Mitigated Negative Declaration

Rancho Santa Margarita Recycled Water System Project

APRIL 2024

Prepared for:

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
AFY	acre-feet per year
AQMP	Air Quality Management Plan
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	methane
CHRIS	California Historical Resources Information Systems
City	City of Rancho Santa Margarita
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Orange
dBA	A-weighted decibel
EIR	Environmental Impact Report
EOP	Emergency Operations Plan
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HCP	Habitat Conservation Plan
ID	Improvement District
ips	inches per second
IS	Initial Study
L_{eq}	equivalent sound level
LST	localized significance threshold
MND	Mitigated Negative Declaration
MM	Mitigation Measure
MRZ	Mineral Resource Zone
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NSR	noise-sensitive receptor

Acronym/Abbreviation	Definition
O_3	ozone
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PPV	peak particle velocity
PRC	California Public Resources Code
project	Rancho Santa Margarita Recycled Water System Project
ROW	right-of-way
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCS	Sustainable Communities Strategy
SMWD	Santa Margarita Water District
SOx	sulfur oxides
SR	State Route
SRA	Source Receptor Area
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
VOC	volatile organic compound

1 Introduction

1.1 Background

The Santa Margarita Water District (SMWD), established in 1964, provides water and wastewater treatment services to more than 200,000 residents and businesses in portions of Mission Viejo, Rancho Santa Margarita, San Juan Capistrano, Coto de Caza, Las Flores, Ladera Ranch, the Village of Sendero and Esencia, and Talega in San Clemente. SMWD is the second largest retail water agency in Orange County, by area, and third largest by number of customers. SMWD is divided into nine Improvement Districts (IDs), which function as operating units of SWMD. These IDs also allow SMWD to meet the diverse needs of specific service areas, factoring in land use, topography, ownership lines, water supply, and wastewater treatment needs.

SMWD has one of the largest recycled water programs in Orange County, currently meeting approximately 25% of its total water demand (SMWD 2023). Municipal wastewater collected by the SMWD system is treated to State of California recycled water standards at SMWD's Chiquita Water Reclamation Plant. In addition, SMWD purchases recycled water from Trabuco Canyon Water District, Moulton Niguel Water District, Irvine Ranch Water District, and the City of San Clemente. The District is in the process of rebuilding the Oso Creek Water Reclamation Plant for recycled water production. Recycled water is conveyed by a purple-pipe system for use as non-potable irrigation water for homeowners' association landscaping, parks, and golf courses. Recycled water is also used to fill Lake Mission Viejo, after treatment by a reverse-osmosis system. The recycled water system reduces SMWD's reliance on imported water, and reduces the volume of treated wastewater that must be discharged into the ocean.

Under current conditions, irrigation water within the Northern portion of Coto de Caza (ID 2) and City of Rancho Santa Margarita (ID3 and 4a) is supplied with potable resources from SMWD. In an effort to reduce its dependence on imported water, SMWD is proposing to expand its recycled water system with a master plan project referred to as the Rancho Santa Margarita Recycled Water System Project (proposed project or project). This project would extend SMWD's recycled water service to ID 3 and ID 4A in the City of Rancho Santa Margarita, and ID 2 in the unincorporated Orange County community of Coto de Caza. Implementation of the proposed project would allow for the delivery of up to 4,000 acre-feet per year (AFY) of additional tertiary-treated recycled water to dedicated irrigation customers.

1.2 California Environmental Quality Act Compliance

Implementation of the project is subject to compliance with the California Environmental Quality Act (CEQA), with SMWD serving as the lead agency. Based on the findings of this Initial Study (IS), SMWD has made the determination that a Mitigated Negative Declaration (MND) is the appropriate environmental document to be prepared in compliance with CEQA (California Public Resources Code Section 21000 et seq.) because the project would not result in any impacts on the environment that cannot be mitigated to less-than-significant levels by measures identified in the MND.

