter referred to as "LASAN");
- City of Los Angeles, Department of Water and Power (hereinafter referred to as "LADWP");
- City of Pasadena (hereinafter referred to as "Pasadena");
- City of Torrance (hereinafter referred to as "Torrance");
- County Sanitation District No. 2 of Los Angeles County (hereinafter referred to as "LACSD");
- Las Virgenes Municipal Water District (hereinafter referred to as "LVMWD");
- Los Angeles County Flood Control District (hereinafter referred to as "LACFCD");
- Main San Gabriel Basin Watermaster (hereinafter referred to as "Main San Gabriel Basin");
- Three Valleys Municipal Water District (hereinafter referred to "Three Valleys");
- Upper San Gabriel Valley Municipal Water District (hereinafter referred to as "Upper District"); and
- Water Replenishment District of Southern California (hereinafter referred to as "WRD").

## **RECITALS**

WHEREAS, the Parties consist of public agencies with responsibility for various aspects of water resources management in the County of Los Angeles, including flood control; water conservation; surface water quality; stormwater management; groundwater management; and wastewater collection, treatment and recycling;

WHEREAS, in May 2018, LVWMD, Main San Gabriel Basin and WRD completed a Phase 1 White Paper on Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions that highlighted the potential merits of controlled and strategic integration of the region's existing stormwater and wastewater systems to achieve multiple benefits, namely enhancing the quality of receiving waters in Los Angeles County and increasing water supplies available for recycling;

WHEREAS, the Phase 1 White Paper identified the need for additional study to address the potential challenges and complexities and to engage a much broader group of stakeholder agencies responsible for the underlying water management functions; and

WHEREAS, the Parties desire to collaboratively prepare and fund a Phase 2 White Paper on Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions (hereinafter referred to as "Study").

NOW, THEREFORE, in consideration of the mutual benefits to be derived by the Parties and of the promises herein contained, it is hereby agreed as follows:

## **SECTION 1: OBLIGATIONS OF THE PARTIES**

### 1.1 Obligations of LVMWD:

- 1.1.1 Scope of Services. LVMWD shall execute and administer a professional services agreement for the preparation of the Study on behalf of the Parties, for a not-to-exceed amount of \$694,000 (hereinafter referred to as "Consultant Costs"), in accordance with the scope of work and fee proposal included as Exhibit "A."
- 1.1.2 Data, Reports, and Documents. Within five (5) business days of receipt of deliverables and completion of the Study, LVMWD shall electronically deliver to the Parties the Study, materials and documents created under this Agreement. If the Parties use any of the data, reports and documents furnished or prepared for projects other than the project shown on Exhibit "A," LVMWD shall be released from responsibility to third parties concerning the use of the data, reports and documents.
- 1.1.3 Invoicing. LVMWD shall invoice the Parties for their respective contributions toward the Consultant Costs for the Study based on the terms provided herein.
- 1.1.4 Consideration. LVMWD shall contribute \$20,000 toward the Consultant Costs for the Study, as more fully described on Exhibit "A."
- 1.1.5 Funding. LVMWD shall prepare and submit a proposal to the Metropolitan Water District of Southern California for \$339,500 in funding from its Future Supply Actions Funding Program for the Study. If such funding is awarded, LVMWD shall execute a funding agreement with Metropolitan Water District of Southern California for the funding, which shall be applied toward the Consultant Costs.

1.1.6 Steering Committee. LVMWD shall participate as a member of the “Steering Committee” as further defined and provided for in Section 2.1 below.

1.1.7 Technical Review Committee. LVMWD shall participate as a member in the “Technical Review Committee” as further defined and provided for in Section 2.2 below.

1.1.8 Attribution. LVMWD shall ensure that attribution for the Study is provided to all Parties, unless a Party requests otherwise in writing. Attribution will not be provided to a Party that fails to provide payment, in full or in part, as required by this Agreement.

1.2 Obligations of LACFCD:

1.2.1 Consideration. LACFCD shall contribute \$125,000 toward the Consultant Costs for the Study, as more fully described on Exhibit “A.” LACFD shall pay said amount to LVMWD within forty-five (45) calendar days of receipt of an invoice.

1.2.2 Committees. LACFCD shall participate as chair of the Steering Committee and member of the Technical Review Committee.

1.3 Obligations of LACSD:

1.3.1 Consideration. LACSD shall contribute \$56,000 toward the Consultant Costs for the Study, as more fully described on Exhibit “A.” LACSD shall pay said amount to LVMWD within forty-five (45) calendar days of receipt of an invoice.

1.3.2 Committees. LACSD shall participate as co-chair of the Steering Committee and chair of the Technical Review Committee.

1.4 Obligations of LASAN:

1.4.1 Consideration. LASAN shall contribute \$56,000 toward the Consultant Costs for the Study, as more fully described on Exhibit “A.” LASAN shall pay said amount to LVMWD within forty-five (45) calendar days of receipt of an invoice.

1.4.2 Committees. LASAN shall participate as co-chair of the Steering Committee and co-chair of the Technical Review Committee.

1.5 Obligations of LADWP, Main San Gabriel Basin, and WRD:

1.5.1 Consideration. LADWP, Main San Gabriel Basin, and WRD shall each contribute \$20,000 toward the Consultant Costs for the Study, as more fully described on Exhibit “A.” LADWP, Main San Gabriel Basin, and WRD shall each pay said amount to LVMWD within forty-five (45) calendar days of receipt of an invoice.

1.5.2 Committees. LADWP, Main San Gabriel Basin, and WRD shall each participate as members of the Steering Committee and Technical Review Committee.

1.6 Obligations of Central Basin, Pasadena, Three Valleys, Torrance, and Upper District:

1.6.1 Consideration. Central Basin, Pasadena, Three Valleys, Torrance, and Upper District shall each contribute \$7,500 toward the Consultant Costs for the Study, as more fully described on Exhibit “A.” Central Basin, Pasadena, Three Valleys, Torrance, and Upper District shall each pay said amount to LVMWD within forty-five (45) calendar days of receipt of an invoice.

1.6.2 Committees. Central Basin, Pasadena, Three Valleys, Torrance, and Upper District shall each participate as members of the Steering Committee and Technical Review Committee.

**SECTION 2: COMMITTEES**

2.1 Steering Committee. The Parties shall form a Steering Committee that will oversee the progress of work, provide strategic direction on the Study, and ensure that the work products best reflect the interests of each Party. The Steering Committee will meet periodically and consist of principals representing each Party. Upon any Party’s failure to provide payment, in full or in part, as required by this Agreement, such Party shall be removed from the Steering Committee.

2.2 Technical Review Committee. The Parties shall form a Technical Review Committee that will provide technical input on the Study, review the deliverables, and vet comments provided by the Parties to LVMWD and the consultant. Upon any Party’s failure to provide payment, in full or in part, as required by this Agreement, such Party shall be removed from the Technical Committee.

**SECTION 3: GENERAL PROVISIONS**

3.1 Term. This agreement shall commence on the date above written and continue until the Study is completed.

3.2 Termination. LVMWD may terminate this Agreement, effective thirty (30) days from the date of written notice, upon any Party's failure to provide payment, in full or in part, as required by this Agreement, after having failed to cure such failure to pay within thirty (30) days of the date of notice provided by LVMWD. In the event of termination of this Agreement, LVMWD shall not be responsible for further preparation or completion of the Study. In the event LVMWD terminates this Agreement pursuant to this section, LVMWD shall refund all unused funds to the respective, non-defaulting parties, in proportion to the non-defaulting parties' respective contributions made prior to the time of the termination.

3.3 Governing Law. This Agreement is made under and will be governed by the laws of the State of California. Further, the Parties shall comply with all applicable laws, ordinances, codes, and regulations of the federal, state, and local governments.

3.4 Good Faith. Each Party shall use reasonable efforts and work in good faith for the expeditious completion of the Study. In the event that the Consultant Costs to prepare the Study are greater than those described herein, the Parties agree to meet and confer in good faith to determine a mutually agreeable allocation of the additional costs.

3.5 No Third-Party Beneficiary. This Agreement is for the sole benefit of the Parties and does not grant rights to any non-Party or impose obligations on a Party beyond those specified herein or in favor of any non-party.

3.6 Severability. The provisions of this Agreement are severable, and the invalidity, illegality or unenforceability of any provision of this Agreement will not affect the validity or enforceability of any other provisions. If any provision of this Agreement is found to be invalid, illegal, or unenforceable, the Parties shall endeavor to modify that clause in a manner that gives effect to the intent of the Parties entering into this Agreement.

3.7 Amendments. This Agreement may be amended or modified only by written mutual consent of all Parties.

3.8 Notice. Any correspondence, communication, or contact concerning this Agreement must be directed to the Parties at the name and address listed on Exhibit "B." Notice will be deemed as given upon personal delivery, receipt of e-mail, receipt of fax confirmation, or five days after deposit in U.S. Mail, first-class postage, prepaid, and addressed as shown on Exhibit "B."

3.9 Counterparts. This Agreement may be executed in counterparts and the signed counterparts will constitute a single instrument. The signatories to this Agreement represent that they have the authority to bind their respective Party.

3.10 Confidentiality. Except when disclosure is required for public records pursuant to the California Public Records Act or other applicable law, the Parties will not disclose or cause their respective officers, directors, employees, representatives, agents, or advisors to disclose or use any Confidential Information furnished, or otherwise permitted for review, by one party to the other in connection with the proposed transactions. For purposes of this paragraph, "Confidential Information" means information supplied by one party to the other that is clearly marked by the supplying party as "confidential", except information that is part of public record.

3.11 Attorneys' Fees. In any action or proceeding for the purpose of enforcing any provision of this Agreement, or to recover damages hereunder, or to obtain injunctive or other relief, or for a declaration of rights or obligations hereunder, or for any other judicial or equitable remedy, the prevailing Party shall be entitled, in addition to such other relief as may be granted to an award in the same or a subsequent proceeding, to its reasonable attorneys' fees and costs.

3.12 No Partnership. LVMWD and any other Party to this Agreement shall not, by virtue of this Agreement, in any way or for any purpose, be deemed to have become a partner of each other or a joint venture in the conduct of their respective businesses or otherwise, nor shall there be deemed to have occurred a merger or any joint enterprise by and between the Parties to this Agreement. LVMWD shall have no authority, expressed or implied, to act on behalf of any other Party to this Agreement in any capacity whatsoever as an agent.

3.13 Integration. This Agreement represents the entire understanding of the Parties as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder.

3.14 Captions, Headings, and Abbreviations. The captions and headings of this Agreement are included for reference purposes only, and not intended to be a part of this Agreement or any way to define, limit, or describe the scope or intent of the particular provision to which they refer.

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IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**LAS VIRGENES MUNICIPAL  
WATER DISTRICT**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**CENTRAL BASIN MUNICIPAL  
WATER DISTRICT**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_



IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**CITY OF LOS ANGELES, LASAN**

Date: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**CITY OF LOS ANGELES,  
DEPARTMENT OF WATER AND  
POWER**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**CITY OF PASADENA**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**CITY OF TORRANCE**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**COUNTY SANITATION DISTRICT  
NO. 2 OF LOS ANGELES COUNTY**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**LOS ANGELES COUNTY FLOOD  
CONTROL DISTRICT**

Date: \_\_\_\_\_

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**MAIN SAN GABRIEL BASIN  
WATERMASTER**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**THREE VALLEYS MUNICIPAL  
WATER DISTRICT**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_



IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**UPPER SAN GABRIEL VALLEY  
MUNICIPAL WATER DISTRICT**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, as of the dates opposite their respective signatures.

**WATER REPLENISHMENT DISTRICT  
OF SOUTHERN CALIFORNIA**

Date: \_\_\_\_\_

By: \_\_\_\_\_

ATTEST:

By: \_\_\_\_\_

APPROVED AS TO FORM:

By: \_\_\_\_\_

Exhibit "A"

Mr. David Pedersen, P.E.  
General Manager  
Las Virgenes Municipal Water District  
4232 Las Virgenes Road,  
Calabasas, CA 91302-1994

October 31, 2018

Subject: Phase 2 of Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Benefits White Paper

Dear Mr. Pedersen,

CH2M Hill Engineers, Inc. (CH2M), a fully owned subsidiary of Jacobs Engineering Group Inc., is pleased to submit this proposal to the Las Virgenes Municipal Water District (LVMWD) to undertake Phase 2 of Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Benefits White Paper. We look forward to building upon the findings and next steps identified in Phase 1, completed in May 2018, to further explore the opportunity for controlled and strategic integration of Los Angeles County's existing stormwater and wastewater systems for regional water supply and quality benefits.

Development of this white paper is intended to be a collaborative effort between LVMWD along with other participating parties including Central Basin Municipal Water District, Los Angeles Sanitation and Environment, Los Angeles Department of Water and Power, Los Angeles County Sanitation Districts, Los Angeles County Department of Public Works, Main San Gabriel Basin Watermaster, and the Water Replenishment District of Southern California. We understand success of this study is dependent on a continued communication and coordination between LVMWD and CH2M as well as participating agencies.

For this study, we have assembled a highly-specialized technical and support services team that has worked in stormwater, wastewater, and water resources fields locally in Los Angeles County and on various water reuse projects. Our team has a comprehensive understanding of the purpose, need, and goals of the study. We offer our commitment and availability on this project to ensure timely, cost-effective project delivery. The CH2M team provides:

- A strong Principal-in-Charge, Rich Nagel, who will bring extensive experience and understanding of the region's water resources, and strong working knowledge and relationships with local agencies and stakeholders.
- The project manager of Phase 1, Amanda Heise, who has experience in Los Angeles County on stormwater and integrated water management projects.
- A strong, local core project team with technical expertise across multiple disciplines such as watershed hydrology and water quality, sewer collection systems, dry and wet weather flow analysis, and stormwater management.
- A strategic advisor, Jim Stahl, experienced in providing guidance and engineering solutions to water and wastewater agencies, municipal government and industrial clients across the country

on the planning, public outreach, permitting, and implementation of cost-effective and environmentally sound wet infrastructure systems.

- Regulatory expertise provided Sam Unger and Mehranian of Cordoba Corporation, offering extensive experience in regulatory compliance under the California Regional Water Quality Control Board.

The Scope of Work for this study is included in Exhibit A. The work will be completed on a time and material basis. The total Not-To-Exceed limit for this effort is \$694,000. The work is estimated to begin in January 2019 and be completed within 12 months.

Thank you again for this opportunity. We look forward to working with you in this effort.

Regards,  
CH2M HILL Engineers, Inc.

*Amanda Heise*

Amanda Heise  
Project Manager



Tim Smith  
Vice President

CC: Rich Nagel/CH2M

# **Exhibit A**

## Scope of Work

## Study Impetus

Dry weather diversions (WRDs) and wet weather diversions (WWDs) provide highly-controlled means of diverting urban stormwater to a water reclamation plant (WRP). Two significant benefits include a new source of recycled water, and the possible reduction of discharged pollutants to receiving waters. Agencies have, in recent times, emphasized the separation of storm and wastewater systems, and it is important to emphasize that this is not a return to “combined sewers,” but rather the controlled introduction of dry weather urban runoff, and/or (typically) the first-flush storm flow into the wastewater collection system, but only where and when sufficient capacity exists within the collection system and the WRP.

