Initial Study/ Mitigated Negative Declaration Golden Triangle Sewer Pipeline Project Murrieta, California

Prepared for
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

Prepared by
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~~September 2020~~May 2023

Initial Study/Mitigated Negative Declaration for the Golden Triangle Sewer Pipeline Project Murrieta, California

Letters of Comment and Responses

The following letters of comment were received from agencies, organizations, and individuals during the public review period (July 24, 2020 to August 24, 2020) of the Draft Initial Study/Mitigated Negative Declaration (IS/MND). A copy of each comment letter along with corresponding staff responses is included here. Some of the comments did not address the adequacy of the environmental document; however, staff has attempted to provide appropriate responses to all comments as a courtesy to the commenter. The comments received did not affect the conclusions of the document, and no changes to the text of the Draft IS/MND were required.

Subsequent to the preparation of the response to comments, the design of the Golden Triangle Sewer Pipeline Project (project) was slightly modified in March 2023. Although the overall sewer alignment remained similar to what was evaluated in the Draft IS/MND, the change in design resulted in a 0.57-acre expansion of the project boundary from 5.49 acres to 6.06 acres. Some of this increase consisted of acknowledging the land within the California Department of Transportation (Caltrans) right-of-way between the northbound and southbound lanes of Interstate 15 (I-15). This area lacks any environmental resources, and as under the previous version of the Draft IS/MND circulated for public review, the project would tunnel underneath the northbound and southbound lanes of I-15 within this portion of the alignment. The remaining expansion of the original project boundary is located within Caltrans right-of-way south of I-15. RECON Environmental, Inc. (RECON) biologist Alex Fromer subsequently conducted a verification survey of the revised project boundary on March 23, 2023. Additionally, RECON archaeologist Carmen Zepeda-Herman reviewed and determined that the expansion of the project boundary is located within the fill slope developed during construction of I-15, and therefore would not possess any intact soils or significant cultural resources. Changes to the Draft IS/MND, Biological Technical Report (Appendix B), and Cultural Resources Survey (Appendix C) since public review are tracked in strikeout/underline. Figures in the IS/MND, Biological Technical Report (Appendix B), and Cultural Resources Survey (Appendix C) have also been updated to reflect the latest project design. The revised project design did not affect the conclusions of the IS/MND.

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B	Pechanga Band of Luiseño Indians	RTC-3
C	Saint Nicholas Greek Orthodox Church	RTC-4

Letter A

Rincon Band of Luiseño Indians

CULTURAL RESOURCES DEPARTMENT

One Government Center Lane | Valley Center | CA 92082
(760) 749-1051 | Fax: (760) 749-8901 | rincon-nsn.gov

July 30, 2020

Sent via email: broadhej@emwd.org
Eastern Municipal Water District
Joseph Broadhead
P.O. Box 8300
Perris, CA 92572

Re: Golden Triangle Sewer Infrastructure Project

Dear Mr. Broadhead,

A-1 This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Band"), a federally recognized Indian Tribe and sovereign government. Thank you for providing us with the Notice of Intent to Adopt a Mitigated Negative Declaration (MND) for the above referenced project. The identified location is within the Territory of the Luiseño people, and is also within Rincon's specific area of Historic interest.

We have reviewed the provided documents and we are in agreement with the measures which include archaeological and tribal monitoring, a monitoring report, and protocols for discovery of cultural material and human remains.

We do request that the Rincon Band be notified of any changes in project plans. In addition, we request a copy of the final monitoring report, when available. If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

A-1 Thank you for submitting your comment letter stating that the Rincon Band of Luiseño Indians concurs with the mitigation and monitoring measures presented in the Draft IS/MND for cultural and tribal cultural resources. The District will send the Rincon Band of Luiseño Indians a copy of the final monitoring report when it is complete. The District will also notify the Rincon Band of Luiseño Indians if there are any changes in project plans that would affect the significance conclusions presented in the Draft IS/MND regarding cultural and tribal cultural resources.

Letter B

From: Ebru Ozdil
To: Broadhead, Joseph
Cc: Juan Ochoa; Andrea Fernandez; Tina Thompson Mendoza
Subject: EMWD Golden Triangle Infrastructure Project - Pechanga AB 52 Conclusion
Date: Monday, August 17, 2020 2:08:24 PM

Dear Mr. Broadhead,

B-1 The Pechanga Band of Luiseño Indians ("Tribe") thanks the Eastern Municipal Water District ("District") for working with us to develop appropriate conditions of approval/mitigation measures to be implemented during development of the Golden Triangle Infrastructure Project. With this e-mail and the inclusion of the measures/conditions included in the draft Initial Study/Mitigated Negative Declaration dated July 24, 2020 , we consider our AB 52 consultation complete at this time. Please forward us a copy of the final MND when it is available. The Tribe would like the District to be aware that should additional measures or conditions be applied/deleted/modified that could impact cultural and archaeological resources during the hearing(s), the Tribe and the District should meet and discuss the revisions, prior to going to Board.

The Pechanga Band thanks the District for the opportunity to review and comment on this Project and work together to successfully complete the mandates of AB 52. We look forward to continuing our good working relationship on future projects.

Ebru T. Ozdil
Cultural Analyst
Pechanga Band of Mission Indians
P.O. Box 2183
Temecula, CA 92593

Office:(951)-770-6313
Fax:(951)-693-2314
eozdil@pechanga-nsn.gov

B-1 Thank you for submitting your comment letter stating that the Pechanga Band of Luiseño Indians considers AB 52 Consultation complete at this time. The District will send the Pechanga Band of Luiseño Indians a copy of the Final IS/MND when it is complete. The District will also notify the Pechanga Band of Luiseño Indians if there are any changes in project plans that would affect the significance conclusions presented in the Draft IS/MND regarding cultural and tribal cultural resources.

Letter C

From: Angela Ryan
To: Broadhead, Joseph
Subject: Golden triangle sewer pipeline project
Date: Wednesday, July 29, 2020 6:00:13 AM

Good Morning,

C-1 St Nicholas Greek Orthodox Church recently received notification from the city of Murrieta dated x July 2020 regarding the proposed installation of a city sewer line from the east side to the west side of Interstate 15 and transiting down Guava Street.

As St Nicholas Greek Orthodox Church is located at 41132 Guava Street, we would like to know the following details regarding this proposed project:

C-2 1) the proposed dates and duration of the project;

C-3 2) the potential impact of the project on accessibility to church property as Guava is the lone access point to the property for church members;

C-4 3) any plans or potential of connecting St Nicholas facilities to the sewer line (as St Nicholas is currently on septic and the property is below the grade of Guava Street);

C-5 4) any other impacts the city may be aware of for the church to taken into consideration

C-6 Thank you for your time and consideration. We request your response not later than August 15, 2020 in order for us to bring this issue to the Parish Council during our August meeting.

Sincerely,
Angela Ryan, Parish Council President
aaryan617@gmail.com

C-1 Introductory comment. Responses to specific comments in this letter are provided below.

C-2 As described in Section 4.3b of the Draft IS/MND, construction of the I-15 Crossing segment, which would affect a portion of Guava Street, is anticipated to occur between April 2021 and February 2022. However, it should be noted that the actual time period of construction could be affected by economic conditions and contract related issues.

C-3 Section 4.17a of the Draft IS/MND documents that the project would maintain access on Guava Street during construction by stating the following:

Construction within the right-of-way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allowed continued access. Roadways would be restored to pre-existing conditions once construction is completed.

C-4 Please contact the District's Development Services Department to inquire about establishing a connection to the proposed I-15 Crossing segment within Guava Street. You may direct you inquiry to Vanessa Buenrostro, Development Services Technician, who may be reached via telephone at (951) 928-3777 extension 4411, or via email at buenrosv@emwd.org.

Design for the proposed sewer segment at this location would likely allow for a connection, but that would need to be confirmed through consultation with the Development Services Department. More information, including a helpful guide on how to start this process, can be found on the District's website: https://www.emwd.org/new-development-process.

C-5 All potential impacts associated with the project were documented in the Draft IS/MND that was circulated for public review.

C-6 Conclusory remarks. No response is required.

Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA) requires the adoption of feasible mitigation measures to reduce the severity and magnitude of potentially significant environmental impacts associated with project development. In order to ensure that the mitigation measures and project revisions identified in an Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND) are implemented, the Lead Agency is required to adopt a program for monitoring and reporting on the measures it has imposed to mitigate or avoid significant effects (CEQA Guidelines Section 15097[a]). The CEQA Guidelines require that a Mitigation Monitoring and Reporting Program (MMRP) be adopted upon certification of an EIR or adoption of an MND to ensure mitigation measures identified in the EIR or MND are implemented.

According to CEQA Guidelines Section 15097(c), "reporting" generally consists of a written compliance review that is presented to the decision-making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight. This program identifies, at a minimum, the entity responsible for the monitoring, what is to be monitored, how the monitoring shall be accomplished, and the monitoring and reporting schedule.

The MMRP assigns responsibility for monitoring mitigation measures incorporated into the Golden Triangle Sewer Pipeline Project (Project). Under this program, the Eastern Municipal Water District (District), and the construction contractor under the direction of the District, would be responsible for the implementation and monitoring of these measures before, during, and immediately following construction phases of the Project unless otherwise stated herein, in accordance with CEQA Guidelines Section 15097. A record of the MMRP will be maintained at the District office, located at 2270 Trumble Road, Perris, California 92570.

The Initial Study/MND (State Clearinghouse Number 2020070477) analyzed the potential environmental effects of the Project and identified measures to mitigate potentially significant impacts associated with construction of the Project. The MMRP table presented below documents the mitigation measures to be implemented by the District.

Mitigation, Monitoring, and Reporting Program			
Mitigation Measure	Timing of Verification	Responsible for Verification	Status/Date/ Initials
Biological Resources			
BIO-1: Migratory birds and raptors (including California horned lark and Cooper's hawk) To comply with CFGC Sections 3503 and 3503.5, no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests during the breeding season (February 1 to September 15). Thus, to avoid potential impacts to California horned lark and other migratory or nesting birds, vegetation removal should occur outside the general bird breeding season. If vegetation removal must occur during this period, a pre-construction survey would be necessary to confirm the presence or absence of breeding birds in the impact area. If nests or breeding activities are located on the survey area, then an appropriate buffer area around the nesting site shall be maintained until the young have fledged. If no nesting birds are detected during the pre-construction survey, no mitigation would be required.	Prior to Construction	District/ Qualified Biologist	
BIO-2: Western burrowing owl To prevent potential impacts to western burrowing owl, a pre-construction take avoidance survey for this species would be required within all suitable habitat located inside the burrowing owl survey area (suitable habitat within the project footprint, plus 500 feet). Per the Staff Report on Burrowing Owl Mitigation (CDFW 2012), take avoidance surveys require an initial survey no less than 14 days prior to the start of ground disturbance activities and a final survey conducted within 24 hours of ground disturbance. If burrowing owls are detected, the CDFW must be notified within 48 hours and avoidance measures and/or mitigation would be required. Potential mitigation measures for impact to burrowing owl could include preparation of a western burrowing owl relocation plan for active or passive relocation review and approval by CDFW.	Prior to Construction	District/ Qualified Biologist	

Mitigation, Monitoring, and Reporting Program			
Mitigation Measure	Timing of Verification	Responsible for Verification	Status/Date/ Initials
Cultural Resources			
CUL-1: Cultural Resources Treatment and Monitoring Agreement At least 30 days prior to the start of any ground-disturbing activities, the District shall contact the Consulting Tribe(s) to develop Cultural Resource Treatment Monitoring Agreement(s) ("Agreement"). The Agreement(s) shall address the treatment of archaeological resources inadvertently discovered on the project site; project grading; ground disturbance and development scheduling; the designation, responsibilities, and participation of tribal monitor(s) during grading, excavation, and ground disturbing activities; and compensation for the tribal monitors, including overtime, weekend rates, and mileage reimbursements.	Prior to Construction	District/ Qualified Archaeologist	
CUL-2: Develop a Cultural Resources Monitoring Plan Prior to any grading activities, a Cultural Resources Monitoring Plan shall be prepared by a qualified archaeologist in consultation with the Consulting Tribe(s). The plan shall also identify the location and timing of cultural resources monitoring. The plan shall contain an allowance that the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, may reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall outline the appropriate measures to be followed in the event of unanticipated discovery of cultural resources during project implementation (including during the survey to occur following vegetation removal and monitoring during ground-disturbing activities). The plan shall identify avoidance as the preferred manner of mitigating impacts to cultural resources. The plan shall establish the criteria utilized to evaluate the historic significance (per CEQA) of the discoveries, methods of avoidance consistent with CEQA Guidelines Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to mitigate the effect of the Project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, disposition of artifacts, curation of data, and dissemination of reports to local and state repositories, libraries, and interested professionals. A qualified archaeologist and Consulting Tribe(s)	Prior to Construction	District/ Qualified Archaeologist	

Mitigation, Monitoring, and Reporting Program			
Mitigation Measure	Timing of Verification	Responsible for Verification	Status/Date/ Initials
tribal monitor shall attend a pre-grade meeting with District staff, the contractor, and appropriate subcontractors to discuss the monitoring program, including protocols to be followed in the event that cultural material is encountered.			
CUL-3: Tribal Monitoring Agreements A qualified archaeological monitor and a Consulting Tribe(s) monitor shall be present for ground-disturbing activities associated with the Project, and both the project archaeologist and Tribal Monitor(s) will make a determination as to the areas with a potential for encountering cultural material. At least seven business days prior to project grading, the District shall contact the tribal monitors to notify the Tribe of grading/excavation and the monitoring program/schedule, and to coordinate with the Tribe on the monitoring work schedule. Both the archaeologist and the tribal monitor shall have the authority to stop and redirect grading activities in order to evaluate the nature and significance of any archaeological resources discovered within the project limits. Such evaluation shall include culturally appropriate temporary and permanent treatment pursuant to the Cultural Resources Treatment and Monitoring Agreement, which may include avoidance of cultural resources, in-place preservation, data recovery, and/or reburial so the resources are not subject to further disturbance in perpetuity. Any reburial shall occur at a location predetermined between the District and the Consulting Tribe(s), details of which shall be addressed in the Cultural Resources Treatment and Monitoring Agreement in mitigation measure CUL-1. Treatment may also include curation of the cultural resources at a tribal curation facility, as determined in discussion among the District, the project archaeologist, and the tribal representatives and addressed in the Cultural Resources Treatment and Monitoring Agreement referenced in mitigation measure CUL-1.	Prior to Construction	District/ Qualified Archaeologist	
CUL-4: Evaluation of Discovered Artifacts All artifacts discovered at the development site shall be inventoried and analyzed by the project archaeologist and tribal monitor(s). A monitoring report will be prepared, detailing the methods and results of the monitoring program, as well as the disposition of any cultural material encountered. If no cultural material is encountered, a brief letter report will be sufficient to document monitoring activities.	During Construction	District/ Qualified Archaeologist	

Mitigation, Monitoring, and Reporting Program			
Mitigation Measure	Timing of Verification	Responsible for Verification	Status/Date/ Initials
CUL-5: Disposition of Inadvertent Discoveries In the event that Native American cultural resources are recovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries with the tribe. The District shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following: 1. Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource. 2. If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to mitigation measure CR-2 is the next preferable treatment measure. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments. 3. In the event that on-site reburial is not feasible, the District will enter into a curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.	During Construction	District/ Qualified Archaeologist	

Mitigation, Monitoring, and Reporting Program			
Mitigation Measure	Timing of Verification	Responsible for Verification	Status/Date/ Initials
CUL-6: Non-Disclosure of Reburial Locations It is understood by all parties that unless otherwise required by law, the site of any reburial of culturally sensitive resources shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, pursuant to the specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies will be asked to withhold public disclosure information related to such reburial.	During Construction	District/ Qualified Archaeologist	
CUL-7: Human Remains If Native American human remains are encountered, Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 will be followed. If human remains are encountered, no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours. Subsequently, the NAHC shall identify the person or persons it believes to be the "most likely descendant." The most likely descendant shall then make recommendations and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.	During Construction	District/ Qualified Archaeologist	

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A: Air Quality and Greenhouse Gas CalEEMod Emission Calculation Output, RECON Environmental, Inc., March 30, 2020
B: Biological Technical Report, RECON Environmental, Inc., ~~July 20, 2020~~May 2, 2023
C: Cultural Resources Survey, RECON Environmental, Inc., ~~July 20, 2020~~May 23, 2023

1.0 Introduction

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared in accordance with relevant provisions of the California Environmental Quality Act (CEQA) of 1970, as amended, and the CEQA Guidelines, as revised. This IS/MND evaluates the environmental effects of the proposed Golden Triangle Sewer Pipeline Project (Project).

The IS/MND includes the following components:

- A Draft MND and the formal findings made by the Eastern Municipal Water District (District) that the Project would not result in any significant effects on the environment, as identified in the CEQA IS Checklist.
- A detailed project description.
- The CEQA IS Checklist, which provides standards to evaluate the potential for significant environmental impacts from the Project, and is adapted from Appendix G of the CEQA Guidelines. The Project is evaluated in 21 environmental issue categories to determine whether the Project's environmental impacts may be significant in any category. Brief discussions are provided that further substantiate the Project's anticipated environmental impacts in each category.

Because the Project fits into the definition of a "project" under Public Resources Code Section 21065 requiring discretionary approvals by the District, and because it could result in a significant effect on the environment, the Project is subject to CEQA review. The IS Checklist was prepared to determine the appropriate environmental document to satisfy CEQA requirements: an Environmental Impact Report (EIR), a Mitigated Negative Declaration (MND), or a Negative Declaration (ND). The analysis in this IS Checklist supports the conclusion that the Project may result in significant environmental impacts, but (1) revisions in the Project plans or proposals made by or agreed to by the applicant before a proposed MND and IS are released for public review would avoid the effects or mitigate the effects to appoint where clearly no significant effects would occur, and (2) there is no substantial evidence, in light of the whole record before the District, that the Project as revised may have a significant effect on the environment; therefore, an MND has been prepared.

This IS/MND ~~will be~~was circulated for 30 days for public and agency review (July 24, 2020 to August 24, 2020), during which time individuals and agencies ~~may~~were invited to submit comments on the adequacy of the environmental review. Following the public review period, the District's Board will consider any comments received on the IS/MND when deciding whether or not to adopt the MND.

2.0 Project Description

1. Project Name:

Golden Triangle Sewer Project

2. Lead Agency:

Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570

3. Contact Person and Phone Number:

Joseph Broadhead
Principal Water Resource Specialist – CEQA/NEPA
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300
T (951) 928-3777 ext. 4545
broadhej@emwd.org

4. Project Location:

The project is located in the city of Murrieta (City) immediately north of the Interstate 15 (I-15) and I-215 interchange (Figure 1). The project is located within the Temecula Land Grant on the U.S. Geological Survey (USGS) 7.5-minute topographic map, Murrieta quadrangle (Figure 2; USGS 1979). Figure 3 shows the project location on an aerial photograph. As shown in Figure 3, the project site would consist of the following three segments:

- Murrieta Hot Springs Road Crossing Segment: Approximately 230-foot-long sewer extension;
- Golden Triangle Segment: Approximately 1,417-foot-long sewer extension; and
- I-15 Crossing Segment: Approximately 2,070-foot-long sewer extension.

The northern terminus of the Project is located within the roadway of Sparkman Court just north of Murrieta Hot Springs Road. The proposed sewer pipeline then travels south through the approved Golden Triangle Project site, turns southeast and runs parallel to I-15, turns southwest and crosses under I-15, and then continues southwest until terminating at Guava Street. A substantial portion of the project site is located south of Murrieta Hot Springs Road, northwest of I-15, within the Triangle Specific Plan boundary. This segment of the project site is demarcated as "Area Previously Surveyed" on Figure 3 because it was evaluated in the Golden Triangle Specific Plan Subsequent Environmental Impact Report (Golden Triangle SEIR) that was certified in 2013. The results of the Golden Triangle SEIR are described under Section 14 below and are incorporated by reference herein. The Murrieta Hot Springs Road Crossing Segment and the I-15 segments are demarcated "Project Boundary" since they were not evaluated in the Golden Triangle SEIR and have been evaluated in this IS/MND.

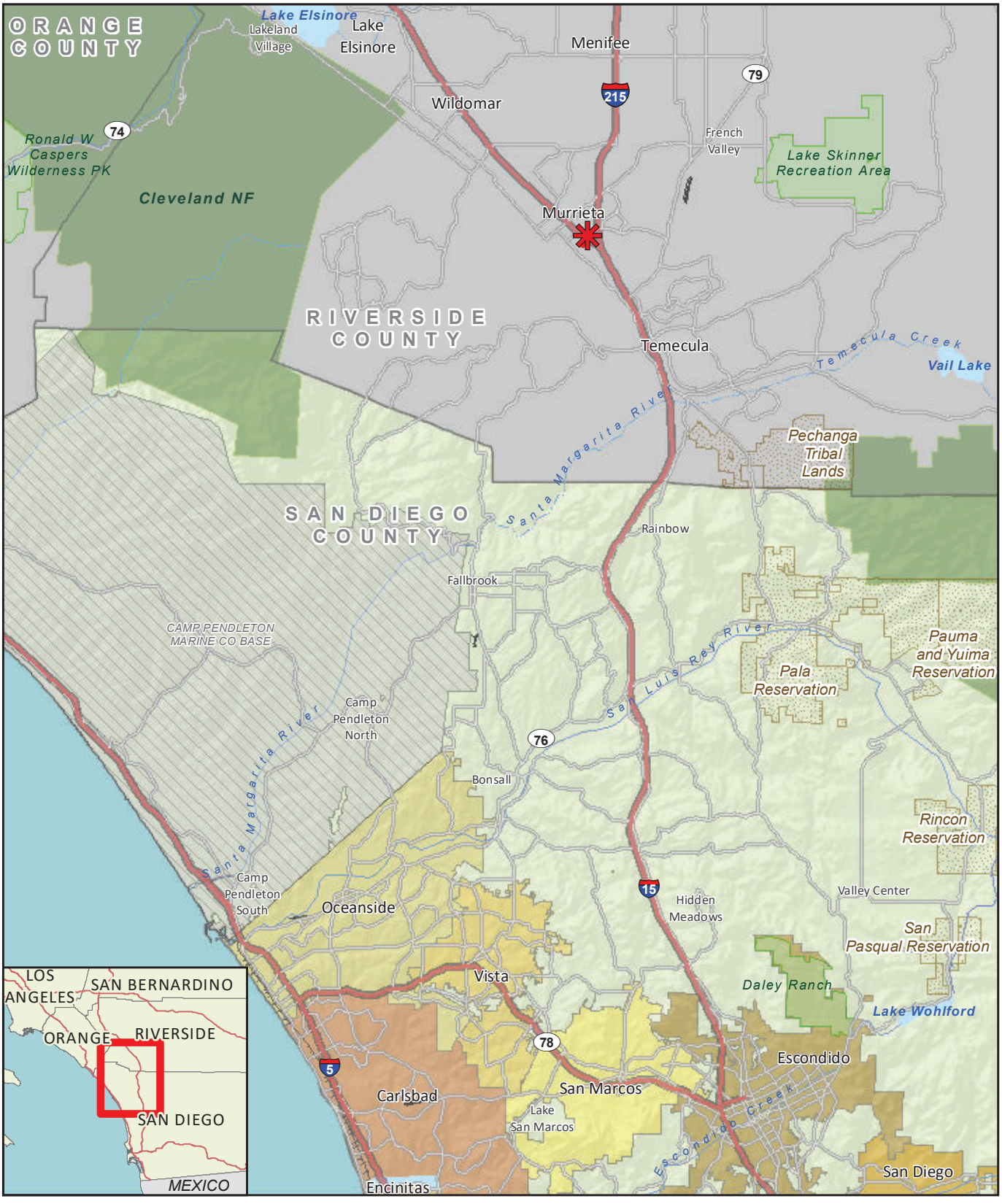

FIGURE 1
Regional Location

emwd

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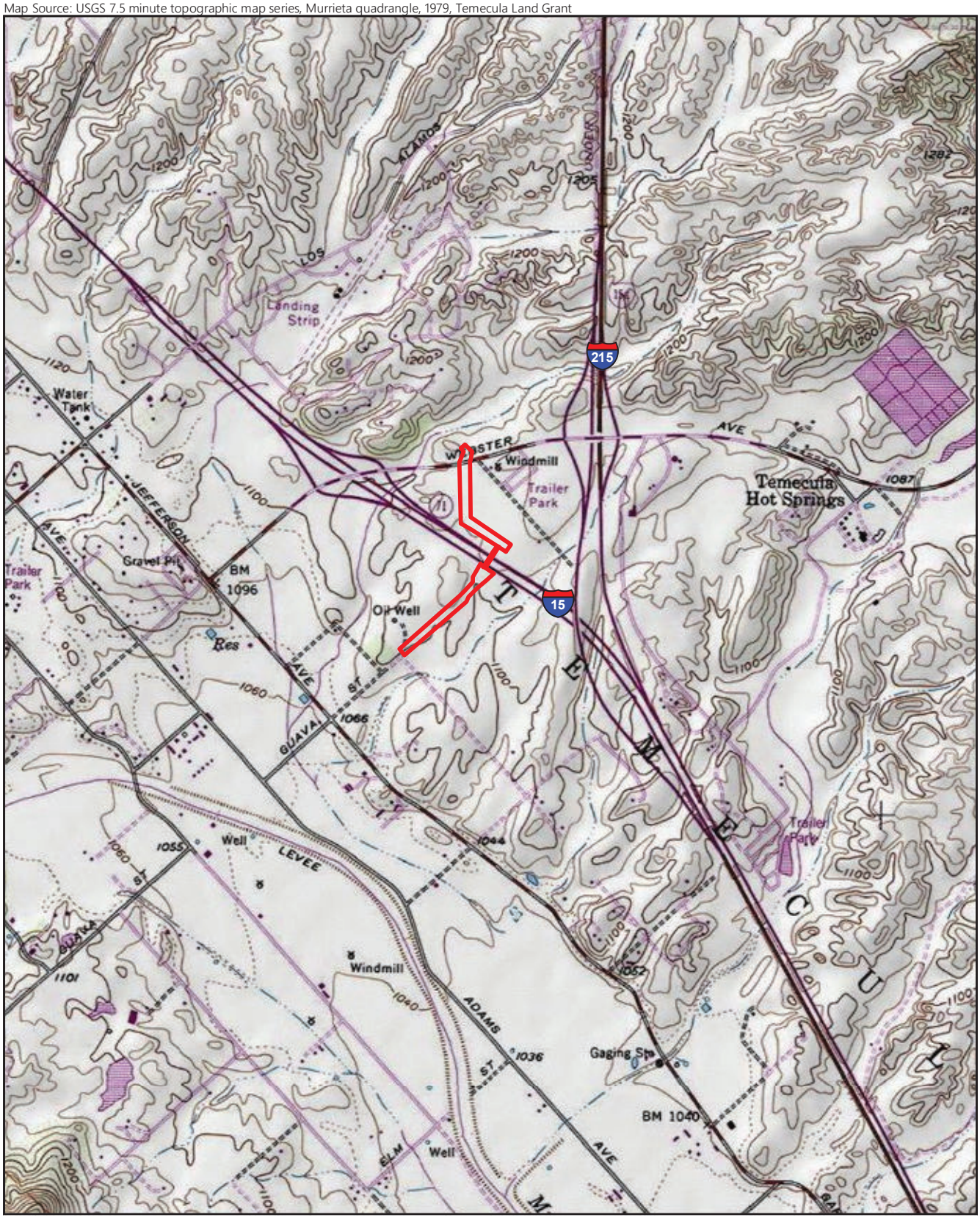
Map Source: USGS 7.5 minute topographic map series, Murrieta quadrangle, 1979, Temecula Land Grant



Project Boundary

FIGURE 2
Project Location on USGS Map

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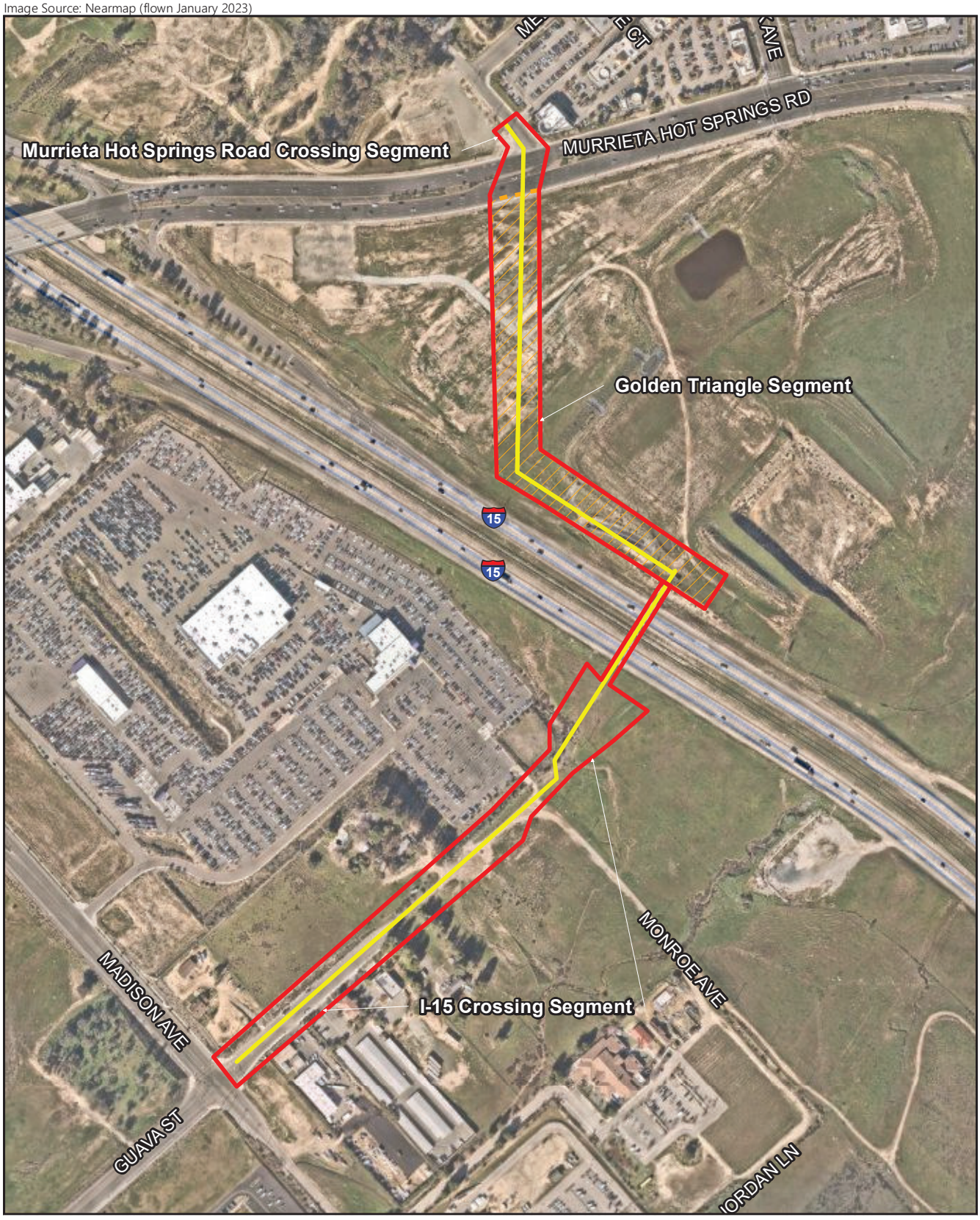
Image Source: Nearmap (flown January 2023)



0 Feet 400

Project Boundary

Area Previously Surveyed

Pipeline

FIGURE 3

Project Location on Aerial Photograph

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5. Project Applicant/Sponsor:

Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

6. General Plan Designation:

The proposed alignment is located with local rights-of-way for public roads and the California Department of Transportation (Caltrans) right-of-way for I-15. The alignment is surrounded by uses designated as Commercial and Office and Research Park

7. Zoning:

The proposed alignment is located with local rights-of-way for public roads and Caltrans right-of-way for I-15. The alignment is surrounded by uses zoned as Golden Triangle Specific Plan, Community Commercial, and Office Research Park

8. Description of Project:

The Project would construct a sewer pipeline extension consisting of the following three segments:

- Murrieta Hot Springs Road Crossing Segment: Approximately 230-foot-long sewer extension;
- Golden Triangle Segment: Approximately 1,417-foot-long sewer extension; and
- I-15 Crossing Segment: Approximately 2,070-foot-long sewer extension.