This MND was prepared by SMWD and is in conformance with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of this MND and IS checklist is to determine any potentially significant impacts associated with the project, and to incorporate mitigation measures into the project design, as necessary, to reduce

or eliminate significant or potentially significant effects. As determined in this MND, the project would not have a significant impact on the environment.

1.3 List of Discretionary Actions

Approval of the following discretionary actions will be required to implement the proposed project:

- Approval of the project by the SMWD Board of Directors
- City of Rancho Santa Margarita Encroachment Permit (for work in City of Rancho Santa Margarita streets)
- County of Orange (County) Encroachment Permit (for work in County streets)

1.4 Other Agencies that May Use the Mitigated Negative Declaration

This MND is intended for use by responsible and trustee agencies that may have an interest in reviewing the project. All responsible and trustee agencies for the project, listed below, will be asked to review this document:

- California Water Resources Control Board Division of Drinking Water
- San Diego Regional Water Quality Control Board
- County of Orange, Public Works Department
- Orange County Health Care Agency, Department of Environmental Health
- City of Rancho Santa Margarita
- City of Mission Viejo

2 Project Description

2.1 Project Location

The project site is within various developed areas of the City of Rancho Santa Margarita and the unincorporated communities of Coto de Caza and Las Flores, within southeastern Orange County. One small component is in the City of Mission Viejo. The project site is east of Interstate 5 and is bisected by State Route (SR) 241 (Figure 1, Project Location).

2.2 Environmental Setting

Rancho Santa Margarita and adjacent project areas are southwest of the Santa Ana Mountain foothills and feature a mixture of residential, commercial, and industrial uses, along with developed public parks and undeveloped open space. Development occurred as a series of planned communities prior to the City of Rancho Santa Margarita's incorporation in January 2000 (City of Rancho Santa Margarita 2019). The planned communities that joined together to create the City of Rancho Santa Margarita consist of Rancho Santa Margarita, Rancho Trabuco, Robinson Ranch, and Dove Canyon. The City of Rancho Santa Margarita's commercial and industrial development is in its central portion, on either side of SR-241. Portions of O'Neill Regional Park, which is owned and operated by the Orange County Parks Department, are within Rancho Santa Margarita's municipal boundaries, including a long canyon oriented northeast to southwest across Rancho Santa Margarita.

The unincorporated community of Coto de Caza is south of Rancho Santa Margarita's eastern portion. Coto de Caza features a mixture of residential and commercial development, public parks, undeveloped open space, and golf course land. The unincorporated community of Las Flores is primarily residential, with commercial and school uses, and is south of Rancho Santa Margarita's western portion.

Most of the project's impact area would occur within existing paved roads through developed areas that traverse the area's hilly topography and provide access to local residences and other uses. The project's reservoir and pump stations are proposed within or adjacent to existing developed SMWD facilities, including existing tanks, pump stations, and the Portola Reservoir, on property owned by SMWD.

2.3 Project Characteristics

2.3.1 Proposed Facilities

The project would entail construction and operation of SMWD infrastructure to extend its existing recycled water service within Rancho Santa Margarita and adjacent unincorporated County land. The project proposes installation of approximately 95,000 linear feet (approximately 18 miles) of 8-inch-, 12-inch-, 16-inch-, and 18-inch-diameter pipes. Most proposed pipelines would run parallel to existing SMWD potable water pipelines beneath existing City and County roads, consisting of Antonio Parkway, Avenida de las Banderas, Avenida Empresa, Santa Margarita Parkway, Avenida de las Flores, Melinda Road, Coto de Caza Drive, and smaller collector streets within residential and commercial developments. A new aboveground reservoir tank would be constructed to store recycled water for distribution flexibility. The new tank is proposed in an undeveloped area on property owned by SMWD north of Los Alisos Boulevard and adjacent to an existing SMWD tank and pipelines. A new pump station is proposed south

of the Portola Reservoir on developed SMWD property. The existing Eastbrook Recycled Water Pump Station would be expanded to provide additional pumping capacity. Upon completion, the project would permanently convert an estimated approximately 4,000 acre-feet per year of residential and commercial irrigation demand from potable to recycled water.