Compliance with MS4 permits requires retention of stormwater from the 85<sup>th</sup> percentile, 24-hour storm event, or the volume established for the drainage area based on a Reasonable Assurance Analysis (RAA) conducted as part of a Watershed Management Plant (WMP) or Enhanced WMP (EWMP). Based on the site-specific conditions and size of the storm event, it may not be possible to capture and divert the entire storm event volume. In that case, a portion of the storm event flows can be captured which can contribute to MS4 compliance, but not necessarily satisfy the entire compliance requirement. An approach similar to the RAA, in consultation with the Regional Board, would need to be applied to quantify the water quality benefit that would be provided by the WWD. In any case, diversion projects can help manage and divert the “first flush” of storm events to reduce the highest concentration of pollutants that originate from urban/pervious surfaces and provide reductions in pollutant loadings that discharge to receiving waterbodies.

WWDs present a unique opportunity for compliance with Bacteria TMDLs. Many Bacteria TMDLs in the Los Angeles Region define wet weather as the day of the rain event that experience 0.1 inch of rain or more and the three following days. It has been observed at several DWDs that runoff flows rapidly decline after a storm event. If the stormwater runoff in the three days after a storm event can be diverted to a WWD, then the diversion rate would be typical of dry weather conditions so there would likely not be capacity concerns, but it would contribute toward wet weather compliance with the requirements of Bacteria TMDLs. Diversion of these lower flows would likely require only a change of the operational strategy of DWDs.

An earlier version of scope document (dated August 28, 2018), was circulated to stakeholders for discussion and input. Thoughtful comments were received and have been incorporated into the scope of work presented herein. The received comments cannot be fully addressed within a brief scope of work, so, for clarity and completeness, the comments provided, and our responses, are appended herein as Exhibit 1. Exhibit 1 is not part of the scope of work explicitly but is included so that stakeholders can understand how their comments have been considered and incorporated. The comments and responses can be further refined during the study discussions and workshops.

## Objectives and Approach

### Objectives

CH2M Hill Engineers Inc. (CH2M), a fully owned subsidiary of Jacobs Engineering Group Inc., proposes to explore leveraging available capacity in the WRPs for treating urban runoff/stormwater to generate new water supply (i.e., recycled water) while achieving water quality benefits for the receiving waters. This approach may offer another important Best Management Practice (BMP) tool for MS4 permit compliance, particularly as a pathway offering benefits for wet weather compliance. This potential compliance tool exemplifies the benefits of integrated regional water management practices by enhancing both stormwater quality and water supply, while efficiently utilizing existing infrastructure. The study area<sup>1</sup> will encompass the sewershed of the 12 water reclamation plants (WRPs) indicated in Figure 1 (appended).

Through an analysis of existing DWDs, CH2M will produce a framework to guide the implementation of DWDs and WWDs by:

- Incorporating knowledge gained from the existing DWDs to guide the selection of locations suitable for dry and wet weather diversions to provide water supply and water quality benefits.
- Conducting case studies of four existing DWDs to determine the feasibility of converting those to WWDs.
- Developing a framework for conversion of DWDs to WWDs to allow the permissive connection of the stormwater system to the wastewater system through controlled diversions either directly to a WRP or via the wastewater collection system.

The following are also considerations within the study:

- Water supply benefits from the diversion of stormwater will vary according to the storm size, recycled water production and storage capacities, and end uses. For example, during large storm events, the demand for recycled water may be low due to reduced irrigation demand and potentially full utilization of spreading grounds with storm water. The study will not be addressing the production, storage and delivery of the recycled water, but will acknowledge the variability of this water supply benefit.
- The study will provide a discussion on the generation of water supply and water quality benefits (although the quantification of the water supply and water quality benefits is beyond the scope of this study).
- Diversion locations immediately upstream of the WRPs are preferable because their effect on the plant flows is immediate, and this is a benefit for plant operations control.
- Future design of dry and wet weather diversion structures will need to consider avoiding impacts to the Los Angeles County Flood Control District (LACFCD) facility operations, preventing adverse impacts to flood risk, and protecting public safety.
- Climate change can impact rainfall intensity and frequency which may have implications on diversion volume. In this study, climate change impacts will be discussed qualitatively.
- Water supply and water quality benefits provided by diversions will be site-specific and will depend on several factors. These include size and capacity of the diversions, upstream sources of flow and pollutants, capacities in the adjacent sewer systems to accept runoff, discharge

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<sup>1</sup> See also the Study Area definition in the Key Terminology section beginning on page 4.



locations, space available for creating storage, and opportunities and constraints, both physical and regulatory.

## Approach

CH2M will use existing data (to be requested from stakeholders or common government data sources such as NOAA), as the foundation for the analytical work. Because of the very large volume of existing data within the stakeholder geographic area and the various data formats and structures, CH2M will request and utilize detailed data for focused areas of the study to keep on-track with scope, schedule and budget. CH2M will, however, request metadata (e.g. the extent, type, format, and quality of data) to understand the scope of all available data for the purpose of documentation.

The following activities are planned:

- **Stakeholder Coordination** – this will be conducted throughout the project to maintain a common understanding of the project progress. To facilitate ongoing review and input, 12 technical memoranda (TM) will be produced as the study progresses to communicate interim findings and seek stakeholder feedback; a final report will summarize and consolidate the findings.
- **Data Collection** – data (and metadata) will be requested from stakeholders, gathered, and compiled. The type of data will be specified, but is expected to include locations, data type, sources, formats, quality, and data gaps. CH2M will provide a summary of the data sources and type of information, and will serve as a data repository and reference for subsequent studies of dry and wet weather diversions.
- **Inventory and Efficacy Analysis** - existing DWDs will be assessed (location, capacity, type, and constraints) to understand their potential additional dry weather flow diversion, and the potential for conversion to WWDs. This will consider the capacity of the DWD and receiving wastewater system.
- **Identify DWDs for Focused Study** - in consultation with the stakeholders, select up to four DWDs and conduct case studies for potential conversion to WWDs.
- **Cistern Diversion Investigation** - Conduct case studies of existing cisterns with direct diversion to the sanitary system.
- **Path Forward Framework** - Develop a framework for MS4 permittees to plan, execute, and assess steps to obtain approvals from the involved agencies for planning and building new diversions and/or converting DWDs to WWDs
- **TM and Report Preparation** - Document the findings of the study in a series of TMs, and a draft and final study report.

Table 1 lists the proposed tasks and primary deliverables of this study, and Figure 2 (appended) shows the relationships between the tasks and key activities:

**Table 1 – Study Tasks and Deliverables**

Task	Task Description	TM Title
1	Project Chartering	
2	Collect, Review and Summarize Data	TM No. 1 – Inventory of Dry Weather Data TM No. 2 – Inventory of Wet Weather Data TM No. 3 – Characterization of Dry and Wet Weather Flows TM No. 4 – Inventory of DWDs TM No. 5 – DWD Efficacy Analysis

3	Identification of Potential DWDs for Conversion to WWDs	TM No. 6 – Identification of DWDs for Potential Conversion to WWDs
4	Case Studies of Selected Diversions	TM No. 7 – Feasibility Analysis of Selected DWDs for Conversion to WWDs
5	Develop Overall Conceptual Plan to Divert Remaining Dry Weather Flow	TM No. 8 – Conceptual Plan to Divert Remaining Dry Weather Flows in the Study Area
6	Case Study of Cisterns with Direct Diversion to Sanitary Sewer	TM No. 9 – Case Studies of Cisterns with Direct Diversion to Sanitary Sewer
7	Regulatory Considerations	TM No. 10 – Regulatory Considerations
8	Framework for MS4 Permittees for Conversion of DWDs and WWDs	TM No. 11 – Path Forward Framework of Conversion of DWDs to WWDs for MS4 Permittees
9	Conclusions and Recommendations	TM No. 12 – Conclusions and Recommendations
10	Final Report	
11	Project Management and Meetings	

## Key Terminology

**Dry Weather Diversion (DWD):** Dry weather diversions (also commonly referred to as low flow diversions) are diversions of non-stormwater flows from the storm drain system into the sanitary sewer system for treatment at wastewater treatment facilities. In LACSD’s policy for their service area, dry weather diversions typically include flows up to the first 0.1 inch of rainfall and they are not allowed to resume operation until 24 hours after cessation of rainfall.

**Wet Weather Diversion (WWD):** Wet weather diversions are diversions of both non-stormwater and stormwater flows from the storm drain system into the sanitary sewer system for treatment at wastewater treatment facilities. For this project, the goal will be to capture and divert as much storm volume as possible to help achieve the MS4 compliance. However, the captured and diverted storm runoff will be site-specific and will depend on several factors, such as the size and type of diversion structure, capacity of the sewer system, and storage opportunities.

**Capture Volume:** Capture volume is the volume that can be captured by the diversion structure. Capture volumes will be project-specific, and may be able to divert a portion of, or more than the 85<sup>th</sup> percentile, 24-hour MS4 permit compliance storm event.

**First Flush** – In this context, the first flush is described as the initial volume of runoff from a rain event that is generated after a dry period. It is believed that the runoff generated in the beginning of a rainfall event is the most contaminated (first flush) and contains contaminants from washing out contaminant buildup from impervious surfaces. The concentration of pollutants in the first flush varies by the size of the storm event and by pollutant.

**Municipal Separate Storm Sewer System (MS4) Permit:** Permits are issued under the National Pollutant Discharge Elimination System (NPDES) Program and administered within Los Angeles County by the Los Angeles Regional Water Quality Control Board (LARWQCB). Permits issued for Los Angeles County include Order No. R4-2012-0175, as amended, *Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County, except those Discharges Originating from the City of Long Beach MS4* and Order No. R4-2014-0024, as amended, *Waste Discharge Requirements for MS4 Discharges from the City of Long Beach*.

**Study Period:** Data collected, reviewed, and summarized will be limited to calendar years 2002 through 2017.

**Study Area:** The study area for the project is limited to the sewershed of the 12 water reclamation plants (WRPs) as identified in Table 2 (and Figure 1). For the purposes of this study, the WRFs include wastewater treatment plants that currently deliver recycled water as well as those with potential to produce recycled water in the future.

**Table 2. Sewersheds Included in the Study Area**

	Owning Agency	Facility	Rated Capacity (MGD)	Rated Capacity (AFY)
<b><i>Sewersheds included in the study area:</i></b>				
1	LACSD	Joint WPCP	400	448,058
2	LACSD	Long Beach WRP	25	28,004
3	LACSD	Los Coyotes WRP	37.5	42,005
4	LACSD	Pomona WRP	15	16,802
5	LACSD	San Jose Creek WRP	100	112,014
6	LACSD	Whittier Narrows WRP	15	16,802
7	LASAN	Donald C. Tillman WRP	80	89,612
8	LASAN	Hyperion WRP	450	504,065
9	LASAN	LA-Glendale WRP	20	22,403
10	LASAN	Terminal Island WRP	30	33,604
11	Burbank	Burbank WRP	11	12,322
12	LVMWD	Tapia WRP	12	13,442
<b><i>Sewersheds not included in the study area:</i></b>				
1	LACSD	La Cañada WRP	0.2	224
2	LACSD	Lancaster WRP	18	20,163
3	LACSD	Palmdale WRP	12	13,442
4	LACSD	Saugus WRP	6.5	7,281
5	LACSD	Valencia WRP	21.6	24,195
6	LACDPW	Lake Hughes Community WTF	0.09	104
7	LACDPW	Malibu Mesa WRP	0.2	224
8	LACDPW	Malibu WPCP	0.05	57
9	LACDPW	Trancas WPCP	0.08	84

**Abbreviations:**

- AFY = acre-feet per year
- LACDPW = Los Angeles County Department of Public Works
- LACSD = Los Angeles County Sanitation Districts
- LASAN = City of Los Angeles, Bureau of Sanitation
- LVMWD = Las Virgenes Municipal Water District
- MGD = million gallons per day
- WPCP = water pollution control plant
- WRP = water reclamation plant
- WRF = water reclamation facility
- WTF = water treatment facility

# Scope of Work

## Task 1: Project Chartering

Project chartering comprises the project kick-off meeting and stakeholder workshop. Through these sessions the project team will clarify the objectives, scope and schedule for the project, and identify the stakeholder representatives that will assist with various tasks and information requests.

The kick-off meeting will introduce the project team members, and clarify the study objectives, scope, and schedule. The meeting will also identify a date and make a plan for the stakeholder meeting. A meeting agenda will be circulated prior to the meeting.

CH2M will coordinate with LVMWD to conduct the stakeholder workshop. The purpose is to review project scope and schedule and to identify stakeholder involvement throughout the project. A workshop agenda will be circulated prior to the workshop.

The initial stakeholders participating in this project include:

- LVMWD
- Central Basin Municipal Water District (CBMWD)
- City of Los Angeles, Los Angeles Sanitation (LASAN)
- City of Los Angeles, Department of Water and Power (LADWP)
- Sanitation Districts of Los Angeles County (LACSD)
- Metropolitan Water District of Southern California (MWD)
- Water Replenishment District of Southern California (WRD)
- Los Angeles County Department of Public Works/Los Angeles County Flood Control District (LACFCD)
- Main San Gabriel Basin Watermaster

### **Deliverables:**

- Meeting agenda and notes (action items and key decisions in bulleted form) from the kick-off meeting and the stakeholder workshop, both draft and final.

### **Assumptions:**

- The kick-off meeting will be a conference call, lasting up to two hours, and will be attended in-person by three project team members from CH2M.
- The stakeholder workshop will be held at the Sanitation Districts of Los Angeles County office in Whittier, California with a duration of four hours. Up to three CH2M staff will attend in person.

## Task 2: Collect, Review and Summarize Data

The purpose of this task is to gather and compile existing information related to dry and wet weather flows within the study area from 2002 through 2017. Dry and wet weather data gathering and compilation are separated into independent subtasks to provide smaller and focused TMs for stakeholder review, thereby providing helpful guidance to the team as work proceeds. The summarized data will be used in the focused studies described in Task 3, but are expected to be helpful in screening for future DWD and WWD projects.

CH2M will lead the coordination efforts with the project team members, and LVMWD will coordinate with the stakeholders. The summary will also provide information on any data gaps and recommendations to fill in the data gaps if needed for the subsequent tasks.

### Subtask 2.1: Collect and Review Dry Weather Data

CH2M will request data related to dry weather storm drain flows and sanitary sewer capacity from 2002 through 2017. CH2M will prepare the data request and provide to LVMWD to submit to stakeholders and the LARWQCB. The received data will be consolidated and documented in TM 1, and any data gaps will be identified.

The data request will include, but not be limited to, the following:

#### Diversion/BMP Data

- DWD data or other diversion information, including infrastructure location, as-built plans, diversion capacity and configuration, flow data, water quality data, subwatershed drainage area and delineated boundary, pre-treatment mechanisms, and possibly available information.
- DWD planning documents, reports, and permits.
- Operation and maintenance data on existing DWDs, and capital, operation, and maintenance costs.
- Stormwater management facility details, including detention facilities, cisterns, and bioretention facilities (within the tributary area/watersheds of existing DWD) which are potential candidates for diverting flows to the wastewater collection system.