It is anticipated that the District would construct the Murrieta Hot Springs Road Crossing and the I-15 Crossing segments, while the Golden Triangle Segment would be constructed by the developer during construction of the Specific Plan. It is anticipated that the District would construct the Murrieta Hot Springs Road Crossing Segment first, followed by the developer constructing the Golden Triangle Segment. This would allow the developer to use the Murrieta Hot Springs Crossing Segment to pump flow to the existing Golden Triangle Lift Station while the I-15 Crossing Segment is constructed as the final segment. The Golden Triangle Segment is located within the planning boundary of the Triangle Specific Plan that was evaluated in the Golden Triangle Specific Plan Subsequent Environmental Impact Report (Golden Triangle SEIR) that was certified in 2013. The Specific Plan area has been graded and the Golden Triangle Segment would be constructed concurrently with development of the Specific Plan. The sewer pipeline would be 15 inches in diameter, and construction would reach depths of excavation ranging from 15 to 25 feet. All manholes within the project site would be constructed within existing roadways or sidewalks.

9. Surrounding Land Use(s) and Project Setting:

The Project is located in the City immediately north of the I-15 and I-215 interchange. The Murrieta Hot Springs Road Crossing Segment is located in an urbanized area and is surrounded by commercial and residential uses. The Golden Triangle Segment is located

between I-15 and I-215 and is located within the planning boundary of the Triangle Specific Plan. The I-15 Crossing Segment would cross under I-15 and continue into an area surrounded by a mix of industrial and residential uses.

10. Required Approvals:

Eastern Municipal Water District – Approval of the Golden Triangle Sewer Pipeline Project and adoption of this Mitigated Negative Declaration

11. Other Required Agency Approvals or Permits Required:

Caltrans Encroachment Permit- State Water Resource Control Board (SWRCB) Construction General Permit

12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

The District initiated consultation with the following Native American tribes consistent with the requirements of Assembly Bill 52 (AB 52) who are traditionally and culturally affiliated with the geographic area of the Project to consult regarding potential impacts to tribal cultural resources:

- Agua Caliente Band of Cahuilla Indians
- Morongo Band of Mission Indians
- Rincon Band of Luiseño Indians
- San Manuel Band of Mission Indians
- Soboba Band of Luiseño Indians
- Pechanga Band of Luiseño Indians

The Agua Caliente Band of Luiseño Indians, Morongo Band of Mission Indians, and San Manuel Band of Missions Indians either declined or did not respond to the AB 52 consultation letters. The Rincon Band of Luiseño Indians (April 3, 2020), Pechanga Band of Luiseño Indians (April 20, 2020), and the Soboba Band of Luiseño Indians (April 21, 2020) accepted consultation with the District. Consultation meetings were held with the Rincon Band of Luiseño Indians on April 22, 2020; the Soboba Band of Luiseño Indians on April 28, 2020; and the Pechanga Band of Luiseño Indians on July 8, 2020.

Due to the positive results of the Native American Heritage Commission (NAHC) search to identify spiritually significant and/or sacred sites or traditional use areas, construction activities would have the potential to unearth previously unknown tribal cultural resources, the discovery of which would be considered a significant impact. Implementation of mitigation measures CUL-1 through CUL-6 described in Section 4.5b below would reduce impacts to a level less than significant.

13. Summary of 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.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

14. Summary of Golden Triangle SEIR:

The portion of the project site located south of Murrieta Hot Springs Road and northwest of I-15 is located within the planning boundary of the Triangle Specific Plan, which was evaluated in the Golden Triangle SEIR that was certified in 2013. The Golden Triangle SEIR identified the following environmental impacts for the Golden Triangle Specific Plan:

- Aesthetics: The Golden Triangle SEIR did not identify any impacts to a designated scenic vista. Impacts to scenic resources within the project site or surrounding areas would be less than significant. No impacts would occur in regard to a conflict with applicable General Plan policies. The Golden Triangle SEIR determined impacts to the existing visual condition of the project site would be mitigated to a level less than significant through implementation of the Development Standards identified in the Triangle Specific Plan and implementation of the Triangle Design Guidelines. Project impacts related to light and glare would also be mitigated to a level less than significant through implementation of the Development Standards identified in the Triangle Specific Plan and implementation of the Triangle Design Guidelines. Furthermore, impacts to light and glare would be mitigated through the Project proponent demonstrating to the City Community Development Director that no lighting would create a safety hazard or nuisance to off-site vehicular traffic or adjacent land uses.

- Agricultural Resources: Review of Department of Agriculture Farmland Mapping and Monitoring Program (FMMP) mapping determined that no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance were located within the Specific Plan. The Specific Plan was not designated for agricultural uses in the City of Murrieta General Plan, there were no Williamson Act contracts protecting the property, and development of the Project would not result in the conversion of farmland to other uses. Therefore, no impacts occurred to farmland under the Golden Triangle Specific Plan.

- Air Quality: The Golden Triangle SEIR determined that the Project would not be consistent with the Air Quality Management Plan (AQMP) because of forecasted significant and unavoidable long-term emissions exceeding South Coast Air Quality Management District (SCAQMD) thresholds. Impacts regarding the exceedance of regional thresholds established by the SCAQMD for volatile organic compounds (VOCs) during the peak construction day would be mitigated to a level less than significant with preparation of an Architectural Coating Plan and the Property Owner/Developer including specific language on the Contractor Specifications, which would then be verified by the City Building and Safety Department. The Golden Triangle SEIR determined project operational impacts would be significant and unavoidable. Operational impacts would be reduced with Project Design Features and implementation of statewide energy requirements, but remain at a level of significant and unavoidable. Impacts to construction emissions would be less than significant. The Golden Triangle SEIR would result in significant and unavoidable impacts to long-term cumulatively considerable net increase of respirable particulate matter (PM_{10}) and nitrogen dioxide (NO_2; including oxides of nitrogen [NO_X]) which would be reduced with statewide energy requirements. The Golden Triangle SEIR did not identify any impacts related to the concentration of criteria pollutants at off-site receptors exceeding SCAQMD thresholds for ambient air quality, the exposure of sensitive receptors to potential CO "hot spots," and conflicts with the applicable General Plan policies.

- Biological Resources: The Golden Triangle SEIR did not identify any impacts to upland vegetation communities that would require mitigation. Impacts on burrowing owls and birds subject to the Migratory Bird Treaty Act would be mitigated to a level less than significant through surveys, monitoring, and implementation of mitigation strategies as necessary. Impacts to United States Army Corps of Engineers and California Department of Fish and Wildlife (CDFW) jurisdictional resources, including riparian riverine habitat, would be mitigated to a level less than significant through compensatory mitigation. The Golden Triangle SEIR did not identify any impacts to wildlife movement corridors or conflicts with any local policies or ordinances protecting biological resources. Payment of the appropriate Multiple Species Habitat Conservation Program (MSHCP) Local Development Mitigation Fee prior to issuance of the grading permit by the Property/Owner/Developer would ensure consistency with the Western Riverside MSHCP.

- Cultural Resources: The Golden Triangle SEIR did not identify any known sensitive archaeological resources, but determined that potential impacts to unknown archaeological resources and human remains that could be discovered during on-site and off-site grading and excavation activities would be mitigated to a level less than significant through monitoring and implementation of mitigation strategies as necessary.

- Geology and Soils: The Golden Triangle SEIR determined project impacts from seismic ground shaking would be mitigated to a level less than significant with adherence to applicable codes and requirements set forth in the 2001 California Building Code (CBC), preparation of a Preliminary Geotechnical Report in accordance with Caltrans standard specifications, and preparation of a Geologic Study. The Golden Triangle SEIR did not identify any impacts from liquefaction and associated settlement of surface structures and applicable General Plan policies. Impacts related to soil erosion and loss of topsoil

would be mitigated to a level less than significant with preparation of an Erosion Control Plan. Impacts related to potentially unstable and highly expansive soils would be mitigated to a level less than significant through implementation of mitigation strategies as necessary.

- Greenhouse Gas Emissions: The Golden Triangle SEIR determined the Project is substantially consistent with the City of Murrieta Climate Action Plan (CAP) and impacts would be less than significant. The Golden Triangle SEIR determined project impacts in relation to public education and support for advanced technology vehicle would be mitigated to a level less than significant through applicable project design features.

- Hazards and Hazardous Materials: The Golden Triangle SEIR did not identify any impacts related to the accidental release of hazardous materials, hazardous materials within one-quarter mile of a school, the project site being included on a list of hazardous materials sites, hazardous materials being within an airport land use plan or within two miles of an airport or private airstrip, the Project interfering with an emergency response plan, and the project site being within a wildland fire hazard area.

- Hydrology/Water Quality: The Golden Triangle SEIR determined impacts from storm water runoff would be less than significant with implementation of an on-site storm drain system, a drainage plan, and a detailed hydrology/drainage analysis. Impacts to water quality would be less than significant with compliance of applicable National Pollutant Discharge Elimination System (NPDES) permit requirements, and preparation of a Stormwater Pollution Prevention Plan and Stormwater Quality Management Plan that incorporate Best Management Practices (BMPs). The Golden Triangle SEIR did not identify any impacts conflicting with applicable General Plan policies.

- Land Use and Planning: The Golden Triangle SEIR did not identify any impacts related to goals and policies of local and regional regulatory and planning documents.

- Mineral Resources: The Golden Triangle SEIR did not identify any impacts related to loss of mineral resources or of a locally important mineral resource recovery site.

- Noise: The Golden Triangle SEIR determined impacts related to short-term construction noise would be less than significant with adherence to the City Municipal Code. The Golden Triangle SEIR did not identify any impacts related to vibration, traffic noise, stationary noise sources, and applicable General Plan policies. Impacts caused by roadway noise levels and mechanical equipment would exceed the City's noise standards and would be mitigated to a level less than significant through approval and compliance of a detailed acoustical analysis.

- Population/Housing: The Golden Triangle SEIR did not identify any impacts related to unanticipated growth on the project site and the displacement of existing housing.

- Public Services and Utilities: The Golden Triangle SEIR determined impacts due to the increase in demand for fire protection emergency medical services would be less than significant with compliance to the City Municipal Code and the California Fire Code. Impacts related to the increased demand for police protection services would be mitigated

to a level less than significant through project implementation of security measures and design features. Because there would not be an increase in population, impacts related to the increase in demand for parks, recreational facilities, or other libraries would result in no impacts. Impacts from the new demand for electricity and natural gas on the project site would be mitigated to a level less than significant through compliance with project design features and implementation of mitigation design strategies. The Golden Triangle SEIR did not identify any impacts related to wastewater treatment requirements, the increase in demand for the District's water supply, solid waste, and General Plan policies.

- Transportation and Traffic: The Golden Triangle SEIR determined significant and unavoidable direct impacts at the intersections of I-15 northbound ramps/Winchester Road, and Margarita Road/Murrieta Hot Springs Road because implementation of the required intersection improvements is not feasible. Impacts to Hancock Avenue at Parkcrest would be mitigated to a level less than significant through implementation of mitigation design strategies. Significant and unavoidable cumulative impacts were determined at eight intersections and to the freeway mainline segments along I-15 and I-215. Impacts related to construction traffic and construction work would be mitigated to a level less than significant through mitigation design strategies. The Golden Triangle SEIR determined impacts related to the Riverside County Transportation Management Program would be less than significant through project design features such as the Project providing adequate emergency access and options for alternative transportation. Impacts related to the Project conflicting with Policy CIR-1.2 of the Circulation Element would result in significant and unavoidable impacts.

The Golden Triangle Specific Plan area has been graded and the Golden Triangle Segment proposed under the Project would be constructed concurrently with development of the Specific Plan. The Golden Triangle Segment would serve the Golden Triangle Specific Plan development and would be constructed entirely within the footprint that was evaluated in the Golden Triangle SEIR. Therefore, construction and operation of the Project would not result in any additional environmental impacts in this area beyond those that were evaluated and disclosed in the Golden Triangle SEIR that was certified in 2013. With the evaluation of additional potential environmental impacts associated with the Project outside the Specific Plan area, combined with those incorporated by reference and summarized above from the Golden Triangle Specific Plan SEIR, the potential impacts of the entire Project have been presented in this IS/MND.

3.0 Draft Mitigated Negative Declaration

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION shall be prepared.

☒ I find that, although the proposed project might have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made, or agreed to, by the project proponent. A MITIGATED NEGATIVE DECLARATION shall be prepared.

☐ I find that the proposed project might have a significant effect on the environment and/or deficiencies exist relative to the City's General Plan Quality of Life Standards, and the extent of the deficiency exceeds the levels identified in the City's Environmental Quality Regulations pursuant to Zoning Code Article 47, Section 33-924 (b), and an ENVIRONMENTAL IMPACT REPORT shall be required.

☐ I find that the proposed project might have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment, but at least one effect: (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT shall be required, but it shall analyze only the effects that remain to be addressed.

☐ I find that, although the proposed project might have a significant effect on the environment, no further documentation is necessary 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 proposed project.

Signature

Alfred Javier
Director of Environmental &
Regulatory Compliance
Eastern Municipal Water District

July 24, 2020
Date of Draft MND

May 23, 2023
Date of Final MND

4.0 Initial Study Checklist

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved. A "No Impact answer should be explained where it is based on project specific factors as well as general standards.
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or (mitigated) negative declaration. Section 15063(c)(3)(D).
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

4.1 Aesthetics

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

EXPLANATIONS:

a. Less Than Significant Impact

The project site is located in an urbanizing environment surrounded by a mixture of residential, commercial, and roadway uses, along with some areas of undeveloped land. The majority of the project site consists of the Triangle Specific Plan evaluated in the Golden Triangle SEIR and certified in 2013. Although project construction may temporarily partially obscure views of the San Jacinto Mountains to the east and Santa Ana Mountains to the west, views would be restored once the Project was complete, and all impacted areas would be restored to their pre-project condition. Furthermore, the sewer pipeline would be located underground and would not include any permanent aboveground components. Therefore, the Project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

b. No Impact

There are no designated State Scenic Highways within Murrieta. Although I-15 is considered an Eligible State Scenic Highway, official designation is required for potential impacts to be considered significant. The project site does not possess any scenic resources such as trees and rock outcroppings and is unremarkable in character. As described in Section 4.5a below, no historic structural resources have been historically located, or are currently located, on the project site. Therefore, the Project would not substantially damage any scenic resources within a state scenic highway. No impact would occur.

c. Less Than Significant Impact

Project construction would temporarily alter the existing visual character of the project site. However, once project construction is complete, all impacted areas would be restored to their pre-project condition. Furthermore, the sewer pipeline would be located underground and would not include any permanent aboveground components. Therefore, the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and impacts would be less than significant.

d. Less Than Significant Impact

Project construction would be limited to daytime hours Monday through Friday and is not anticipated to require lighting. In the event that construction lighting is required, it would be properly shielded to avoid spillover effects. Additionally, nighttime lighting would be limited to tie-ins with existing sewer lines within roadway intersections with streetlights and traffic lights. Once project construction is complete, any temporary lighting that was required would be removed and all impacted areas would be restored to their pre-project condition. Furthermore, the sewer pipeline would be located underground and would not include any permanent aboveground components. Therefore, the Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, and impacts would be less than significant.

4.2 Agriculture and Forestry Resources

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 1220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

EXPLANATIONS:

a. No Impact

The majority of the project site consists of existing roadways and a portion of the Triangle Specific Plan that has already been permitted and graded. The only undeveloped segment of land within the project site consists of a narrow corridor stretching from I-15 to Guava Street classified as "Farmland of Local Importance" by the Farmland Mapping and Monitoring Program (California Department of Conservation 2016). Farmland of Local Importance is not listed in this significance threshold. Furthermore, this undeveloped segment of the project site

is not in agricultural production and would be restored to its existing condition once the proposed sewer pipeline has been installed. Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. No impact would occur.

b. No Impact

The project site and surrounding properties are not zoned for agricultural uses and are not subject to a Williamson Act contract. No impact would occur.

c. No Impact

The project site does not contain any forest or timberland as defined by Public Resources Code Section 12220[g], Public Resources Code Section 4526, or Government Code Section 51104(g) and is not zoned as forest or timberland. No impact would occur.

d. No Impact

The project site does not contain any forest or timberland as defined by Public Resources Code Section 12220[g], Public Resources Code Section 4526, or Government Code Section 51104(g). No impact would occur.

e. No Impact

There are no agricultural uses or forestlands on-site or in the vicinity of the project site. Therefore, the Project would not result in conversion of farmland or forest land. No impact would occur.

4.3 Air Quality

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

EXPLANATIONS:

a. Less Than Significant Impact

The project is located within the South Coast Air Basin (Basin) under the jurisdiction of the SCAQMD. Air districts are tasked with regulating emissions to ensure that air quality in the basin does not exceed National or California Ambient Air Quality Standards (NAAQS and CAAQS). NAAQS and CAAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. NAAQS and CAAQS have been established for six common pollutants of concern known as criteria pollutants, which include ozone, carbon monoxide (CO), sulfur dioxide (SO_2), NO_2, lead, and respirable particulate matter (PM_{10} and $PM_{2.5}$).

The Basin is currently classified as a federal non-attainment area for ozone and $PM_{2.5}$ and a state non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. The regional air quality plan, the 2016 AQMP, outlines measures to reduce emissions of ozone and $PM_{2.5}$. Whereas reducing PM concentrations is achieved by reducing emissions of $PM_{2.5}$ to the atmosphere, reducing ozone concentrations is achieved by reducing the precursors of photochemical formation of ozone, VOC, and NO_X.

The growth forecasting for the AQMP is based in part on the land uses established by local general plans. Thus, if a project is consistent with land use as designated in the local general plan, it can normally be considered consistent with the AQMP. Projects that propose a different land use than is identified in the local general plan may also be considered consistent with the AQMP if the proposed land use is less intensive than buildout under the current designation. For projects that propose a land use that is more intensive than the current designation, analysis that is more detailed is required to assess conformance with the AQMP.

As described in Section 4.3b below, project construction would not result in significant air quality impacts. The project is limited to a sewer pipeline and does not include growth-generating components, but rather would accommodate existing and planned growth. As such, the Project would be consistent with growth projections contained in the General Plan and AQMP forecasts. Based on these considerations and pursuant to SCAQMD guidelines, project-related emissions are accounted for in the AQMP. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and impacts would be less than significant.

b. Less Than Significant Impact

Regional Significance Thresholds

NAAQS and CAAQS have been established for six criteria pollutants (ozone, CO, SO_2, NO_2, lead, and PM). As described in Section 4.3a above, the SCAQMD is the air pollution control agency responsible for protecting the people and the environment of the Basin from the effects of air pollution. Accordingly, the District evaluates project air quality emissions based on the quantitative emission thresholds originally established in the SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). SCAQMD's significance thresholds for impacts to regional air quality are shown in Table 1.

Table 1
SCAQMD Air Quality Significance Thresholds – Mass Daily Thresholds

Pollutant	Emissions (pounds)	
	Construction	Operational
Oxides of Nitrogen (NO_X)	100	55
Volatile Organic Compounds (VOC)	75	55
Coarse Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Carbon Monoxide (CO)	550	550
Lead (Pb)*	3	3
SOURCE: SCAQMD Air Quality Significance Thresholds (SCAQMD 2015).		

The project would result in short-term emissions associated with construction. Operation of the Project would result in emissions related to minor vehicle/equipment use associated with routine inspection and maintenance; however, these operational emissions would be negligible. Therefore, this analysis focuses on emissions associated with construction activities. Construction emissions associated with the Project were modeled using the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Roadway Construction Emissions Model (RCEM) Version 9.0.0 (SMAQMD 2018).

As discussed in Section 2.0, the sewer pipeline would be construction in three segments: Murrieta Hot Springs Road Crossing Segment, Golden Triangle Segment, and the I-15 Crossing Segment. Construction of the Murrieta Hot Springs Road segment is anticipated to occur between December 2020 and June 2021, and construction of the I-15 Crossing segment is anticipated to occur between April 2021 and February 2022. The exact timing of construction of the Golden Triangle segment is not known at this time. Emissions were calculated assuming construction of this segment would last as long as construction of the I-15 Crossing segment. Since the I-15 Crossing segment is longer than the Golden Triangle segment, this is conservative. Maximum daily construction emissions were calculated separately for each of the three segments. Additionally, should construction of the Golden Triangle segment occur at the same time as construction of the other two segments, total combined emissions were also calculated. Required construction equipment would include excavators, jack and bore equipment, a crane, dump truck, concrete trucks, and paving equipment. Construction activities would include grubbing/land clearing, trenching/jack and

bore, pipe installation and backfill, and repaving. As a worst-case analysis, all construction equipment was modeled during each phase of each segment.

Table 2 shows the total projected construction maximum daily emission levels for each criteria pollutant. The RCEM output files for construction emissions for the Project are contained in Appendix A.

To assess the significance of the air quality emissions resulting from construction of the Project, construction emissions were compared to the significance thresholds shown in Table 1. These thresholds are designed to provide limits below which project emissions would not significantly change regional air quality.

As shown in Table 2, maximum daily construction emissions associated with the Project are projected to be less than the applicable thresholds for all criteria pollutants, including emissions for ozone precursors (ROG and NO_X), PM_{10}, and $PM_{2.5}$. Operation of the Project would result in emissions related to minor vehicle/equipment use associated with routine inspection and maintenance; however, these operational emissions would be negligible. Therefore, the Project would not result in a cumulatively considerable net increase in emissions of ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

Table 2
Summary of Maximum Buildout Construction Emissions
(pounds per day)

Construction Activities	Pollutant					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Murrieta Hot Springs Road Crossing						
Grubbing/Land Clearing	3	31	24	<1	11	3
Trenching	3	32	26	<1	11	3
Pipe Installation and Backfill	3	28	25	<1	11	3
Repaving	3	27	24	<1	1	1
Maximum Daily Total	**3**	**32**	**26**	**<1**	**11**	**3**
Golden Triangle						
Grubbing/Land Clearing	3	27	24	<1	11	3
Trenching	3	31	26	<1	11	3
Pipe Installation and Backfill	3	27	25	<1	11	3
Repaving	3	27	24	<1	1	1
Maximum Daily Total	**3**	**31**	**26**	**<1**	**11**	**3**
I-15 Crossing						
Grubbing/Land Clearing	3	27	24	<1	11	3
Trenching/Jack and Bore	3	32	26	<1	11	3
Pipe Installation and Backfill	3	27	25	<1	11	3
Repaving	3	27	24	<1	1	1
Maximum Daily Total	**3**	**32**	**26**	**<1**	**11**	**3**
Simultaneous Construction of Murrieta Hot Springs Road Crossing and Golden Triangle Segments						
Maximum Daily Total	**6**	**62**	**52**	**<1**	**23**	**6**
Simultaneous Construction of I-15 Crossing and Golden Triangle Segments						
Maximum Daily Total	**6**	**63**	**52**	**<1**	**23**	**6**
Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*

SOURCE: Appendix A.

Localized Construction Impacts

In addition to these regional significance thresholds, the SCAQMD utilizes Localized Significance Thresholds (LSTs) to evaluate localized air quality impact to sensitive receptors in the vicinity of the Project (SCAQMD 2008). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. Localized air quality impacts would occur if pollutant concentrations at sensitive receptors exceeded applicable NAAQS or CAAQS.

The project site is located within Murrieta Source Receptor Area 26. LSTs apply to on-site air emissions of CO, NO_2, PM_{10}, and $PM_{2.5}$. The LST Methodology states that only on-site emissions should be compared to LSTs. Therefore, off-site emissions associated with worker travel, materials deliveries, and other mobiles sources are not evaluated against LSTs. However, as a conservative analysis, total maximum on-site and off-site emissions shown in Table 1 were compared to the LSTs. Maximum on-site emissions would be less.

The maximum on-site daily emissions for CO, NO_X, PM_{10}, and $PM_{2.5}$ for construction activity are compared to the applicable screening thresholds based on acreage disturbed per day and the distance to the closest sensitive receptor. The LSTs for a 5-acre site located in Source Receptor Area 26, Temecula Valley, with receptors at a distance of 50 meters were used. The results of the LST analysis are provided in Table 3.

Table 3
Localized Construction Emissions

	Pollutant			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emission	63	52	23	6
LST Threshold	*416*	*2,714*	*40*	*10*
Threshold Exceeded?	No	No	No	No

As shown in Table 3, maximum localized construction emissions would not exceed any of the SCAQMD recommended localized screening thresholds. Therefore, the Project would not exceed the LST thresholds for CO, NO_X, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

c. Less Than Significant Impact

A sensitive receptor is a person in the population who is more susceptible to health effects due to exposure to an air contaminant than is the population at large. Examples of sensitive receptor locations in the community include residences, schools, playgrounds, childcare centers, churches, athletic facilities, retirement homes, and long-term health care facilities. The sensitive receptors located closest to the proposed construction activities is a single-family residence located approximately 150 feet from the I-15 Crossing area alignment. Pollutants that have the potential to affect sensitive receptors include criteria pollutants, diesel particulate matter (DPM), and CO hotspots. Impacts to sensitive receptors from

criteria pollutants are discussed above in Section 4.3(b), Localized Construction Impacts. DPM and CO hotspots are discussed below.

Diesel Particulate Matter

Construction-related activities would result in short-term emissions of diesel particulate matter (PM) exhaust emissions from off-road, heavy-duty diesel equipment. Diesel PM has been identified by the California Air Resources Board (CARB) as a carcinogen. Cancer risk is dependent on the exposure concentration (dose) and duration of exposure. Generation of diesel PM from construction projects typically occurs in a single area for a short period. The risks associated with exposure to diesel PM are typically evaluated based on a lifetime of chronic exposure, which is defined as 24 hours per day, 7 days per week, 365 days per year, for 70 years. The project's generation of DPM would be limited to 7 months for the Murrieta Hot Springs Road Crossing segment, 11 months for the I-15 Crossing segment, and up to 11 months for the Golden Triangle segment. Therefore, the Project would not result in long-term exposure of sensitive receptors to DPM, and potential impacts would be less than significant.

Carbon Monoxide Hot Spots

A CO hot spot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO hot spots have the potential to violate state and federal CO standards at intersections, even if the broader basin is in attainment for federal and state levels. The project would generate vehicle trips during construction in the form of haul trucks and worker commute vehicles; however, the number of vehicles generated would be limited and would not result in congestion on nearby roadways. Construction vehicle generation would also be temporary. Should lane closures be required during construction at Murrieta Hot Springs Road, minor increases in vehicle congestion may occur; however, the Project would implement traffic control measures to maintain vehicular flow. This would ensure that congestion would not be substantial, and the Project would not cause the generation of carbon monoxide hot spots. Roadways would be restored to pre-existing conditions once construction is completed. Therefore, the Project would not generate CO hot spots, and potential impacts would be less than significant.

d. Less Than Significant Impact

During construction, diesel equipment may generate some nuisance odors. Sensitive receptors near the project site include residential uses; however, exposure to odors associated with project construction would be short term and temporary in nature and would not affect a substantial number of people. There would be no operational source of odors associated with the Project, as the sewer system would be completely enclosed and underground. Therefore, the Project would not generate substantial amounts of odors adversely affecting a substantial number of people, and impacts would be less than significant.