The facilities proposed for this project have not yet entered the engineering design phase. Project description information provided in this MND is for CEQA-related informational purposes, and serves as the basis for assumptions used in the environmental impact analysis (Figures 2A–2J, Pipeline Alignment and System Details).

2.3.1.1 Recycled Water Pipelines

Recycled water pipelines would be an assortment of 8-inch-, 12-inch-, 16-inch-, and 18-inch-diameter pipes made of PVC material. Pipeline would be installed via trenches within existing roadways and parallel to SMWD potable water pipes. Trenches would reach up to 6 feet below finished ground surface and have a maximum width of 3 feet. Appurtenant facilities, such as isolation valves, would be installed along the alignment, and existing potable-water meters would be replaced with recycled-water meters at customer connection points. Trench installation would require temporary lane closures that would be implemented pursuant to a traffic control plan to be prepared by the contractor. The portions of the roads affected by trenching would be repaved and restriped, where applicable, following completion of the pipeline installation and backfilling. No permanent changes to roads or traffic configuration would be required.

Pipeline installation would occur in the following roads, listed according to land-use jurisdiction.

City of Rancho Santa Margarita

- Alma Aldea
- Antonio Parkway
- Arroyo Vista
- Avenida De Las Banderas
- Avenida De Las Flores
- Avenida De Los Fundadores
- Avenida Empresa
- Buena Suerte
- Camino Altozano
- Coto de Caza Drive
- El Corazon
- El Paso
- El Prado
- Esperanza Road
- Los Alisos Boulevard
- Melinda Road
- Santa Margarita Parkway
- Segada
- Trabuco Canyon Road
- Vereda-Laguna
- Via Arribo
- Via Con Dios
- Via Melina
- Via Regressos
- Via Ricardo

City of Mission Viejo

- Melinda Road
- Santa Margarita Parkway

Unincorporated Orange County

- Alta Vista Ranch Road
- Antonio Parkway
- Coto de Caza Drive
- Oso Parkway
- Trigo Trail

2.3.1.2 Trabuco Hills Recycled Water Reservoir and Pump Station

The project would entail construction of a new recycled water reservoir and pump station in the northwestern reach of the proposed system, referred to as the Trabuco Hills Recycled Water Reservoir and pump station. This facility would be built on partially undeveloped SMWD property adjacent to an existing SMWD reservoir north of Los Alisos Boulevard and approximately 1,000 feet east of the Upper Oso Reservoir. Recycled water piping would be installed by trench in the existing SMWD access road connecting the tank site to Los Alisos Boulevard. The reservoir would be an aboveground cylindrical metal tank and would be painted white, similar to the adjacent existing tank. Pumps and mechanical equipment would be housed inside a small structure made of concrete block with a tiled roof. Construction of this facility would require clearing native vegetation from a small hill and excavating material to create a suitable elevation and level foundation for the proposed tank. The impact analysis assumes excavation and off-site export of approximately 12,500 cubic yards of earth material at this location, and import of approximately 100 cubic yards of earth material for engineered fill beneath the tank's foundation. The project would involve construction of a paved apron around the reservoir tank for maintenance access, extending the pavement that currently surrounds the existing tanks.

2.3.1.3 Portola Reservoir Recycled Water Pump Station

The project would involve construction of a small pump station on SMWD property immediately south of the Portola Reservoir. This facility would be placed in a developed area adjacent to the SMWD access road that surrounds the reservoir, which is kept clear of vegetation and is used for equipment staging and other reservoir operations uses. The pumps and mechanical equipment would be housed inside a small structure made of concrete block with a tiled roof. Piping would be installed within the SMWD access road connecting to Trigo Trail to the west.