#### Storm Drain Data

- Storm drain flow gauging data for the watersheds of DWDs.
- Monitoring years and duration of measurements, e.g., flows measured during studies for specific periods vs. continuous flow monitoring systems.

#### Wastewater Collection System Data

- Wastewater collection system GIS data.
- Flow data from 12 WRPs (as identified in Table 2).
- Dry weather sanitary sewer and storm drain capacities where DWDs are implemented, information on related monitoring programs.

#### Watershed-level Data

- Watershed management planning documents including the Los Angeles Basin Conservation Study and the Greater Los Angeles Water Collaborative reports, Integrated Regional Watershed Management Plans (IRWMPs) and Enhanced Watershed Management Programs (EWMPs).
- Sewer System Management Plans (SSMPs).

**Deliverables:**

- TM No. 1 – Inventory of Dry Weather Data (draft and final).

**Assumptions:**

- The TM will be approximately 10 pages.
- Stakeholders will provide data in a readily-usable electronic format, within three weeks of the data request. Acceptable data formats will be discussed.
- Because the quantity, quality and completeness of the received data are not currently known, CH2M has assumed 100 hours for data consolidation and review of the dry weather data task.
- Any data received after the compilation and summary will not be included in TM No. 1.

**Subtask 2.2: Collect and Review Wet Weather Data**

CH2M will request data related to wet weather data from 2002 through 2017. CH2M will prepare the data request and provide to LVMWD to submit to stakeholders and the LARWQCB. The received data will be consolidated and documented in TM 2, and any data gaps will be identified.

The information related to wet weather will include, but not be limited to, the following:

Rainfall Data

- Rain gage data in the watersheds where the DWDs exists. NOAA or Los Angeles County rain gage data will be collected.

Storm Drain Data

- Wet weather flow data
- Information on the locations and duration(s) of measured wet weather flows in the study area.
- Water quality data, specifically for storm drains where DWDs exist.

Wastewater Collection System Data

- Available wet-weather flow data (may be included in the received data from Subtask 2.1).
- Historical hourly, or more frequent, influent sanitary sewer flows to WRPs 24 hours prior to, during and up to 7 days after rainfall events.
- Inventory of telemetry or smart sensor systems of the sanitary sewer system.
- Locations and dates of sanitary sewer overflows caused by rainfall events, and locations of localized flooding.
- Significant Inflow and infiltration studies during wet weather events.

Watershed-level Data

- Integrated Watershed Management Plans (IRWMPs) and Enhanced Watershed Management Programs (EWMPs).
- GIS files of delineated drainage areas tributary to existing DWDs, and other GIS watershed data, such as land use, etc. (to be determined).

**Deliverables:**

- TM No. 2 – Inventory of Wet Weather Data (draft and final).

**Assumptions:**

- The TM will be approximately 10 pages.

- Stakeholders will provide data in a readily-usable electronic format, within three weeks of the data request. Acceptable data formats will be discussed.
- Because the quantity, quality and completeness of the received data are not currently known, CH2M has assumed 100 hours of time for data consolidation and review of the wet weather data.
- Rainfall data will be limited to the rain gages in the study area, and the summary will be focused on the rainfall gages where DWDs exist, and those used in the TMDL development in the watersheds
- Any data received after the compilation and summary will not be included in TM No. 2.

### **Subtask 2.3: Characterize and Quantify Dry Weather and Wet Weather Data**

Quantification and characterization of flows is an important to the understanding of flows tributary to existing DWDs, water quality, capacity of the existing infrastructure (both diversion structures and sanitary systems), and the potential for these systems to accommodate flows beyond dry weather flows.

CH2M will characterize dry and wet weather flows handled by existing DWDs. Based on the information received, characterization and quantification of flows will include:

#### Storm Drain System

- Storm drain flows originating from the tributary areas of the DWDs.
- Dry weather flows will be estimated at peak if a diversion does not have storage. The average flow over the allowable diversion hours will be provided if a diversion includes storage.
- Information on water quality impairments for parameters of concern, e.g., metals, nutrients, and bacteria, and other constituents for which TMDLs have been developed within the subwatersheds where the DWDs are located.

#### Wastewater Collection System

- Conveyance capacity of the downstream collection system from the location of the diversion.
- Summaries of seasonal average, peak flows, and available capacities at the WRPs will be developed.
  - For diversions further upstream in the sewer system, the analysis will focus on the available capacity after rainfall has subsided (e.g., dry-weather peak capacity and the capacity available during off-peak hours) and the time between the end of rainfall and return to baseflow. These data can be used to determine the draw down rate for stormwater storage.
  - Potential constraints for utilizing existing infrastructure/system for the wet weather flows.
  - Flows currently captured by DWDs and additional potential to capture dry weather flows.

#### **Deliverable:**

- TM No. 3 – Characterization of Dry and Wet Weather Flows (draft and final).

#### **Assumptions:**

- The TM will be approximately 10 pages.
- No monitoring or modeling is scoped under this task.
- Wastewater system capacity data will be provided by the stakeholders.

#### **Subtask 2.4: Prepare Inventory of DWDs**

An inventory of the received DWD data will be prepared. The inventory and summary may include the following (depending upon data gathered under previous subtasks):

- DWD location, receiving waterbody name where drainage area was discharged prior to the DWD; DWD owner, capacity, storage, jurisdiction, land use, and year constructed.
- Watershed tributary drainage area that discharges to DWD, and related hydrology data, including but not limited to flows, and land use types contributing to the runoff.
- Any pre-treatment system and related information, e.g., type of maintenance needed, frequency of maintenance, agency responsible.
- Map of the DWDs, including tributary drainage areas if the GIS files of the drainage areas are available.
- DWD facility/structure type, DWD capital and operational costs and requirements, and responsible agency.
- lessons learned from the performance of existing DWDs, challenges, and successes of using DWDs as a tool for stormwater management.

#### **Deliverable:**

- TM No. 4 – Inventory of DWDs (draft and final).

#### **Assumptions:**

- The TM will be approximately 10 pages.
- No data analysis is scoped under this task.

#### **Subtask 2.5: Determine Efficacy of Existing DWDs**

Existing DWDs will be assessed to evaluate their potential to accommodate additional dry weather flows. The screening-level assessment may include:

- Quantity of flow diverted by each existing DWD, and whether a DWD also functions as a WWD.
- Adopted and planned TMDLs in the watershed where DWD is located.
- Summary of variations in flows for subwatersheds that are diverted to the DWDs.
- Summary of pollutant loading in the subwatersheds diverted to DWDs.
- Land use.
- Collection system capacities.

#### **Deliverable:**

- TM No. 5 – DWD Efficacy Analysis (draft and final).

#### **Assumptions:**

- The TM will be approximately 10 pages.
- Assessments will be based on received data from earlier subtasks.



## Task 3: Identification of Potential DWDs for Conversion to WWDs

Based on the data compiled in Task 2, analysis will be conducted to understand if the existing DWDs and the connected wastewater collection system have capacity for conversion to WWDs. CH2M will prepare a list of DWDs that have the potential for conversion to WWDs. Out of that list up to four DWDs will be selected for conducting a preliminary feasibility analysis.

### Subtask 3.1: Select DWDs for Conducting Preliminary Feasibility Analysis

Up to four existing DWDs will be selected and evaluated for potential conversion to WWDs. The selection process will incorporate available data for the diversion as identified in Task 2, and also input from stakeholders.

The following are expected to be assessed based on received data:

- Temporal/seasonal variations in both dry and wet weather flows generated in the tributary areas of the DWDs.
- Design capacity of the diversion system.
- Ability of the existing DWD system to accommodate additional flows.
- Opportunity for physical expansion, e.g., availability of land and potential public safety impacts.
- Capability of the sanitary sewers in the area to handle additional flows.
- Capability of downstream WRP(s) to handle additional flows and the timing of those flows.

#### Deliverable:

- TM No. 6 – Identification of DWDs for Potential Conversion to WWDs (draft and final).

#### Assumptions:

- The TM will be approximately 10 pages.
- Assessments will be based on received data from earlier subtasks.

## Task 4: Case Studies of Selected Diversions

CH2M will conduct a preliminary feasibility analysis of the four selected DWDs from Task 3 to understand the feasibility of converting those DWDs to WWDs.

### Subtask 4.1: Perform Rainfall and Wet Weather Flow Analysis

Existing Intensity-Duration-Frequency (IDF) curves will be used to estimate the flows generated from the watersheds/catchment areas of each selected DWD. IDF curves will be used in conjunction with runoff estimation formulae; e.g. the Rational Method, to predict the peak runoff amounts from a particular watershed. Generated flows/volumes will be routed (using a simplified static accumulation approach) to each selected DWD.

#### Deliverables:

- No separate deliverable will be submitted under this task; results will be incorporated into TM No. 7 – Feasibility Analysis of Selected DWDs for Conversion to WWDs.

#### Assumptions:

- Existing IDF curves will be taken from NOAA, Los Angeles County Hydrology Manual, or other agreed-upon source.

## Subtask 4.2: Evaluation of Hydrologic and Water Quality Modeling to Quantify Flow and Pollutant Reduction

For each selected DWD watershed, CH2M will use the existing Watershed Management Modeling System (WMMS) developed by the Los Angeles County Flood Control District to develop water balances, and estimate (quantify) water quality pollutant reduction benefits.

The following activities are expected to be performed for each of the four selected DWDs:

- Review approaches used in the TMDLs to understand the pollutants of concern, and review EWMPs for quantification of flows in the subwatersheds where the DWD exists.
- Assess the feasibility of using analysis developed in the study area conducted by Los Angeles County Department of Public Works and LACFCD and Bureau of Reclamation for understanding region's water supply and demand, impacts from projected population growth and climate change in the watersheds of the Los Angeles region.
- Discussion and summary of other potential approaches, such as the Los Angeles County Department of Public Works Hydrology Manual, the Rational Method based on the area, and modeling tools.

### Deliverables:

- No separate deliverable will be submitted under this task; results will be incorporated into TM No. 7 – Feasibility Analysis of Selected DWDs for Conversion to WWDs.

### Assumptions:

- It is assumed that the WMMS model has been calibrated for flows and water quality for the Los Angeles Basin watersheds (specifically the four identified in Task 2) and will be readily available to apply for this task without modification by CH2M.
- Analysis will be based upon existing collected data.

## Subtask 4.3: Evaluate Sewer Capacity to Convey Stormwater Flows

CH2M will evaluate up to four priority storm drain locations for the potential for new storm water flow diversions by comparing available sewer capacity to existing hydrologic conditions. The results of Tasks 3 will provide the basis for this evaluation. The following analysis will be conducted:

- 1) Estimate the capacity of existing sewers at the specific target locations to convey flows from up to the targeted capture volume using the information gathered in Task 2.5. This analysis will consider the additive effects of multiple diversions (using a simplified static accumulation of flows so that downstream sewer reaches are not loaded beyond the maximum wet weather flow constraint identified by the sewerage agency<sup>2</sup>).
- 2) Estimate the amount of stormwater that could be captured and treated at each target location.
- 3) If storage at a DWD for first flush volume is not an option, and water supply is an important goal, storage upstream in the watershed may be considered. The captured stormwater can then be released back into the storm drain to be conveyed to a diversion when capacity is available. A balance needs to be found between available land, capturing enough water for MS4 compliance, water supply benefits, and available conveyance and treatment capacity.

### Deliverables:

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<sup>2</sup> The Sanitation Districts and the City of Los Angeles use a standard of 75% d/D (or a flow depth no greater than 75% of the diameter of the pipe).

- No separate deliverable will be submitted under this task; results will be incorporated into TM No. 7 – Feasibility Analysis of Selected DWDs for Conversion to WWDs.

**Assumptions:**

- Analysis will be based upon existing collected data.

**Subtask 4.4: Interview WRP Operators – Wet Weather Plant Performance**

Interviews with WRP managers/operators will be conducted to understand plant wet weather performance and operation. Of interest are WRP capacities, hydraulic and process constraints, and concerns that may affect the flow diversion potential within the WRP sewershed.

A questionnaire will be developed and sent to WRP managers/operators (via the appropriate stakeholder) to gather information, and up to five in-person meetings will be conducted.

**Deliverables:**

- WRP manager/operator questionnaire.
- Interview agendas and meeting notes (draft and final)

**Assumptions:**

- Results will be incorporated into TM No. 7 – Feasibility Analysis of Selected DWDs for Conversion to WWDs.
- Stakeholders will facilitate the WRP questionnaires and feedback, and assist with coordination of the in-person on-site meetings.
- Data and information by WRP operators will be available prior to the in-person meetings.
- Up to five meetings will be held at individual WRPs; each meeting will be two hours in duration, and will be attended by up to two CH2M staff.

**Subtask 4.5: Evaluate Feasibility of Wet Weather Flow Diversion**

The purpose of this analysis is to develop a range of flows for use in evaluating the potential for new storm water flow diversions. For the four DWDs, and using data collected in prior tasks, CH2M will develop (depending on available data) the annual storm, 85<sup>th</sup> percentile storm, 2-year, 5-year, and 10-year storms using a simplified approach to pro-rate the storms based on annual rainfall values based on the LA County Hydrology Manual. The results will be compared against available sewer capacities, and other infrastructure demands for storage and conveyance.

Based on the information developed in the previous tasks, CH2M will evaluate the need for storage to facilitate the conversion to a WWD.

**Deliverable:**

- TM No. 7 – Feasibility Analysis of Selected DWDs for Conversion to WWDs (draft and final).

**Assumptions:**

- The TM will be approximately 10 pages.
- No new hydrologic analysis will be performed under this task.
- Analysis will use data collected in previous tasks.

## Task 5: Develop Conceptual Plan to Divert Remaining Dry Weather Flow

The conceptual plan will be developed to divert remaining dry weather flows in the study area to WRPs. It is assumed that the overall conceptual plan will be applicable to all the treatment plants in the study area.

### **Deliverable:**

- TM No. 8 –Conceptual Plan to Divert Remaining Dry Weather Flows in Study Area (draft and final).

### **Assumptions:**

- The TM will be approximately 10 pages.
- Analysis will be dependent on the available data in the storm drain system and sewersheds.
- No monitoring and modeling is scoped under this task.

## Task 6: Case Study of Cisterns with Direct Diversion to Sanitary Sewer

CH2M understands that distributed BMPs, such as cisterns, are being implemented/planned within the jurisdictions of the stakeholders. The related study conducted by the Greater Los Angeles Water Collaborative, a partnership between LADWP, LASAN, and LACFCD, will be reviewed to understand the findings of the study. Two examples of cisterns in the stakeholder jurisdictions will be considered for diversion of wet weather flows from cisterns to the wastewater collection system.

### **Deliverable:**

- TM No. 9 – Case Studies of Cisterns with Direct Diversion to Sanitary Sewer (draft and final).