4.4 Biological Resources

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have substantial adverse effects, 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 (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
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 CDFW or USFWS?	☐	☐	☐	☒
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
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 native wildlife nursery sites?	☐	☐	☒	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☒	☐	☐

EXPLANATIONS:

a. Potentially Significant Unless Mitigation Incorporated

This section is based on the Biological Resources Report prepared by RECON (~~2020a~~2023a; Appendix B). RECON biologist Brian Parker and JR Sundberg conducted biological surveys on March 17, 2020. RECON biologist Alex Fromer subsequently conducted a verification survey of the survey area on March 23, 2023. Biological conditions within the survey area presented below have been verified or updated based on the results of this survey. Changes in biological conditions identified since March 2020 are tracked in this final document in strikeout/underline. The biological surveys covered the Murrieta Hot Springs Road Crossing and I-15 Crossing segments, totaling ~~5.49~~6.06 acres, as well as the areas within the 100-foot buffer surrounding these two segments. The biological survey area totaled ~~17.40~~17.57 acres, which is presented in Figure 4. As described in Chapter 3.0, Section 14 above, all impacts to biological resources within the Golden Triangle Segment were evaluated and disclosed in the Golden Triangle SEIR that was certified in 2013. Therefore, the footprint of the Golden Triangle Segment, which is demarcated as "Area Previously Surveyed" on Figure 4, was not surveyed and impacts were not analyzed.

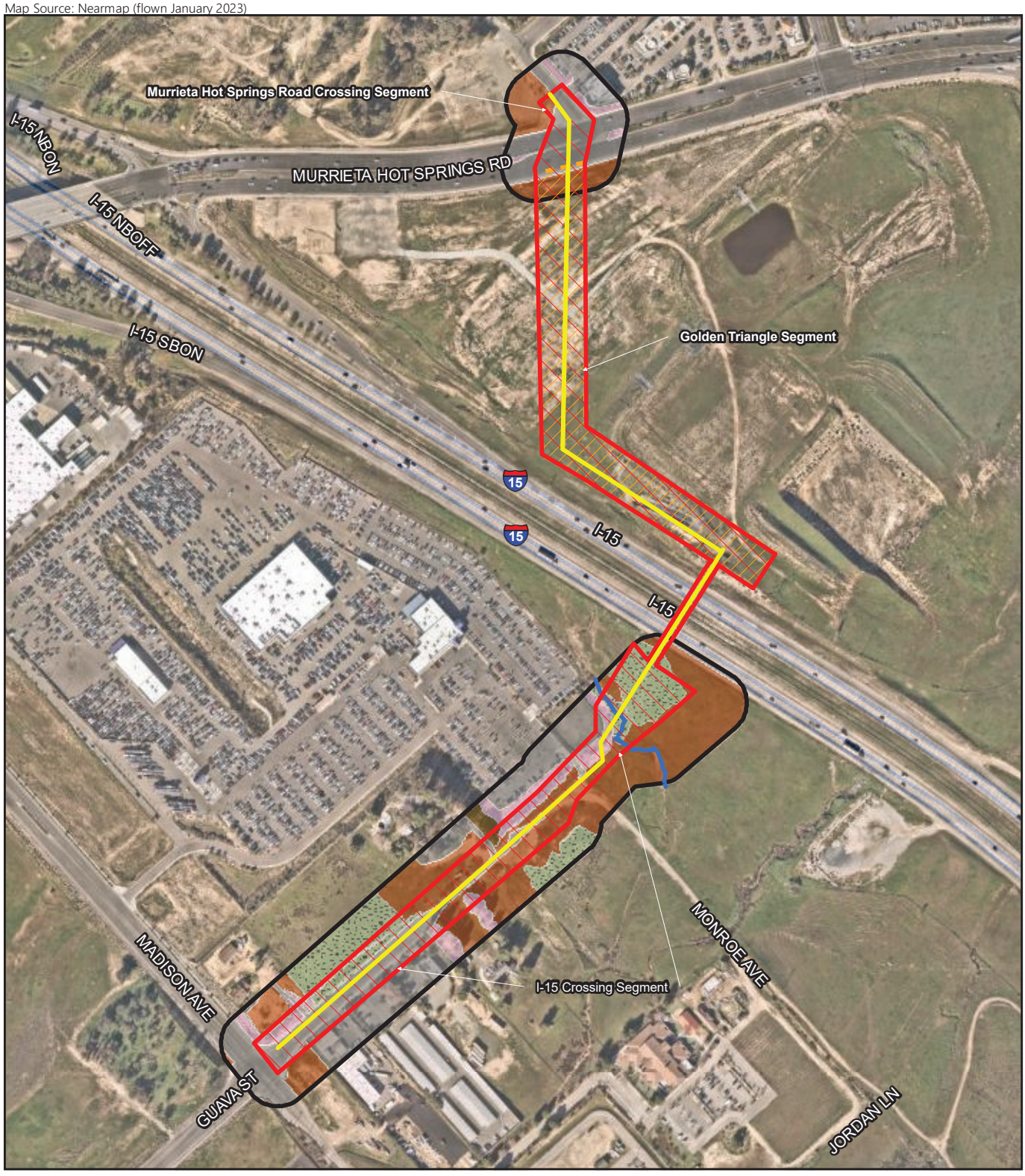
Vegetation Communities/Land Cover Types

The biological survey identified five vegetation communities/land cover types within the biological survey area: disturbed Riversidean sage scrub, disturbed habitat, eucalyptus woodland, ornamental vegetation, and developed land. The acreages of vegetation communities and land cover types. The acreage of these vegetation communities/land cover types are presented in Table 4. Descriptions of these vegetation communities/land cover types are provided below.

Table 4
Vegetation Communities within Biological Survey Area (acres)

Vegetation Communities	Total Biological Survey Area	Project Site
Disturbed Riversidean sage scrub	~~2.03~~2.52	~~0.58~~1.14
Disturbed Habitat	~~7.28~~7.17	~~1.99~~2.07
Eucalyptus woodland	0.15	0.03
Ornamental vegetation	~~1.61~~1.35	~~0.78~~0.59
Developed Land	~~6.33~~6.39	~~2.12~~2.23
TOTAL	**~~17.40~~17.57**	**~~5.49~~6.06**
NOTE: Totals may vary due to rounding.		

Map Source: Nearmap (flown January 2023)



Pipeline
Temporary Impacts
Project Boundary
Area Previously Surveyed
100 ft Survey Area

Non-jurisdictional Swale

Vegetation Community

Disturbed Riversidian Sage Scrub
Eucalyptus Woodland
Ornamental Vegetation
Disturbed Habitat
Urban/Developed

0 Feet 400

emwd

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FIGURE 4
Impacts to Biological Resources

~~Southern Maritime Chaparral~~Disturbed Riversidean Sage Scrub

Disturbed Riversidean sage scrub occurs in four patches in the I-15 Crossing Segment of the biological survey area. These patches generally appear to have been mowed, grazed, or subject to some other form of disturbance, as they have low, sparse native sage scrub species, interspersed with non-native grasses and forbs. Total vegetation cover was ~~approximately 80~~close to 100 percent in most areas, with approximately ~~10 to~~ 20 to 30 percent native cover and ~~60 to~~ 70 to 80 percent non-native cover. The dominant native species in the disturbed Riversidean sage scrub is California buckwheat (*Eriogonum fasciculatum*), with lesser amounts of brittlebush (*Encelia farinosa*), ~~California encelia (*Encelia californica*), slender buckwheat (*Eriogonum gracile*),~~ and popcorn flower (*Plagiobothrys* sp.). These areas have substantial non-native plant cover, including long-beak filaree (*Erodium botrys*), redstem filaree (*Erodium cicutarium*), red brome (*Bromus madritensis* ssp. *rubens*), and ~~short-pod mustard (*Hirschfeldia incana*)~~stinknet (*Oncosiphon pilulifer*).

Disturbed Habitat

The disturbed habitat predominantly consists of non-native grasses and forbs with areas of bare ground and occasional native shrubs and wildflowers. Where these areas are vegetated, total cover is approximately ~~50~~90 percent and dominated by longbeak filaree, redstem filaree, tocalote (*Centaurea melitensis*), sourclover (*Melilotus indicus*), foxtail chess (*Bromus madritensis ssp. rubens*), ~~black mustard (*Brassica nigra*),~~ and ~~shortpod mustard~~stinket. Native plants make up less than 5 percent of the total cover, and include such species as California ~~poppy (*Eschscholzia californica*)~~buckwheat, rancher's fiddleneck (*Amsinckia menziesii*), and deerweed (*Acmispon glaber*)~~, telegraph weed (*Heterotheca grandiflora*), and California buckwheat~~.

Eucalyptus Woodland

Eucalyptus woodland occurs in one patch associated with an adjacent residence in the I-15 Crossing Segment of the biological survey area. It is dominated by exotic gum trees (*Eucalyptus* sp.). Gum trees are a non-native species that was historically planted in southern California. In some locations eucalyptus trees have become naturalized and spread into surrounding areas, often displacing native habitats.

Ornamental Vegetation

Ornamental vegetation occurs in several areas of the I-15 Crossing Segment of the biological survey area. This community consists of areas planted with ornamental shrubs or trees, drought-tolerant species, and some native species. In the southwestern portion of the I-15 Crossing Segment of the biological survey area, the ornamental vegetation consists of rosemary (*Salvia rosemarinus*) planted in rows with California buckwheat and deerweed. Other areas contain ornamental monkeyflower (*Mimulus* sp.), bottlebrush (*Callistemon* sp.), and ornamental barrel cactus (*Cactaceae*).

In the northeastern portion of the I-15 Crossing Segment of the biological survey area a patch of ornamental vegetation was mapped in the land around a detention basin associated with

the Carmax car lot. Vegetation in this area is characterized by native species mixed with occasional non-natives. This area is dominated by California buckwheat, brittlebush, deerweed, black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and mule fat (*Baccharis salicifolia*). Non-native species planted in this area include ornamental pine tree (*Pinus* sp.) and ~~tamarisk (*Tamarix* sp.)~~vanilla-scented wattle (*Acacia redolens*). Many of the native species in this area occur nowhere else in the biological survey area, and the ornamental non-natives were tied to wooden support structures. This area is planted, irrigated, and clearly maintained, with some areas containing a bark mulch substrate, so it is not considered a native vegetation community despite the abundance of native plant species.

Two other small areas of ornamental vegetation consist of rows of ornamental pine trees (*Pinus* sp.) associated with a single-family residence on the south side of Guava Street.

Developed Land

Developed land within the biological survey area included existing roads, sidewalks, commercial developments, and single-family residences. Generally, vegetation in these areas is characterized by ornamental trees and shrubs, with occasional native or non-native species recruiting into more open areas. In addition, the detention basin adjacent to the Carmax lot is also mapped as developed land, as this area has been planted and appears to be maintained for sediment control and/or storm water control purposes.

Project impacts on vegetation communities are presented in Table 5 and Figure 4. As the Project consists of pipeline installation, all areas impacted by construction will be returned to the original grade and areas that are not currently developed or within roadways would be revegetated. While there would be manholes at-grade, all would be located in existing developed or disturbed areas. Therefore, all impacts assessed in this report are considered temporary. With the proposed revegetation, impacts to sensitive vegetation communities, i.e., disturbed Riversidean sage scrub, would be considered less than significant and would not require mitigation.

Table 5
Impacts to Vegetation Communities (acres)

Land Cover Types	Existing Within Biological Survey Area	Temporary Impacts
Disturbed Riversidean sage scrub	~~2.03~~2.52	~~0.58~~1.14
Disturbed habitat	~~7.28~~7.17	~~1.99~~2.07
Eucalyptus woodland	0.15	0.03
Ornamental vegetation	~~1.61~~1.35	~~0.78~~0.59
Developed land	~~6.33~~6.39	~~2.12~~2.23
Total	**~~17.40~~17.57**	**~~5.49~~6.06**

Plant Species

No sensitive plant species were observed on-site; however, one sensitive plant species – smooth tarplant (*Centromadia pungens* ssp. *laevis*) – has potential to occur in the disturbed

Riversidean sage scrub and disturbed habitat on-site. Thus, it could be temporarily impacted by the Project if it is present during construction. This species is known from numerous records within two miles of the project site and project impacts are not expected to affect the long-term survival of the species or the local population. Furthermore, these impacted areas would be revegetated following construction, and impacts are not expected to affect the long-term survival of the species or the local population. Therefore, potential impacts to smooth tarplant would be less than significant. Nonetheless, to reduce potential impacts to this species, topsoil should be stockpiled during construction and replaced on the regraded landscape during revegetation, and if possible, this species should be included in the plant palette.

Wildlife

There are no state or federally state listed species that occur in the project site. The project site does not support suitable habitat for riparian birds as no riparian habitat exists in the project site. However, there is moderate potential for California horned lark (*Eremophila alpestris actia*), Cooper's hawk (*Accipiter cooperii*), western burrowing owl (*Athene cunicularia hypugaea*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) to occur within the project site due to the presence of suitable habitats. These are discussed in further detail below.

General Wildlife

The project may result in direct impacts to small mammals and reptiles with low mobility. Large mammal species and most birds will be able to avoid the area during construction activities. Impacts to general wildlife would be considered less than significant and, therefore, would not require mitigation.

California Horned Lark and Other Migratory Birds

The project has potential to result in direct impacts to California horned lark and other migratory or nesting birds protected by California Fish and Game Code (CFGC) Section 3503 if vegetation removal and/or project grading occurs during the general bird breeding season (February 1 to September 15). Direct impacts to these species would be considered significant and require mitigation.

Cooper's Hawk and Other Raptors

Although eucalyptus woodland and ornamental trees present within the biological survey area can provide suitable nesting habitat for Coper's hawk and other tree-nesting raptors, no trees are anticipated to be removed by the Project. Therefore, there would be no direct impacts to nesting Cooper's hawks or other raptors. However, construction noise and activities have potential to cause indirect impacts on these species. These species are protected under CFGC Section 3503.5, and indirect impacts would be considered significant and mitigation would be required.

Western Burrowing Owl

Impacts to western burrowing owl could result from project activities within the disturbed Riversidean sage scrub and disturbed habitat, both of which provide suitable nesting and

foraging habitat for this species. Direct impacts to this species would be significant and require mitigation.

San Diego Black-tailed Jackrabbit

San Diego black-tailed jackrabbit is a highly mobile species and is expected to be able to move out of harm's way during construction activities. Therefore, no direct impacts to this species are anticipated.

Mitigation Measures

BIO-1: **Migratory birds and raptors (including California horned lark and Cooper's hawk).** To comply with CFGC Sections 3503 and 3503.5, no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests during the breeding season (February 1 to September 15). Thus, to avoid potential impacts to California horned lark and other migratory or nesting birds, vegetation removal should occur outside the general bird breeding season. If vegetation removal must occur during this period, a pre-construction survey would be necessary to confirm the presence or absence of breeding birds in the impact area. If nests or breeding activities are located on the survey area, then an appropriate buffer area around the nesting site shall be maintained until the young have fledged. If no nesting birds are detected during the pre-construction survey, no mitigation would be required.

BIO-2: **Western burrowing owl.** To prevent potential impacts to western burrowing owl, a pre-construction take avoidance survey for this species would be required within all suitable habitat located inside the burrowing owl survey area (suitable habitat within the project footprint, plus 500 feet). Per the Staff Report on Burrowing Owl Mitigation (CDFW 2012), take avoidance surveys require an initial survey no less than 14 days prior to the start of ground disturbance activities and a final survey conducted within 24 hours of ground disturbance. If burrowing owls are detected, the CDFW must be notified within 48 hours and avoidance measures and/or mitigation would be required. Potential mitigation measures for impact to burrowing owl could include preparation of a western burrowing owl relocation plan for active or passive relocation review and approval by CDFW.

b. No Impact

Direct impacts associated with the Project would be limited to disturbed Riversidean sage scrub, disturbed habitat, eucalyptus woodland, ornamental vegetation, and developed land (see Table 5). None of these vegetation communities qualify as sensitive riparian habitats. Therefore, no impact would occur.

c. No Impact

Direct impacts associated with the Project would be limited to disturbed Riversidean sage scrub, disturbed habitat, eucalyptus woodland, ornamental vegetation, and developed land (see Table 5). None of these vegetation communities qualify as wetlands. Therefore, no impact would occur.

d. Less Than Significant Impact

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

The northern portion of the project site lies just northwest of the intersection of Murrieta Hot Springs Road and Sparkman Court. It is situated in a previously graded, developed lot adjacent to a large commercial development. The I-15 Crossing Segment of the biological survey area, along Guava Street, is in a less-developed area, but is generally situated within an existing roadway and in a historically graded area in a Caltrans right-of-way. There are undeveloped portions of the site and surrounding area, but they have only limited connectivity with higher quality native habitats to the west. Therefore, the project location would not be considered part of a wildlife corridor, and impacts would be less than significant.

e. Less Than Significant Impact

Implementation of the Project would not conflict with policies or conservation measures for biological resources of the County's General Plan. The project site consists primarily of disturbed and developed land that would be restored to their existing condition once the Project is completed. Therefore, the Project would not conflict with any local policies or ordinances protecting biological resources, and impacts would be less than significant.

f. Potentially Significant Unless Mitigation Incorporated

The project site is located within the boundaries of the Western Riverside MSHCP (Western Riverside County Regional Conservation Authority [WRCRCA] 2003). The MSHCP allocates responsibility for assembly and management of its Conservation Areas to local, state, and federal governments, as well as private and public entities engaged in construction that may impact MSHCP covered species. As lead agency, the District is not a participant in the MSHCP; however, the Project must still demonstrate it would not prevent implementation of the conservation goals and objectives of the MSHCP. The project is not located within a designated criteria cell, so no mitigation for impacts to vegetation communities would be required by the MSHCP. No riparian/riverine areas, vernal pools, or narrow endemic plant species are present. As portions of the Project are located within the MSHCP-designated burrowing owl survey area, focused surveys and potential mitigation measures would be required for this species, as addressed in Section 4.4a. Implementation of mitigation measure BIO-2 would reduce impacts on burrowing owls to a level less than significant and ensure consistency with the MSHCP.

4.5 Cultural Resources

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of an historical resource pursuant to §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

EXPLANATIONS:

a. No Impact

A cultural resources survey was conducted for the Project's area of potential effect (APE) that comprised of a background research, review of historic aerial photographs, and an on-foot survey (RECON ~~2020b~~2023b; Appendix C). The APE consists of the Murrieta Hot Springs Road Crossing and I-15 Crossing segments, totaling ~~5.49~~6.06 acres. As described in Chapter 3.0, Section 14 above, all impacts to cultural resources within the Golden Triangle Segment were evaluated and disclosed in the Golden Triangle SEIR that was certified in 2013. Therefore, the footprint of the Golden Triangle Segment, which is demarcated as "Area Previously Surveyed" on Figure 3, was not surveyed and impacts were not analyzed.

Prior to the survey, a records search was requested from the Eastern Information Center (EIC). Additionally, a Sacred Lands File search and Native American outreach was included as part of the survey. The search indicated that there have been 116 cultural resources investigations and 33 cultural resources within the one-mile radius. Twelve of the investigations were included the APE. Two of the investigations cover the Golden Triangle segment not surveyed for this project. The previous investigation surveyed approximately 67 acres and did not identify any cultural resources (Crownover and Holz 1990). An additional records search was previously completed for the Golden Triangle segment and no resources were identified (Tang 2006).

The records search for this proposed project indicated that there is one built environment property within the search area. The historic resources consist of single-family houses, fences, road segments, a ranching complex, a landing strip, and a trash scatter. The prehistoric resources consist of five isolated artifacts, one lithic scatter, one hearth with lithic

artifacts, two ground stone scatters, a lithic and ceramic scatter, and four ground stone and lithic scatters. The resources do not retain the integrity to qualify as a historic property under the National Historic Preservation Act (NHPA) or historical resources under CEQA. No significant or potentially significant prehistoric or historic cultural resources are anticipated. Therefore, the Project would not cause a substantial adverse change in the significance of an historical resource pursuant to §15064.5. No impact would occur.

b. Potentially Significant Unless Mitigation Incorporated

The records search results indicated that there are no previously recorded cultural resources within the APE (see Appendix C). The Murrieta Hot Springs Road Crossing Segment has been developed. The intersection is paved and the northernmost connection point has been graded and is used as a gravel parking lot. The Golden Triangle Segment has been graded in the past. The I-15 Crossing Segment extends along Guava Street, which is paved and then extends as a heavily used dirt road at the east (northeast) end. Commercial and some residential development are on the paved portion of the road. The dirt road portion is open and undeveloped. A drainage ditch and landscaped slope are located along a portion of the northern end of Guava Street. A portion of the dirt road at the east end also contains a landscaped slope that was completed as part of the Carmax development. The yards in front of the residences are not developed and had ground visibility of 40 percent. There was evidence of past plowing/agricultural use. The Caltrans I-15 right-of-way consists of a fill slope. Given past disturbances, the possibility of buried significant cultural resources being present within the Project APE is considered low.

A letter was sent on February 17, 2020, to the NAHC requesting a search of their Sacred Lands File to identify spiritually significant and/or sacred sites or traditional use areas in the project vicinity. The NAHC was also asked to provide a list of local Native American tribes, bands, or individuals that may have concerns or interests regarding cultural resources potentially occurring within the Project's Area of Potential Effect (APE). The NAHC responded on February 28, 2020, noting that the Sacred Lands File search was positive. Per the recommendation of the letter, an e-mail was sent to the Pechanga Band of Luiseño Indians to inquire about their concerns with the Project on February 28, 2020. No response was received. Due to the positive results of the NAHC search to identify spiritually significant and/or sacred sites or traditional use areas, construction activities would have the potential to unearth previously unknown cultural resources, the discovery of which would be considered a significant impact. Implementation of mitigation measures CUL-1 through CUL-6 would reduce impacts to a level less than significant.

CUL-1: Cultural Resources Treatment and Monitoring Agreement. At least 30 days prior to the start of any ground-disturbing activities, the District shall contact the Consulting Tribe(s) to develop Cultural Resource Treatment Monitoring Agreement(s) ("Agreement"). The Agreement(s) shall address the treatment of archaeological resources inadvertently discovered on the project site; project grading; ground disturbance and development scheduling; the designation, responsibilities, and participation of tribal monitor(s) during grading, excavation,

and ground disturbing activities; and compensation for the tribal monitors, including overtime, weekend rates, and mileage reimbursements.

CUL-2: **Develop a Cultural Resources Monitoring Plan.** Prior to any grading activities, a Cultural Resources Monitoring Plan shall be prepared by a qualified archaeologist in consultation with the Consulting Tribe(s). The plan shall also identify the location and timing of cultural resources monitoring. The plan shall contain an allowance that the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, may reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall outline the appropriate measures to be followed in the event of unanticipated discovery of cultural resources during project implementation (including during the survey to occur following vegetation removal and monitoring during ground-disturbing activities). The plan shall identify avoidance as the preferred manner of mitigating impacts to cultural resources. The plan shall establish the criteria utilized to evaluate the historic significance (per CEQA) of the discoveries, methods of avoidance consistent with CEQA Guidelines Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to mitigate the effect of the Project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, disposition of artifacts, curation of data, and dissemination of reports to local and state repositories, libraries, and interested professionals. A qualified archaeologist and Consulting Tribe(s) tribal monitor shall attend a pre-grade meeting with District staff, the contractor, and appropriate subcontractors to discuss the monitoring program, including protocols to be followed in the event that cultural material is encountered.

CUL-3: **Tribal Monitoring Agreements.** A qualified archaeological monitor and a Consulting Tribe(s) monitor shall be present for ground-disturbing activities associated with the Project, and both the project archaeologist and Tribal Monitor(s) will make a determination as to the areas with a potential for encountering cultural material. At least seven business days prior to project grading, the District shall contact the tribal monitors to notify the Tribe of grading/excavation and the monitoring program/schedule, and to coordinate with the Tribe on the monitoring work schedule. Both the archaeologist and the tribal monitor shall have the authority to stop and redirect grading activities in order to evaluate the nature and significance of any archaeological resources discovered within the project limits. Such evaluation shall include culturally appropriate temporary and permanent treatment pursuant to the Cultural Resources Treatment and Monitoring Agreement, which may include avoidance of cultural resources, in-place preservation, data recovery, and/or reburial so the resources are not subject to further disturbance in perpetuity. Any reburial shall occur at a location predetermined between the District and the Consulting Tribe(s), details of which shall be addressed in the Cultural Resources Treatment and Monitoring

Agreement in mitigation measure CUL-1. Treatment may also include curation of the cultural resources at a tribal curation facility, as determined in discussion among the District, the project archaeologist, and the tribal representatives and addressed in the Cultural Resources Treatment and Monitoring Agreement referenced in mitigation measure CUL-1.

CUL-4: Evaluation of Discovered Artifacts. All artifacts discovered at the development site shall be inventoried and analyzed by the project archaeologist and tribal monitor(s). A monitoring report will be prepared, detailing the methods and results of the monitoring program, as well as the disposition of any cultural material encountered. If no cultural material is encountered, a brief letter report will be sufficient to document monitoring activities.

CUL-5: Disposition of Inadvertent Discoveries. In the event that Native American cultural resources are recovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries with the tribe. The District shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:

1. Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource.

2. If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to mitigation measure CR-2 is the next preferable treatment measure. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments.

3. In the event that on-site reburial is not feasible, the District will enter into a curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.

CUL-6: Non-Disclosure of Reburial Locations. It is understood by all parties that unless otherwise required by law, the site of any reburial of culturally sensitive resources shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, pursuant to the

specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies will be asked to withhold public disclosure information related to such reburial.

c. Potentially Significant Unless Mitigation Incorporated

There are no formal cemeteries or recorded burials in the vicinity of the project site. Therefore, the potential for encountering human remains during construction is very low. However, construction activities would still have the potential to unearth previously unknown human remains, the discovery of which would be considered a significant impact. Implementation of mitigation measure CUL-7 would reduce impacts to a level less than significant.

CUL-7: **Human Remains.** If Native American human remains are encountered, Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 will be followed. If human remains are encountered, no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours. Subsequently, the NAHC shall identify the person or persons it believes to be the "most likely descendant." The most likely descendant shall then make recommendations and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

4.6 Energy

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

EXPLANATIONS:

a. Less Than Significant Impact

Energy use during construction would occur within two general categories: vehicle fuel used by workers commuting to and from the construction site, and fuel use by vehicles and other equipment to conduct construction activities. While construction activities would consume fuels, project-related consumption of such resources would be temporary and would cease upon the completion of construction. In addition, mobile equipment energy usage during construction would be minimized as the Project would comply with CARB's idling regulations, which restrict idling diesel vehicles and equipment to five minutes. Additionally, consistent with state requirements, all construction equipment would meet CARB Tier 3 In-Use Off-Road Diesel Engine Standards. Engines are required to meet certain emission standards, and groups of standards are referred to as Tiers. A Tier 0 engine is unregulated with no emission controls, and each progression of standard level (i.e., Tier 1, Tier 2, Tier 3, etc.) generate lower emissions, use less energy, and are more advanced technologically than the previous tier. CARB's Tier 3 In-Use Off-Road Diesel Engine Standards requires that construction equipment fleets become cleaner and use less energy over time. The fuel consumed during construction would also be typical of similar construction projects and would not require the use of new energy resources beyond what are typically consumed in California. Therefore, construction of the Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

Operational energy usage would be minimal and would consist of occasional maintenance worker vehicle trips. The proposed pipeline would be gravity fed and would not require the use of energy for its operation. The project would therefore not use energy in a wasteful, inefficient, or unnecessary manner. Therefore, operation of the Project would not result in a wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

b. Less Than Significant Impact

Construction equipment would be subject to CARB's idling regulations and Tier 3 In-Use Off-Road Diesel Engine Standards. Operation of the Project would not require ongoing or regular use of energy. Therefore, the Project would not conflict with any state or local plans for renewable energy or energy efficiency, and impacts would be less than significant.

4.7 Geology and Soils

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause 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?	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

EXPLANATIONS:

a.i. Less Than Significant Impact

Review of Exhibit 12-3 of the Murrieta General Plan 2035 determined that there are no known Alquist-Priolo fault zones traversing the project site (City of Murrieta 2011). Review of Exhibit 12-4 of the Murrieta General Plan 2035 determined that there are no known active faults traversing the project site. Therefore, the risk of earthquake ground rupture is low, and impacts related to the exposure of people or structures to rupture of a known earthquake fault would be less than significant.

a.ii. Less Than Significant Impact

The project site is located in a seismically active southern California region. However, the Project is limited to construction of a sewer pipeline and would not introduce any residential, commercial, or other uses that could expose people to strong ground shaking. Therefore, impacts related to strong seismic shaking would be less than significant.

a.iii. Less Than Significant Impact

Liquefaction is a phenomenon where water-saturated granular soil loses shear strength during strong ground shaking produced by earthquakes. The loss of soil strength occurs when cyclic pore water pressure increases below the groundwater surface. Potential hazards due to liquefaction include the loss of bearing strength beneath structures; feasibly causing foundation failure or significant settlements and differential settlements Groundwater was not encountered during boring investigations. Due to the lack of groundwater in combination with the proposed dense fill soils over Pauba Formation (bedrock), the potential for liquefaction and associated settlement of structures is low. Additionally, review of Exhibit 12-5 of the Murrieta General Plan 2035 determined that the project site is not located within a liquefaction hazard zone (City of Murrieta 2011). Therefore, impacts related to liquefaction would be less than significant.

a.iv. Less Than Significant Impact

The project site and surrounding area are relatively flat and do not possess any slopes that could generate a landslide. Furthermore, the Project is limited to construction of a sewer pipeline that would be located below ground and would not introduce any residential, commercial, or other uses that could expose people to landslides. Therefore, the Project would not cause or increase the potential for landslides, and impacts would be less than significant.

b. Less Than Significant Impact

The project would implement BMPs during construction consistent with the requirements of the NPDES Construction General Permit and the City standards that are designed to minimize erosion potential by controlling storm water flows and minimization of topsoil loss. Therefore, compliance with the requirements of the NPDES Construction General Permit would prevent substantial soil erosion or the loss of topsoil, and impacts would be less than significant.

c. Less Than Significant Impact

As described in the Section 4.6aiii above, the project site is not located within a liquefaction hazard zone. Review of Exhibit 12-2 of the Murrieta General Plan 2035 determined that the project site is not located within a subsidence susceptibility zone (City of Murrieta 2011). Project excavation and pipeline construction would be conducted consistent with requirements of the 2010 CBC regarding unstable soils. Adherence to these guidelines would ensure that impacts associated with unstable soils would be less than significant.

d. Less Than Significant Impact

Project excavation and pipeline construction would be conducted consistent with requirements of the 2010 CBC regarding expansive soils. Adherence to these guidelines would ensure that impacts associated with expansive soils would be less than significant.

e. No Impact

The project does not propose the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

f. Less Than Significant Impact

As described in Section 4.5b above, the project site has been disturbed in the past. Therefore, the possibility of buried paleontological resources being present within the project site is considered low. Therefore, the Project would not directly or indirectly destroy a unique paleontological resource, and impacts would be less than significant.