2.3.1.4 Eastbrook Recycled Water Pump Station Expansion

The project would entail adding pumps to SMWD's existing Eastbrook Recycled Water Pump Station in the City of Mission Viejo, located immediately south of Santa Margarita Parkway and its intersection with Pinecrest, and just east of Oso Creek. The expansion would entail partial demolition of the existing building and reconstruction of walls and roof to increase the building's size, along with relocation of existing piping and electrical equipment. The existing paved access and maintenance area would be reconfigured, and fences and gates would be realigned.

2.3.2 Project Construction and Scheduling

A detailed implementation schedule has not yet been developed for this project. It is likely that the project would be constructed in a series of four or five phases, with the pipelines and other facilities associated with the system's individual pressure zones completed as a single project, and then moving on to another pressure zone once the previous phase is complete. Because a detailed schedule has not been developed, the environmental impact analysis in this MND assumes that the project would be constructed as a single phase over the span of 1 year, including concurrent construction of the new reservoir, construction of the new pump station, and expansion of the

existing pump station. Under this single-phase scenario, pipeline trenching, installation, and repaving is assumed to occur for an 11-month period for the overall project. However, work at individual pipe installation areas would last for a much shorter period, with workers excavating, installing, and backfilling trenches of shorter segments as they move along the alignment.

Project Design Features and Best Management Practices

All project components would be designed and built in accordance with the seismic design provision of the International Building Code and the California Building Code. Additionally, all facets of excavation, construction, and facility design would meet the standards established during final engineering design. Specifically, this would include measures such as the proper composition, placement, and compaction of all construction fill; the use of additional foundation design techniques as necessary; and the use of appropriate construction materials and methods. To reduce impacts during construction, SMWD will include the following project features, as needed:

- Best available control measures shall be used during construction to reduce particulate emissions and reduce soil erosion and trackout through the following project features:
  - Construction staff shall cover or water, as needed, any on-site stockpiles of debris, dirt, or other dusty material.
  - Construction staff shall use adequate water and/or other dust palliatives on all disturbed areas to avoid particle blow-off.
  - Construction staff shall wash down or sweep paved streets as necessary to control trackout or fugitive dust.
  - Construction staff shall cover or tarp all vehicles hauling dirt or spoils on public roads if sufficient freeboard is not available to prevent material blow-off during transport.
  - Construction staff shall use gravel bags and catch basins during ground-disturbing operations.
  - Construction staff shall maintain appropriate soil moisture, apply soil binders, and plant stabilizing vegetation.
- During construction, equipment emissions shall be reduced through the following project features:
  - Construction staff shall properly tune and maintain construction equipment.
  - Construction management staff shall encourage carpooling by all construction workers.
  - Any necessary lane closures shall be limited to off-peak travel periods to the maximum extent feasible.
  - Construction staff shall park construction vehicles off traveled roadways.
  - Construction management shall encourage receipt of materials during non-peak traffic hours.

2.3.3 Operations and Maintenance

The proposed facilities would be operated remotely from SMWD headquarters and would not be permanently staffed. The new reservoir and pump station would become part of the SMWD's regular patrol route and its regular inspection and maintenance schedules. Pumps would run during water deliveries, but would be inside enclosed structures that would minimize noise received outside the facilities.

2.4 Project Purpose and Need

The project's purpose is to reduce SMWD's reliance on imported water by increasing its capacity to deliver recycled water for irrigation and other non-potable uses. The increased delivery capacity would also reduce the region's volume of treated wastewater that must be discharged into the ocean.