### **Assumptions:**

- The TM will be approximately 10 pages.
- Flows generated from cisterns are collected at one central location and there are existing DWDs where flows from the cisterns can be diverted.
- Only data collected in previous tasks will be used in this task.

## Task 7: Regulatory Considerations

Existing relevant regulations relating to storm drain diversions to the sanitary system will be summarized and examined, and opportunities for regulatory flexibility identified.

### **Subtask 7.1: High Level Review of Relevant Policies and Regulations**

CH2M will summarize the existing relevant regulations relating to storm drain diversions to the sanitary sewer system. A high-level review of regulatory requirements and policies will be conducted.

Key activities include:

- Review of WRP discharge requirements for storm water, e.g. Public Health/end use requirements for treated storm water (Title 22), and combined sewer overflow (CSO)/sanitary sewer overflow (SSO) regulations.
- Review of existing NPDES permits, including evaluation and summary of existing MS4 requirements.
- Conduct a meeting with the project stakeholders to understand their NPDES compliance requirements regarding post-construction stormwater treatment objectives.
- Review of relevant TMDLs documents and EWMP treatment objectives goals.
- Review of SSMPs.

**Deliverables:**

- Stakeholder meeting agenda and point-form meeting notes (draft and final).

**Assumptions:**

- Results of this subtask will be incorporated into TM No. 10 – Regulatory Considerations.
- The review will not be specific to any diversion, but will be an overview of the existing relevant regulations relating to storm drain diversions to the sanitary system.
- The stakeholder meeting will be held in Los Angeles, will be up to four hours in duration, and will be attended by up to three CH2M staff.
- Analysis will be based upon existing collected data.

**Subtask 7.2: Regulatory Considerations and Regional Board Engagement**

Through a series of additional meetings/workshops, CH2M will develop a process to engage Los Angeles Regional Water Quality Control Board (LARWQCB) during the planning phases of this project. Benefits are expected to include early identification of constraints and concerns, unified approaches to resolving issues to help gain acceptance of the approach. LARWQCB input regarding the existing DWDs will be of great value to design a robust approach and a solid framework for MS4 permittees to adopt to avoid any major issues.

CH2M will lead the discussions with LARWQCB and stakeholders. Up to three in-person meetings and two workshops with LARWQCB are included in this scope.

**Deliverables:**

- Meeting/workshop agendas and point-form meeting notes (draft and final).
- TM No. 10 – Regulatory Considerations (draft and final)

**Assumptions:**

- Up to three in-person meetings will be held in Los Angeles; each meeting will be up to two hours in duration, and will be attended by up to three CH2M staff.
- Up to two workshops will be held in Los Angeles; each workshop will be up to three hours in duration, and will be attended by up to three CH2M staff.
- The TM will be approximately 10 pages.

**Task 8: Framework for MS4 Permittees for Conversion of DWDs to WWDs**

CH2M will develop a framework for MS4 permittees to guide conversion of an existing DWD to a WWD, or development of a new WWD. The framework will include an approach to plan, execute, and assess steps to start a dialogue and obtain approvals from the agencies involved, such as infrastructure owners, treatment plant operators and regulators.

The framework will include a checklist of items to obtain approvals for the process. It will include, but not limited to the following:

- Appropriateness/feasibility of a WWD.
- Geographical information and project location
  - Preferable evaluation for downstream solutions to gain maximum benefit.
  - Priority (e.g., end of pipe, river diversions, or large municipal agencies downstream).
  - Infrastructure demands (e.g., pump stations, right of way, plumbing, detention storage).

- Upland solutions (e.g., local diversions, infrastructure demands (flow splitter designs, storm drain connections, upsizing sewers)).
- Design elements.
- Planning and steps to obtain approvals from LARWQCB and infrastructure owners (e.g. LACFCD Flood Permit), CEQA, USACE 401, USACE 404, CA DFW, and CA Coastal Commission).
- Compliance-based criteria.
  - Municipal
    - Phase 1 MS4 permit compliance -- cities, LACFCD, Port of Los Angeles.
    - Small MS4 permit compliance -- traditional and non-traditional MS4s, e.g., LAX, UCLA, CSULA, etc.
  - Industrial
    - Potential to connect to industrial storm water facilities.
    - Incentives.

Other potential topics may include:

- Operational controls and control interface
- Real-time monitoring.
- Sanitary sewer overflows.
- Peak flow capacity.
- Margin of safety.

**Deliverable:**

- TM No. 11 – Path Forward Framework of Conversion of DWDs to WWDs for MS4 Permittees (draft and final).

**Assumptions:**

- The TM will be approximately 10 pages.
- The framework will not be specific to a location, but will be generalized with the steps to follow for conversion of DWDs to WWDs.
- Only data collected in previous tasks will be used in this task.
- Deliverables (e.g., TMs) will be provided in electronic format only.

## Task 9: Conclusions and Recommendations

Produce a synthesized set of conclusions and recommendations based on the 11 TMs.

**Deliverable:**

- TM No. 12 – Conclusions and Recommendations (draft and final).

**Assumptions:**

- The TM will be a maximum of 5 pages.

## Task 10: Draft and Final Report

CH2M will prepare a draft report to present the work completed in Tasks 1 through 9. The draft report will consist of a clear and concise Summary Report that communicates the major elements of each TM, all of which will be appended.

### Deliverables:

- Project report (draft and final).

### Assumptions:

- The final report will be a approximately 10 pages, excluding the appended TMs.
- Stakeholders review the report and provide comments after a 4-week period.
- Comments on the draft report are assumed to be minimal as the deliverables under tasks 1 through 9 would have been previously reviewed by the stakeholders and the draft report is a compilation of those deliverables with prior comments addressed.

## Task 11: Project Management and Meetings

CH2M will perform project management activities which will include project setup, communications with the project manager at LVMWD, attending project meetings, monthly progress conference calls, internal quality control reviews, and preparation of monthly progress reports and invoices. This task also includes communications with LVMWD to plan for the workshops, communication with the LARWQCB.

Four, in-person, quarterly meetings of the project team with LVMWD are assumed under this task. These meetings will cover project progress, next steps, project schedule and budget, stakeholder process, and strategy. CH2M will conduct up to an additional two conference calls per month with LVMWD to review progress and discuss any issues or concerns.

### Assumptions:

- Eight monthly progress meetings will be conducted by phone or Skype, and will be attended by up to three CH2M staff; meetings will be 1 hour in duration. An agenda, and draft and final meeting notes will be provided. Four quarterly meetings will double as progress meetings.
- Four quarterly meetings will be attended in person by up to three CH2M staff; meetings will be two hours in duration, and held at in Los Angeles. An agenda, and draft and final meeting notes will be provided.
- Up to 24 progress conference calls will be attended by up to three CH2M staff, and each call will be one hour in duration. Final call notes will be provided for each call.
- Meeting notes will be point-form, and will include decisions and action items.

### General Project Assumptions:

- The CH2M Project Manager will work directly with the project stakeholders to receive comments on the draft TMs, and will agree on an appropriate stakeholder review period for each TM so that project schedule is not adversely affected. Comments will be consolidated and reconciled by CH2M and reviewed with LVMWD prior to incorporation into the final document. CH2M will revise draft TMs based on the comments received and submit to LVMWD and stakeholders. Up to 10 hours of time per TM, and for the final report, have been assumed for resolution of stakeholder comments.
- All received data will be available in usable electronic format. Data extraction from CAD files, GIS maps, or paper files will not be performed by CH2M.

- After discussion with LVMWD on the required elements for the project, CH2M and LVMWD will determine whether any additional scope and budget will be needed to fill in identified major data gaps, and/or perform the analysis.

**Deliverables:**

- Periodic meeting agendas and notes (final).
- Monthly progress reports and invoices.

## Budget

This fee of this project will be on a time-and-materials basis for the scope of work described herein. The estimated budget to complete Tasks 1 through 11 is \$694,000. Table 3 contains a breakdown by each of the 11 tasks.

**Table 3 – Cost by Task**

<b>Project Task</b>	<b>Hours</b>	<b>Budget</b>
Task 1: Project Chartering Sessions	109	\$21,883
Task 2: Collect, Review and Summarize Data	878	153,054
Task 3: Identification of Potential DWDs for Conversion to WWDs	294	\$54,496
Task 4: Case Studies of Selected Diversions	860	\$155,827
Task 5: Develop Overall Conceptual Plan to Divert Remaining Dry Weather Flow	189	\$34,072
Task 6: Case Study of Cisterns with Direct Diversions to a Sanitary Sewer System	228	\$41,560
Task 7: Regulatory Considerations	253	\$62,570
Task 8: Develop Path Forward Framework for MS4 Permittees for Conversion of DWDs and WWDs	215	\$39,700
Task 9: Conclusions and Recommendations	176	\$33,218
Task 10: Draft and Final Report	153	\$29,402
Task 11: Project Management and Meetings	387	\$68,218
<b>Total</b>	<b>3,742</b>	<b>\$694,000</b>

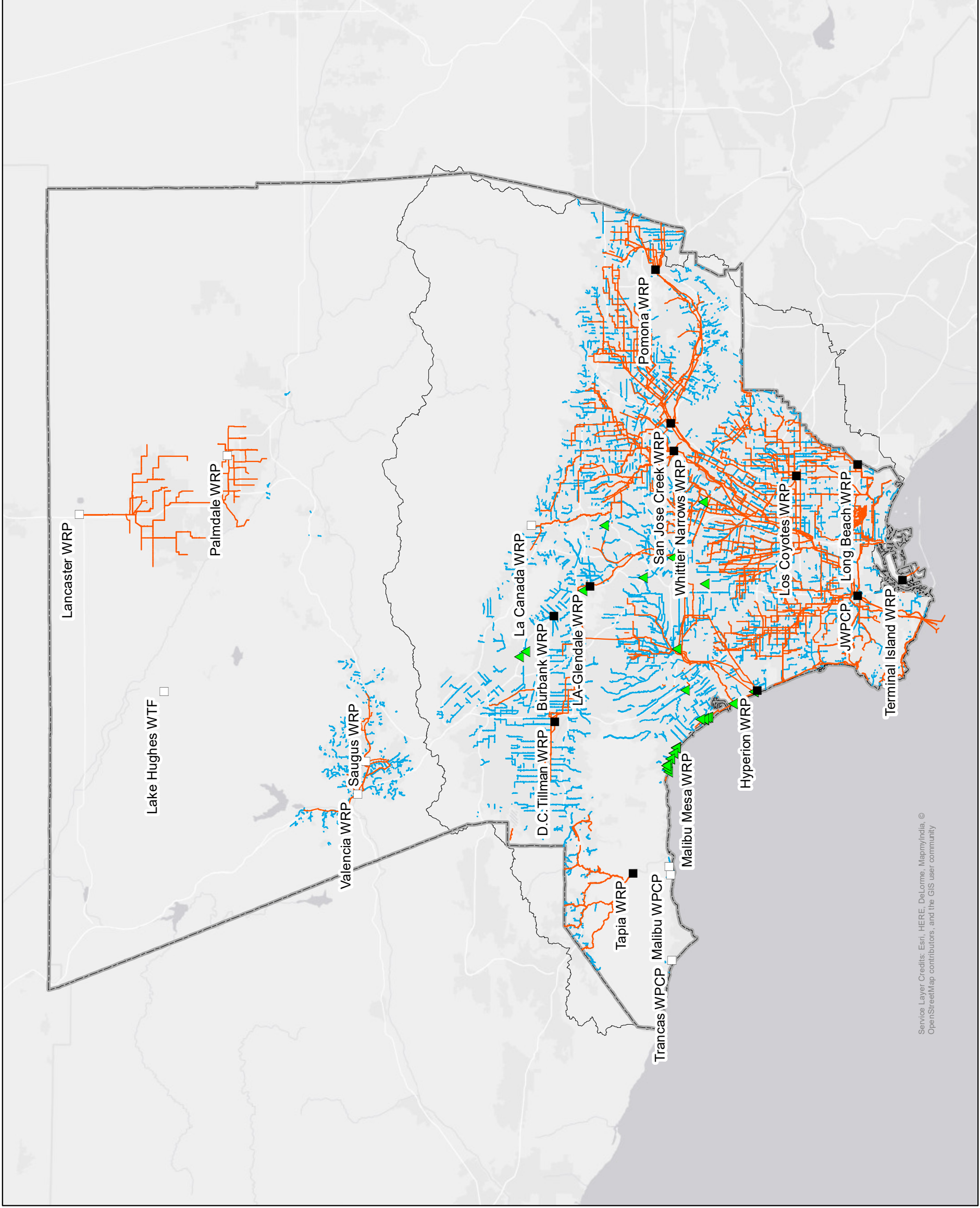
CH2M will not be obligated to perform work beyond the contracted budget, and LVMWD will not be obligated to compensate CH2M beyond the authorized budget without LVMWD approval.

This proposal is valid for sixty (60) days from the submittal date.

## Schedule

The work is estimated to be completed within 12 months of contract execution. It is assumed that the work will begin in January 2019.





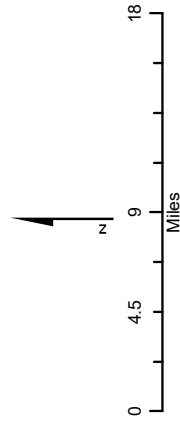
**LEGEND**

**Wastewater Treatment/Reclamation Facility**

- Sewershed Included in Study Area
- Sewershed Not Included in Study Area
- ▲ Existing Dry Weather Diversion
- Large Interceptor/Outfall Sewer
- Storm Drain > 48"
- Los Angeles County Boundary
- Los Angeles Basin

**Notes:**

1. For clarity, resolution of piping varies by area. Not all pipes are shown.
2. Maps are intended for high-level view of existing facilities. Locations of facilities are approximate.