4.8 Greenhouse Gas Emissions

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

EXPLANATIONS:

a. Less Than Significant Impact

The District has not adopted its own GHG Thresholds of Significance for CEQA. The SCAQMD published its Interim CEQA GHG Significance Thresholds for Stationary Sources, Rules, and Plans in 2008 (SCAQMD 2008). The interim thresholds are a tiered approach; projects may be determined to be less than significant under each tier or require further analysis under subsequent tiers. For the proposed project, the most appropriate screening threshold for determining GHG emissions is the SCAQMD proposed Tier 3 screening threshold (SCAQMD 2010); therefore, a significant impact would occur if the proposed project would exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 metric tons carbon dioxide equivalent (MT CO_2E) per year. Based on guidance from the SCAQMD, total construction GHG emissions resulting from a project should be amortized over the lifetime of a project, which is defined as 30 years (SCAQMD 2009).

The project would result in short-term emissions from construction activities. Construction emissions were calculated using RCEM and the parameters discussed in detail in Section 4.3b above. Total construction GHG emissions are summarized in Table 6.

Table 6 Summary of Total Construction GHG Emissions	
Construction Activities	GHG Emissions (MT CO_2E)
Murrieta Hot Springs Road Crossing	
Grubbing/Land Clearing	121
Trenching	623
Pipe Installation and Backfill	381
Repaving	187
Total	**1,312**
Golden Triangle	
Grubbing/Land Clearing	67
Trenching	421
Pipe Installation and Backfill	209
Repaving	103
Total	**800**
I-15 Crossing	
Grubbing/Land Clearing	67
Trenching/Jack and Bore	463
Pipe Installation and Backfill	209
Repaving	103
Total	**842**
Total Construction Emissions	**2,954**
Amortized Construction Emissions	*98*
SOURCE: Appendix A.	

As shown in Table 6, the Project would result in a total of 2,954 MT CO_2E over the entire construction period, which would be 98 MT CO_2E per year when amortized over the lifetime of the Project. This would be less than the 3,000 MT CO_2E per year screening threshold.

Operation of the Project would result in emissions related to minor vehicle/equipment use associated with routine inspection and maintenance; however, these operational emissions would be negligible. Therefore, impacts from construction and operation of the Project would be less than significant.

b. Less Than Significant Impact

The project would result in construction GHG emissions below the SCAQMD proposed Tier 3 screening threshold of 3,000 MT CO_2E per year and negligible operational GHG emissions. The proposed project would not result in emissions that would adversely affect state-wide attainment of GHG emission reduction goals as described in AB 32, Executive Order S-21-09, and Senate Bill 32. Project emissions would therefore have a less than cumulatively considerable contribution to global climate change impacts. Therefore, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be less than significant.

It should also be noted that the City adopted a CAP in 2011 which contains Climate Action Strategies to reduce emissions in the City. Because project emissions are limits to construction activities and negligible maintenance activities, none of the Climate Action Strategies are applicable to the Project. Further, the CAP does not provide GHG reduction

goals beyond 2020. Thus, the Project would not interfere with implementation of CAP measures or reduction goals.

4.9 Hazards and Hazardous Materials

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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 or excessive noise for people residing or working in the project area?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

EXPLANATIONS:

a. Less Than Significant Impact

The project is limited to construction of a sewer pipeline and would not involve the routine transport, use, or disposal of significant hazardous materials. Project construction may involve the use of small amounts of solvents, cleaners, paint, oils and fuel for equipment. However, these materials are not acutely hazardous, and use of these common hazardous materials in small quantities would not represent a significant hazard to the public or environment. Additionally, project construction would be required to be undertaken in compliance with applicable federal, state, and local regulations pertaining to the proper use of these common hazardous materials. Compliance with these regulations is mandatory per standard permitting conditions. Therefore, the Project would not create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials, and impacts would be less than significant.

b. Less Than Significant Impact

As described in Section 4.9a above, operation of the proposed sewer pipeline would not involve the routine transport, use, or disposal of significant hazardous materials. Furthermore, project construction would be conducted consistent with all applicable safety regulations and would not be expected to introduce accident conditions that could result in the release of hazardous materials into the environment. Roadways would be restored to pre-existing conditions once construction is completed. Therefore, the Project would not create upset and accident conditions that could result in the release of hazardous materials, and impacts would be less than significant.

c. Less Than Significant Impact

Project construction would occur within less than 0.25 mile of the Promise Christian Preschool and the David L. Long Regional Learning Center. Both schools are located to the southeast of the project site. However, project construction would not require the use of acutely hazardous materials, and would be limited to the use of small amounts of solvents, cleaners, paint, oils and fuel for equipment. Use of these common hazardous materials in

small quantities would not represent a significant hazard to the public or environment, and the use and handling of hazardous materials during construction would be conducted consistent with all applicable regulations (see Section 4.8a, above). Therefore, impacts related to hazardous emissions within 0.25 mile of a school would be less than significant.

d. Less Than Significant Impact

Record searches of the GeoTracker and EnviroStor databases determined that the project site is not identified as hazardous materials sites within either database (SWRCB 2020). The closest site was identified as a gas station cleanup site 0.5 mile west of the project site. The site has been cleaned up, the case is closed, and does not pose a hazardous materials risk to the Project (SWRCB 2020). Therefore, there are no hazardous materials located on the project site or surrounding area that would create a significant hazard to the public or the environment, and impacts would be less than significant.

e. No Impact

The project site is not located within the vicinity of a private airstrip. The nearest airport is the French Valley Airport, which is located approximately 5 miles to the northeast. Therefore, the project site is not located within an airport land use plan or within two miles of a public airport, and would not result in a safety hazard or excessive noise. No impact would occur.

f. Less Than Significant Impact

The project is limited to construction of a sewer pipeline and would not result in any permanent changes to the existing circulation network. Construction within the right-of-way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allow continued access. Roadways would be restored to pre-existing conditions once construction is completed. As described in Section 4.17a below, vehicle trips generated during construction and operation would not affect intersection and roadway operation. Therefore, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

g. No Impact

The proposed project is not located in a High Fire Hazard Severity Zone. The underground pipeline does not include habitable structures that could expose people to a significant risk of loss, injury, or death involving wildland fires. Human presence would be limited to temporary construction and periodic maintenance. Therefore, no impacts associated with the exposure of people or structures to significant risk of loss, injury, or death would occur.

4.10 Hydrology and Water Quality

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner, which would:	☐	☐	☒	☐
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. 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; or	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

EXPLANATIONS:

a. Less Than Significant Impact

Project construction would have the potential to generate erosion/sedimentation and pollutants that could impact water quality. However, the Project would implement construction BMPs consistent with the NPDES Construction General Permit and related requirements that would prevent erosion and prevent pollution from affecting water quality. Roadways would be restored to pre-existing conditions once construction is completed and the drainage pattern of undeveloped portions of the project site would be restored to its pre-existing conditions. Therefore, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and impacts would be less than significant.

b. Less Than Significant Impact

The project site is located within the Temecula-Murrieta Groundwater Basin which underlies several valleys in southwestern Riverside County and a portion of northern San Diego County.

The project is limited to construction of a sewer pipeline and would not introduce any residential, commercial, or other uses that would use groundwater. The pipeline would be located below ground and would not result in any permanent changes above ground that could interfere with groundwater recharge. Therefore, the Project would not significantly decrease groundwater supplies or interfere with groundwater recharge or obstruct sustainable groundwater management, and impacts would be less than significant.

c.i. Less Than Significant Impact

As described in Section 4.10a above, the Project would implement construction BMPs consistent with the NPDES Construction General Permit and related requirements that would prevent erosion. Roadways would be restored to pre-existing conditions once construction is completed and the drainage pattern of undeveloped portions of the Project site would be restored to its pre-existing conditions. Therefore, the Project would not substantially alter the drainage pattern of the site or the surrounding area in a manner that could result in substantial erosion, runoff, impediment or redirection of flood flows, and impacts would be less than significant.

c.ii. Less Than Significant Impact

The project is limited to construction of a sewer pipeline and would not introduce any aboveground features that would alter the drainage pattern and would not introduce impervious surfaces that could increase the rate or amount of surface runoff. Roadways would be restored to pre-existing conditions once construction is completed and the drainage pattern of undeveloped portions of the project site would be restored to its pre-existing conditions. Therefore, the Project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, and impacts would be less than significant.

c.iii. Less Than Significant Impact

As described in Section 4.10a above, the Project would implement construction BMPs consistent with the NPDES Construction General Permit and related requirements that would prevent erosion and prevent pollution from affecting water quality. Roadways would be restored to pre-existing conditions once construction is completed and the drainage pattern of undeveloped portions of the project site would be restored to its pre-existing conditions. The project is limited to construction of a sewer pipeline and would not introduce any aboveground features that would alter the drainage pattern or increase impervious surfaces that could increase stormwater runoff. Therefore, the Project would not 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, and impacts would be less than significant.

c.iv. Less Than Significant Impact

The project is limited to construction of a sewer pipeline and would not introduce any aboveground features that could impede or redirect flows. Roadways would be restored to pre-existing conditions once construction is completed and the drainage pattern of undeveloped portions of the project site would be restored to its pre-existing conditions. Therefore, the Project would not impede or redirect flood flows, and impacts would be less than significant.

d. No Impact

Review of Exhibit 12-7 of the Murrieta General Plan 2035 determined that the project site is not located within a dam inundation zone (City of Murrieta 2011). The project site is located approximately 24 miles inland from the Pacific Ocean, and therefore is not subject to risk associated with tsunami. The nearest body of water is Skinner Reservoir located approximately six miles northeast of the project site. Given this distance of six miles, the project site would not be affected by a seiche. Additionally, the Project is limited to construction of a sewer pipeline that would be located below ground and would not construct any above ground structures that could release pollutants during a flood. Therefore, the Project would not result in impacts associated with flood hazard, tsunami, or seiche zones. No impact would occur.

e. Less Than Significant Impact

As described in Section 4.10a above, the Project would implement construction BMPs consistent with the NPDES Construction General Permit and related requirements that would prevent erosion and pollution from affecting water quality. As described in Section 4.10b above, the Project would not decrease groundwater supplies or interfere with groundwater recharge. Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and impacts would be less than significant.

4.11 Land Use and Planning

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☒	☐
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

EXPLANATIONS:

a. Less Than Significant Impact

The project is limited to construction of a sewer pipeline and would not result in any permanent changes to the existing land use plan or circulation network. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Construction within right-of-way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allowed continued access. Roadways would be restored to pre-existing conditions once construction is completed. The pipeline would be located below ground and would not result in any permanent changes above ground. Therefore, the proposed project would not physically divide an established community, and impacts would not be significant.

b. Potentially Significant Unless Mitigation Incorporated

The project is limited to construction of a sewer pipeline and would not conflict with applicable land use/zoning designations within the project site. As described in Section 4.4f above, the Project would mitigate all potential impacts on biological resources to a level less than significant (see Appendix B). The pipeline would be located below ground and would not result in any permanent changes aboveground. Therefore, the Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant.

4.12 Mineral Resources

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

EXPLANATIONS:

a. No Impact

Review of Exhibit 8-1 of the Conservation Element of the Murrieta General Plan 2035 determined there are no known mineral resources located within the project site (City of Murrieta 2011). Therefore, the Project would not result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state or of a locally important mineral resource recovery site. No impact would occur.

b. No Impact

The City's General Plan does not identify the project site as an existing or former mineral resource site. No impact would occur.

4.13 Noise

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or 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 area to excessive noise levels?	☐	☐	☐	☒

EXPLANATIONS:

a. Less Than Significant Impact

Noise is defined as sound that is loud, unpleasant, unexpected, or undesired, and therefore, may cause general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment. Decibels (dB) are the standard unit of measurement of the sound pressure generated by noise sources and are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale for earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the noise energy would result in a 3 dB decrease.

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-weighted scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. Noise levels using A-weighted measurements are written as dB(A). It is widely accepted that the average healthy ear can barely perceive changes of 3 dB(A) (increase or

decrease) and that a change of 5 dB(A) is readily perceptible. An increase of 10 dB(A) is perceived as twice as loud, and a decrease of 10 dB(A) is perceived as half as loud (Caltrans 2013).

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}), the maximum noise level, and the community noise equivalent level (CNEL).

The L_{eq} is the equivalent steady-state noise level in a stated period of time that is calculated by averaging the acoustic energy over a time period; when no period is specified, a 1-hour period is assumed. The maximum noise level is the highest sound level occurring during a specific period.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and a 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

The City has established Noise Land Use Compatibility Guidelines in the City's adopted General Plan Noise Element. These guidelines identify compatible exterior noise levels for various land use types. Additionally, the City's Municipal Code, Chapter 16.30, also known as the Noise Ordinance, establishes property line noise level limits for operational source. However, the Project would not construct a noise sensitive land use or create an operational source of noise. The City regulations applicable to the proposed project are the construction noise regulations established in Section 16.30.130 of the Noise Ordinance.

Section 16.30.130 of the Noise Ordinance prohibits noise generated by construction activities between the hours of 8:00 p.m. and 7:00 a.m. and on Sundays and holidays. Construction activities shall be conducted in a manner that the maximum noise levels at the affected structures will not exceed the standards summarized in Table 7.

Table 7
City of Murrieta Construction Noise Standards [dB(A)L_{eq}]

Equipment Type	Single-Family Residential	Multi-Family Residential	Commercial
Mobile Equipment			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75	80	85
Daily, except Sundays and legal holidays, 8:00 p.m. to 7:00 a.m.	60	64	70
Stationary Equipment			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60	65	70
Daily, except Sundays and legal holidays, 8:00 p.m. to 7:00 a.m.	50	55	60
SOURCE: Section 16.30.130 of the Noise Ordinance.			

Construction of the pipeline would require the use of mobile construction equipment. Construction equipment would move along the pipeline alignment and would not be located at any one location for a long period of time. Therefore, the applicable standards would be the "Mobile Equipment" standards shown in Table 7. Noise impacts from construction are a function of the noise generated by equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Table 8 presents a list of noise generation levels for various types of equipment anticipated to be used on construction of the Project. The duty cycle is the amount of time that equipment generates the reported noise level during typical, standard equipment operation. The noise levels and duty cycles summarized in Table 8 are based on measurements and studies conducted by Federal Highway Administration (FHWA) and the Federal Transit Authority (FTA).

Table 8
Typical Construction Equipment Noise Levels

Equipment	Maximum Noise Level at 50 Feet [dB(A) L_{max}]	Typical Duty Cycle	Maximum Average Hourly Noise Level [dB(A) L_{eq}]
Concrete Mixer Truck	85	40%	81
Crane (mobile or stationary)	85	20%	78
Drill Rig	84	20%	77
Dump Truck	84	40%	80
Excavator	85	40%	81
Paver	85	50%	82
SOURCE: FHWA 2006, FTA 2006.			

Due to the complex nature of construction sites, construction noise from a linear project, such as a pipeline project, is assessed from the centerline of the alignment and work area. Maximum noise levels would occur when the loudest construction equipment is nearest to a noise sensitive receiver. Although construction equipment may temporarily be located at the point on the alignment nearest to a receiver, over time equipment would move along the alignment. Therefore, the distance from a receiver to the centerline of the alignment is not the same as the average distance during a given day from the receiver to construction equipment. Thus, average noise levels correlate to the area of active construction. Construction noise levels were calculated assuming the simultaneous use of two pieces of construction equipment. Based on the noise levels summarized in Table 8, the simultaneous operation of two pieces of construction equipment would generate a maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet.

As discussed in Section 2.0, the sewer pipeline would be constructed in three segments: Murrieta Hot Springs Road Crossing Segment, Golden Triangle Segment, and the I-15 Crossing Segment. The following is a discussion of construction noise at the receivers located closest to each of these segments.

Murrieta Hot Springs Crossing Segment

The residential uses located closest to the Murrieta Hot Springs Crossing Segment are the multi-family residential uses approximately 670 feet north of the segment's northern boundary. A maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet would attenuate to 62 dB(A) L_{eq} at 670 feet. Noise levels would be less than the daytime limit of 80 dB(A) L_{eq}. The commercial uses located closest to the Murrieta Hot Springs Crossing Segment are 75 feet east of the alignment. A maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet would attenuate to 81 dB(A) L_{eq} at 75 feet. Noise levels would be less than the daytime limit of 85 dB(A) L_{eq}. Construction activities would general occur during the daytime hours between 7:00 a.m. to 8:00 p.m. Pipeline construction noise levels are not anticipated to exceed Noise Ordinance limits at the Murrieta Hot Springs crossing area.

Golden Triangle Segment

The residential uses located closest to the Golden Triangle Segment are the multi-family residential uses approximately 890 feet north of the segment's northern boundary. A maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet would attenuate to 60 dB(A) L_{eq} at 890 feet. Noise levels would be less than the daytime limit of 80 dB(A) L_{eq}. The commercial uses located closest to the Golden Triangle Segment are 195 feet north of the segment's northern boundary. A maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet would attenuate to 73 dB(A) L_{eq} at 195 feet. Noise levels would be less than the daytime limit of 85 dB(A) L_{eq}. Construction activities would general occur during the daytime hours between 7:00 a.m. to 8:00 p.m. Pipeline construction noise levels are not anticipated to exceed Noise Ordinance limits at the Golden Triangle Segment.

It should be noted that the sewer pipeline within the Golden Triangle Segment would be constructed by a private developer along with construction of the Specific Plan land uses. Construction activities would implement noise mitigation measures outlined in the Golden Triangle SEIR that was certified in 2013. Implementation of these measures would reduce noise impacts to a level less than significant, and reduce construction noise to levels lower than for the Murrieta Hot Springs Crossing Segment analyzed above.

I-15 Crossing

The residential use located closest to the I-15 Crossing Segment is a single-family residential use approximately 150 feet northwest of the alignment. A maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet would attenuate to 75 dB(A) L_{eq} at 150 feet. Noise levels would not exceed the daytime limit of 75 dB(A) L_{eq}. The commercial uses located closest to the I-15 crossing area are 55 feet southeast of the alignment. A maximum average hourly noise level of 85 dB(A) L_{eq} at 50 feet would attenuate to 84 dB(A) L_{eq} at 55 feet. Noise levels would be less than the daytime limit of 85 dB(A) L_{eq}. Construction activities would general occur during the daytime hours between 7:00 a.m. to 8:00 p.m. Pipeline construction noise levels are not anticipated to exceed Noise Ordinance limits at the I-15 Crossing Segment.

b. Less Than Significant Impact

Human reaction to vibration is dependent on the environment the receiver is in as well as individual sensitivity. As example, vibration outdoors is rarely noticeable and generally not considered annoying. Typically, humans must be inside a structure for vibrations to become noticeable and/or annoying. Based on several federal studies, the threshold of perception is 0.035 inch per second (in/sec) peak particle velocity (PPV), with 0.24 in/sec PPV being distinctly perceptible (Caltrans 2013).

Operation of the Project would not generate significant groundborne noise or vibration.

Construction activities produce varying degrees of ground vibration, depending on the equipment and methods employed. While ground vibrations from typical construction activities very rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive or historic land uses are near the construction site. The construction activities that typically generate the highest levels of vibration are blasting and impact pile driving. However, the Project would not require blasting or pile driving.

Vibration perception would occur at structures, as people do not perceive vibrations without vibrating structures. According to the FTA, loaded trucks generate vibration levels of 0.076 in/sec PPV at 25 feet. As discussed, the nearest residence is approximately 150 feet from the alignment, and the nearest commercial use is approximately 55 feet from the alignment. At these distances, vibration levels would attenuate to 0.005 in/sec PPV or less at the nearest residential use and 0.023 in/sec PPV or less at the nearest commercial use. Therefore, construction vibration levels would be below the distinctly perceptible threshold, and impacts would be less than significant.

c. No Impact

The project site is not located within the vicinity of a private airstrip. The nearest airport is the French Valley Airport, which is located approximately 5 miles to the northeast. Therefore, the project site is not located within an airport land use plan or within two miles of a public airport and would not expose people to excessive noise levels. No impact would occur.

4.14 Population and Housing

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned 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)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

EXPLANATIONS:

a. No Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would induce growth. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not directly or indirectly result in substantial population growth within the City. No impact would occur.

b. No Impact

The project site consists of existing roadways, a portion of the Triangle Specific Plan that has already been permitted and graded, and a narrow corridor of undeveloped land stretching from I-15 to Guava Street. Therefore, the Project would not displace any existing people or housing. No impact would occur. No impact would occur.

4.15 Public Services

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

EXPLANATIONS:

a.i. No Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would require fire protection services. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not require new or expanded fire protection facilities. No impact would occur.

a.ii. No Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would require police protection services. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated

in the General Plan. Therefore, the Project would not require new or expanded police protection facilities. No impact would occur.

a.iii. No Impact

The project is limited to a sewer pipeline and would not construct any residential uses that would generate any new student enrollment that would increase demand for school services. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not require new or expanded school facilities. No impact would occur.

a.iv. No Impact

The project is limited to a sewer pipeline and would not construct any residential uses that would increase demand for school services. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not require new or expanded park facilities. No impact would occur.

a.v. No Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would require additional public services. No impact would occur.

4.16 Recreation

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?	☐	☐	☐	☒
b. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

EXPLANATIONS:

a. No Impact

As described in Section 4.14a above, the Project is limited to a sewer pipeline that would primarily serve the proposed Triangle Specific Plan, as well as existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not result in an increase in population that would cause substantial physical deterioration of recreational facilities through increased use. No impact would occur.

b. No Impact

The project is limited to a sewer pipeline and does not include the provision of recreational facilities or require the construction or expansion of recreational facilities. No impact would occur.

4.17 Transportation/Traffic

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

EXPLANATIONS:

a. Less Than Significant Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would generate vehicle trips. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan. Traffic associated with the

Triangle Specific Plan was evaluated in the Golden Triangle SEIR that was certified in 2013. Operational traffic trips would be limited to periodic maintenance and inspection that would not affect intersection and roadway operations.

Vehicle trips associated with project construction would be minimal and would not affect intersection and roadway segment operations on the surrounding roadway network. Construction of the I-15 Crossing would tunnel under I-15 and would not disrupt traffic operations. Construction within the right-of-way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allowed continued access. Roadways would be restored to pre-existing conditions once construction is completed.

The project would not impact alternative modes of transportation. Construction would not occur within the sidewalks along Sparkman Court, Murrieta Hot Springs Road, and Guava Street, and the Project would maintain pedestrian access during construction. There are no bicycle lanes or bus stops located along the segments of Sparkman Court, Murrieta Hot Springs Road, and Guava Street adjacent or near the project site. Therefore, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, and impacts would be less than significant.

b. Less Than Significant Impact

As described in Section 4.17a above, vehicle trips associated with project construction would be minimal and would not affect intersection and roadway segment operations on the surrounding roadway network. Additionally, operational vehicle trips would be limited to periodic maintenance and inspection that would not affect intersection and roadway operations. Therefore, preparation of a Vehicle Miles Traveled Analysis per CEQA Guidelines Section 15064.3, subdivision (b) was not required, and impacts would be less than significant.

c. Less Than Significant Impact

The project is limited to a sewer pipeline and would not result in any permanent changes to the existing circulation network. Construction within the right-of-way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allow continued access. Roadways would be restored to pre-existing conditions once construction is completed. Therefore, the Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, and impacts would be less than significant.

d. Less Than Significant Impact

The project is limited to a sewer pipeline and would not result in any permanent changes to the existing circulation network. Construction within the right-of-way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allow continued access. Roadways would be restored to pre-existing conditions once construction is completed. As described in Section 4.17a above, vehicle trips generated during construction and operation would not affect intersection and roadway operations.

Therefore, the Project would not result in inadequate emergency access to or from the project site, and impacts would be less than significant.

4.18 Tribal Cultural Resources

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless 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)?	☐	☐	☒	☐
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?	☐	☒	☐	☐

EXPLANATIONS:

a.i. Less Than Significant Impact

The District initiated consultation with the following Native American tribes consistent with the requirements of AB 52 who are traditionally and culturally affiliated with the geographic area of the Project regarding potential impacts to tribal cultural resources:

- Agua Caliente Band of Cahuilla Indians
- Morongo Band of Mission Indians
- Rincon Band of Luiseño Indians
- San Manuel Band of Mission Indians
- Soboba Band of Luiseño Indians
- Pechanga Band of Luiseño Indians

The Agua Caliente Band of Luiseño Indians, Morongo Band of Mission Indians, and San Manuel Band of Missions Indians either declined or did not respond to the AB 52 consultation letters. The Rincon Band of Luiseño Indians (April 3, 2020), Pechanga Band of Luiseño Indians (April 20, 2020), and the Soboba Band of Luiseño Indians (April 21, 2020) accepted consultation with the District. Consultation meetings were held with the Rincon Band of Luiseño Indians on April 22, 2020; the Soboba Band of Luiseño Indians on April 28, 2020; and the Pechanga Band of Luiseño Indians on July 8, 2020.

There are no historic resources located on the project site that would qualify or be eligible for listing in the California Register of Historical Resources or the local register of historical resources in accordance with the Public Resources Code Section 5020.1(k). Therefore, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource, and impacts would be less than significant.

a.ii. Potentially Significant Unless Mitigation Incorporated

The records search at the Eastern Information Center (EIC) and non-foot survey conducted as part of the Project cultural resources survey report indicated that no cultural resources are present on-site (see Appendix C). Given past disturbances, the possibility of buried significant cultural resources being present within the Project APE is considered low. However, due to the positive results of the NAHC search to identify spiritually significant and/or sacred sites or traditional use areas, construction activities would have the potential to unearth previously unknown tribal cultural resources, the discovery of which would be considered a significant impact. Implementation of mitigation measures CUL-1 through CUL-6 described in Section 4.5b above would reduce impacts to a level less than significant.

4.19 Utilities and Service Systems

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provided 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?	☐	☐	☐	☒
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local statutes and regulation related to solid waste?	☐	☐	☒	☐

EXPLANATIONS:

a. No Impact

The project consists solely of a sewer pipeline, the potential impacts for which are evaluated throughout this IS/MND. The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would require expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not result in increased utilities demand that would cause significant environmental effects. No impact would occur.

b. Less Than Significant Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would require water supply. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Water consumption would be limited to small amounts during construction. Therefore, the Project would have sufficient water supplies available to serve the Project, and impacts would be less than significant.

c. No Impact

The project is limited to a sewer pipeline and would not construct any residential, commercial, or other uses that would require expanded wastewater treatment capacity. The proposed sewer pipeline would primarily serve the proposed Triangle Specific Plan that was evaluated in the Golden Triangle SEIR that was certified in 2013. Any other facilities that would be served by the Project consist of existing development and planned growth that is already anticipated in the General Plan. Therefore, the Project would not exceed existing wastewater treatment capacity and would accommodate existing and planned growth in the City. No impact would occur.

d. Less Than Significant Impact

Project construction would generate small amounts of waste that would likely be disposed of at either the Badlands Sanitary Landfill, located in Moreno Valley, or the El Sobrante Landfill, located in Corona. The Badlands Landfill has a remaining capacity of 15,748,799 cubic yards and a maximum permitted throughput of 4,800 tons per day and the El Sobrante Landfill has a remaining capacity of 143,977,170 cubic yards and a maximum permitted throughput of 16,054 tons per day (California Department of Resources Recycling and Recovery [CalRecycle] 2020). Both landfills would have sufficient capacity to accommodate the small amounts of waste that would be generated during construction. Operation of the Project would not generate any solid waste. Therefore, the Project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, and impacts would be less than significant.

e. Less Than Significant Impact

As described in Section 4.19d above, the Project would generate small amounts of waste during construction that would be disposed of at either the Badlands Sanitary Landfill, located in Moreno Valley, or the El Sobrante Landfill, located in Corona, which both have adequate capacity. The project would also comply with local regulations pertaining to recycling of construction waste. Operation of the Project would not generate any solid waste. Therefore, the Project would comply with federal, state, and local statutes and regulation related to solid waste, and impacts would be less than significant.

4.20 Wildfire

Would the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

a. Less Than Significant Impact

Construction of the I-15 Crossing would tunnel under I-15 and would not disrupt traffic operations. Construction within right of way for Sparkman Court, Murrieta Hot Springs Road, and Guava Street would be temporary and include traffic control measures to allow continued access. Roadways would be restored to pre-existing conditions once construction is completed. Traffic control measures for the Project would allow for maintained access to hospitals, emergency response centers, school locations, communication facilities, highways and bridges, airports, and evacuation routes in the event of an emergency. Therefore, the Project would not impair an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

b. No Impact

Because the Project involves a belowground pipeline, it would not, in combination with environmental factors such as slope or prevailing winds, exacerbate fire risks. In addition, aside from temporary construction and maintenance workers, there would be no occupants on-site. Therefore, no impact would occur.

c. No Impact

The project is limited to a belowground sewer pipeline and would not require any new infrastructure. Roadways would be restored to pre-existing conditions once construction is completed. Therefore, the Project would not require the installation or maintenance of infrastructure that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. No impact would occur.

d. No Impact

The project is limited to a below ground sewer pipeline. Roadways and undeveloped land impacted by the Project would be restored to pre-existing conditions once construction is completed. As described in Sections 4.8 and 4.10, the Project would not result in any impacts associated with landslides or flooding. Therefore, the Project would not expose people or structures to significant risks from runoff, post-fire slope instability, or drainage changes. No impact would occur.