3 Initial Study Checklist

1. **Project title:**

   Rancho Santa Margarita Recycled Water System Project

2. **Lead agency name and address:**

   Santa Margarita Water District
   26111 Antonio Parkway
   Rancho Santa Margarita, California 92688

3. **Contact person and phone number:**

   Tricia Butler
   triciab@smwd.com
   949.459.6554

4. **Project location:**

   Rancho Santa Margarita, California 92688

5. **Project sponsor's name and address:**

   Santa Margarita Water District

6. **General plan designation:**

   Pipeline alignment: Occurs within existing streets and the SMWD right-of-way (ROW); surrounding land includes City of Rancho Santa Margarita: Residential (Low, Medium, and High), Business Park, Community Facility, Commercial General, Commercial Neighborhood, Open Space, Open Space Golf, and Park; and Orange County: Suburban Residential

   Trabuco Hills Recycled Water Reservoir and Pump Station: Open Space (City of Rancho Santa Margarita 2023)

   Portola Reservoir Recycled Water Pump Station: Suburban Residential (County of Orange 2015)

   Eastbrook Recycled Water Pump Station Expansion: Residential 30 (City of Mission Viejo 2023)

7. **Zoning:**

   Pipeline alignment: Occurs within existing streets and the SMWD ROW; surrounding land includes City of Rancho Santa Margarita: Residential – Low Density (RL-6000 and RL-5000), Residential – Medium Density (RM-3000-D and RM-2000-A), Residential – High Density (RH), Open Space (OS), Commercial Neighborhood (CN), Commercial – General (CG), Public/Quasi-Public (PQ), and Park (P) (City of Rancho Santa Margarita 2015); and Orange County: Suburban Residential (County of Orange 2015)

Trabuco Hills Recycled Water Reservoir and Pump Station: Open Space (OS) (City of Rancho Santa Margarita)

Portola Reservoir Recycled Water Pump Station: Suburban Residential (Orange County)

Eastbrook Recycled Water Pump Station Expansion: RPD 30 (City of Mission Viejo)

In Rancho Santa Margarita, a portion of the alignment is within the Las Flores Planned Community Program. The area surrounding the alignment within the community of Las Flores is zoned as a planned community (City of Rancho Santa Margarita 2015).

8. **Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):**

The project would involve installation of approximately 95,000 linear feet (approximately 18 miles) of recycled water pipeline in existing paved roads. A new aboveground water reservoir tank would be constructed in an undeveloped area adjacent to an existing SMWD tank to store recycled water for distribution. A new pump station is proposed south of the Portola Reservoir on developed SMWD property, and the existing Eastbrook Recycled Water Pump Station would be expanded to provide additional pumping capacity. Upon completion, the project would permanently convert an estimated approximately 4,000 AFY of residential and commercial irrigation demand from potable to recycled water.

9. **Surrounding land uses and setting (Briefly describe the project's surroundings):**

The project would be located in developed areas within Rancho Santa Margarita, Orange County, and Mission Viejo. Surrounding development is mostly residential, but also includes commercial, business park, park, and institutional uses, as well as open space.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

No other public agency approval is required.

11. **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.?**

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Yes. See Section 3.18, Tribal Cultural Resources, for further detail.

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 and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

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 will be prepared.

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

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

4-4-24

Date

3.1 Aesthetics

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS –** Except as provided in Public Resources Code Section 21099, would the project**:**				
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 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 which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a) Would the project have a substantial adverse effect on a scenic vista?

Less-Than-Significant Impact**.** The project's permanent aboveground components would include the proposed Trabuco Hills Reservoir, a new pump station south of the Portola Reservoir, and expansion of the Eastbrook Recycled Water Pump Station. None of these project components would be visible from a publicly accessible scenic vista to the extent that the additional features would cause a significant impact pursuant to CEQA.

The Orange County General Plan Transportation Element includes a Scenic Highway Plan that designates certain roads within Orange County and incorporated cities as landscape corridors and viewscape corridors. Per the Transportation Element, "A viewscape corridor is a route which traverses a corridor within which unique or unusual scenic resources and aesthetic values are found" (County of Orange 2005a). Landscape corridors "[traverse] developed or developing areas and [have] been designated for special treatment to provide a pleasant driving environment as well as community enhancement" (County of Orange 2005a). Project-related portions of Santa Margarita Parkway and Trabuco Canyon Road are designated as viewscape corridors, and other portions of Santa Margarita Parkway, Avenida Empressa, Antonio Parkway, and Oso Parkway are designated as landscape corridors. The project does not propose permanent features that would be visible from these corridors. Temporary construction activities would be visible along the corridors during trench installation, but that temporary change in the visual setting would not constitute a

significant impact pursuant to CEQA. If landscaping within these corridors must be removed for pipeline installation, it would be returned to pre-existing conditions.