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**Figure 1**  
Existing Low Flow Diversions and WRPs

 = Technical Memorandum

Stakeholder Participation

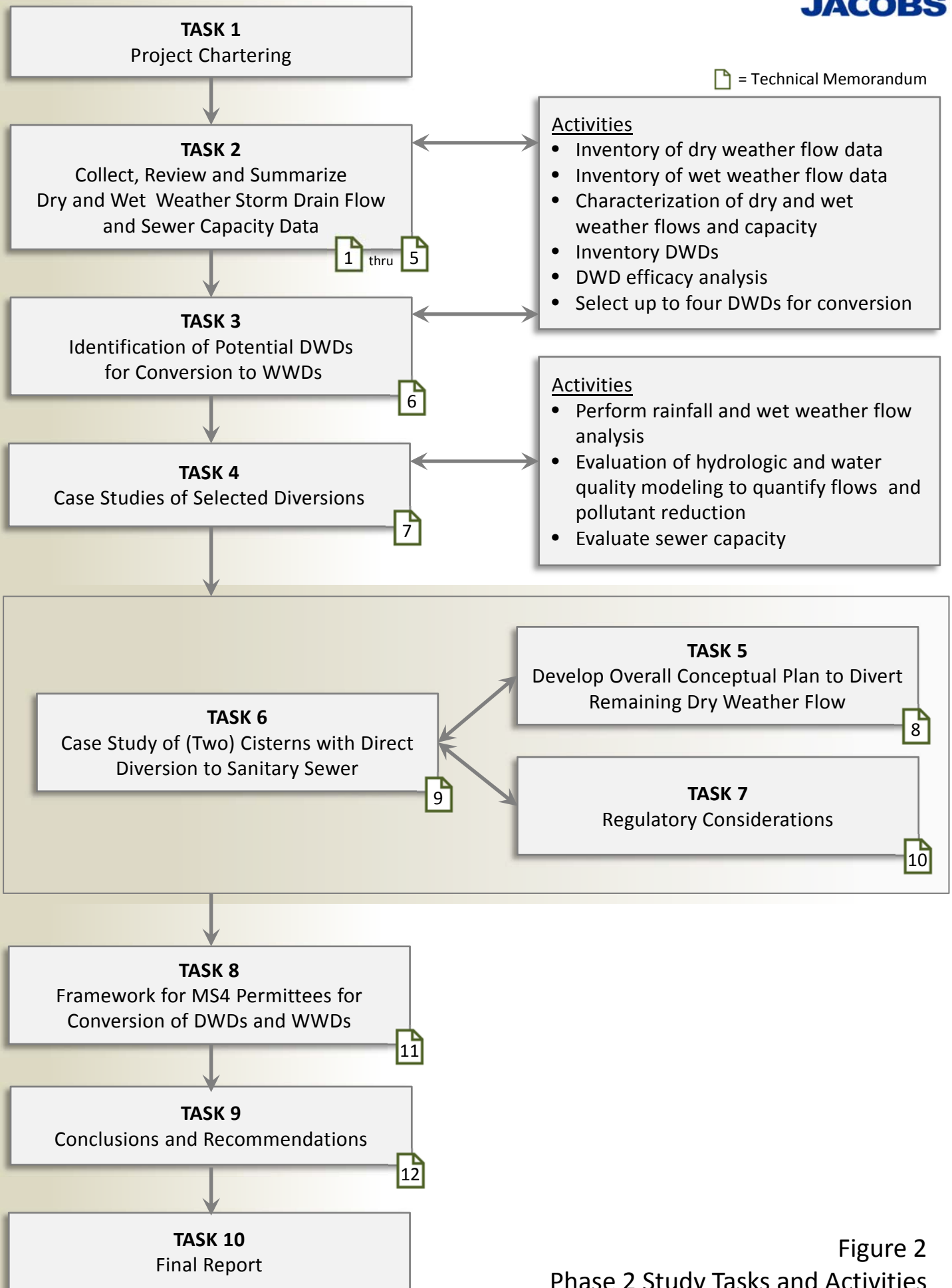


Figure 2  
Phase 2 Study Tasks and Activities  
306

## **Exhibit 1**

Responses to Stakeholder Comments on  
August 28, 2018 Draft Scope

Exhibit 1  
Responses to Stakeholder Comments on  
August 28, 2018 Draft Scope

No	Task	Comment	Response
<b>LA County Department of Public Works</b>			
LACDPW-1	Key Terminology	Is there a potential to utilize a 15-year period? This would then include the very wet 2004-05 storm season which could provide some useful insights when coupled with the 2012-2016 drought.	Agree, we will use the study period from CY 2002 through 2017 to include the very wet 2004-05 storm season and the 2012-2016 drought.
LACDPW-2	Task 1	This white paper is an excellent opportunity to showcase the benefits of integrated regional water management practices; we suggest adding such language.	Yes, the benefits of integrated regional water management practices will be added into the deliverables of this study. Incorporated text to reflect this point in the new conceptual approach section of the scope of work .
LACDPW-3	Task 2	What is considered to be "reasonable"?	Edited text to state that the stakeholders will provide the data within three weeks of the request sent by Jacobs.
LACDPW-4	Task 2.1	Modifications to LACFCD stormwater infrastructure or operations have potentially significant public-safety impacts and these should also be considered	Edited text to state that the stakeholders will provide the data within three weeks of the request sent by CH2M/Jacobs.
LACDPW-5	Task 2.1	The LA Basin Study and the Greater Los Angeles Water Collaborative reports are also good resources which we can provide	Yes, we added these studies to the list of documents for review under this task.
LACDPW-6	Task 2.2	Could this compiled GIS data be later made available to the Project Partners?	Yes, we will provide the GIS data to the Project Partners.
LACDPW-7	Task 2.6	LA County Public Works has 21 low-flow diversions (LFDs) which we have been operating for 15+ years. Data sources include construction records, maintenance records, telemetry system data, etc. Note there was a minor error or needed clarification on page 4-2 of the May 2018 white paper; the Herondo LFD has a capacity of 60 OR 120 gpm depending on the time of day, not 60,120.	We will make this data correction for the Phase 2 of the project and utilize the County's LFD data.
LACDPW-8	Task 2.6	LACDPW's Low-Flow Diversion Task Force will be able to work with the authors to seek this information.	We will communicate with the LACDPW's Low-Flow Diversion Task Force members to gather LFD data and info.
LACDPW-9	Task 3	Other factors to consider for analysis: How will flows be diverted? - Design of diversion structures needs to be considered to avoid any impacts to LACDPW operations and to prevent adverse impacts to flood risk. Would these flows otherwise be captured?  - are there spreading grounds downstream of diversion?  - does this diversion add an actual supply benefit?  Design to limit pumping - Some elevated locations may allow diversions without need for pumping, greatly reducing operation and design costs, along with CO2 reductions from less energy use  Who will receive the recycled water? - Whether there are existing customers, need, or opportunity to use the additional recycled water; - Groundwater, whether aquifer is confined, could water be directly placed into infiltration? - Availability of spreading ground capacity in the area; - Restrictions from the regional board as to where recycled water can be spread (e.g. distance to production wells); - availability of spreading grounds is limited during wet weather, and priority is given to storm flows; Please contact LACDPW to discuss any of these further.	Acknowledged and added information related to these comments into the conceptual approach. Provided below are responses to these comments: - Conceptualization of preliminary design of diversion structures will be conducted for the selected (4) diversions in Task 4. Features to avoid any impacts to LACDPW operations and to prevent adverse impacts to flood risk will be considered.  Location of spreading grounds will be identified if affected by the location of a select diversion.  The diversions projects will provide water supply benefit when the downstream WRF effluent is recycled. However, the analysis for the location and end uses of the generated water supply will not the focus of this study.  Need pumping for permissive aspects of diversions.  As noted above, pumping is necessary to assure permissive diversion from the storm drain system to the sanitary system.  The end users of the water supply generated by the diversion projects will not be the focus of the study. However, qualitative description of end users will be discussed in the project report.

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No	Task	Comment	Response
LACDPW-10	Task 4.1	It is recommended that this analysis incorporate local climate change projections for storm frequencies.	In the overall conceptual approach, we have acknowledged the climate change impacts for the study. Where appropriate, we will include qualitative description for climate change impacts on storm frequencies.
LACDPW-11	Task 4.2	It is recommended to consider a climate-adjust 85th percentile storm event to assess the future effectiveness of these facilities.	Per above response to comment LACPW-10, we will address climate change impacts qualitatively in this study.
LACDPW-12	Task 4.3	We believe storage is a key design feature given the highly irregular flows observed in our systems.	For the four case studies conducted under this study, the analysis will include storage considerations to accommodate highly irregular flows.
LACDPW-13	Task 4.3	Can combinations of seasonal dry and wet flow patterns be considered? Or could this "optimization" come later?	This analysis will be a part of the final feasibility analysis of the project(s) identified under this study, which will depend on the data available.
LACDPW-14	Task 4.3	Based on our experience, flows vary widely on an hourly, daily, monthly, and annual basis. Wet years have much more dry weather flow.	This discussion was referring to gaging of the wastewater in the collection system rather than stormwater runoff. It has since been removed from the scope language and will be considered during the study only if necessary and feasible.
LACDPW-15	Task 4.3	Hourly peak? Daily? "Peak" flow might be replaced with "85% daily dry-weather flow total on a multi-year basis" or something similar.	The amount of flow diverted will depend on the size of the diversion and capacity of the wastewater system.
LACDPW-16	Task 4.5	Could these be climate-adjusted?	The impact of climate change will be acknowledged and climate change adjustments to stormwater flows will be discussed qualitatively.
LACDPW-17	Task 6	This concept was coarsely assessed in the Greater LA Water Collaborative, a partnership between LADWP, LASAN, and LACFCD. The report can be shared with the Project Team.	We will review the report to understand the findings of the study. Added language to this scope to reflect this.
LACDPW-18	Task 8	This suggests/emphasizes path forward centers predominantly around water quality. If water supply is to receive equal exploration, perhaps a separate task for path forward related to water supply or else rename Task 8 to account for both....	The goal of the path forward task is to develop a framework for agencies to follow who would like to proceed with WWDS to divert surface water to create recycled water. The steps needed to develop new WWDS, or conversion of DWDS to WWDS will be discussed in this task, without quantification of potential water supply benefits.
LACDPW-19	Task 9	Consider adding infrastructure owners (e.g. LACFCD Flood Permit), CEQA, USACE 401, USACE 404, CA DFW, and CA Coastal Commission permitting requirements	Infrastructure owners have been added in the text for this task. Other agencies that may be involved in the process for diversions will be considered.
LACDPW-20	Schedule	It is assumed that further development, opportunities for further GIS expansion/overlays, discussion of how/when to engage other stakeholders, and further alignment with other sources/studies will be a part of the white paper process.	This is the intent of the stakeholder coordination/project steering committee. These elements will be discussed during stakeholder meetings.
<b>LA County Sanitation Districts: Ruffell, Kristen</b>			
LACSD-1	Task 1	Do you want to give any other MS4 permittees a chance to participate since the findings could affect their programs?	The participation of additional stakeholders will be discussed in the stakeholder meetings and communication about the study will be provided in other forums.
LACSD-2	Task 2.1	Attached is an example of the data available for one of LACSD's sewers. These Clearance Diagrams represent the available capacity during peak dry weather flow and are prepared by hand using a combination of sewer level monitoring and best professional judgement (for example, knowledge of a cross connection that can flow either direction depending on the time of day or an episodic industrial discharge). To determine the capacity available in any section of sewer, all of the downstream sections need to be analyzed along with any completing projects (e.g. a new industrial wastewater discharge) to determine the constraining flow.	We will rely on LACSD to provide the relevant available sewer capacities for diversion locations.
LACSD-3	Task 2.1	We have these and can provide them. What will they be used for?	We will review the SSMPs for data related to sewer systems and the plans (e.g., operation and maintenance) in place.
LACSD-4	Task 2.2	Given the paper-based flow records and the case-by-case analysis needed, this may not be worth the effort/cost	In this task, we will prepare a summary of the available data, the extent of data, and the format of it. We have clarified in the text that the GIS database will house only data provided electronically.

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August 28, 2018 Draft Scope

No	Task	Comment	Response
LACSD-5	Task 2.3	We do not have sufficient data to characterize flows or capacity in wet weather except at the headworks to a treatment plant.	We will use all data that is readily available to characterize flows or capacity in wet weather. Since the wet weather data in the sewer system are limited, the focus will be to prioritize diversions upstream of WRPs rather than further upstream in the sewage collection system. Data gaps will be identified under this study for the feasibility analysis of the projects identified under this scope.
LACSD-6	Task 2.3	We can provide a map of the current Smart Covers we have installed. Please be aware that many of our smart covers are moved frequently, therefore we would prefer not to put these locations in a report. We have attempted to use this data for a control system and found that it was not reliable or frequent enough to manage flows. We are happy to share our experience.	We understand the concern and will not include the information about the location of the Smart Covers in the deliverables prepared under this scope. We would like to hear about your experience with the quality/use of this data.
LACSD-6	Task 2.3	We do not have a system-wide study. Our operations section has completed targeted studies to resolve particular issues, but formal reports were not prepared.	There may be value in considering the finding of targeted studies, depending on the potential WWD locations we wind up considering. We can discuss at that time.
LACSD-6	Task 2.4	Raw wet weather flow data is useful for calibrating models (both for the generated storm flow and the capacity available in the sewer), but cannot be directly used for planning or design.	Agreed. The purpose of this task is to document the availability of data and its attributes such as locations, type of data, quality of data, etc.
LACSD-6	Task 2.5	This conflicts with the highlighted text in the next paragraph.	Corrected in the next paragraph for consistency.
LACSD-6	Task 2.5	Doing this for the whole study area is a much larger task than the areas upstream of existing diversions (as stated in previous paragraph). Which one do you intend?	The flow characterization will be for the areas upstream of existing DWDs not for the entire study area.
LACSD insert	Subtask 2.5	For a proposed diversion to the headworks of a wastewater treatment facility, sufficient data exist to develop a model that will be used to determine minute-by-minute capacity throughout an 85 <sup>th</sup> percentile design storm. This model will be sufficient to estimate dry and wet weather capacity.	Development of such a model, useful for site-specific facility design, is not planned to be conducted under this scope of work where design will be considered at a more conceptual level.
LACSD insert	Subtask 2.5	Storm drain flows originating from the tributary areas of the DWDs for the 85 <sup>th</sup> percentile 24-hour design storm. Flows will be graphs in one-minute increments throughout the storm. The peak flow and the total volume will also be identified.	Flow graphing will be dependent on the data available/provided, and could be developed for the selected diversions, rather than the entire study area. The targeted capture volume could be more or less than the compliance storm.
LACSD deletion	Subtask 2.5	Water quality data, specifically for parameters of concern, e.g., metals, nutrients, and bacteria, and other constituents for which TMDL are developed in the watersheds where the DWDs are located	An inventory of water quality data will be beneficial to understand the water quality issues and loadings of pollutants in the watershed where diversions are studied.
LACSD insert	Subtask 2.5	Because the flow in the sewer system is dependent on the rate of rainfall, location(s) of flooding, and wet-weather operations of the sewer system, an analysis of available capacity during a storm can only be accomplished by developing a hydrodynamic model and calibrating it with sewer flow data collected during a range of storm conditions. Use of dry weather flow or data from one or two storms is not sufficient to determine the safe capacity during wet weather.	Agree that hydrodynamic modeling would be an optimal tool for assessing wet weather flow conditions in the sanitary sewer systems. Where the benefit of such modeling is available (e.g., City of LA) and it can be applied by the agency to inform the study, it will be considered. Where such a model does not exist or data is not available, other approaches to estimating available sewer capacity during wet weather will be considered with the respective agency.
LACSD insert	Subtask 2.5	In addition to physical flow, capacity must also consider future upstream residential/commercial/institutional/industrial developments, peak flow cycles, inflow and infiltration, and other factors that the various managing jurisdictions may apply. Guidelines for determining available capacity should therefore allow for differing methodologies that may be applied by the various controlling agencies.	We will work with the sewerage agencies to appropriately identify reasonable estimates of available capacities in their sanitary sewer systems.
LACSD-7	Task 3	The Sanitation Districts should conduct this analysis for the diversions in our service area.	Thank you.