4.21 Mandatory Findings of Significance

Does the project:

Issue	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have the potential to substantially 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, substantially 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?	☐	☒	☐	☐
b. 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, the effects of other current projects, and the effects of probable futures projects)?	☐	☒	☐	☐
c. Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

EXPLANATIONS:

a. Potentially Significant Unless Mitigation Incorporated

As described in Section 4.4a, implementation of mitigation measure BIO-1 would reduce the potential impacts to nesting birds or raptors to a level less than significant, and

implementation of mitigation measure BIO-2 would reduce impacts on burrowing owl to a level less than significant. The project does not have the potential to result in any other impacts that would substantially 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, substantially 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. As described in Section 4.5a, the Project would not impact any historical resources.

b. Potentially Significant Unless Mitigation Incorporated

Project impacts requiring mitigation are limited to biological resources. As described in Section 4.4a, implementation of mitigation measure BIO-1 would reduce impacts related to nesting bird or raptor species to a level less than significant, and implementation of mitigation measure BIO-2 would reduce impacts on burrowing owl to a level less than significant. Implementation of BIO-1 and BIO-2 would also ensure consistency with the MSHCP. By mitigating project-level impacts to a level less than significant, the Project would not contribute to existing cumulative impact to biological resources. As described in Section 4.5b, implementation of mitigation measures CUL-1 through CUL-6 would reduce impacts on archaeological resources to a level less than significant. As described in Section 4.5c, implementation of mitigation measures CUL-7 would reduce impacts on human remains to a level less than significant. As described throughout the IS/MND, all other project-level impacts would be less than significant without mitigation. Consequently, the Project would not result in any project-level significant impacts that could contribute to an existing cumulative impact on the environment.

c. Less Than Significant Impact

As described in Sections 4.1 through 4.20, the Project would not result in any substantial adverse direct or indirect impacts to human beings. Therefore, impacts would be less than significant.

5.0 Preparers

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6.0 Sources Consulted

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Murrieta, City of
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Murrieta, City of

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State Water Resources Control Board (SWRCB)

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Murrieta, City of

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Utilities and Service Systems

California Department of Resources Recycling and Recovery (CalRecycle)
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APPENDICES

APPENDIX A

Air Quality and Greenhouse Gas CalEEMod Emission Calculation Output RECON Environmental, Inc., March 30, 2020

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Triangle Sewer Pipeline - Murrieta Hotsprings Crossing

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	3.06	24.34	31.09	11.27	1.27	10.00	3.24	1.16	2.08	0.06	6,022.03	1.89	0.06	6,086.50
Grading/Excavation	3.18	26.24	31.89	11.35	1.35	10.00	3.27	1.19	2.08	0.07	6,848.66	1.90	0.13	6,934.42
Drainage/Utilities/Sub-Grade	2.92	24.85	27.77	11.17	1.17	10.00	3.13	1.05	2.08	0.07	6,293.61	1.90	0.07	6,360.50
Paving	2.85	24.30	27.05	1.13	1.13	0.00	1.02	1.02	0.00	0.06	6,170.52	1.89	0.06	6,236.25
Maximum (pounds/day)	3.18	26.24	31.89	11.35	1.35	10.00	3.27	1.19	2.08	0.07	6,848.66	1.90	0.13	6,934.42
Total (tons/construction project)	0.67	5.58	6.57	2.15	0.28	1.87	0.64	0.25	0.39	0.01	1,429.51	0.42	0.02	1,446.00

Notes:

Project Start Year ->	2020
Project Length (months) ->	20
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	0
Grading/Excavation	50	0	90	0	800	0
Drainage/Utilities/Sub-Grade	0	0	0	0	560	0
Paving	0	0	0	0	400	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Triangle Sewer Pipeline - Murrieta Hotsprings Crossing

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.07	0.54	0.68	0.25	0.03	0.22	0.07	0.03	0.05	0.00	132.48	0.04	0.00	121.48
Grading/Excavation	0.31	2.60	3.16	1.12	0.13	0.99	0.32	0.12	0.21	0.01	678.02	0.19	0.01	622.80
Drainage/Utilities/Sub-Grade	0.19	1.64	1.83	0.74	0.08	0.66	0.21	0.07	0.14	0.00	415.38	0.13	0.00	380.83
Paving	0.09	0.80	0.89	0.04	0.04	0.00	0.03	0.03	0.00	0.00	203.63	0.06	0.00	186.70
Maximum (tons/phase)	0.31	2.60	3.16	1.12	0.13	0.99	0.32	0.12	0.21	0.01	678.02	0.19	0.01	622.80
Total (tons/construction project)	0.67	5.58	6.57	2.15	0.28	1.87	0.64	0.25	0.39	0.01	1429.51	0.42	0.02	1,311.80

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Triangle Sewer Pipeline - Murrieta Hotsprings Crossing	
Construction Start Year	2020	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	20.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.40	miles
Total Project Area	0.62	acres
Maximum Area Disturbed/Day	0.50	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00		50.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		2.00		1/1/2020
Grading/Excavation		9.00		3/2/2020
Drainage/Utilities/Sub-Grade		6.00		12/1/2020
Paving		3.00		6/2/2021
Totals (Months)		20		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation	30.00			3	90.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,782.99	0.00	0.28	1,866.55
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.08	0.62	0.02	0.01	0.00	357.50	0.00	0.06	374.25
Tons per const. Period - Grading/Excavation	0.00	0.01	0.06	0.00	0.00	0.00	35.39	0.00	0.01	37.05
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	35.39	0.00	0.01	37.05

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,782.99	0.00	0.28	1,866.55
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip	20		Calculated	Calculated
One-way trips/day	2		Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing	5		10	200.00
No. of employees: Grading/Excavation	20		40	800.00
No. of employees: Drainage/Utilities/Sub-Grade	14		28	560.00
No. of employees: Paving	10		20	400.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grading/Excavation (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.12	0.10	0.05	0.02	0.00	341.62	0.00	0.01	344.15
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grubbing/Land Clearing (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Grading/Excavation (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Draining/Utilities/Sub-Grade (grams/trip)	1.19	2.96	0.35	0.00	0.00	0.00	73.19	0.08	0.04	85.87
Paving (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.04	0.61	0.06	0.02	0.01	0.00	156.38	0.00	0.00	157.89
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	3.44	0.00	0.00	3.47
Pounds per day - Grading/Excavation	0.15	2.42	0.23	0.08	0.03	0.01	625.51	0.02	0.02	631.56
Tons per const. Period - Grading/Excavation	0.02	0.24	0.02	0.01	0.00	0.00	61.93	0.00	0.00	62.52
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.57	0.14	0.06	0.02	0.00	426.28	0.01	0.01	430.19
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.10	0.01	0.00	0.00	0.00	28.13	0.00	0.00	28.39
Pounds per day - Paving	0.07	1.10	0.10	0.04	0.02	0.00	302.86	0.01	0.01	305.60
Tons per const. Period - Paving	0.00	0.04	0.00	0.00	0.00	0.00	9.99	0.00	0.00	10.08
Total tons per construction project	0.02	0.39	0.04	0.01	0.01	0.00	103.49	0.00	0.00	104.48

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,782.99	0.00	0.28	1,866.55
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.50		10.00	0.22	2.08	0.05
Fugitive Dust - Grading/Excavation	0.50		10.00	0.99	2.08	0.21
Fugitive Dust - Drainage/Utilities/Subgrade	0.50		10.00	0.66	2.08	0.14

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.28	2.08	3.52	0.10	0.09	0.01	909.81	0.29	0.01	919.65
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.45	2.12	5.39	0.22	0.20	0.01	558.79	0.18	0.01	564.81
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.49	6.54	4.83	0.23	0.21	0.01	1,000.24	0.32	0.01	1,011.02
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.33	7.62	12.65	0.46	0.42	0.03	2,557.25	0.83	0.02	2,584.79
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.41	5.07	4.28	0.21	0.20	0.01	789.06	0.26	0.01	797.57
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	3.02	23.73	31.04	1.25	1.15	0.06	5,865.65	1.89	0.05	5,928.61
Grubbing/Land Clearing	tons per phase	0.07	0.52	0.68	0.03	0.03	0.00	129.04	0.04	0.00	130.43

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.28	2.08	3.52	0.10	0.09	0.01	909.81	0.29	0.01	919.65
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.45	2.12	5.39	0.22	0.20	0.01	558.79	0.18	0.01	564.81
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.49	6.54	4.83	0.23	0.21	0.01	1,000.24	0.32	0.01	1,011.02
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.33	7.62	12.65	0.46	0.42	0.03	2,557.25	0.83	0.02	2,584.79
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.41	5.07	4.28	0.21	0.20	0.01	789.06	0.26	0.01	797.57
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day		3.02	23.73	31.04	1.25	1.15	0.06	5,865.65	1.89	0.05	5,928.61
	Grading/Excavation	tons per phase		0.30	2.35	3.07	0.12	0.11	0.01	580.70	0.19	0.01	586.93

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.08	3.10	0.09	0.09	0.01	911.69	0.29	0.01	921.55
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.42	2.00	4.94	0.20	0.18	0.01	558.75	0.18	0.01	564.77
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.39	0.21	0.20	0.01	1,000.36	0.32	0.01	1,011.15
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.23	7.28	10.88	0.40	0.37	0.03	2,557.08	0.83	0.02	2,584.62
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.39	5.08	3.95	0.20	0.18	0.01	788.94	0.26	0.01	797.45
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	2.82	23.29	27.63	1.12	1.03	0.06	5,867.33	1.89	0.05	5,930.31
Drainage/Utilities/Sub-Grade	tons per phase	0.19	1.54	1.82	0.07	0.07	0.00	387.24	0.12	0.00	391.40

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Paving	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
	Paving	tons per phase	0.09	0.77	0.89	0.04	0.03	0.00	193.63	0.06	0.00	195.71
Total Emissions all Phases (tons per construction period) =>			0.64	5.17	6.47	0.26	0.24	0.01	1,290.62	0.41	0.01	1,304.47

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Triangle Sewer Pipeline - Triangle SP Area

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.82	23.75	27.00	11.11	1.11	10.00	3.09	1.01	2.08	0.06	6,019.09	1.89	0.06	6,083.44
Grading/Excavation	2.97	25.85	30.52	11.29	1.29	10.00	3.17	1.09	2.08	0.08	8,356.27	1.90	0.37	8,512.98
Drainage/Utilities/Sub-Grade	2.88	24.74	27.10	11.15	1.15	10.00	3.11	1.03	2.08	0.07	6,291.67	1.90	0.07	6,358.49
Paving	2.85	24.30	27.05	1.13	1.13	0.00	1.02	1.02	0.00	0.06	6,170.52	1.89	0.06	6,236.25
Maximum (pounds/day)	2.97	25.85	30.52	11.29	1.29	10.00	3.17	1.09	2.08	0.08	8,356.27	1.90	0.37	8,512.98
Total (tons/construction project)	0.35	3.03	3.46	1.17	0.15	1.03	0.34	0.13	0.21	0.01	868.21	0.23	0.02	881.14

Notes:

Project Start Year ->	2021
Project Length (months) ->	11
Total Project Area (acres) ->	6
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	0
Grading/Excavation	309	0	480	0	800	0
Drainage/Utilities/Sub-Grade	0	0	0	0	560	0
Paving	0	0	0	0	400	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Triangle Sewer Pipeline - Triangle SP Area

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.29	0.33	0.13	0.01	0.12	0.04	0.01	0.03	0.00	72.83	0.02	0.00	66.78
Grading/Excavation	0.16	1.41	1.66	0.61	0.07	0.54	0.17	0.06	0.11	0.00	455.00	0.10	0.02	420.51
Drainage/Utilities/Sub-Grade	0.10	0.90	0.98	0.40	0.04	0.36	0.11	0.04	0.08	0.00	228.39	0.07	0.00	209.39
Paving	0.05	0.44	0.49	0.02	0.02	0.00	0.02	0.02	0.00	0.00	112.00	0.03	0.00	102.68
Maximum (tons/phase)	0.16	1.41	1.66	0.61	0.07	0.54	0.17	0.06	0.11	0.00	455.00	0.10	0.02	420.51
Total (tons/construction project)	0.35	3.03	3.46	1.17	0.15	1.03	0.34	0.13	0.21	0.01	868.21	0.23	0.02	799.37

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Triangle Sewer Pipeline - Triangle SP Area	
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	11.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.27	miles
Total Project Area	5.70	acres
Maximum Area Disturbed/Day	0.50	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00		308.80
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.10		1/1/2021
Grading/Excavation		4.95		2/4/2021
Drainage/Utilities/Sub-Grade		3.30		7/5/2021
Paving		1.65		10/14/2021
Totals (Months)	11			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation	30.00			16	480.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.04	0.45	3.37	0.12	0.05	0.02	1,882.88	0.00	0.30	1,971.13
Tons per const. Period - Grading/Excavation	0.00	0.02	0.18	0.01	0.00	0.00	102.52	0.00	0.02	107.33
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.02	0.18	0.01	0.00	0.00	102.52	0.00	0.02	107.33

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip	20		Calculated	Calculated
One-way trips/day	2		Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing	5		10	200.00
No. of employees: Grading/Excavation	20		40	800.00
No. of employees: Drainage/Utilities/Sub-Grade	14		28	560.00
No. of employees: Paving	10		20	400.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grubbing/Land Clearing (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Paving (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.55	0.05	0.02	0.01	0.00	151.43	0.00	0.00	152.80
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	1.83	0.00	0.00	1.85
Pounds per day - Grading/Excavation	0.14	2.20	0.20	0.08	0.03	0.01	605.72	0.02	0.02	611.21
Tons per const. Period - Grading/Excavation	0.01	0.12	0.01	0.00	0.00	0.00	32.98	0.00	0.00	33.28
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.54	0.14	0.06	0.02	0.00	424.00	0.01	0.01	427.85
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.06	0.01	0.00	0.00	0.00	15.39	0.00	0.00	15.53
Pounds per day - Paving	0.07	1.10	0.10	0.04	0.02	0.00	302.86	0.01	0.01	305.60
Tons per const. Period - Paving	0.00	0.02	0.00	0.00	0.00	0.00	5.50	0.00	0.00	5.55
Total tons per construction project	0.01	0.20	0.02	0.01	0.00	0.00	55.70	0.00	0.00	56.21

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.50		10.00	0.12	2.08	0.03
Fugitive Dust - Grading/Excavation	0.50		10.00	0.54	2.08	0.11
Fugitive Dust - Drainage/Utilities/Subgrade	0.50		10.00	0.36	2.08	0.08

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Grubbing/Land Clearing	tons per phase	0.03	0.28	0.33	0.01	0.01	0.00	71.00	0.02	0.00	71.76

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Grading/Excavation	tons per phase	0.15	1.26	1.47	0.06	0.05	0.00	319.49	0.10	0.00	322.92

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Drainage/Utilities/Sub-Grade		tons per phase	0.10	0.84	0.98	0.04	0.04	0.00	213.00	0.07	0.00	215.28

Paving	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Paving	tons per phase	0.05	0.42	0.49	0.02	0.02	0.00	106.50	0.03	0.00	107.64
Total Emissions all Phases (tons per construction period) =>		0.34	2.81	3.26	0.13	0.12	0.01	709.99	0.23	0.01	717.61

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Triangle Sewer Pipeline - I-15 Crossing

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.82	23.75	27.00	11.11	1.11	10.00	3.09	1.01	2.08	0.06	6,019.09	1.89	0.06	6,083.44
Grading/Excavation	2.99	26.05	31.99	11.34	1.34	10.00	3.19	1.11	2.08	0.09	9,180.03	1.91	0.50	9,375.35
Drainage/Utilities/Sub-Grade	2.88	24.74	27.10	11.15	1.15	10.00	3.11	1.03	2.08	0.07	6,291.67	1.90	0.07	6,358.49
Paving	2.85	24.30	27.05	1.13	1.13	0.00	1.02	1.02	0.00	0.06	6,170.52	1.89	0.06	6,236.25
Maximum (pounds/day)	2.99	26.05	31.99	11.34	1.34	10.00	3.19	1.11	2.08	0.09	9,180.03	1.91	0.50	9,375.35
Total (tons/construction project)	0.35	3.04	3.54	1.18	0.15	1.03	0.34	0.13	0.21	0.01	913.07	0.23	0.03	928.10

Notes:

Project Start Year ->	2021
Project Length (months) ->	11
Total Project Area (acres) ->	5
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	0
Grading/Excavation	451	0	690	0	800	0
Drainage/Utilities/Sub-Grade	0	0	0	0	560	0
Paving	0	0	0	0	400	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Triangle Sewer Pipeline - I-15 Crossing

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.29	0.33	0.13	0.01	0.12	0.04	0.01	0.03	0.00	72.83	0.02	0.00	66.78
Grading/Excavation	0.16	1.42	1.74	0.62	0.07	0.54	0.17	0.06	0.11	0.01	499.85	0.10	0.03	463.11
Drainage/Utilities/Sub-Grade	0.10	0.90	0.98	0.40	0.04	0.36	0.11	0.04	0.08	0.00	228.39	0.07	0.00	209.39
Paving	0.05	0.44	0.49	0.02	0.02	0.00	0.02	0.02	0.00	0.00	112.00	0.03	0.00	102.68
Maximum (tons/phase)	0.16	1.42	1.74	0.62	0.07	0.54	0.17	0.06	0.11	0.01	499.85	0.10	0.03	463.11
Total (tons/construction project)	0.35	3.04	3.54	1.18	0.15	1.03	0.34	0.13	0.21	0.01	913.07	0.23	0.03	841.97

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Triangle Sewer Pipeline - I-15 Crossing	
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	11.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.39	miles
Total Project Area	4.88	acres
Maximum Area Disturbed/Day	0.50	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00		451.20
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.10		1/1/2021
Grading/Excavation		4.95		2/4/2021
Drainage/Utilities/Sub-Grade		3.30		7/5/2021
Paving		1.65		10/14/2021
Totals (Months)	11			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation	30.00			23	690.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.06	0.64	4.84	0.17	0.07	0.03	2,706.64	0.00	0.43	2,833.50
Tons per const. Period - Grading/Excavation	0.00	0.04	0.26	0.01	0.00	0.00	147.38	0.00	0.02	154.28
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.04	0.26	0.01	0.00	0.00	147.38	0.00	0.02	154.28

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip	20		Calculated	Calculated
One-way trips/day	2		Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing	5		10	200.00
No. of employees: Grading/Excavation	20		40	800.00
No. of employees: Drainage/Utilities/Sub-Grade	14		28	560.00
No. of employees: Paving	10		20	400.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grubbing/Land Clearing (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Paving (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.03	0.55	0.05	0.02	0.01	0.00	151.43	0.00	0.00	152.80
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	1.83	0.00	0.00	1.85
Pounds per day - Grading/Excavation	0.14	2.20	0.20	0.08	0.03	0.01	605.72	0.02	0.02	611.21
Tons per const. Period - Grading/Excavation	0.01	0.12	0.01	0.00	0.00	0.00	32.98	0.00	0.00	33.28
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.54	0.14	0.06	0.02	0.00	424.00	0.01	0.01	427.85
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.06	0.01	0.00	0.00	0.00	15.39	0.00	0.00	15.53
Pounds per day - Paving	0.07	1.10	0.10	0.04	0.02	0.00	302.86	0.01	0.01	305.60
Tons per const. Period - Paving	0.00	0.02	0.00	0.00	0.00	0.00	5.50	0.00	0.00	5.55
Total tons per construction project	0.01	0.20	0.02	0.01	0.00	0.00	55.70	0.00	0.00	56.21

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.50		10.00	0.12	2.08	0.03
Fugitive Dust - Grading/Excavation	0.50		10.00	0.54	2.08	0.11
Fugitive Dust - Drainage/Utilities/Subgrade	0.50		10.00	0.36	2.08	0.08

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Grubbing/Land Clearing	tons per phase	0.03	0.28	0.33	0.01	0.01	0.00	71.00	0.02	0.00	71.76

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation		pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Grading/Excavation		tons per phase	0.15	1.26	1.47	0.06	0.05	0.00	319.49	0.10	0.00	322.92

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Drainage/Utilities/Sub-Grade	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
	Drainage/Utilities/Sub-Grade	tons per phase	0.10	0.84	0.98	0.04	0.04	0.00	213.00	0.07	0.00	215.28

Paving	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Bore/Drill Rigs	0.26	2.07	3.02	0.09	0.08	0.01	912.06	0.30	0.01	921.92
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.41	1.98	4.85	0.20	0.18	0.01	558.74	0.18	0.01	564.76
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.46	6.54	4.31	0.21	0.19	0.01	1,000.38	0.32	0.01	1,011.17
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.21	7.21	10.53	0.39	0.36	0.03	2,557.05	0.83	0.02	2,584.59
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Paving Equipment	0.38	5.08	3.88	0.19	0.18	0.01	788.91	0.26	0.01	797.43
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment — If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	2.78	23.20	26.95	1.09	1.00	0.06	5,867.66	1.89	0.05	5,930.64
Paving	tons per phase	0.05	0.42	0.49	0.02	0.02	0.00	106.50	0.03	0.00	107.64
Total Emissions all Phases (tons per construction period) =>		0.34	2.81	3.26	0.13	0.12	0.01	709.99	0.23	0.01	717.61

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

APPENDIX B

Biological Technical Report
RECON Environmental, Inc., ~~July 20, 2020~~May 2, 2023

Biological Technical Report for the Golden Triangle Sewer Pipeline Project Murrieta, California

Prepared for
Eastern Municipal Water District
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P.O. Box 8300
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RECON Number ~~9547~~9878-18
~~July 20, 2020~~May 2, 2023

~~Brian Parker, Project~~Alex Fromer, Biologist

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1: Plant Species Observed
2: Wildlife Species Observed
3: Sensitive Plant Species Observed or with the Potential to Occur
4: Sensitive Wildlife Species Occurring or with the Potential to Occur

Acronyms and Abbreviations

amsl	above mean sea level
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
District	Eastern Municipal Water District
I-15	Interstate 15
MBTA	Migratory Bird Treaty Act
MSHCP	Multiple Species Habitat Conservation Program
OHWM	ordinary high water mark
project	Golden Triangle Sewer Pipeline Project
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	~~United States~~U.S. Fish and Wildlife Service
USGS	~~United States~~U.S. Geological Survey

Executive Summary

The Golden Triangle Sewer Pipeline Project (project) is located in the city of Murrieta, California. The project would include construction of a sewer pipeline extension beginning in the roadway for Sparkman Court just north of Murrieta Hot Springs Road, crossing through the Golden Triangle development, under Interstate 15 (I-15), and ending at the intersection of Guava Street and Madison Avenue.

In March 2020, RECON Environmental, Inc. conducted a literature review, a general biological survey, and a jurisdictional wetland delineation for the ~~5.49~~6.06-acre project site plus all land within 100 feet, for a total survey area of ~~17.40~~17.57 acres. In March 2023, RECON updated the literature review, general biological survey, and jurisdictional wetland delineation.

The project will result in impacts to five vegetation communities/land cover types: disturbed Riversidean sage scrub, disturbed habitat, eucalyptus woodland, ornamental vegetation, and developed land. All areas impacted by construction would be returned to the original grade and areas that are not currently developed or within roadways would be revegetated. Thus, all project impacts assessed in this report are considered temporary.

No sensitive plant species were observed on-site; however, one sensitive plant species – smooth tarplant (*Centromadia pungens* ssp. *laevis*) – has potential to occur in the disturbed Riversidean sage scrub and disturbed habitat on-site. Thus, it could be temporarily impacted by the project. As these impacted areas would be revegetated following construction, impacts are not expected to affect the long-term survival of the species or the local population. Therefore, potential impacts to smooth tarplant would be less than significant.

No sensitive wildlife species were observed within the survey area; however, there is moderate potential for four sensitive species – California horned lark (*Eremophila alpestris actia*; CDFW watch list species), Cooper's hawk (*Accipiter cooperii*; CDFW watch list species), western burrowing owl (*Athene cunicularia hypugaea*; CDFW species of special concern), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*; CDFW species of special concern) – to occur on-site due to the presence of suitable habitats. The potential for impacts to San Diego black-tailed jackrabbit would be low as this species would be able to move out of the way during construction activities; thus, no direct impacts to this species are anticipated. In addition to the species listed above, nesting migratory birds and raptors protected by California Fish and Game Code (CFGC) Sections 3503 and 3503.5 have potential to be impacted.

Direct impacts to California horned lark, Cooper's hawk and other nesting migratory birds and raptors could occur if vegetation removal and/or project grading is conducted during the general bird breeding season (February 1 to September 15). To comply with CFGC Sections 3503 and 3503.5, which prohibits direct impacts to nesting birds, eggs, chicks, or nests, vegetation removal should occur outside this period. If vegetation removal must occur during this period, a pre-construction survey would be necessary to confirm the presence or absence of breeding birds in the impact area. If nests or breeding activities are located on the survey area, then an appropriate buffer area around the nesting site shall be maintained until the young have fledged. If no nesting birds are detected during the pre-construction survey, no mitigation would be required.

To prevent potential impacts to western burrowing owl, a pre-construction take avoidance survey for this species would be required within all suitable habitat located inside the burrowing owl survey area (suitable habitat within the project footprint, plus 500 feet). Per the Staff Report on Burrowing Owl Mitigation (CDFW 2012), take avoidance surveys require an initial survey no less than 14 days prior to the start of ground disturbance activities and a final survey conducted within 24 hours of ground disturbance. If burrowing owls are detected, the CDFW must be notified within 48 hours and avoidance measures and/or mitigation would be required.

1.0 Introduction

This report describes the results of the biological resource survey conducted for the Golden Triangle Sewer Pipeline Project (project). The biological survey occurred within a ~~17.40~~17.57-acre survey area, made up of a ~~5.49~~6.06-acre project site plus a 100-foot off-site survey buffer, in the city of Murrieta (Figure 1). The survey area is located within the Temecula Land Grant on the U.S. Geological Survey (USGS) 7.5-minute topographic map, Murrieta quadrangle (Figure 2; USGS 1979). The northern terminus of the project is located within the roadway for Sparkman Court just north of Murrieta Hot Springs Road (Figure 3). The proposed sewer pipeline then travels south through the approved Golden Triangle project site, turns southeast and runs parallel to Interstate 15 (I-15), turns southwest and crosses under I-15, and then continues southwest until terminating at Guava Street. The majority of the project site is located within the Triangle Specific Plan boundary south of Murrieta Hot Springs Road and northwest of I-15. Biological impacts within the Triangle Specific Plan area were evaluated and disclosed in the Golden Triangle Specific Plan Supplemental Environmental Impact Report (Golden Triangle SEIR; City of Murrieta 2013), which was certified in 2013. Therefore, the footprint of the Golden Triangle Segment was not surveyed and impacts were not analyzed in this report.

The project would construct a sewer pipeline extension consisting of the following three segments:

- Murrieta Hot Springs Road Crossing Segment: Approximately 230-foot-long sewer extension
- Golden Triangle Segment: Approximately 1,417-foot-long sewer extension (not analyzed in this report)
- I-15 Crossing Segment: Approximately 2,070-foot-long sewer extension.

These three segments are identified on Figure 3. Aboveground work areas (i.e., trenching and/or staging) are shown in red (current project) or orange (Golden Triangle Specific Plan). The approximate pipeline location is shown with a dotted line. Areas between the aboveground work areas would be accomplished by jack-and-bore techniques and would not disturb the ground surface.