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No	Task	Comment	Response
LACSD-8	Task 4	Many diversion won't go to reclaimed water. Should diversions be evaluated for their potential to generate new water?	The assumption of this study will be to generate potential water supply. Any water at the WRP could be used for generation of recycled water. We will not evaluate how much water will be reused as the study will not focus on end uses.
LACSD-9	Task 4	Different than the 85 <sup>th</sup> percentile 24-hour flow? Define?	Changed capture of "first flush" to capture of "targeted capture volume", which is dependent on available/potential storage volume in, or external to, the WWD.
LACSD-10	Task 4.1	Define first flush	Defined
LACSD-11	Task 4.3	There isn't enough money in the proposal to do this countywide. Suggest identifying priority locations and doing a detailed analysis on those. Locations near the WRPs may be most advantages.	Task 4 consists of conducting case studies on up to 4 selected LFDs.
LACSD-12	Task 4.3	[1] The Sanitation Districts and the City of Los Angeles? use a standard of 75% d/D (or a flow depth no greater than 75% of the diameter of the pipe.	Added footnote as suggested; City of Los Angeles indeed uses 0.75 d/D as trigger flow for capacity expansion.
LACSD-13	Task 4.3	This task is for new diversions, what pumping improvements did you have in mind?	Pumping improvements may be needed at existing DWDs to convey wet weather flows rather than the smaller, dry weather flows.
LACSD insert	Subtask 4.3	1) If sewer capacity is a constraint to conveying the required wet weather event volume, estimate the relative costs of sewer expansion improvements to enhance stormwater diversion will be considered, such as:• The cost of providing additional sewer conveyance. 3) The cost of providing stormwater storage so that the design volume can be diverted within 72 hours, or pumping improvements	Deleted. Cost analysis will not a part of this scope.
LACSD-14	Task 4.5	Are you intending to identify peaks? Total volume? How will you use this data given that the flows are variable throughout the storm?	We will develop a range of flows, including peaks and total volumes.
LACSD-15	Task 5	Can you provide more information as to how you plan to do this and what you think the output will look like? Any analysis needs to take into account that multiple projects will compete for the same capacity. Maybe this is a conceptual path forward given the detailed analysis of targeted locations in Task 4.3?	We will develop an output matrix that shows how much of the dry weather flows have been addressed by the existing DWDs, and, of the remaining dry weather flow in the watershed, the amount that could potentially be diverted to the sanitary system.
LACSD-16	Task 7.1	These are very broad. Maybe they can be refined in the first meeting with the stakeholders	This will be discussed with the stakeholders before the initiation of this task.
LACSD-17	Task 7.2	This should also be discussed among the stakeholders, given that many have a history and understanding of the Regional Board's jurisdiction in diversions	Agreed
LACSD-18	Task 8	These are not Regional Board issues. These issues will need to be discussed with the receiving sewerage agency.	Agreed. The text has been moved to Task 8.
LACSD-19	Task 7.3	These are the issues that would need Regional Board buy off.	Agreed.
LACSD-20	Task 10	How long will stakeholders have to review?	A review period of four weeks has been added in the text.
<b>LA Sanitation and Environment</b>			
LASAN-1	General Comments	It is recommended to provide projections of potential water supply benefits by DWDs, WWDs, and conversions of DWDs to WWDs as not all diverted runoff would necessarily result in actual water supply benefits.	The focus of this study is to identify the feasibility of diverting stormwater to the sanitary system for potential water supply benefit, i.e., if the wastewater is ultimately treated for reuse. It will be dependent on a number of factors such as type of diversion (wet or dry), location and capacity of the system to generate recycled water along with the end users. The end users and determination of water supply benefits will not be a focus of this study. However, the report of this project will include high level description of water supply benefits and potential beneficial uses.
LASAN-2	General Comments	When converting DWDs to WWDs, the water supply benefit is anticipated to be minimal because flows in the wastewater collection system during storm events are already sufficient. A possible solution would be a combination of a WWD and a detention take to attenuate peak storm runoff and delayed diversion to the collection system.	<p>These comments are addressed in this section. Brief response to the comments provided here:</p> <ul style="list-style-type: none"> <li>Storage will be considered as appropriate which will be site-specific.</li> <li>Volume to be addressed by the diversions will be discussed with the stakeholders. It will be dependent on several factors as discussed in this section.</li> <li>Agree with the comment on an auto-shutoff system for the diversions.</li> </ul>

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August 28, 2018 Draft Scope

No	Task	Comment	Response
LASAN-3	General Comments	A complete storm hydrograph is preferred when assessing the ability of the wastewater collection system and the WRPs to convey the peak runoff flow for the 85 <sup>th</sup> percentile storm event.	Using a complete hydrograph allows the full volume and shape of the storm event to be routed through the collection system. But if only a portion of the entire hydrograph is being routed into the diversion, or if storage is provided at the diversion, then the overall magnitude and shape of the hydrograph are of less importance, because much of that total volume will bypass the diversion.
LASAN-4	General Comments	Operators of the wastewater collection system may require an auto-shutoff system that would turn off the WWD if certain levels are reached in the wastewater collection system.	Agreed.
LASAN-5	Task 2.1	Flow data covering the second part of study period (2007-2017) might be more readily available than data covering the first part, which depends on when gauges were installed.	This comment is for the wastewater system data collection. We will use available data for the study for the period from 2007-2017 and if additional time is needed to extract data from archives, we will begin with the data that is more readily available.
LASAN-6	Task 2.5	Some modeling may become necessary under this subtask if there are large data gaps.	We will make that assessment as the study progresses and, if needed, work with the agencies to schedule their execution of such modeling, where possible.
LASAN-7	Task 2.7	For determining the efficacy of DWDs in relation to regulatory (MS4 Permit) compliance, it is important to establish the metric for compliance. We usually don't evaluate reduction of pollutant loadings by DWDs. We design DWDs to divert all dry weather runoff from a drainage area (no DWD discharge -> MS4 is not responsible for exceedances of water quality standards in receiving water). Likewise, a WWD that diverts the 85th percentile storm event would make the drainage area to that WWD into full compliance, regardless of the actual reduction of the pollutant loading.	The intent of this study is to add WWDs as another tool to be included as part of the strategy for achieving MS4 compliance; it is not expected to replace all of the other BMPs that will also be needed to fully manage the 85th percentile storm event. If the WWD will be able to handle the 85th percentile storm then the drainage area will be in full compliance. As mentioned in the conceptual approach, the amount of flow handled by each diversion will be dependent on several factors, e.g., site-specific conditions, size and capacity of the diversions, availability of storage in the upstream area of the diversion, etc. In case, the WWD cannot handle the 85th percentile storm event, then a methodology should be established in consultation with the Regional Board to determine the water quality benefit/credit from the reduction in loadings due to diversion.
LASAN-8	Task 3	There may be an interesting area for potential exploration by consultant team, specifically for addressing Bacteria TMDLs: - Many Bacteria TMDLs define wet weather as the day of the rain event and the three day following that storm event. - We have observed at several DWDs that runoff flows to rapidly decline after a storm event. - If we also divert runoff in the three days after a storm event, the diversion rate could be typical of dry weather (no capacity issues) but from a MS4 Permit/Bacteria TMDL compliance perspective it would count towards wet weather compliance. - This would be a partial/temporal conversion of DWDs to WWDs that would only require a change of the operational strategy.	This discussion has been added to the conceptual approach section of the study's scope of work.
LASAN-9	Task 4 (intro)	It is mentioned that LASAN is working on two DWD to WWD conversions, being effective in 2019. In the kickoff meeting, we brought up two examples of WWD projects that are being planned in the Ballona Creek watershed. However, those are done by other municipalities, and they will not be done by 2019 as they are in the early planning stages. Consultant team is recommended to confirm with LASAN whether we're talking about the same projects.	Thank you for clarifying the status of the planned WWD projects (by others) in the Ballona Creek watershed. For the case studies, four new projects will be identified for case studies based on the availability of data and discussion with the stakeholders.
LASAN-10	Task 4.3	If flow gauging upstream and downstream of a DWD would be necessary, who would be performing those services?	In that case, flow gauging of sewage upstream and downstream of the DWD will be conducted by the agencies owning the sanitary sewer system.
LASAN-11	Task 7.1	It is not clear why new development and redevelopment design criteria, building conditions, and municipal ordinances are important for evaluating runoff diversions to the wastewater collection system.	The stated factors do not affect the physical capacity to convey diverted flows; but may affect how much should be diverted to positively influence receiving waters. We will include a high level review of the regulatory requirements to qualitatively assess their impact on potential diversion flows.
		We recommend also evaluating the impact of runoff diversions on contractual agreements for sewage conveyance and treatment between contract agencies.	Under Task 8, a path forward strategy will lay out the steps and considerations for developing contractual mechanisms among agencies who participate in the projects.



Exhibit 1  
 Responses to Stakeholder Comments on  
 August 28, 2018 Draft Scope

No	Task	Comment	Response
LASAN-11	Budget	<p>Large scale runoff diversion could potentially result in reduction of flow/water levels in receiving waters which, in turn, could bring issues related to beneficial uses of the receiving waters, water rights, etc. However, this may be beyond the scope.</p> <p>Practical note: the consultant team will need to execute a license agreement with LASAN for receiving GIS files. This is a standard procedure taking about one week to complete.</p>	<p>These issues will be acknowledged during the Phase 2 work, but the impact of reduction of flow/water levels on receiving waters needs to be addressed on a case-by-case basis. We will acknowledge the impact of diversions on the downstream beneficial uses in the receiving waters.</p>
			<p>We acknowledge this comment. We will initiate the process as soon as the study begins.</p>

## Exhibit "B"

## **Contact Information for Parties to Agreement**

- Central Basin Municipal Water District  
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Central Basin Municipal Water District  
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- City of Los Angeles, LA Sanitation and Environment  
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- Las Virgenes Municipal Water District
  - Mr. David Pedersen, General Manager
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- Los Angeles County Flood Control District
  - Mr. Keith Lilley, Assistant Deputy Director
  - Stormwater Planning Division
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- Main San Gabriel Basin Watermaster
  - Mr. Tony Zampello, Executive Officer
  - Main San Gabriel Basin Watermaster
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- Three Valleys Municipal Water District
  - Mr. Matthew H. Litchfield, General Manager/Chief Engineer
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- Upper San Gabriel Valley Municipal Water District  
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**INFORMATION ONLY**

March 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

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**Subject : Pure Water Project Las Virgenes-Triunfo: Preliminary Evaluation of Stormwater Diversion Opportunities**

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**SUMMARY:**

As a part of the U.S. Bureau of Reclamation Title XVI Feasibility Study, a preliminary evaluation of stormwater diversion opportunities was conducted to explore supplementing the source water for the Pure Water Project Las Virgenes-Triunfo. The stormwater management agencies within the Malibu Creek Watershed include the cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village, together with the counties of Los Angeles and Ventura.

Based on information obtained from the stormwater management agencies and the Enhanced Watershed Management Program for Malibu Creek Watershed (MCWEWMP, 2016), sixteen proposed projects were analyzed using a screening process. The project screening included evaluation of the following factors:

- Size and proximity to an existing sanitary sewer
- Estimated quantity of diversion
- Influence of the Monterey/Modelo Formation (projects influenced by the Monterey/Modelo Formation were excluded due to potential water quality issues)
- Project flexibility (upsized potential and project status)

The screening process resulted in the following three projects that were further evaluated.

- TC-02 located on Mulholland Highway near Careful Drive
- TC-29 located near Lindero Canyon Road and Foxfield Drive
- TC-37 located at the intersection of Lindero Canyon Road and Triunfo Canyon Road

The projects consist of infiltration basins that utilize prefabricated underground storage to collect stormwater. The collected stormwater would then be discharged to the sanitary sewer at a controlled rate. Each project was also analyzed for upsizing potential beyond the size originally envisioned in the MCMEWMP.

The table below shows the results of the evaluation of the three projects. In general, the projects are expensive and provide relatively low yield. However, the projects could serve multiple purposes, including MS4 stormwater compliance and water supply. As a result, the projects could potentially qualify for multiple funding sources, recognizing the multiple benefits,

which would make them more attractive and potentially warrant further evaluation.

<u>Project</u>	<u>Estimated Stormwater (AFY)</u>	<u>Estimated Cost (\$M)</u>	<u>Cost per AF</u>
TC-02	50	\$3.352	\$67,040
TC-29	89	\$2.838	\$223,452
TC-37	42	\$9.385	\$31,887

Attached for reference is the Stormwater Technical Memorandum from the U.S. Bureau of Reclamation Title XVI Feasibility Study. The full study is available at [LVMWD.com/PureWaterProject-FeasibilityStudy](http://LVMWD.com/PureWaterProject-FeasibilityStudy).

**FISCAL IMPACT:**

No

**ITEM BUDGETED:**

No

**FINANCIAL IMPACT:**

There is no financial impact associated with this item.

Prepared by: David R. Lippman, P.E., Director of Facilities and Operations

**ATTACHMENTS:**

Stormwater Technical Memorandum from Title XVI Feasibility Study

5 September 2018

## Technical Memorandum (TM)

To: Mr. David R. Lippman, P.E.

From: Sachi Itagaki, P.E. & Rachel Morgan, EIT

Reviewer: Dawn Taffler, P.E.

Subject: Pure Water Project Las Virgenes - Preliminary Evaluation of Stormwater Diversion

K/J 1744518\*00

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This Technical Memorandum (TM) is prepared as part of the Pure Water Project Las Virgenes - Title XVI Feasibility Study, prepared by the Las Virgenes – Triunfo Joint Powers Authority (JPA) under a grant from the U.S. Bureau of Reclamation (BOR) Water Reclamation and Reuse (Title XVI) Program.

### 1.0 Introduction

The JPA is exploring the feasibility of Indirect Potable Reuse (IPR) to further treat recycled water from the Tapia Water Reclamation Facility (Tapia WRF) at a new Advance Water Treatment Facility (AWTF) and to convey the purified water to Las Virgenes Reservoir to supplement the drinking water supply. This project, referred to as the Pure Water Project, will complement the JPA's existing, and successful, recycled water program, which beneficially reuses nearly all available recycled water produced at the Tapia WRF during the summer months for irrigation of golf courses, green belts, parks and schools. The Title XVI Feasibility Study is evaluating alternatives to help the JPA address a major challenge related to the seasonal imbalance in the supply and demand for recycled water.

The purpose of this Technical Memorandum (TM) is to identify and evaluate opportunities to divert stormwater as a supplemental source water for the Pure Water project. This assessment of stormwater diversion opportunities is performed at a conceptual-level to provide a high-level assessment of the potential volume of stormwater that could be captured and to provide an order-of-magnitude cost of the stormwater capture. Additional studies would be needed to confirm the viability and cost effectiveness of a stormwater diversion project to increase the yield of the Pure Water Project.



## 2.0 Local Stormwater Setting

### 2.1 Stormwater Permitting

The federal Clean Water Act of 1972 (CWA) created the National Pollutant Discharge Elimination System (NPDES), which addresses non-point source pollution to improve water quality through permits such as the Municipal Separate Storm Sewer System (MS4) permit. Additionally, Section 303(d) of the CWA requires states, territories, and authorized tribes to develop a list of impaired waters (termed the “303(d) list”) to establish priority rankings and develop Total Maximum Daily Loads (TMDLs) for the waterbodies on the list. TMDLs establish a receiving waterbody target for a pollutant that will allow the waterbody to meet water quality standards for that pollutant.