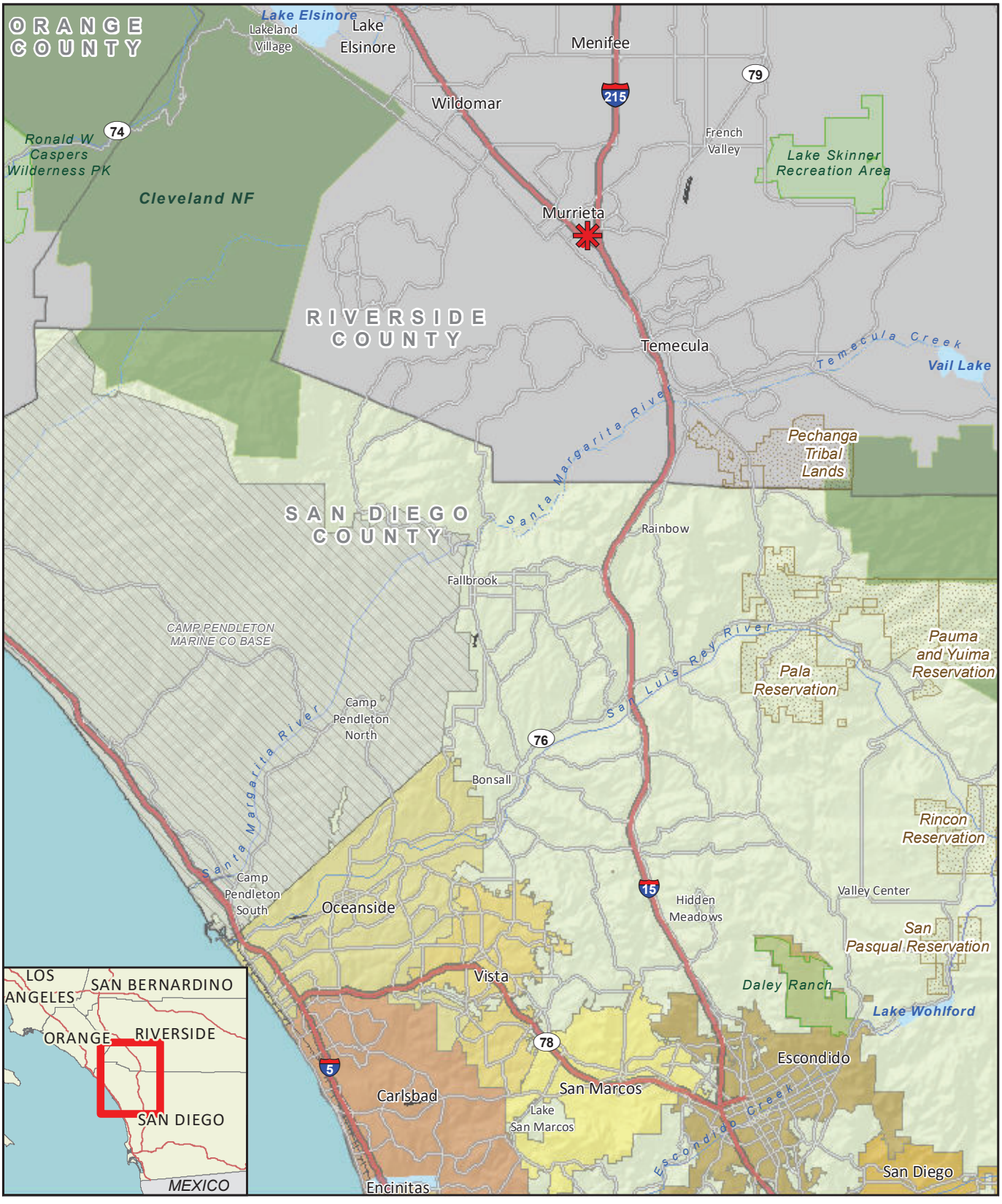

FIGURE 1
Regional Location

emwd

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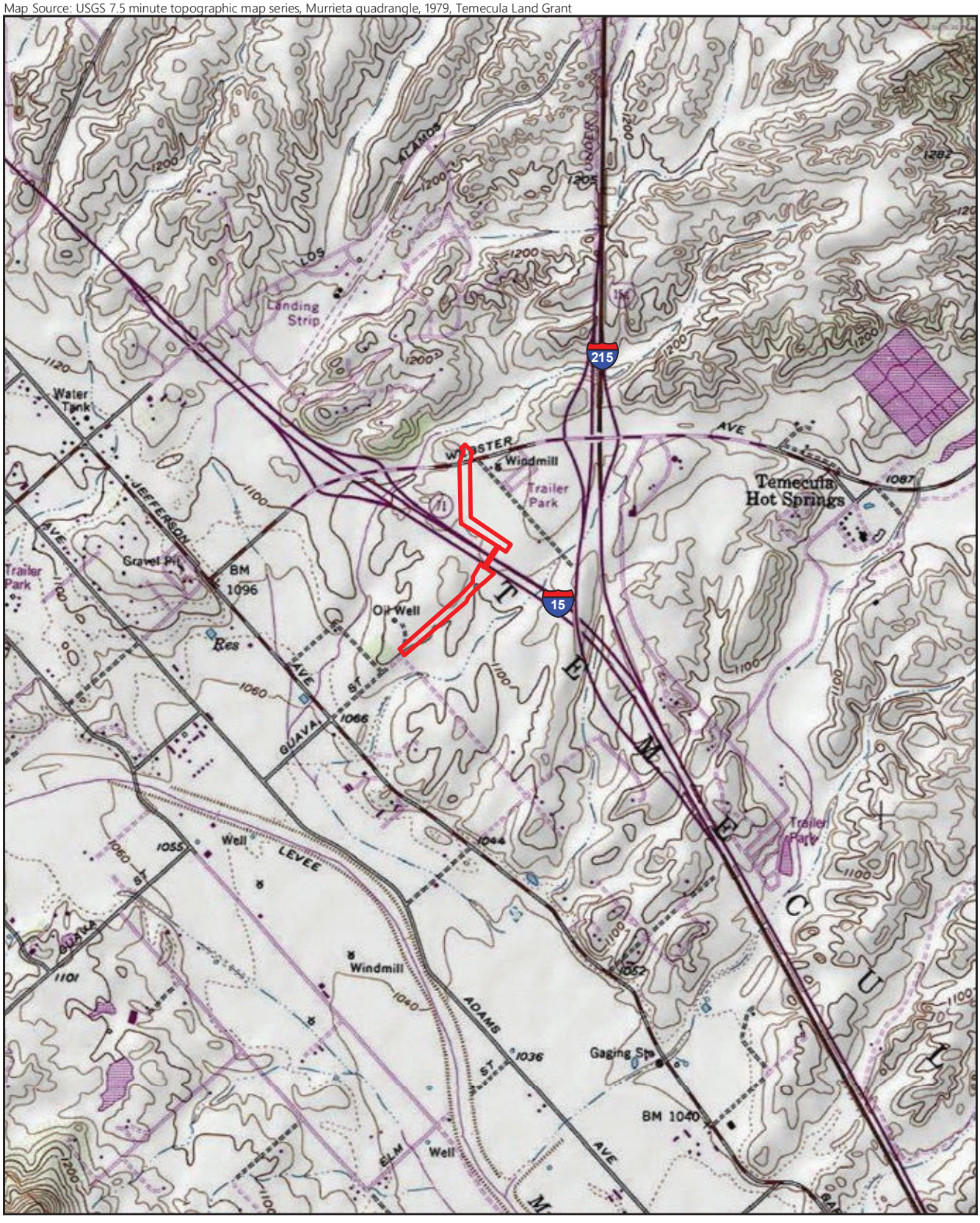
Map Source: USGS 7.5 minute topographic map series, Murrieta quadrangle, 1979, Temecula Land Grant



Project Boundary

FIGURE 2
Project Location on USGS Map

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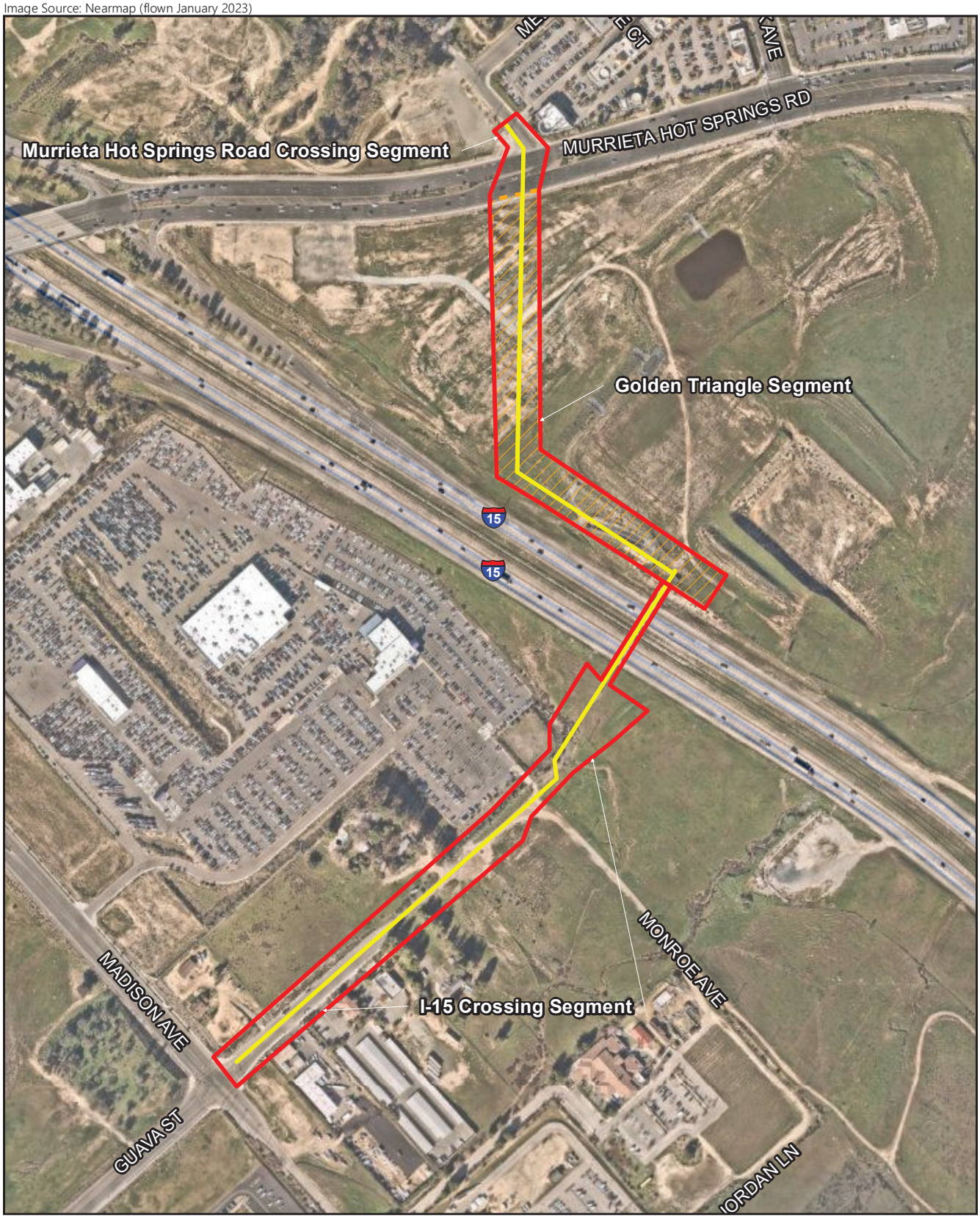
Image Source: Nearmap (flown January 2023)



0 Feet 400

Project Boundary

Area Previously Surveyed

Pipeline

FIGURE 3

Project Location on Aerial Photograph

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It is anticipated that the Eastern Municipal Water District (District) would construct the Murrieta Hot Springs Road Cross0069ng and the I-15 Crossing segments, while the Golden Triangle Segment would be constructed by the Golden Triangle developer during construction of that project. It is anticipated that the Murrieta Hot Springs Road Crossing Segment would be constructed first, followed by the developer constructing ~~that~~ the Golden Triangle Segment. This would allow the developer to use the Murrieta Hot Springs Crossing Segment to pump flow to the existing Golden Triangle Lift Station while the I-15 Crossing Segment is constructed as the final segment. The Golden Triangle Segment is located within the planning boundary of the Triangle Specific Plan that was evaluated in Golden Triangle SEIR that was certified in 2013 (City of Murrieta 2013). The specific plan area has been graded and the Golden Triangle Segment would be constructed concurrently with development of the specific plan. The sewer pipeline would be 15 inches in diameter, and construction would reach depths of excavation ranging from 15 to 25 feet. All manholes within the survey area will be located in existing roadways or sidewalks.

This report provides the necessary biological data and background information required for environmental analysis of the Murrieta Hot Springs Road Crossing and I-15 Crossing segments subject to the California Environmental Quality Act (CEQA).

2.0 Survey Methodology

2.1 Literature Review

RECON conducted a search of existing biological data for the project site, including a review of the Golden Triangle SEIR, database queries for sensitive plant and animal species reported within one mile of the project site, and a review of the site's physical characteristics (e.g., location, elevation, soils/substrate, topography). Supplemental data sources included the California Natural Diversity Database (CNDDB; California Department of Fish and Wildlife [CDFW] ~~2020a~~2023a-e), the All Species Occurrences Database (U.S. Fish and Wildlife Service [USFWS] ~~2020~~2023), the California Native Plant Society (CNPS) Online database (CNPS ~~2020~~2023), and the U.S. Department of Agriculture (USDA) Soil Conservation Service maps and descriptions (USDA 1971 and ~~2020a~~2023a).

2.2 Biological Surveys

RECON biologist Brian Parker conducted a general biological survey on March 5, 2020, within the project site and a 100-foot buffer (survey area). The survey area consisted of two general areas: the northern survey area covered the Murrieta Hot Springs Road Crossing Segment and the southern survey area covered the I-15 Crossing Segment.

Most portions of the survey area were covered on foot. However, due to the presence of private property adjacent to public access throughout the survey area, many areas were surveyed from accessible viewpoints with the use of binoculars. Similarly, a binocular survey was conducted of the land between the northbound and southbound lanes of I-15. Mr. Parker mapped vegetation communities, recorded vegetation and habitat characteristics, and noted wildlife and plant species apparent at the time of the survey. RECON biologist Alex Fromer subsequently conducted a verification survey of the survey area on March 23, 2023. Biological conditions within the survey area

presented below are based on the results of this survey. Changes in biological conditions since March 2020 are tracked in strikeout/underline.

Vegetation communities were mapped in the field on a ~~1:4,800 scale aerial photograph~~digital map of the survey area. Plant and animal species apparent at the time of the survey were recorded. Plants were visually identified in the field and wildlife species were identified visually with the aid of binoculars or aurally based on identification of calls. Mammals were identified by direct visual observation or observation of scat, tracks, or burrows. Nomenclature in this report follows the Jepson Online Interchange (Jepson Flora Project ~~2020~~2023) and Rebman and Simpson (2014), for common plants, *Sunset Western Garden Book* (Brenzel 2001) for ornamental species, CNDDB (CDFW ~~2020a~~2023a) for sensitive plant species, San Diego Natural History Museum (2002) for moths and butterflies, Crother et al. (2017) for amphibians and reptiles, Chesser et al. (2019) for birds, and Bradley et al. (2014) and Baker et al. (2003) for mammals.

2.3 Jurisdictional Delineation

RECON biologist JR Sundberg conducted a routine jurisdictional waters/wetland delineation in the survey area on March 17, 2020. The delineation was performed following the guidelines set forth by the U.S. Army Corps of Engineers (USACE; 1987, 2008a, 2008b) to determine the presence and extent of wetlands and/or waters under the jurisdiction of USACE, CDFW, and Regional Water Quality Control Board (RWQCB).

Wetlands and waters are generally delineated based on the presence of the three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology, each of which is discussed below.

Hydrophytic Vegetation. Hydrophytic vegetation is defined as "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (USACE 1987). The wetland indicator status of each species recorded on-site was determined by using the list of wetland plants for California provided by the USFWS (Lichvar et al. 2016). The wetland indicator status of a plant can be one of the following:

> Obligate (OBL) – Plants that have a 99 percent probability of occurring in wetlands under natural conditions.
>
> Facultative-Wet (FACW) – Plants that occur in wetlands (67–99 percent probability) but are occasionally found in non-wetlands.
>
> Facultative (FAC) – Plants that are equally likely to occur in wetlands or non-wetlands (estimated probability 34–66 percent).
>
> Facultative Upland (FACU) – Plants that are most often found in upland sites (estimated probability 67 –99 percent).
>
> Upland (UPL) – Plants that almost always occur in upland sites (estimated probability greater than 99 percent).

> No Indicator (NI) – Plants for which insufficient data are available to determine an indicator status for the local region. These are considered upland species unless other data to support a different status are available.

Hydric Soils. A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the accumulation of visible indicators of extended saturation (USACE 1987). Information on the soil types sampled in the project site is summarized from the Soil Survey for San Diego County (USDA 1973) and the Hydric Soils list obtained from the USDA's Natural Resources Conservation Service (USDA ~~2020b~~2023b).

Hydrology. Wetland hydrology indicators are used to determine if inundation or saturation has occurred on a site. These indicators are features that suggest current or recent flows through an area but do not provide information about the timing, duration, or frequency of the event. Hydrology features are generally the most ephemeral of the three wetland parameters (USACE 2008b). Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field.

2.3.1 Jurisdictional Criteria

2.3.1.1 U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the USACE regulates the dredging or discharge of fill material into Waters of the U.S. including wetlands and non-wetland Waters of the U.S.

USACE jurisdictional wetlands are defined as those areas that meet all three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. USACE jurisdictional non-wetland waters include vegetated or unvegetated streams, open water, and other aquatic areas with strong hydrology indicators such as the presence of seasonal flows and an ordinary high water mark (OHWM). An OHWM is defined as:

> . . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 Code of Federal Regulations Part 328.3).

Areas delineated as non-wetland waters may lack wetland vegetation or hydric soil characteristics. Hydric soil indicators may be missing, because topographic position precludes ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow.

2.3.1.2 California Department of Fish and Wildlife

Under Sections 1600–1607 of the California Fish and Game Code (CFGC), the CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. In most cases, CDFW jurisdictional

areas overlap USACE jurisdictional areas; however, the CDFW also regulates native riparian vegetation associated with watercourses, regardless of USACE jurisdiction.

2.3.1.3 Regional Water Quality Control Board

The jurisdiction of the RWQCB includes all Waters of the State and all Waters of the U.S. as mandated by both Section 401 of the federal Clean Water Act and the California Porter–Cologne Water Quality Control Act. State waters generally include, but are not limited to, all waters under the jurisdiction of USACE.

2.3.2 Delineation Methods

The delineation methods followed the USACE Wetland Delineation Manual (1987) and the Arid West Regional Supplement (2008b). Prior to conducting the delineation, aerial photographs, USGS topographic maps, and initial vegetation maps of the site were examined. In the field, all potential federal and state jurisdictional areas within the survey area were examined to determine the presence and extent of any jurisdictional waters. As no hydrophytic vegetation was present, no test pits were dug. Mr. Sundberg inspected one potential drainage on site to determine its jurisdictional status. The subsequent survey conducted on March 23, 2023, by Mr. Fromer verified that the original findings from 2020 had not changed.

3.0 Existing Conditions

3.1 Site Topography

The northern survey area consists of a flat, graded area surrounded by development. The southern survey area is also flat, with small landscaped slopes on either side of the existing roadway, and a long, gradual slope leading up toward I-15 in the east. Elevations in the southern survey area range from approximately 1,100 feet above mean sea level (amsl) within Guava Street, to 1,125 feet amsl in the California Department of Transportation (Caltrans) right-of-way (ROW) near I-15 in the northeastern end. The elevation in the largely flat northern survey area is approximately 1,125 feet amsl.

A small swale occurs in the northern portion of the southern survey area. It begins at I-15 continues in a southeasterly direction, merges with a second swale leaving a detention basin on the Carmax property, crosses to the northeast of the terminus of Guava Street, and ultimately dissipates in a disturbed field.

3.2 Botanical Resources

The survey area supports five vegetation communities and land cover types: disturbed Riversidean sage scrub, disturbed habitat, eucalyptus woodland, ornamental vegetation, and developed land (Table 1 and Figure 4). A total of ~~51~~37 plant species were identified within the survey area (Attachment 1). Of this total, ~~29~~17 (~~57~~46 percent) are native species and ~~22~~20 (~~43~~54 percent) are non-native. Sensitive plant species and their potential for occurrence are discussed in Section 4.0.

Table 1 Vegetation Communities within the Survey Area (acres)		
Vegetation Community	Total Survey Area	Project Site
Disturbed Riversidean sage scrub	~~2.03~~2.52	~~0.58~~1.14
Disturbed habitat	~~7.28~~7.17	~~1.99~~2.07
Eucalyptus woodland	0.15	0.03
Ornamental vegetation	~~1.61~~1.35	~~0.78~~0.59
Developed land	~~6.33~~6.39	~~2.12~~2.23
TOTAL	~~17.40~~17.57	~~5.49~~6.06

3.2.1 Disturbed Riversidean Sage Scrub

Disturbed Riversidean sage scrub occurs in four patches in the southern survey area. These patches generally appear to have been mowed, grazed, or subject to some other form of disturbance, as they have low, sparse native sage scrub species, interspersed with non-native grasses and forbs (Photographs 1 and 2). Total vegetation cover was ~~approximately 80~~close to 100 percent in most areas, with approximately ~~10 to~~ 20 to 30 percent native cover and ~~60 to~~ 70 to 80 percent non-native cover. The dominant native species in the disturbed Riversidean sage scrub is California buckwheat (*Eriogonum fasciculatum*), with lesser amounts of brittlebush (*Encelia farinosa*), ~~California encelia (*Encelia californica*), slender buckwheat (*Eriogonum gracile*),~~ and popcorn flower (*Plagiobothrys* sp.). These areas have substantial non-native plant cover, including long-beak filaree (*Erodium botrys*), redstem filaree (*Erodium cicutarium*), red brome (*Bromus madritensis* ssp. *rubens*), and ~~short-pod mustard (*Hirschfeldia incana*~~stinknet (*Oncosiphon pilulifer*).

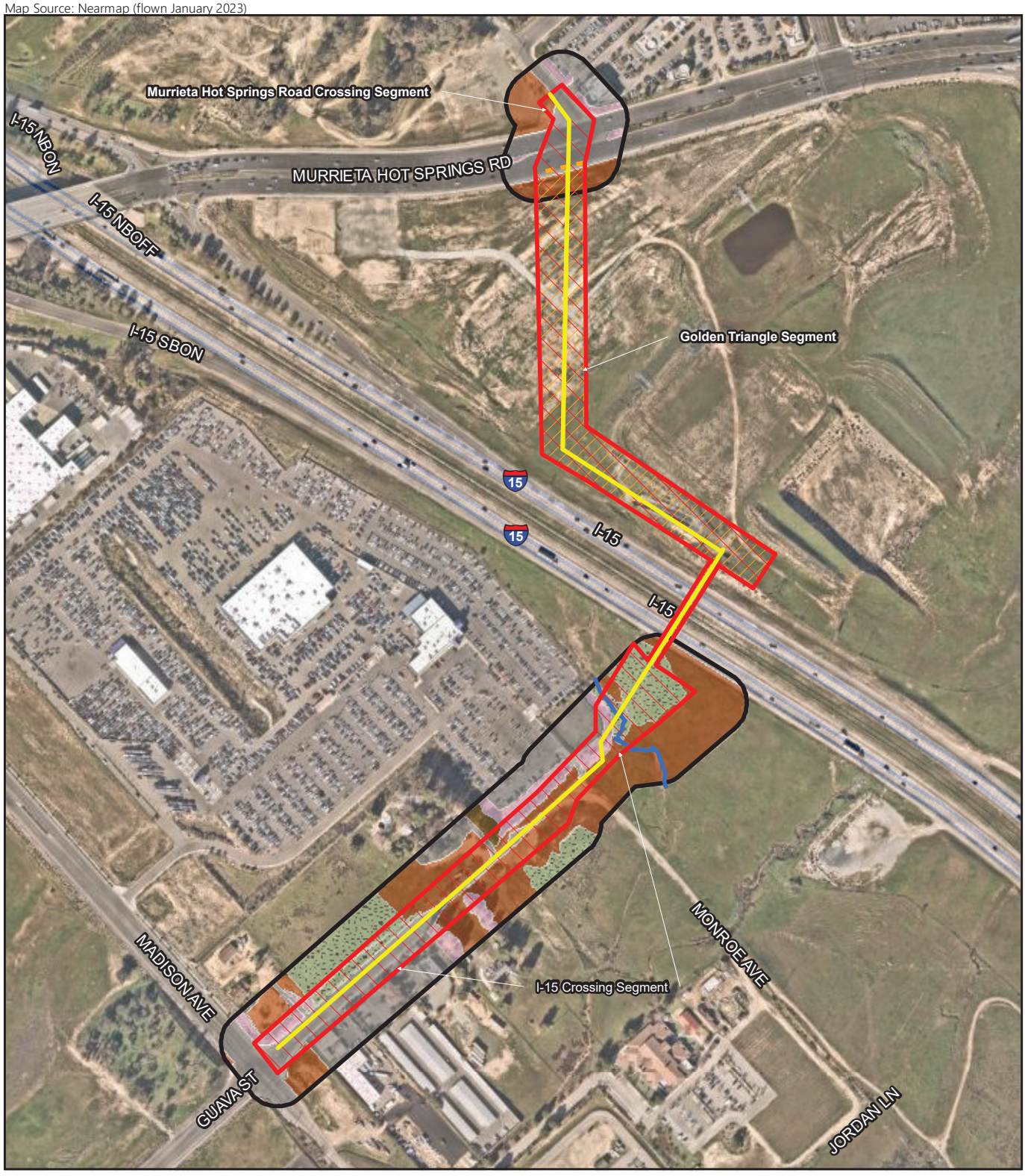
3.2.2 Disturbed Habitat

The disturbed habitat predominantly consists of non-native grasses and forbs with areas of bare ground and occasional native shrubs and wildflowers (Photographs 3 and 4). Where these areas are vegetated, total cover is approximately ~~50~~90 percent and dominated by long-beak filaree, redstem filaree, tocalote (*Centaurea melitensis*), sourclover (*Melilotus indicus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), ~~black mustard (*Brassica nigra*), ,~~ and ~~short-pod mustard~~stinknet. Native plants make up less than 5 percent of the total cover, and include such species as California ~~poppy (*Eschscholzia californica*),~~buckwheat, rancher's fiddleneck (*Amsinckia menziesii*), and deerweed (*Acmispon glaber*~~), telegraph weed (*Heterotheca grandiflora*), and California buckwheat.~~).

3.2.3 Eucalyptus Woodland

Eucalyptus woodland occurs in one patch associated with an adjacent residence in the southern survey area (see Photograph 1). It is dominated by exotic gum trees (*Eucalyptus* sp.). Gum trees are a non-native species that was historically planted in southern California. In some locations eucalyptus trees have become naturalized and spread into surrounding areas, often displacing native habitats.

Map Source: Nearmap (flown January 2023)



Pipeline
Temporary Impacts
Project Boundary
Area Previously Surveyed
100 ft Survey Area

Non-jurisdictional Swale

Vegetation Community

Disturbed Riversidian Sage Scrub
Eucalyptus Woodland
Ornamental Vegetation
Disturbed Habitat
Urban/Developed

0 Feet 400

emwd

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FIGURE 4
Impacts to Biological Resources

PHOTOGRAPH 1

View of Survey Area from within Caltrans ROW, Showing Disturbed Riversidean Sage Scrub in Foreground, with Disturbed Habitat, Eucalyptus Woodland, and Developed Land in Background, Facing Southwest

PHOTOGRAPH 2

View of Disturbed Riversidean Sage Scrub on Undeveloped Land to Southeast of an Unpaved Segment of Guava Street, Facing Northeast

PHOTOGRAPH 3
Disturbed Habitat in Northern Survey Area, Facing Northeast

PHOTOGRAPH 4
View of Disturbed Habitat along Unpaved Segment of Guava Street, Facing Southeast

3.2.4 Ornamental Vegetation

Ornamental vegetation occurs in several areas of the southern survey area. This community consists of areas planted with ornamental shrubs or trees, drought-tolerant species, and some native species. In the southwestern portion of the southern survey area, the ornamental vegetation consists of rosemary (*Salvia rosemarinus*) planted in rows with California buckwheat and deerweed (Photographs 5 and 6). Other areas contain ornamental monkeyflower (*Mimulus* sp.), bottlebrush (*Callistemon* sp.), and ornamental barrel cactus (Cactaceae).

In the northeastern portion of the southern survey area a patch of ornamental vegetation was mapped in the land around a detention basin associated with the Carmax car lot. Vegetation in this area is characterized by native species mixed with occasional non-natives. This area is dominated by California buckwheat, brittlebush, deerweed, black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and mule fat (*Baccharis salicifolia*). Non-native species planted in this area include ornamental pine tree (*Pinus* sp.) ~~and tamarisk (*Tamarix* sp.).~~ and vanilla-scented wattle (*Acacia redolens*). Many of the native species in this area occur nowhere else in the survey area, and the ornamental non-natives were tied to wooden support structures (Photograph 7). This area is planted, irrigated, and clearly maintained, with some areas containing a bark mulch substrate, so it is not considered a native vegetation community despite the abundance of native plant species.

Two other small areas of ornamental vegetation consist of rows of ornamental pine trees (*Pinus* sp.) associated with a single-family residence on the south side of Guava Street.

3.2.5 Developed Land

Developed land within the survey area included existing roads, sidewalks, commercial developments, and single-family residences (Photograph 8). Generally, vegetation in these areas is characterized by ornamental trees and shrubs, with occasional native or non-native species recruiting into more open areas. In addition, the detention basin adjacent to the Carmax lot is also mapped as developed land, as this area has been planted and appears to be maintained for sediment control and/or storm water control purposes (see Photograph 7).

3.3 Zoological Resources

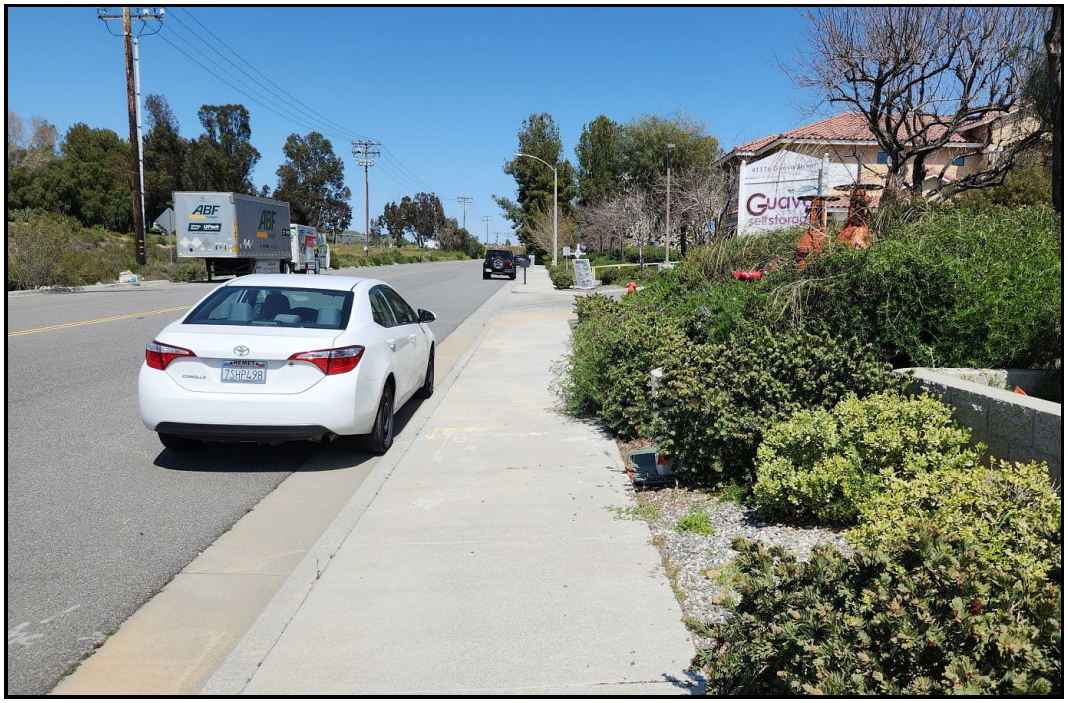
A total of ~~11~~17 wildlife species were identified during the biological survey (Attachment 2). The survey area had relatively low wildlife diversity as a result of its disturbed and urbanized nature and most of the species observed are urban-adapted species typical of disturbed areas. Section 4.0 addresses sensitive wildlife species and their potential to occur.