The Las Virgenes – Triunfo Joint Powers Authority (JPA) operates the Tapia WRF that provides wastewater treatment service for approximately 100,000 residents in the Las Virgenes Municipal Water District (LVMWD) and Triunfo Sanitation District (TSD) service areas.

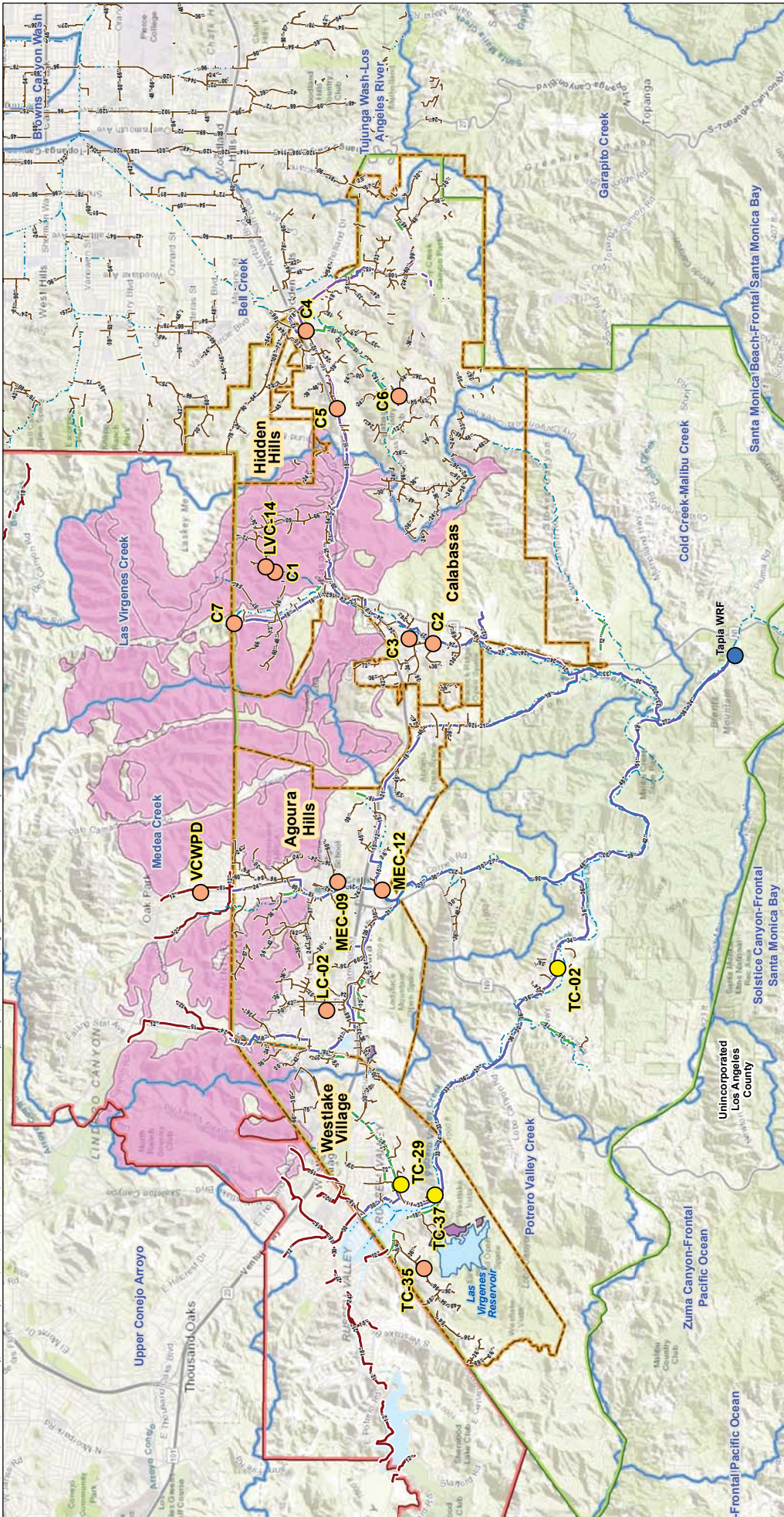
The LVMWD and TSD service areas are located within the Malibu Creek watershed, which is in both Ventura County and Los Angeles County. Malibu Creek is 303(d)-listed for bacteria and EPA adopted a bacteria TMDL for Malibu Creek in 2003. Implementation of the TMDL is summarized in the Integrated Total Maximum Daily Load Implementation Plan for the Malibu Creek Watershed (CDM 2007).

LVMWD’s service area includes the Cities of Agoura Hills, Calabasas, and Westlake Village as well as unincorporated Los Angeles County (LA County). These cities and unincorporated LA County are co-permittees on an MS4 permit along with the Los Angeles County Flood Control District, LA County (with the exception of the City of Long Beach), and 81 other incorporated cities (Order No. R4-2012-0175 as amended by State Water Board Order WQ 2015-0075 and Los Angeles Water Board Order R4-2012-0175-A01). The cities and LA County are also the owners/operators of the stormwater infrastructure within LVMWD’s service area. TSD’s service area is within Ventura County which is regulated under MS4 permit Order No. R4-2009-0057 which also implements the Malibu Creek TMDL.

### 2.2 Geologic Setting

The Monterey/Modelo geologic formation affects portions of the LVMWD service area. As summarized in the Enhanced Watershed Management Program for Malibu Creek Watershed (MCWEWMP; 2016), the Monterey/Modelo formation is a potential source of water quality impairments due to marine sediments that naturally contain sulfate, metals, phosphorus, nitrogen, selenium; collectively, runoff from areas in the Monterey/Modelo formation are higher in salinity. Research completed by others indicates that receiving water bodies are impaired by natural groundwater discharges that originate in the Monterey/Modelo formation (MCWEWMP; 2016). The Tapia WRF may not be designed to manage these water quality issues, and therefore potential

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, incrementP Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, and the GIS User Community



**Kennedy/Jenks Consultants**  
LVMWD Title XVI Feasibility Study

**Potential Stormwater Diversion Projects**

KJ 17445-18-00  
August 2018  
Figure 1

Scale: Feet  
0 3,000 6,000

Project ID	Project
C1	Gales Canyon Park
C2	Las Virgenes Creek Diversion
C3	Green Street - Malibu Hills Road
C4	Green Street - Parway Calabasas
C5	Green Street - Las Virgenes Road
C6	Bonnie Canyon/Stormwater Harvest and Use
C7	Infiltration Basin
LC-02	Streamflow Capture Facility - Infiltration Chamber/Stormwater Harvest and Use
MEC-12	Stormwater Harvest and Use
TC-35	Infiltration Chambers/Stormwater Harvest and Use
TC-37	Stormwater Harvest and Use
TC-29	Infiltration Chambers
VCWPD	Green Streets - Kanan Rd, Oak Park

**Legend**

- Potential Stormwater Diversion Projects - Not Evaluated Further: Orange circle
- Potential Stormwater Diversion Projects - Evaluated: Yellow circle
- Tapia WRF: Blue circle
- AWTF Sites Under Consideration: Purple square
- TSD Sanitary Sewer Pipelines: Red line
- LA County Sewer Pipelines: Green line
- JPA Sewers Pipelines: Blue line
- LVMWD Sewers Pipelines: Purple line
- LA County Stormdrain: Brown line
- LA County Natural Drainage: Dashed blue line
- LA County Open Channel: Dotted blue line
- LA County District: Red outline
- LA County City Limits: Orange outline
- Monterey Modelo Geologic Formation: Pink shaded area
- LVMWD Sewer Service Area: Green shaded area
- Triunfo Sanitation District: Red outline
- City Limits: Orange outline
- Watershed Boundary: Blue outline

impacts from the Monterey/Modelo formation were considered when evaluating stormwater capture projects in this technical memorandum, as described below. The approximate extent of the Monterey/Modelo formation is presented on Figure 1.

### 3.0 Identify Stormwater Capture Opportunities

Local stormwater management entities, including Agoura Hills, Calabasas, and Westlake Village, and Ventura County for the portion of Malibu Creek watershed, provided information on stormwater and surface water quality, their stormwater and sewer collection systems, and planned stormwater quality improvement projects. The information provided herein is based on conversations with the City of Calabasas, a consultant representing the City of Westlake Village, and LVMWD and information from Ventura County. Agoura Hills did not respond to inquiries and requests for information. Agoura Hills, Calabasas, and Westlake Village were involved in the preparation of the Enhanced Watershed Management Program for Malibu Creek Watershed (MCWEWMP, 2016), which also includes potential stormwater quality improvement projects that were developed to meet the TMDL in Malibu Creek. Ventura County is also implementing a water quality improvement project in the Oak Park area using Proposition 84 funding, which is included in this memorandum for completeness. Most stormwater quality issues occur either during first flush rainfall events throughout the wet season and/or dry season runoff that may occur likely from over irrigation. Wet season runoff presents the greatest opportunity for improving the yield of the Pure Water Project.

The stormwater quality improvement projects provided by the individual cities are typically smaller projects that treat runoff in low impact development (LID) best management practices (BMPs) from areas such as street segments and/or parking lots that are often the source of first flush contaminants. These smaller project types include replacing roadway medians with biofiltration and replacing impervious areas with pervious pavements to allow for infiltration. Many of the stormwater quality improvement projects in the MCWEWMP tended to treat larger drainage areas (40 to over 1,000 acres) to provide a broader regional benefit. Each stormwater quality improvement project also represents potential opportunities to store and divert stormwater to the sanitary sewer for additional treatment at the Tapia WRF. The potential water quality BMP projects included in the evaluation for adaptability as a water diversion/storage facility are summarized in Table 1 and presented on Figure 1.

Table 1: Screening of Potential Stormwater Projects in LVMWD Service Area

Project Identifier (b)	City (b)	Project (b)	Project Type (b)	Latitude (b)	Longitude (b)	Description (b)	Capital Cost (b)	Are Project and Drainage Basin in Module formation Area?	Distance to Nearest LVMWD Pipeline (b) (feet)	Size of Nearest LVMWD Pipeline (b) (inches)	Owner of Nearest LVMWD Pipeline (a)	Drainage Area (ac) (b)	Estimated Quantity of Stormwater Available for Diversion (acre-feet/year) (c)	Estimated Project Feasibility	Design Date Presented in MCOE EIMWP (b)	Completion Date Presented in MCOE EIMWP (b)
TC-02	LA County	Bio-retention	Bio-retention	34.111991	-118.773912	Bio-retention with benefits of low reduction, groundwater recharge, habitat. BMP volume: 0.875 AF. Drainage area: 62 ac	\$1,292,000	No	210	36	LVMWD Grassy	62	3.92	Update potential appears limited. Based on high level review of project vicinity there could be potential for installing a second similar project to the west on the adjacent drainage area, but that would be a separate project.	12/2019	07/2021
TC-37	Westlake Village	Infiltration Basin	Infiltration Basin	34.132785	-118.821033	Benefits: low reduction, groundwater recharge. BMP volume: 3.18 AF. Drainage area: 42 ac	\$2,287,000	No	165	33	LVMWD Grassy	42	4.44	Update potential appears limited based on topography and resulting drainage areas.	12/2019	07/2021
TC-29	Westlake Village	Infiltration Chambers	Infiltration Chamber	34.138637	-118.8318853	Specific: low reduction, groundwater recharge. BMP volume: 0.54 AF. Drainage area: 19 ac	\$1,116,000	No	400	18	LA County Sewer Pipeline (LVMWD nearby)	95	9.71	Update potential appears limited. Depends on location of adjacent drainage area at same project site.	12/2019	07/2021
MEC-09	Agoura Hills	Stormwater Harvest and Use	Harvest and Use	34.189941	-118.756386	Benefits: low reduction, water supply. BMP volume: 0.06 AF. Drainage area: 3.12 ac	\$1,191,500	No	510	18	LVMWD Grassy	132	28.37	Estimated quantity is fairly high. Update potential is uncertain. May require additional information to capture larger drainage area.	07/2017	07/2017
G4	City of Calabasas	Green Street, Old Town Calabasas	Infiltration/Green Street	34.129598	-118.642516	Replace medians with bio-filtration systems to alleviate water damage to road and improve permeability.	unknown	No	100	18	LA County Sewer Pipeline	0.50	0.05			
G6	City of Calabasas	Green Street - Pottery Calabasas	Biofiltration	34.139522	-118.655949	Replace medians with bio-filtration systems to alleviate water damage to road and improve permeability.	unknown	No	300	15	LA County Sewer Pipeline	10.50	0.05			
VCWPD	Ventura County Public Works Agency	Duke Park Green Streets Urban Retrofit Project	2 Buffers on Kanan Road and 10 distributed Modular Wetlands	34.173611	-118.758611	Install buffers along Kanan Road and 10 modular wetlands distributed in drainage near Medea Creek; Prop 84 funding received; updating potential very limited	unknown	No	100	18	Traulds SD	20	2.11			
G2	City of Calabasas	Las Virgenes Creek Diversion	Diversion, Treatment, Infiltration	34.131829	-118.726996	Flow diversion project - designed to divert, filter, and infiltrate up to 1,300 gallons per minute (3 ten times the observed dry weather flow rates) of stormwater from the Las Virgenes Creek and capture runoff from streets in addition to dry weather flow. The facility treats dry season runoff from an approximately 670-acre watershed of mixed urban (including landfill and freeway uses) and rural areas. The project is located on a 100' diameter storm drain (P01851) into Las Virgenes Creek, ultimately entering Surfside Beach via Malibu Creek and Lagoon.	unknown	No	100	102	LA County Sewer Pipeline	102				
G5	City of Calabasas	Green Street - Calabasas Road	Infiltration/Green Street	34.120534	-118.658566	Replace impervious surface with permeable surfaces to allow infiltration. Surface soil at high infiltration rate of 0.14 per hour (units not specified).	unknown	No	45	16	LVMWD Grassy					
G3	City of Calabasas	Green Street - Malibu Infiltration	Malibu Infiltration	34.137889	-118.726052	Replace medians with bio-filtration systems to alleviate water damage to road and improve permeability.	unknown	No	465	21						
TC-35	Westlake Village	Stormwater Harvest	Harvest and Use	34.134513	-118.836231	Specific: low reduction, water supply. BMP volume: 1.1 AF. Drainage area: 47 ac	\$2,380,000	No	655	22						
UC-02	Agoura Hills	Infiltration Chambers/Stormwater Harvest and Use	Infiltration & Harvest	34.151652	-118.782018	Specific: low reduction, water supply. BMP volume: 0.86 AF. Drainage area: 31 ac	\$2,623,000	No	160	18						
G1	City of Calabasas	Gates Canyon Park	Harvest and Use	34.181072	-118.69247	Stormwater capture project - capture approx. 30,000 cubic feet of stormwater per year for use in irrigation. Currently recycled water was used for irrigation.	unknown	Yes								
G7	City of Calabasas	Green Street - Las Virgenes Road	Biowalk	34.188041	-118.703177	Replace an unpaired road shoulder with a vegetated swale. AC pavement parking, and a trail.	unknown	Yes								
MEC-12	Agoura Hills	Streamflow Capture and Use	Infiltration & Harvest	34.182258	-118.758041	Benefits: low reduction, groundwater recharge or water supply. BMP volume: unknown. Drainage area: 1.635 ac	\$4,449,000	Yes (Drainage Basin)								
UVC-14	LA County/City of Calabasas	Infiltration Chambers/Stormwater Harvest and Use	Infiltration & Harvest	34.182895	-118.691379	Benefits: low reduction, groundwater recharge or water supply. BMP volume: 2.74. Drainage area: 378 ac	\$4,150,000	Yes								

NOTE: (a) Locations of the LVMWD pipelines are shown in the MCOE EIMWP as of 2016-5. Not prepared by Kennedy/Jenks.