PHOTOGRAPH 5
View of Landscaped Slope Adjacent to Guava Street, Facing Northeast

PHOTOGRAPH 6
View of Landscaped and Maintained Slope with Mix of Native and Ornamental Plants, Facing Northeast

PHOTOGRAPH 7

View of Detention Basin Adjacent to Carmax Lot, with Slopes Landscaped with a Mix of Native and Exotic Species, Facing Northwest



PHOTOGRAPH 8

Typical View of Developed Land, Facing Southeast Along Guava Street

3.4 Potential Jurisdictional Resources

As mentioned above, no hydrophytic vegetation was observed within the survey area, so no jurisdictional wetlands are present. There is a swale present within the survey area, likely draining flows from the detention basin adjacent to the Carmax lot and from I-15 to the north. The swale contains evidence of sediment deposition but lacks a clear OHWM. There was no continuing break in slope, or evidence of sediment sorting, which typically indicate the presence of a streambed. Additionally, there is no change in plant species or cover distinct from that in the surrounding upland habitat. Moreover, the swale is inconsistent, dissipating into the surrounding disturbed habitat off-site to the southeast (see Figure 4). As a result, it lacks downstream connectivity to any jurisdictional feature. Therefore, it would not meet the definition of a non-wetland Water of the U.S. or State and is not expected to be considered jurisdictional.

4.0 Sensitive Biological Resources

4.1 Sensitivity Criteria/Regulatory Setting

For purposes of this report, species will be considered sensitive if they are (1) listed or proposed to be listed by state or federal agencies as threatened or endangered; (2) on California Rare Plant Rank (CRPR) 1B (considered endangered throughout its range), CRPR 2 (considered endangered in California but more common elsewhere), CRPR 3 (more information about the plant's distribution and rarity needed), or CRPR 4 (plants of limited distribution) of the CNPS Inventory of Rare and Endangered Vascular Plants of California (~~2020~~2023); or (3) considered rare, endangered, or threatened by the CNDDB (CDFW ~~2019a, 2019b, and 2020a–c~~2023a-e).

4.1.1 State Regulations

Under Section 3503 of the CFGC, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. CFGC Section 3503.5 prohibits take, possession, or destruction of any birds in the orders Falconiformes (raptors) or Strigiformes (owls) or of their nests and eggs.

4.1.2 Federal Regulations

The federal Migratory Bird Treaty Act of 1918 (MBTA) was established to provide protection to the breeding activities of migratory birds throughout the U.S. The MBTA~~ protects migratory birds and their breeding activities from direct take. Pursuant to U.S. Department of the Interior Memorandum M-37050, the federal MBTA is not currently interpreted to cover incidental take of migratory birds (U.S. Department of the Interior 2017). Therefore, impacts that are incidental to implementation of an otherwise lawful project would not be considered significant~~, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The take, possession, import, export, transport, sale, purchase, barter, or offering of these activities is prohibited, except under a valid permit or as permitted in the implementing regulations.

4.1.3 County Regulations

The project site is located within the boundaries of the Western Riverside Multiple Species Habitat Conservation Program (MSHCP; Western Riverside County Regional Conservation Authority [WRCRCA] 2003). The MSHCP allocates responsibility for assembly and management of its Conservation Areas to local, state, and federal governments, as well as private and public entities engaged in construction that may impact MSHCP covered species. As lead agency, the District is not a participant in the MSHCP; however, the project must still demonstrate it would not prevent implementation of the conservation goals and objectives of the MSHCP. The proposed project is not located within a designated criteria cell so no mitigation for impacts to vegetation communities would be required by the MSHCP. No riparian/riverine areas, vernal pools, or narrow endemic plant species are present. As portions of the project are located within the MSHCP-designated burrowing owl survey area, focused surveys and potential mitigation measures would be required for this species, as discussed in Sections 5.3 and 6.2, below.

4.2 Sensitive Vegetation Communities

The only native vegetation community within the survey area is disturbed Riversidean sage scrub. This vegetation community would be considered sensitive, so any impacts would be considered significant under CEQA and require mitigation.

4.3 Sensitive Plants

No sensitive plant species were observed within the survey area during the biological surveys. An assessment of the potential for sensitive plant species to occur is presented in Attachment 3. This assessment includes all sensitive species with records within two miles of the survey area. Based on this assessment, one sensitive plant species – smooth tarplant (*Centromadia pungens* ssp. *laevis*) – has potential to occur.

Smooth Tarplant. Smooth tarplant is a CNPS CRPR 1B.1 species (CNPS ~~2020~~2023) but is not state or federally listed. It blooms from April through September (Munz 1974) and occurs in grasslands with minimal shrub cover, especially near alkaline sites, but it is also known from open scrub habitats and disturbed areas. Unidentified tarplant sprouts were observed in the disturbed Riversidean sage scrub and adjacent disturbed habitat, but the biological survey was not conducted during its blooming period, so a definitive identification was not possible. The disturbed Riversidean sage scrub and some adjacent portions of disturbed habitat are suitable for this species. Based on the presence of suitable habitat~~ and unidentified tarplant species~~, this species is considered to have moderate potential to occur.

4.4 Sensitive Wildlife

No sensitive wildlife species were observed within the survey area. As the project does not include any riparian resources, the project does not support suitable habitat for riparian birds. All sensitive wildlife species known to occur within two miles of the project site are addressed in Attachment 4. As shown in Attachment 4, this analysis concluded that no state or federally state listed species are

expected to occur in the project area. However, there is moderate potential for California horned lark (*Eremophila alpestris actia*), Cooper's hawk (*Accipiter cooperii*), western burrowing owl (*Athene cunicularia hypugaea*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) to occur on-site due to the presence of suitable habitats. These are discussed in further detail below.

California horned lark. California horned lark is a CDFW watch list species but is not federally listed. This species has moderate potential to occur within the disturbed Riversidean sage scrub and adjacent disturbed habitat.

Cooper's hawk. Cooper's hawk is a CDFW watch list species and has a moderate potential to nest within a stand of Eucalyptus woodland along the west side of Guava Street. The disturbed Riversidean sage scrub and adjacent disturbed habitat within the survey area provide foraging opportunities for this species.

Western burrowing owl. The western burrowing owl is a CDFW species of special concern. Based on the biological survey, suitable habitat is present throughout the disturbed Riversidean sage scrub and adjacent areas of disturbed habitat. There are potential prey items in the survey area, including insects, lizards, and small mammals (see Attachment 2), although no owls, burrows, or owl sign were detected. This species has moderate potential to occur due the presence of suitable habitats with low-lying vegetation. Focused surveys for western burrowing owl should be conducted to determine if the species is present.

San Diego black-tailed jackrabbit. San Diego black-tailed jackrabbit is a CDFW species of special concern. It has moderate potential to occur within the disturbed Riversidean sage scrub and adjacent disturbed habitat.

4.5 Wildlife Movement Corridors

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

The northern portion of the survey area lies just northwest of the intersection of Murrieta Hot Springs Road and Sparkman Court. It is situated in a previously graded, developed lot adjacent to a large commercial development. The southern portion of the survey area, along Guava Street, is in a less-developed area, but is generally situated within an existing roadway and in a historically graded area in a Caltrans ROW. There are undeveloped portions of the site and surrounding area, but they have only limited connectivity with higher quality native habitats to the west. Thus, these areas would not be considered part of a wildlife corridor.

5.0 Project Impacts

5.1 Vegetation Communities

Project impacts are detailed on Table 2 and illustrated in Figure 4. As the project consists of pipeline installation, all areas impacted by construction will be returned to the original grade and areas that are not currently developed or within roadways would be revegetated. While there would be manholes at-grade, all would be located in existing developed or disturbed areas. Therefore, all impacts assessed in this report are considered temporary. With the proposed revegetation, impacts to sensitive vegetation communities, i.e., disturbed Riversidean sage scrub, would be considered less than significant and would not require mitigation.

Table 2
Impacts to Vegetation Communities (acres)

Land Cover Types	Existing Within Survey Area	Temporary Impacts
Disturbed Riversidean sage scrub	~~2.03~~2.52	~~0.58~~1.14
Disturbed habitat	~~7.28~~7.17	~~1.99~~2.07
Eucalyptus woodland	0.15	0.03
Ornamental vegetation	~~1.61~~1.35	~~0.78~~0.59
Developed land	~~6.33~~6.39	~~2.12~~2.23
TOTAL	~~17.40~~17.57	~~5.49~~6.06

5.2 Plant Species

The project has potential to impact smooth tarplant, if present. This species is known from numerous records within 2 miles of the project site and project impacts are not expected to affect the long-term survival of the species or the local population. Therefore, potential impacts to smooth tarplant would be less than significant. Nonetheless, to reduce potential impacts to this species, topsoil should be stockpiled during construction and replaced on the regraded landscape during revegetation, and if possible, this species should be included in the plant palette.

5.3 Wildlife Species

General wildlife. The project may result in direct impacts to small mammals and reptiles with low mobility. Large mammal species and most birds will be able to move out of the way during construction activities. These impacts to general wildlife would be considered less than significant and, therefore, would not require mitigation.

California horned lark and other migratory birds. The project has potential to result in direct impacts to California horned lark and other migratory or nesting birds protected by CFGC Section 3503 if vegetation removal and/or project grading occurs during the general bird breeding season

(February 1 to September 15). Direct impacts to these species would be considered significant and require mitigation.

Cooper's hawk and other raptors. Although eucalyptus woodland and ornamental trees present within the survey area can provide suitable nesting habitat for Coper's hawk and other tree-nesting raptors, no trees are anticipated to be removed by the project. Therefore, there would be no direct impacts to nesting Cooper's hawks or other raptors. However, construction noise and activities have potential to cause indirect impacts on these species. These species are protected under CFGC Section 3503.5, such that these indirect impacts would be considered significant and mitigation would be required.

Western burrowing owl. Impacts to western burrowing owl could result from project activities within the disturbed Riversidean sage scrub and disturbed habitat, both of which provide suitable nesting and foraging habitat for this species. Direct impacts to this species would be significant and require mitigation.

San Diego black-tailed jackrabbit. San Diego black-tailed jackrabbit is a highly mobile species and is expected to be able to move out of harm's way during construction activities. Therefore, no direct impacts to this species are anticipated.

6.0 Mitigation

Mitigation would be required for impacts considered significant under CEQA, including impacts to sensitive vegetation communities and species. The project has been designed to avoid or minimize impacts to sensitive biological resources to the maximum extent feasible. Mitigation for potential impacts is discussed in further detail below.

6.1 Mitigation for Impacts to Vegetation Communities

All impacted areas of Riversidean sage scrub would be revegetated in-kind, so impacts to Riversidean sage scrub would be less than significant and no mitigation would be required.

6.2 Mitigation for Impacts to Sensitive Wildlife Species

Migratory birds and raptors (including California horned lark and Cooper's hawk). To comply with CFGC Section 3503 and 3503.5, no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests during the breeding season (February 1 to September 15). Thus, to avoid potential impacts to California horned lark and other migratory or nesting birds, vegetation removal should occur outside the general bird breeding season. If vegetation removal must occur during this period, a pre-construction survey would be necessary to confirm the presence or absence of breeding birds in the impact area. If nests or breeding activities are located on the survey area, then an appropriate buffer area around the nesting site shall be maintained until the young have fledged. If no nesting birds are detected during the pre-construction survey, no mitigation would be required.

Western burrowing owl. To prevent potential impacts to western burrowing owl, a pre-construction take avoidance survey for this species would be required within all suitable habitat located inside the burrowing owl survey area (suitable habitat within the project footprint, plus 500 feet). Per the Staff Report on Burrowing Owl Mitigation (CDFW 2012), take avoidance surveys require an initial survey no less than 14 days prior to the start of ground disturbance activities and a final survey conducted within 24 hours of ground disturbance. If burrowing owls are detected, the CDFW must be notified within 48 hours and avoidance measures and/or mitigation would be required. Potential mitigation measures for impact to burrowing owl could include preparation of a western burrowing owl relocation plan for active or passive relocation review and approval by CDFW.

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ATTACHMENTS

ATTACHMENT 1

Plant Species Observed

Attachment 1 Plant Species Observed			
Scientific Name	Common Name	Habitat	Origin
GYMNOSPERMS			
Pinus sp.	pine	ORN, DEV	I
ANGIOSPERMS: MONOCOTS			
IRIDACEAE	IRIS FAMILY		
Sisyrinchium bellum	western blue-eyed grass	DH, ORN	N
POACEAE (GRAMINEAE)	GRASS FAMILY		
Avena sp.	oats	RSS-D	I
Bromus madritensis ssp. *rubens*	red brome	RSS-D, DH, ORN	I
Festuca myuros	rattail sixweeks grass	RSS-D, DH	I
Hordeum murinum	wall barley	DH	I
~~*Schismus barbatus*~~	~~Mediterranean schismus~~	~~DH~~	~~I~~
ANGIOSPERMS: DICOTS			
ADOXACEAE	ADOXA FAMILY		
Sambucus nigra ssp. *caerulea*	blue elderberry	DEV	N
ANACARDIACEAE	SUMAC OR CASHEW FAMILY		
Schinus molle	Peruvian pepper tree	DEV, ORN	I
ASTERACEAE	SUNFLOWER FAMILY		
~~*Amblyopappus pusillus*~~	~~pineapple weed~~	~~DH~~	~~N~~
Baccharis salicifolia ssp. *salicifolia*	mule fat, seep-willow	DH, ORN	N
Baccharis pilularis	Chaparral broom, coyote bush	DH, ORN	N
Centaurea melitensis L.	tocalote, Maltese star-thistle	DH	I
~~*Deinandra/Centromadia* sp.~~	~~unidentified tarplant species~~	~~RSS-D~~	~~N~~
~~*Encelia californica*~~	~~California encelia~~	~~DH~~	~~I~~
Encelia farinosa	brittlebush, incienso	ORN	N
~~*Ericameria pinifolia*~~	~~pine-bush~~		~~N~~
Erigeron bonariensis	flax-leaved horseweed	DH, ORN	I
~~*Eriophyllum confertiflorum* var. *confertiflorum*~~	~~long-stem golden-yarrow~~	~~RSS-D, DH, ORN, EV~~	~~N~~
~~*Hedypnois cretica*~~	~~Crete weed~~	~~RSS-D, DH, DEV~~	~~I~~
~~*Helianthus annuus*~~	~~western sunflower~~	~~ORN~~	~~N~~
~~*Lasthenia gracilis*~~	~~common goldfields~~	~~DH~~	~~N~~
~~*Sonchus asper* ssp. *asper*~~*Lactuca serriola*	prickly ~~sow thistle~~lettuce	~~DEV~~DH	I
~~*Sonchus oleraceus* L.~~	~~common sow thistle~~	~~DH~~	~~I~~
Uropappus lindleyi	silver puffs	RSS-D	N
BORAGINACEAE	BORAGE FAMILY		
Amsinckia menziesii	common fiddleneck, small-flowered fiddleneck, rancher's fireweed	RSS-D, DH, ORN, DEV	N
Cryptantha sp.	cryptantha	RSS-D, DH	N
Plagiobothrys sp.	popcornflower	RSS-D	N

Attachment 1 Plant Species Observed			
Scientific Name	Common Name	Habitat	Origin
BRASSICACEAE (CRUCIFERAE)	MUSTARD FAMILY		
Hirschfeldia incana	short-pod mustard	RSS-D, DH, ORN, DEV	I
CACTACEAE	CACTUS FAMILY		
Echinocactus sp.	ornamental barrel cactus	DEV	I
CHENOPODIACEAE	GOOSEFOOT FAMILY		
Salsola tragus	Russian thistle, tumbleweed	DH	I
CRASSULACEAE	STONECROP FAMILY		
Crassula connata	pygmy-weed	~~DEV~~DH	N
~~EUPHORBIACEAE~~	~~SPURGE FAMILY~~		
~~*Croton setiger.*~~	~~turkey-mullein, dove weed~~	~~RSS-D, DH, ORN~~	~~N~~
FABACEAE (LEGUMINOSAE)	LEGUME FAMILY		
Acacia redolens	vanilla-scented wattle	DH	I
Acmispon glaber	deerweed, California broom	DH, ORN	N
Lupinus bicolor	miniature lupine	RSS-D, DH	N
Melilotus indicus	sourclover	DH, DEV	I
Vicia villosa ssp. *varia*	hairy vetch	DEV	I
GERANIACEAE	GERANIUM FAMILY		
Erodium botrys	long-beak filaree	RSS-D, DH	I
Erodium cicutarium	redstem filaree	RSS-D, DH, ORN, DEV	I
LAMIACEAE	MINT FAMILY		
Salvia apiana Jeps.	white sage	DH, ORN	N
Salvia rosmarinus	rosemary	ORN	N
~~*Salvia leucophylla*~~	~~purple sage~~		~~N~~
Salvia mellifera	black sage	DH, ORN	N
MONTIACEAE	MONTIA FAMILY		
Calandrinia menziesii	red maids	DH	N
MYRSINACEAE	MYRSINE FAMILY		
Lysimachia arvensis	scarlet pimpernel	DH	I
~~ONAGRACEAE~~MYRTACEAE	~~EVENING-PRIMROSE~~MYRTLE FAMILY		
~~*Camissoniopsis hirtella*~~	~~field sun cup~~	~~DH~~	~~N~~
~~PAPAVERACEAE~~	~~POPPY FAMILY~~		
~~*Eschscholzia californica*~~	~~California poppy~~	~~DH~~	~~N~~
~~PHRYMACEAE~~	~~HOPSEED FAMILY~~		
~~*Diplacus*~~*Eucalyptus* sp.	~~monkey-flower cultivar~~gum tree	EW, ORN	I
POLYGONACEAE	BUCKWHEAT FAMILY		
Eriogonum fasciculatum	California buckwheat	RSS-D, DH, ORN	N
~~*Eriogonum gracile*~~	~~slender buckwheat~~	~~RSS-D~~	~~N~~
~~SOLANACEAE~~URTICACEAE	~~NIGHTSHADE~~NETTLE FAMILY		
~~*Nicotiana glauca*~~ *Urtica urens*	~~tree tobacco~~dwarf nettle	~~RSS-D,~~ DH	I
~~TAMARICACEAE~~	~~TAMARISK FAMILY~~		
~~*Tamarix* sp.~~	~~tamarisk~~	~~ORN~~	~~I~~

Attachment 1 Plant Species Observed			
Scientific Name	Common Name	Habitat	Origin

VEGETATION COMMUNITIES

DH = Disturbed habitat
DEV = Developed land
EW = Eucalyptus woodland
ORN = Ornamental vegetation
RSS-D = Disturbed Riversidean sage scrub

ORIGIN

N = Native to locality
I = Introduced species from outside locality

ATTACHMENT 2

Wildlife Species Observed

Attachment 2 Wildlife Species Observed			
Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
INVERTEBRATES			
LYCAENIDAE	**BLUES, COPPERS, & HAIRSTREAKS**		
Not identified to species	unidentified blue butterfly	RSS-D	O
Icaricia acmon acmon	Acmon blue	DH	O
Strymon melinus pudica	gray hairstreak	ORN	O
REPTILES			
PHRYNOSOMATIDAE	**SPINY LIZARDS**		
Uta stansburiana	common side-blotched lizard	DH	O
BIRDS			
COLUMBIDAE	**PIGEONS & DOVES**		
Columba livia	rock dove (I)	RSS-D	O
TROCHILIDAE	**HUMMINGBIRDS**		
Calypte anna	Anna's hummingbird	DH, DEV	O, V
CORVIDAE	**CROWS, JAYS, & MAGPIES**		
Corvus brachyrhynchos hesperis	American crow	RSS-D, DH	O, V
MIMIDAE	**MOCKINGBIRDS & THRASHERS**		
Mimus polyglottos polyglottos	northern mockingbird	RSS-D	V
MAMMALS			
LEPORIDAE	**RABBITS & HARES**		
Sylvilagus audubonii	desert cottontail	RSS-D	O
GEOMYIDAE	**POCKET GOPHERS**		
Thomomys bottae	Botta's pocket gopher	RSS-D, DH	B

(I) = Introduced species

HABITATS

DH = Disturbed habitat
DEV = Developed land
ORN = Ornamental vegetation
RSS-D = Disturbed Riversidean sage scrub

EVIDENCE OF OCCURRENCE

B = Burrow
O = Observed
V = Vocalization

ATTACHMENT 3

Sensitive Plant Species Observed or with the Potential to Occur

Attachment 3 Sensitive Plant Species Observed or with the Potential for Occurrence						
Scientific Name Common Name	Sensitivity Code & Status State/ Federal Status	 CNPS Rank	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
ANGIOSPERMS: DICOTS						
ASTERACEAE SUNFLOWER FAMILY						
Centromadia pungens ssp. *laevis* smooth tarplant	–/–	1B.1	Annual herb; chenopod scrub, meadow and seeps, playas, riparian woodland, valley and foothill grasslands; alkaline soils; blooms April–September; elevation less than 2,100 feet. California endemic. Known from San Diego, Riverside, and San Bernardino counties.	No	Moderate	Disturbed Riversidean sage scrub and some of the disturbed habitat are suitable to support this species. Young tarplant individuals were observed; however, the biological survey was conducted prior to the blooming period for this annual species. There are numerous records from within 2 miles of the survey area (CDFW 2023a).
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	–/–	1B.1	Annual herb; coastal salt marsh, vernal pools, playas; blooms February–June; elevation less than 4,000 feet.	No	Not Expected	No suitable habitat occurs in the survey area. The only record of this species within 2 miles of the project site dates to 1918 (CDFW 2023a).
Symphyotrichum defoliatum San Bernardino aster	–/–	1B.2	Perennial rhizomatous herb; near ditches, streams, springs; cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grasslands (vernally mesic); blooms July–November; elevation less than 7,000 feet. California endemic.	No	Low	Habitat on-site is largely disturbed and lacks moist areas such as meadows, seeps, marshes, and swamps. The only record of this species within 2 miles is a 1923 observation that lacks sufficient locational data (CDFW 2023a).

Attachment 3 Sensitive Plant Species Observed or with the Potential for Occurrence						
Scientific Name Common Name	Sensitivity Code & Status State/ Federal Status	 CNPS Rank	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
			Known from San Diego, Imperial, Riverside, Orange, Los Angeles, Kern, San Bernardino counties.			
NYCTAGINACEAE FOUR O'CLOCK FAMILY						
Abronia villosa var. *aurita* chaparral sand verbena	–/–	1B.1	Annual herb; sandy floodplains in inland, arid areas of coastal sage scrub and open chaparral; blooms January–August; elevation 300–5,300 feet.	No	Not Expected	Habitat on-site is largely too disturbed to support this species. The drainage on-site is limited and largely unsuitable.
POLEMONIACEAE PHLOX FAMILY						
Navarretia fossalis spreading navarretia [=prostrate navarretia]	–/FT	1B.1	Annual herb; vernal pools, marshes and swamps, chenopod scrub; blooms April–June; elevation 100–4,300 feet.	No	Not Expected	No vernal pools occur on-site. Nearest record of this species dates to 1998 (CDFW 2023a).
POLYGONACEAE BUCKWHEAT FAMILY						
Chorizanthe polygonoides var. *longispina* long-spined spineflower	–/–	1B.2	Annual herb; clay soils; openings in chaparral, coastal sage scrub, near vernal pools and montane meadows, April–July; elevation 100–5,000 feet.	No	Not Expected	Project site lacks vernal pools or meadows, and sage scrub habitat is largely too disturbed to support this species. Nearest record is from 2006 approximately 2 miles northeast of the project site, on a property that was subsequently developed (CDFW 2023a).

Attachment 3 Sensitive Plant Species Observed or with the Potential for Occurrence						
	Sensitivity Code & Status					
Scientific Name Common Name	State/ Federal Status	CNPS Rank	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
POACEAE GRASS FAMILY						
Orcuttia californica California Orcutt grass	CE/FE	1B.1	Annual herb; vernal pools; blooms April–August; elevation 50–2,200 feet.	No	Not Expected	Project site lacks vernal pools. This is a conspicuous species that would have been detected if present.

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed endangered
FT = Federally listed threatened
FC = Federal candidate for listing as endangered or threatened

STATE LISTED PLANTS

CE = State listed endangered
CR = State listed rare
CT = State listed threatened

CALIFORNIA NATIVE PLANT SOCIETY (CNPS): CALIFORNIA RARE PLANT RANKS (CRPR)

1A = Species presumed extinct.
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2A = Plants presumed extirpated in California, but more common elsewhere.
2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.
.1 = Species seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat).
.2 = Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat).
.3 = Species not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known).

ATTACHMENT 4

Sensitive Wildlife Species Occurring or with the Potential to Occur

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
INVERTEBRATES (Nomenclature from Eriksen and Belk 1999; San Diego Natural History Museum 2002)					
STREPTOCEPHALIDAE **FAIRY SHRIMP**					
Riverside fairy shrimp *Streptocephalus woottoni*	FE *	Vernal pools.	No	Not Expected	No vernal pools or potential vernal pools were detected on site. Nearest record is from a 2006 observation on a site approximately 2 miles south of the project site and which has since been developed (CDFW ~~2020a~~2023a).
NYMPHALIDAE **BRUSH-FOOTED BUTTERFLIES**					
Quino checkerspot *Euphydryas editha quino*	FE	Open, dry areas in foothills, mesas, lake margins. Larval host plant *Plantago erecta*. Adult emergence mid-January through April.	No	Not Expected	Although Riversidean sage scrub occurs in the survey area, it is highly disturbed, lacks host plant species, and is largely unsuitable to support this species. The nearest record of this species is from a 1998 observation approximately 1.7 miles northeast of the survey area (CDFW ~~2020a~~2023a).

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
AMPHIBIANS (Nomenclature from Crother et al. 2008)					
PELOBATIDAE **SPADEFOOT TOADS**					
Western spadefoot *Spea hammondii*	CSC	Vernal pools, floodplains, and alkali flats within areas of open vegetation.	No	Low	Habitat in the project area is largely too disturbed to support this species. Water sources on site are limited. The nearest records are a 1996 observation 1.8 mile northeast of the site, and a 1998 observation 0.9 mile northeast of the site (CDFW ~~2020a~~2023a). Since these observations were made, the region has experienced substantial urban development.
REPTILES (Nomenclature from Crother et al. 2017)					
IGUANIDAE **IGUANID LIZARDS**					
Coast horned lizard *Phrynosoma blainvillii*	CSC	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.	No	Low	The disturbed Riversidean is too disturbed to provide suitable habitat for this species. The nearest records of this species are from prior to 1970 (CDFW ~~2020~~2023)

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
COLUBRIDAE COLUBRID SNAKES					
California glossy snake *Arizona elegans occidentalis*	CSC	Scrub and grassland habitats, often with loose or sandy soils.	No	Not Expected	Although sage scrub and grassy areas are present, these areas are disturbed and largely unsuitable. Only record of this species within 2 miles dates to at least 1946 (CDFW ~~2020a~~2023a).
CROTALIDAE RATTLESNAKES					
Red diamond rattlesnake *Crotalus ruber*	CSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields. Often found in association with large rocky outcrops.	No	Low	Disturbed Riversidean sage scrub habitat on site lacks rocky outcrops and is largely too disturbed to support this species. Most recent record of this species within 2 miles dates to 1991 (CDFW ~~2020a~~2023a)

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
BIRDS (Nomenclature from Chesser et al. 2019 and Unitt 2004)					
STRIGIDAE **TYPICAL OWLS**					
Western burrowing owl (burrow sites) *Athene cunicularia*	CSC	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	No	Moderate	Low, open sage scrub and disturbed habitat are abundant within the survey area. No owls, suitable burrows, or owl sign were detected during the biological survey; however focused surveys have not been conducted. There are several records of this species within two miles of the project site between 2004 and 2010, including one within 1/3 mile (CDFW ~~2020a~~2023a)
VIREONIDAE **VIREOS**					
Least Bell's vireo (nesting) *Vireo bellii pusillus*	FE, CE	Willow riparian woodlands. Summer resident.	No	Not Expected	Suitable riparian habitat does not occur within the survey area.

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
ALAUDIDAE LARKS					
California horned lark *Eremophila alpestris actia*	WL	Sandy shores, mesas, disturbed areas, grasslands, agricultural lands, sparse creosote bush scrub.	No	Moderate	The disturbed Riversidean sage scrub and disturbed habitat are moderately suitable for this species; however, this species would likely have been present during the biological survey. Nearest records of this species are from 1998 on a property that was subsequently developed (CDFW ~~2020a~~2023a).
POLIOPTILIDAE GNATCATCHERS					
Coastal California gnatcatcher *Polioptila californica californica*	FT, CSC	Coastal sage scrub, maritime succulent scrub. Resident.	No	Not Expected	The Riversidean sage scrub in the survey area is highly disturbed and unsuitable for this species. The most recent records of this species are from 1999 – 2000 on properties that have been subsequently developed (CDFW ~~2020a~~2023a).

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
PASSERELLIDAE NEW WORLD PASSERINES					
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	WL	Coastal sage scrub, chaparral, grassland. Resident.	No	Not Expected	The Riversidean sage scrub in the survey area is highly disturbed and unsuitable for this species. The most recent records of this species within 2 miles date to 1999 and 2000 (CDFW ~~2020a~~2023a).
Bell's sage sparrow *Artemisiospiza belli belli*	WL	Chaparral, coastal sage scrub. Localized resident.	No	Not Expected	The habitat in the survey area is highly disturbed and unsuitable for this species. The closest record this species is a 1999 observation approximately 2 miles north of the project site (CDFW ~~2020a~~2023a).
ACCIPITRIDAE HAWKS, KITES, & EAGLES					
Cooper's hawk (nesting) *Accipiter cooperii*	WL	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas.	No	Moderate	Eucalyptus woodland alongside Guava Street is suitable nesting habitat for this species.

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
MAMMALS (Nomenclature from Jones et al. 1997 and Hall 1981)					
LEPORIDAE **RABBITS & HARES**					
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	CSC	Open areas of scrub, grasslands, agricultural fields.	No	Moderate	Habitat on-site is moderately suitable, with native shrub cover abundant in the ornamental areas adjacent to the disturbed Riversidean sage scrub. There are several records of this species within 2 miles of the survey area (CDFW ~~2020a~~2023a).
HETEROMYIDAE **POCKET MICE & KANGAROO RATS**					
Dulzura pocket mouse *Chaetodipus californicus femoralis*	CSC	Brushy areas of coastal sage scrub, chamise-redshank & montane chaparral, sagebrush, annual grassland, valley foothill hardwood, valley foothill hardwood–conifer & montane hardwood. Probably most attracted to interface of grassland and brush.	No	Low	Habitat within the survey area is likely too disturbed to support this species. There is one record of this species within 2 miles of the survey area: a 2005 observation on a property just east of the I-15/I-215 split that has subsequently been developed (CDFW ~~2020a~~2023a).

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	CSC	San Diego County west of mountains in sparse, disturbed coastal sage scrub or grasslands with sandy soils.	No	Low	Habitat within the survey area is likely too disturbed to support this species. The nearest record of this species is a 2009 observation along I-215 approximately 2 miles north of the survey area (CDFW ~~2020a~~2023a).
Stephens' kangaroo rat *Dipodomys stephensi*	FE, CT	Grassland, open areas.	No	Not Expected	Habitat within the survey area is likely too disturbed to support this species. All records of this species within 2 miles date back to at least 1987 (CDFW ~~2020a~~2023a).
San Bernardino Merriam's kangaroo rat *Dipodomys merriami parvus*	FE, CSC	Open scrub vegetation (coastal sage scrub, chaparral, & desert) in sandy loam substrates of alluvial fans and floodplains.	No	Not Expected	Habitat within the survey area is too disturbed to support this species, and no alluvial fans or floodplains are present. The nearest record of this species dates to 1989 and the location of the observation appears to be in question (CDFW ~~2020a~~2023a).

Attachment 4 Sensitive Wildlife Species Occurring or with the Potential to Occur					
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site	Basis for Determination of Occurrence Potential

(I) = Introduced species

STATUS CODES

Listed/Proposed

FE = Listed as endangered by the federal government
FT = Listed as threatened by the federal government
CE = Listed as endangered by the state of California
CT = Listed as threatened by the state of California

Other

CFP = California fully protected species
CSC = California Department of Fish and Wildlife species of special concern
WL = California Department of Fish and Wildlife watch list species
* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

APPENDIX C

Cultural Resources Survey
RECON Environmental, Inc., ~~July 20, 2020~~May 23, 2023

RECON

An Employee-Owned Company

~~July 20, 2020~~May 23, 2023

Mr. Joseph~~Joe~~ Broadhead
Principal Water Resource Specialist
Eastern Municipal Water District
2270 Trumble Road
P.O. Box 8300
Perris, CA 92572-8300

Reference: Cultural Resources Survey for the Golden Triangle Sewer Pipeline Project, Murrieta, California (RECON Number 9878-18~~9547~~)

Dear Mr. Broadhead:

This letter details the results of a cultural resources survey conducted for the Golden Triangle Sewer Pipeline Project (project). The Eastern Municipal Water District (District) is proposing construction of two segments of approximately 3,717 linear feet of sewer extension to support the approved Golden Triangle project site in the city of Murrieta. Subsequent to preparation of the original cultural resources survey on July 20, 2020, the design of project was slightly modified in March 2023. Although the overall sewer alignment remained similar to what was evaluated previously, the change in design resulted in a 0.57-acre expansion of the project boundary from 5.49 acres to 6.06 acres. Some of this increase consisted of acknowledging the land within the California Department of Transportation (Caltrans) right-of-way between the northbound and southbound lanes of Interstate 15 (I-15). This area lacks any cultural resources, and as under the previous design, the project would tunnel underneath the northbound and southbound lanes of I-15 within this portion of the alignment. The remaining expansion of the original project boundary is located within Caltrans right-of-way south of I-15. RECON archaeologist Carmen Zepeda-Herman reviewed and determined that this expansion of the project boundary is located within the fill slope developed during construction of I-15, and therefore would not possess any intact soils or significant cultural resources. Subsequent changes to the cultural resources survey based on the revised design are tracked in strikeout/underline. Figures for the cultural resources survey have also been updated to reflect the latest project design. The revised project design did not affect the conclusions of the cultural resources survey.

1.0 Project Description

The project is located in the city of Murrieta immediately north of the ~~Interstate 15 (~~I-15~~)~~ and I-215 interchange (Figure 1). The northern terminus of the project is located within the roadway of Sparkman Court just north of Murrieta Hot Springs Road. The proposed sewer pipeline then travels south through the approved Golden Triangle project site, turns southeast and runs parallel to I-15, turns southwest and crosses under I-15, and then continues southwest until terminating at Guava Street. The majority of the project site is located south of Murrieta Hot Springs Road, northwest of I-15, and is within the Triangle Specific Plan boundary. The project is located within the Temecula Land Grant on the U.S. Geological Survey (USGS) 7.5-minute topographic map, Murrieta quadrangle (Figure 2; USGS 1979). Figure 3 shows the project location on an aerial photograph.

The project would construct a sewer pipeline extension consisting of the following three segments:

- Murrieta Hot Springs Road Crossing Segment: Approximately 230-foot-long sewer extension;
- Golden Triangle Segment: Approximately 1,417-foot-long sewer extension; and
- I-15 Crossing Segment: Approximately 2,070-foot-long sewer extension.

It is anticipated that the District would construct the Murrieta Hot Springs Road Crossing and the I-15 Crossing segments, while the Golden Triangle Segment would be constructed by the developer during construction of the Specific Plan. It is anticipated that the District would construct the Murrieta Hot Springs Road Crossing Segment first, followed by the developer constructing the Golden Triangle Segment. This would allow the developer to use the Murrieta Hot Springs Crossing Segment to pump flow to the existing Golden Triangle Lift Station while the I-15 Crossing Segment is constructed as the final segment. The Golden Triangle Segment is located within the planning boundary of the Triangle Specific Plan that was evaluated in the Golden Triangle Specific Plan Supplemental Environmental Impact Report (Golden Triangle SEIR) that was certified in 2013. The Specific Plan area has been graded and the Golden Triangle Segment would be constructed concurrently with development of the Specific Plan. The sewer pipeline would be 15 inches in diameter, and construction would reach depths of excavation ranging from 15 to 25 feet. All manholes within the survey area would be constructed within existing roadways or sidewalks. The area of potential effect (APE) is the 15 to 25 feet depth by approximately 3,717 linear feet. The current cultural resources survey was completed for the Murrieta Hot Springs Road Crossing and I-15 Crossing segments, totaling approximately 2,300 linear feet (5.496.06 acres).

2.0 Methods

In order to determine if this project will adversely impact significant cultural resources, background research, review of historic aerial photographs, and an on-foot survey were completed. Prior to the survey, a records search was requested from the Eastern Information Center (EIC) to identify any previously recorded cultural resources recorded within a one-mile radius of the project area. A California Department of Transportation (Caltrans) encroachment permit was obtained to gain access to a portion of the I-15 Crossing Segment within the Caltrans right-of-way.

RECON Environmental, Inc. (RECON) archaeologist Carmen Zepeda-Herman, M.A., conducted a pedestrian survey of the 5.496.06-acre (APE) on March 5, 2020. Ms. Zepeda-Herman served as principal investigator and field archaeologist. Ms. Zepeda-Herman is a member of the Register of Professional Archaeologists and meets the Secretary of the Interior Standards for Archaeology and Historic Preservation.

The primary goal of this survey was to determine (1) if there are previously unrecorded cultural resources present, and if so, document the resources' locations and what they consist of and (2) to update conditions of previously recorded cultural resources. The project area was inspected for evidence of archaeological materials such as flaked and ground stone tools or fragments, ceramics, milling features, and human remains. Photographs were taken to document the environmental setting and general conditions.

In addition, a letter was sent on February 17, 2020, to the Native American Heritage Commission (NAHC) requesting a search of their Sacred Lands File to identify spiritually significant and/or sacred sites or traditional use areas in the project vicinity. The NAHC was also asked to provide a list of local Native American tribes, bands, or individuals that may have concerns or interests regarding cultural resources potentially occurring within the APE.

3.0 Results of Record Search

The search indicated that there have been 116 cultural resources investigations and 33 cultural resources within the one-mile radius (Confidential Attachment 1). Twelve of the investigations included the APE. Two of the investigations

cover the Golden Triangle segment not surveyed for this project. The first investigation surveyed approximately 67 acres and did not identify any cultural resources (Crownover and Holz 1990). A records search was completed for the Golden Triangle segment and no resources were identified (Tang 2006).

Table 1 lists the resources within the one-mile search. None of the 33 resources (18 historic-era, 9 prehistoric, 5 prehistoric isolated artifacts, and 1 multi-component) are within the APE. There is one built environment property within the search area. The historic resources consist of single-family houses, fences, road segments, a ranching complex, a landing strip, and a trash scatter. The prehistoric resources consist of five isolated artifacts, one lithic scatter, one hearth with lithic artifacts, two ground stone scatters, a lithic and ceramic scatter, and four ground stone and lithic scatters.

Table 1
Cultural Resources within One Mile of the Project Site

Primary #	Trinomial #	Site Type	Age	Notes
P-33-000238	CA-RIV-000238	Lithic, ceramic scatter	Prehistoric	
P-33-001003	CA-RIV-001003	Lithic scatter, hearth	Prehistoric	Tarwater Ranch
P-33-001004	CA-RIV-001004	Lithic scatter	Prehistoric	
P-33-001010	CA-RIV-001010	Lithic, ground stone scatter	Prehistoric	
P-33-005785	CA-RIV-005517H	Fence	Historic	
P-33-005786	CA-RIV-005518H	Fence	Historic	
P-33-005787	CA-RIV-005519H	Building	Historic	
P-33-007431		Single-family house	Historic	Brown House
P-33-007445		Single-family house	Historic	Merrill House; Provolt House
P-33-007446		Single-family house	Historic	Ral
P-33-007451		Landing strip	Historic	Oder Ranch landing strip
P-33-007452		Single-family house	Historic	Ross Rail House
P-33-007455	CA-RIV-006466H	Ground stone scatter; resort walls, foundations, roads, sidewalks, cisterns	Multicomponent	Temecula Hot Springs
P-33-007472		Single-family house	Historic	Temecula Hot Springs
P-33-008756		Isolate: scraper/core	Prehistoric	
P-33-008757	CA-RIV-006240	Lithic, ground stone scatter	Prehistoric	
P-33-011084	CA-RIV-006672	Ground stone scatter	Prehistoric	
P-33-011085	CA-RIV-006673	Lithic, ground stone scatter	Prehistoric	
P-33-011086	CA-RIV-006674	Lithic, ground stone scatter	Prehistoric	
P-33-013925		Single-family house, walls	Historic	
P-33-014906		Isolate: mano	Prehistoric	
P-33-014907	CA-RIV-007933	Ground stone scatter	Prehistoric	
P-33-015889		Single-family house	Historic	Yoder Ranch
P-33-016007		Single-family house	Historic	Charles Charnock Property
P-33-016008		Single-family house	Historic	
P-33-016009		Single-family house	Historic	
P-33-017973		Isolate: flake	Prehistoric	
P-33-023953		Road segment	Historic	
P-33-024000	CA-RIV-011794	Trash scatter	Historic	
P-33-024903		Isolate: scraper	Prehistoric	
P-33-028177	CA-RIV-012709	Road segment	Historic	
P-33-028525		Isolate: mano	Prehistoric	
P-33-028833		Ranch complex	Historic	Renon Ranch

The NAHC response letter dated February 28, 2020, noted that the Sacred Lands File search was positive (Attachment 1). Per the recommendation of the letter, RECON sent an e-mail on February 28, 2020, to the Pechanga Band of Luiseño Indians to inquire about their concerns with the project. No response has been received as of the writing of this report.

Review of historic aerial photographs indicates that Murrieta Hot Springs Road was developed as a two-lane road by 1938. The Murrieta Hot Springs Crossing Segment and the Golden Triangle Segment areas were used for agriculture from 1938 through 1967. It is not clear from the grainy quality of the 1996 aerial photograph if agricultural use continued past 1967. Sparkman Court was developed by 1978. The I-15 Crossing Segment area was used for agricultural fields south of Guava Street in 1938. By 1967 and through 1978, both sides were used for agricultural fields. Guava Street itself is a dirt road by 1978. The residential houses were completed between 1996 and 2002 while the commercial development was completed by 2009 (Nationwide Environmental Title Research LLC 2020).

4.0 Results of Survey

No cultural resources were identified during the survey. The Murrieta Hot Springs Road Crossing Segment survey area has been developed. The intersection is paved, and the northernmost connection point has been graded and is used as a gravel parking lot. Despite not surveying the Golden Triangle Segment, RECON noted that this segment has been graded in the past from the vantage points of both the Murrieta Hot Springs Road Crossing and I-15 Crossing Segment.

The I-15 Crossing Segment survey area extends along Guava Street, which is paved and then extends as a heavily used dirt road at the east (northeast) end. Commercial and some residential development are on the paved portion of the road. The dirt road portion is open and undeveloped. A drainage ditch and landscaped slope are located along a portion of the northern end of Guava Street (Photograph 1). A portion of the dirt road at the east end also contains a landscaped slope that was completed as part of the Carmax development. The yards in front of the residences are not developed and had ground visibility of 40 percent. There was evidence of past plowing/agricultural use. Rodent hole backdirt was examined for the presence of artifacts in areas of less ground visibility. The area south of the dirt road contained low weeds and had ground visibility of 70 percent (Photograph 2). The Caltrans I-15 right-of-way is a fill slope with low grasses and some weeds with 30 percent ground visibility. The rodent hole backdirt confirmed that the slope consists of imported fill soils.

The Golden Triangle Segment is located within the planning boundary of the Triangle Specific Plan that was evaluated in an SEIR that was certified in 2013. The Specific Plan area has been graded and the Golden Triangle Segment would be constructed concurrently with development of the Specific Plan. Therefore, impacts associated with construction of the Golden Triangle Segment have already been evaluated and disclosed in the certified 2013 SEIR, and the footprint of this segment was not surveyed.

5.0 Regulatory Context

5.1 National Register of Historic Places Eligibility Criteria

A cultural resource that qualifies for the National Register of Historic Places (National Register) is considered significant in terms of the planning process under the National Historic Preservation Act, National Environmental Policy Act, and other federal mandates. The National Register Criteria for Evaluation (36 Code of Federal Regulations [CFR] 60.4) provides guidance in determining a cultural resource's eligibility for listing on the National Register. This states that the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts,

sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. is associated with events that have made a significant contribution to the broad patterns of our history; or

B. is associated with the lives of persons significant in our past; or,

C. embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or

D. has yielded, or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

5.2 California Environmental Quality Act

The regulatory framework and methods for determining impacts on cultural resources include compliance with California Environmental Quality Act (CEQA) requirements as defined in Section 15064.5 of the CEQA Guidelines, Determining the Significance of Impacts to Archaeological and Historical Resources. These guidelines require the identification of cultural resources that could be affected by the proposed project, the evaluation of the significance of such resources, an assessment of the proposed project impacts on significant resources, and a development of a research design and data recovery program to avoid or address adverse effects to significant resources.

Significant resources, also called historical resources, are those cultural resources (whether prehistoric or historic) that have been evaluated and determined to be eligible for listing in the California Register of Historical Resources.

According to CEQA Section 15064.5(a), a historical resource includes the following:

1. A resource listed in, or determined to be eligible for listing on, the California Register of Historical Resources.
2. A resource included in the local register.
3. A resource which an agency determines to be historically significant. Generally a resource shall be considered to be "historically significant," if the resource meets the criteria for listing on the California Register of Historical Places (Public Resources Code Section 5024.1 Title 14 California Code of Regulations, Section 4852) including the following:
    A. Is associated with events that have made a significant contribution to the broad patterns of California's history or cultural heritage;
    B. Is associated with the lives of persons important in our past;
    C. 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; or
    D. Has yielded, or maybe likely to yield, information important to prehistory or history.
4. The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources or a local register does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

A resource must meet one of the above criteria and must have integrity; that is, it must evoke the resource's period of significance or, in the case of criterion D, it may be disturbed, but it must retain enough intact and undisturbed deposits to make a meaningful data contribution to regional research issues.

6.0 Management Recommendations

No significant or potentially significant prehistoric or historic cultural resources were found during the survey of the APE. The records search results confirmed that there are no previously recorded cultural resources within the APE. Given past disturbances, the possibility of buried significant cultural resources being present within the project APE is considered low. RECON recommends no further cultural resources work. However, because the Sacred Lands File search was positive, government-to-government consultation through Assembly Bill 52 could reveal if there are any tribal concerns regarding the project.

Please call me at (619) 308-9333 ext. 133 you have any questions or concerns about this project.

Sincerely,

Carmen Zepeda-Herman

Carmen Zepeda-Herman
Principal Investigator

CZH:sh

7.0 References Cited

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1990 An Archaeological Assessment of the Proposed Regional Mall near Murrieta, Riverside County, California. Unpublished report on file at the Eastern Information Center.

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2006 Letter Report: Historical/Archaeological Resources Records Search: The Murrieta Triangle Commercial Development Project, APNs 910-390-001 to 003, 008 to 018, 021, 022 and 400-001 to 018, Portions of the Rancho Temecula Land Grant. Unpublished report on file at the Eastern Information Center.

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1979 Murrieta quadrangle 7.5-minute topographic map.

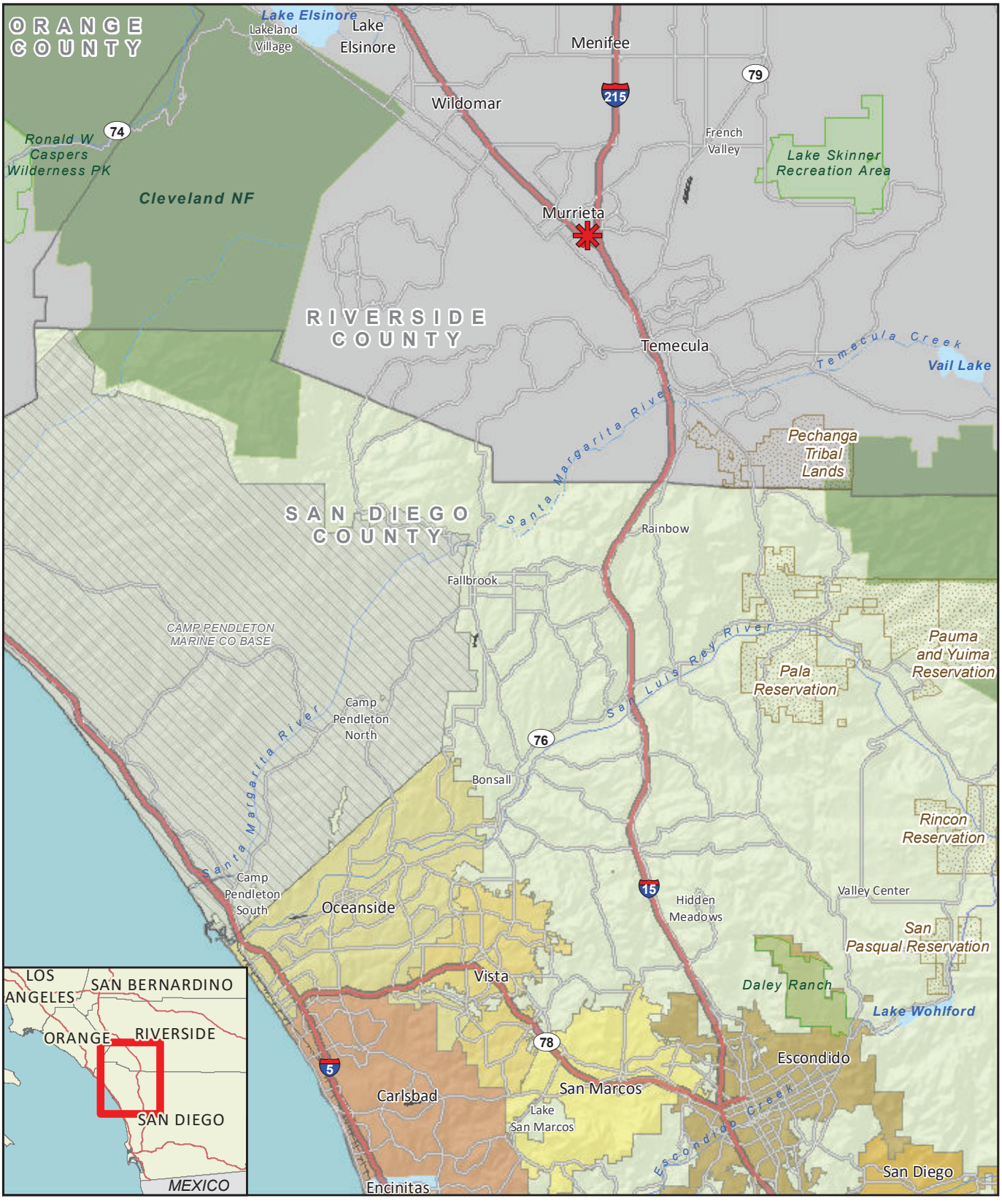

FIGURE 1
Regional Location

emwd

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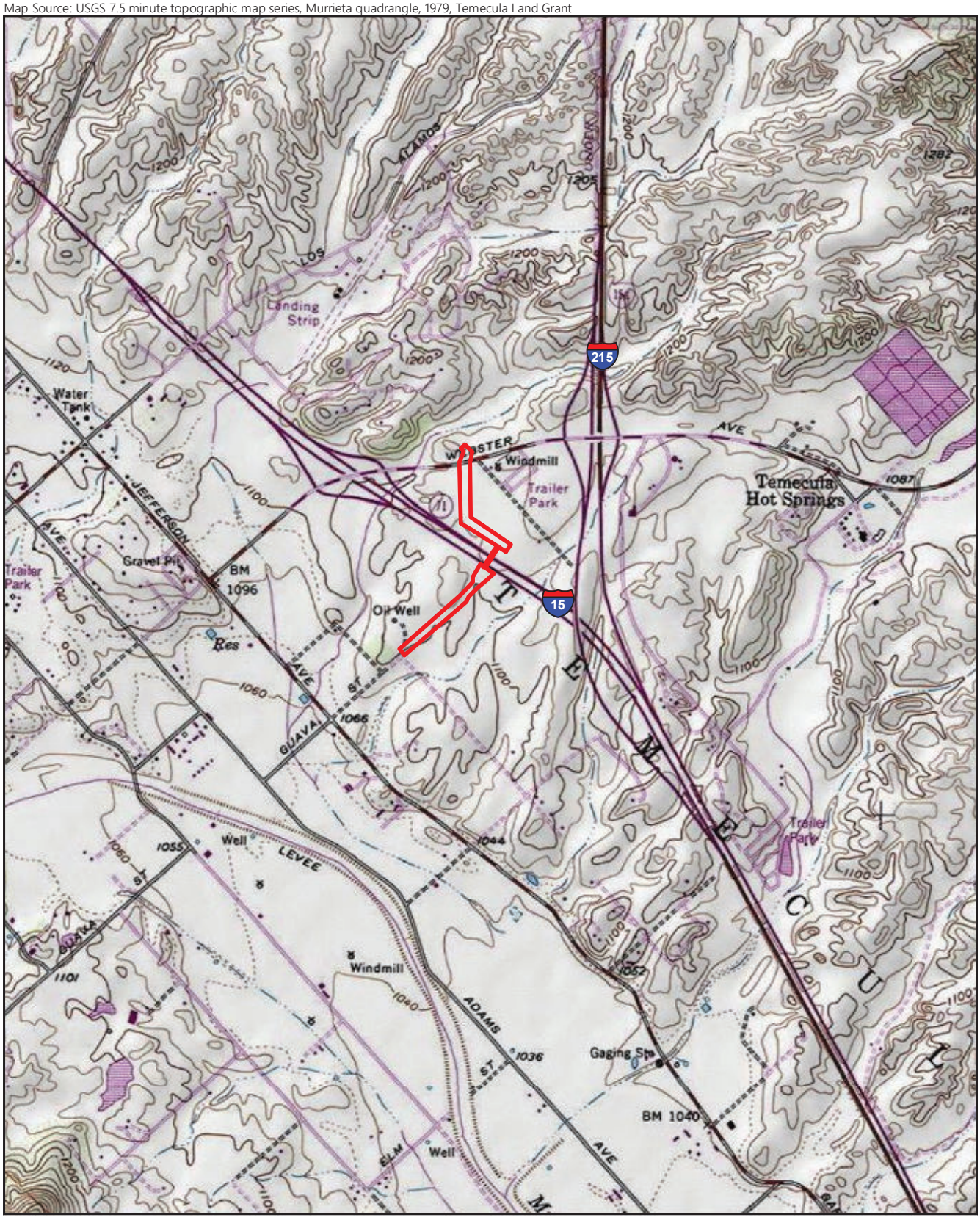
Map Source: USGS 7.5 minute topographic map series, Murrieta quadrangle, 1979, Temecula Land Grant



Project Boundary

FIGURE 2
Project Location on USGS Map

emwd

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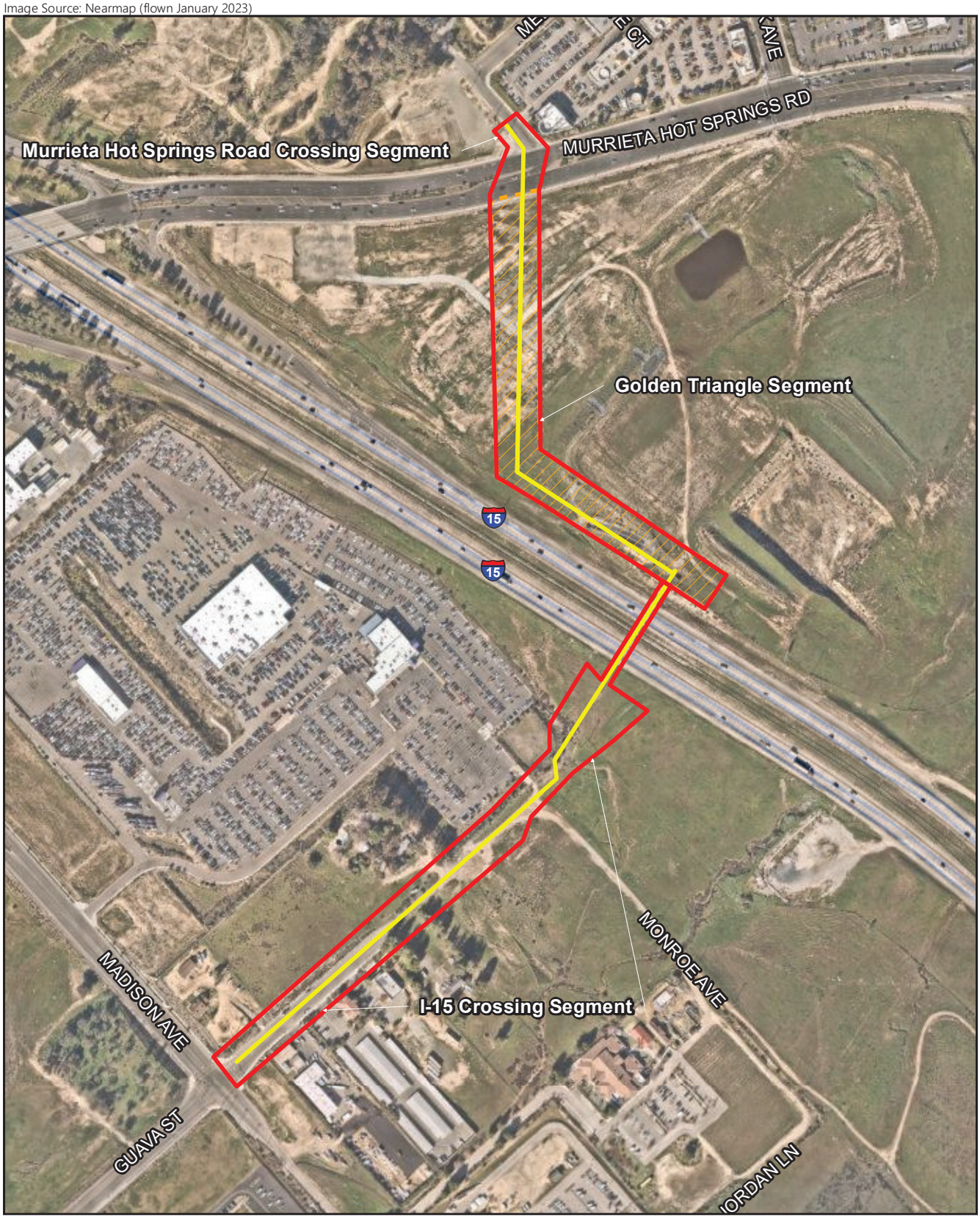
Image Source: Nearmap (flown January 2023)



0 Feet 400

Project Boundary

Area Previously Surveyed

Pipeline

FIGURE 3

Project Location on Aerial Photograph

emwd

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PHOTOGRAPH 1
North Side of Guava Street, Looking Northeast

PHOTOGRAPH 2
South of the Dirt Road, Looking Southwest

ATTACHMENT 1

NAHC Response Letter

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Triangle Sewer Pipeline Project RECON #9547

County: Riverside County

USGS Quadrangle

Name: Murrieta, 1979

Township: Click here to enter text. **Range:** Click here to enter text. **Section(s):** Unsectioned portion of the Temecula Landgrant

Contact Information

Company/Firm/Agency: RECON Environmental, Inc.

Contact: Carmen Zepeda-Herman

Street Address: 1927 Fifth Avenue

City: San Diego **ZIP:**92101

Phone: 619-308-9333

Fax: 619-308-9334

Email: czepeda@reconenvironmental.com

Project Description:

The Triangle Sewer Pipeline Project is located east and west of Interstate 15, just south of Murrieta Hot Springs Road.

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 28, 2020

Carmen Zepeda-Herman
RECON Environmental, Inc.

Via Email to: czepeda@reconenvironmental.com

Re: Triangle Sewer Pipeline Project, Riverside County

Dear Ms. Zepeda-Herman:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Pechanga Band of Luiseno Indians on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Riverside County
2/28/2020

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia — Juaneno
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos — Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Pechanga Band of Luiseno Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Triangle Sewer Pipeline Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
2/28/2020

Quechan Tribe of the Fort Yuma Reservation
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

San Luis Rey Band of Mission Indians
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

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CONFIDENTIAL ATTACHMENTS

Are not for public review