(b) Based on values presented in the MCOE EIMWP.

Bold = evaluated projects

Red background = project not evaluated further because it fails this criteria for the purpose of this evaluation.

Responses prepared by Kennedy/Jenks.

## 4.0 Project Evaluation

Initial screening criteria were established to evaluate whether the identified water quality BMP presented an opportunity to be adapted to function for water diversion/storage suitable for the Pure Water Project. Project opportunities were evaluated for the following criteria:

1. Proximity to an existing sanitary sewer pipeline and size of existing sanitary sewer pipeline.
2. Quantity of stormwater estimated to be available for diversion.
3. Location of project and associated drainage basin with respect to the Modelo formation area (i.e., less likely to be impacted by salts in the formation)
4. Project flexibility. The following factors will be taken into account when assessing the project against this criterion:
  - If the project has potential to be upsized to add additional storage and increase the estimated quantity, it will be reflected here.
  - If the project is at a late stage and therefore it is unlikely to be modified, it will be reflected here.
  - Potential for project partner.

Table 1 presents the results of the project screening to arrive at a short list of projects for further evaluation. Two primary assumptions guided the approach to additional evaluation of the remaining project opportunities:

1. It was assumed that the water quality BMP footprint presented in the MCWEWMP represented the available space at the project location.
2. It was initially assumed that gravity conveyance to convey stormwater to the existing sewer was desirable, and therefore available depth for stormwater storage construction was estimated based on a minimum pipe slope for gravity flow (0.5%) and the estimated distance to the existing sanitary sewer pipeline. Feedback from LVMWD indicated that a small pump station in order to control flows into the sanitary sewer was desirable and included for costing; flow control will have to be evaluated in greater detail in the future.

Therefore, the approach for adapting a water quality BMP focused on increasing storage by increasing the depth of the water quality BMP, rather than increasing the footprint, while still allowing for discharge by gravity or a small pump station. The depth available for construction and the footprint available for the BMP were then provided to a vendor to determine the estimated maximum quantity of stormwater that could be captured for storage and diverted to the existing sewer for each location. A device for stormwater storage was selected in order to maximize the storage in a given footprint.

Based on the vendor information, there are opportunities to increase BMP storage capacity at TC-37 and TC-29; although site constraints at TC-02 may restrict storage capability. Information

provided in the MCWEWMP for the water quality BMP and MCWEWMP project cost estimates, pipeline length and stormwater storage information provided by the vendor are summarized in Table 2. Vendor information is provided in Attachment 3.

Table 2: Additional Project Evaluation

Project Identifier (b)	Information Obtained from MCW EWMP										Estimated by Kennedy/Jenks			Estimated by Vendor
	Project Type (b)	Artificial Fill (af) (b)	Alluvium/Colluvium (Gai/Qc) (b)	Bedrock Formation (b)	Depth Groundwater Encountered (feet below ground surface) (b)	Infiltration Rates (inches per hour) (a, b)	BMP Footprint (acre) (b)	BMP Volume (acre-feet) (b)	BMP Volume (cubic feet) (b)	EWMP Capital Cost Estimate for Water Quality BMP (b)	Distance to Nearest LVMWD Pipeline (feet) (c)	Minimum Pipe Elev Loss to Accommodate Gravity Flow (minimum 0.5% slope)	Estimated - Depth Available for Storage Construction (feet)	Vendor - Estimated Volume Based on Estimated Available Depth (acre-feet)
TC-02	Bioretention	Approx. 8 to 14 ft bgs (Clayey sand to Wellgraded GRAVEL with Silt and Sand)	Not Encountered	Below approx. 8 to 14 ft bgs (Conejo Volcanic Formation Coarse Ash Tuff)	Not encountered in explored depth (20 ft bgs), which was limited by LA County encroachment permit conditions	0.5 - 2.8	0.19	0.875	\$2,132,423	220	1.10	3.9	0.4	
TC-37	Infiltration Basin	Approx. 0 to 4 ft bgs (Clayey SAND with gravel)	Approx. 4 to 18 ft bgs (Sandy CLAY to Clayey SAND with gravel)	Below approx. 17 ft bgs (Topanga Formation Shale)	13 - 15 Interpreted as perched condition resting on underlying bedrock formation encountered at 19 - 21 ft bgs	0.1 - 0.7	1.59	3.18	\$2,448,218	165	0.83	12	10.6	
TC-29	Infiltration Chamber	Not Encountered	(Clayey SAND with gravel)	Not Encountered	Not encountered due to shallow hand exploration refusal (at 6 ft bgs) but assumed shallow due to observed bedrock	< 0.1 - 0.8	0.27	0.54	\$1,301,720	315	1.58	6.42	1.2	

**Notes:**

- (a) Infiltration rates corrected for lateral flow only, as recommended by LA County UDBMPG (2014).
- (b) Values prepared by others and were presented in the MCW EWMP. Not prepared by K/J. Escalated from 2016 costs.
- (c) Locations of tie-ins/wyes unknown. Reasonable estimate of pipeline pathway selected, but appropriateness of proposed pipeline connections requires additional information to confirm. Cutoff distance for evaluation was 1,000 feet.

Responses prepared by Kennedy/Jenks.  
Responses provided by vendor. See Attachment 3.

## 5.0 Estimated Stormwater Availability

An estimate of stormwater availability has been calculated based on the drainage area to each water quality BMP/storage facility, the estimated average annual rainfall of 16 inches/year in the Malibu Creek and adjusting for percent of urbanization to provide a potential maximum stormwater available as shown in Table 3. Since capture of the maximum stormwater from a drainage area is unlikely, a more conservative estimate of stormwater availability based on the estimate made in the Malibu Creek Watershed TMDL of flow from residential areas is also provided. This provides a range of stormwater availability which will need to be refined in future analyses.

Table 3: Estimate of Stormwater Availability

Project	Location	Drainage Area	Estimated % Urbanized	Potential Maximum Available Stormwater (AFY) (a)	Estimated Stormwater from Residential Areas Per TMDL (AFY) (b)
<b>Bioretention (TC-02)</b>	LA County	62 acres	60%	50	6.8
<b>Infiltration Basin (TC-37)</b>	Westlake Village	42 acres	75%	42	4.6
<b>Infiltration Chamber (TC-29)</b>	Westlake Village	95 acres	70%	89	10.4

Notes:

- (a) Average precipitation in Malibu Creek Watershed is 16 inches per year (Ref. Malibu Creek Watershed TMDL) applied to the entire drainage area multiplied by % urbanized which was made from reviewing the aerial photographs of the project areas provided in Attachment 1.
- (b) From Malibu Creek Watershed TMDL (Page 2-10) which estimated that 13 percent or 9,100 Acres of total watershed area is residential and assuming 90% capture of precipitation and 40 percent efficient storage, a maximum potential of up to 1,000 AFY of reuse of stormwater from the 9,100 acres of residential land uses. Applying ratio of 1,000 AFY/9,100 Acres to project drainage areas provides a more conservative estimate of stormwater available

To put the stormwater availability in perspective with available recycled water, the Tapia WRF average production has been approximately 9,400 acre-feet per year (AFY) of recycled water from 2001-2015. Thus an additional 50 AFY of stormwater would have increased the RW production at Tapia WRF by less than 1%. However, if all of the stormwater captured water were made available for the Pure Water Project, which anticipates an average available recycled water supply of 4,330 AFY in 2035, then the additional 50 AFY of stormwater would increase purified water production by just over 1%. Additional analysis based on actual storage and rainfall estimates can refine the available stormwater which could result in increased stormwater yields.



## 6.0 Summary and Next Steps

Based on the high-level screening of the available information from existing projects, a summary of the top three projects, including MCWEWMP costs for water quality BMPs and incremental costs for adding storage and conveyance pipelines and pump station is provided in Table 4. MCWEWMP costs were escalated from 2016 to 2018 using the ENR Los Angeles index. As detailed in Attachment 4, Vendor provided storage costs were supplemented with excavation costs, pipeline and pump station costs and contingencies to arrive at an estimated incremental project cost to accommodate additional storage and diversion of stormwater. As limited information was available for the capital costs for the MCWEWMP (backup information provided in Attachment 5), to be conservative at this screening stage, it is assumed that the incremental capital costs would be added to the MCWEWMP to realize the combined estimated storage volume. In reality, there are likely economies of scale that would be achieved by designing and building the facilities as a single project. Cost sharing between agencies and available funding would also be an important consideration for the viability of a larger project.

Table 4: Summary of Top Three Projects

Project Location and Description	BMP Footprint (Acres)	Water Quality BMP Volume (AF) <sup>(a)</sup>	MCWEWMP Estimated Capital Cost <sup>(b)</sup>	Vendor-Estimated Incremental Storage Volume (AF)	Estimated Incremental Capital Cost for Storage and Diversion of Stormwater <sup>(c)</sup>
<b>Bioretention (TC-02)</b> <u>LA County</u> Benefits: flow reduction, groundwater recharge, habitat. Drainage area: 62 acres	0.19	0.875	\$2,132,000	0.4	\$1,220,000
<b>Infiltration Basin (TC-37)</b> <u>Westlake Village</u> Benefits: flow reduction, groundwater recharge. Drainage area: 42 acres	1.59	3.18	\$2,448,000	10.6	\$6,937,000
<b>Infiltration Chamber (TC-29)</b> <u>Westlake Village</u> Benefits: flow reduction, groundwater recharge. Drainage area: 95 acres	0.27	0.54	\$1,302,000	1.2	\$1,536,000

Notes:

- (a) Estimated volume presented in the MCWEWMP. Potential opportunities to increase BMP size to increase capture, as indicated by the vendor-estimated incremental storage volume.

- (b) Estimated cost presented in the MCWEWMP to implement the water quality BMP volume, escalated to 2018 based on ENR indices. This cost would be in addition to the estimated incremental capital cost for storage and diversion of stormwater to provide additional supply for the Pure Water Project.
- (c) See Appendix 4 for detailed cost estimates. This cost would be in addition to the estimated MCWEWMP cost to achieve the combined water quality BMP with the vendor-estimate incremental storage volume.

Estimated storage volumes are based on the available space and are targeted at capturing runoff from individual storms or a series of small storms. The actual runoff captured in a year is a function of the number and size (i.e return interval) of storms. The storage volume estimate can be further refined to target a certain storm size. For example, TC-37 has a large footprint, 1.59 Acres, which contributes to the high cost of storage; an evaluation to optimize the storage relative to the storms that occur on average could result in a more cost-effective storage opportunity at this location.

The estimated costs presented in Table 4 are based on many assumptions. Additional project development and confirmation of assumptions, as summarized in the next steps below, is necessary to increase confidence in the viability of adapting a water quality BMP for storage. The storage facilities are sized to maximize storage capacity within the available footprint and considering the depth restrictions which should be refined to consider pumped flow to control sanitary sewer peaks. Further integration and refinement of the storage and conveyance with the water quality treatment BMP is anticipated to reduce the costs of implementation and to optimize the yield of stormwater capture.

Based on the potential stormwater available as summarized in Table 3 and an initial cost estimate for incremental storage, the TC-29 infiltration chamber offers the best value in terms of the of incremental volume of storage added at a low cost. TC-37, in contrast, offers the greatest potential volume but at a high overall cost. These two projects may warrant future effort to refine and assess feasibility, as discussed in the next steps that follow.

A list of some potential next steps to further explore project development options follows:

1. Contact the MCEWMP developers that are leading the top three projects to better understand project status including:
  - a. Stage of project (i.e. planning, including CEQA, design, construction, land/easement acquisition, permitting, etc.). Per the MCEWMP, which was prepared in 2016, the projects in Table 3 are slated for design in December 2019.
  - b. Schedule for project development/implementation
  - c. Status of funding for project development/implementation
  - d. Discuss opportunities for participation especially during planning/pre-design when it is easiest to influence the project development to enhance stormwater capture.
  - e. Identify major issues that influence implementation that LVMWD could assist with.

2. Reach out to the Greater Los Angeles County Region Integrated Regional Water Management Plan (IRWM) to discuss funding for these projects through:
  - a. Prop 1 Stormwater funding<sup>1</sup>,
  - b. Prop 1 IRWM, and
  - c. Other future funding such as from Proposition 68 and November 2018 Water Bond.
3. Continue more detailed technical evaluation including:
  - a. Confirm elevations of ground surface in area of water quality BMPs and locations of sanitary sewer manholes and inverts relative to project location to verify gravity flow assumptions,
  - b. Confirm depth and subsurface conditions assumptions for feasibility of additional storage and to conceptualize flow control through stormwater pumping,
  - c. Conduct further hydrologic/precipitation evaluation to confirm potential stormwater yield,
  - d. Coordinate and optimize storage facility with water quality BMP development,
  - e. Evaluate whether a pipeline only or more limited storage is a more cost effective means of enhancing yield, and
  - f. Evaluate whether refined, concurrent cost estimating of water quality treatment and storage could result in potential cost savings.

If upon further investigation, the projects in Table 4 are deemed infeasible to pursue because of institutional or other issues, the other projects in Table 1 can be re-evaluated and/or additional new projects can be identified and developed in locations where the storm drain system and the sanitary sewer system are in relative proximity to each other.

#### Attachments:

- Attachment 1: Enhanced Watershed Management Program for Malibu Creek Watershed, Excerpts from Appendix A – Project Maps
- Attachment 2: Enhanced Watershed Management Program for Malibu Creek Watershed, Excerpts from Appendix C – Regional BMP Sites Geotechnical Report
- Attachment 3: Vendor-Provided Information
- Attachment 4: Capital Cost Estimates
- Attachment 5: Enhanced Watershed Management Program for Malibu Creek Watershed, Section 8 – Structural Control Measures Cost Estimates

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<sup>1</sup> <http://dpw.lacounty.gov/wmd/irwmp/Prop1SWRP.aspx>

## References

- CDM. 2007. Integrated Total Maximum Daily Load Implementation Plan for the Malibu Creek Watershed. February 27. Prepared for the Los Angeles County Department of Public Works.
2016. Enhanced Watershed Management Program for Malibu Creek Watershed. January 26.