North of the project site, portions of Live Oak Canyon Road, El Toro Road, and Trabuco Canyon Road are also designated as viewscape corridors. The project's proposed aboveground reservoir would not be visible from these corridors due to distance and/or intervening topography.

Because the project's impact on scenic vistas would be limited to temporary visibility of construction activity in areas that would return to their pre-project condition after completion of the work, impacts to scenic vistas would be less than significant.

b) Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no dedicated state scenic highways in the vicinity of the proposed project. According to the California Department of Transportation (Caltrans 2019), the nearest officially designated scenic highway is SR-91 from SR-55 to the eastern city limit of Anaheim. SR-74, which runs through Orange County between Interstate 5 in the west and Interstate 15 in the east, is a highway that is eligible for designation as a state scenic highway, but is not officially designated. SR-74 is approximately 5.3 miles south of the project site and would not be visible from this distance. For local context, see Section 3.1(a). Because the project would not be visible from a state scenic highway, there would be no impact.

c) In non-urbanized areas, would the project 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 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?

Less-Than-Significant Impact. California Public Resources Code (PRC) Section 21071 defines an "urbanized area" as "(a) an incorporated city that meets either of the following criteria: (1) Has a population of at least 100,000 persons, or (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons." As of January 1, 2019, the estimated population in Rancho Santa Margarita was 49,051 persons (DOF 2020). The City of Mission Viejo, west of Rancho Santa Margarita, has an estimated population of 94,766 persons (DOF 2020). Additionally, part of the project would be located in the unincorporated community of Las Flores, which does not fall within the definition of an urbanized area per PRC Section 21071. As such, the project site is analyzed as both an urbanized and non-urbanized area.

The proposed project would involve installation of new recycled water pipelines, a new aboveground reservoir tank, a new pump station, and expansion of an existing pump station. Minor components of the proposed project would include installation of isolation valves and replacement of existing potable-water meters with recycled-water meters. The aforementioned project components would be located within existing roadways and the SMWD ROW. As discussed in Section 3.1(b), construction of the proposed pipelines would result in temporary visual impacts during construction; however, these impacts would be temporary, and upon completion of construction, would not be visible (for the pipeline installation).

The reservoir would be an aboveground cylindrical metal tank and would be painted white, similar to the adjacent existing tank. Pumps and mechanical equipment would be housed inside a small structure made of concrete block with a tiled roof. Expansion of the existing pump station would entail partial demolition of the existing building and reconstruction of walls and the roof to increase the building's size. The existing paved access and maintenance area would be reconfigured, and fences and gates would be realigned. However, these facilities already exist and expansion would not substantially alter the visual character of the site. The new pump station would consist of a small structure made of concrete block with a tiled roof on a site that is currently used for equipment staging and other reservoir operations uses.

The reservoir and pump station site is designated and zoned as Open Space, which is the same as the adjacent existing reservoir. The new pump station site is designated and zoned as Suburban Residential; however, it is currently being used for similar uses, and due to its proximity to the reservoir, would not be used as residential.

Therefore, the project would not conflict with applicable zoning or any regulations governing scenic quality. With regard to degradation of the existing visual character or quality of the site, impacts would be less than significant.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less-Than-Significant Impact. Pipeline installation would not create new sources of light or glare. If nighttime work is proposed, construction lighting would be directed downward toward the work area so as not to spill into residential areas or open space. The proposed reservoir tank and pump station would not be located in a highly visible area, and glare would be prevented by its flat white coating, similar to the existing adjacent tank. Limited security lighting would be installed at the new reservoir tank and pump stations, but this low-level and downward-directed lighting would not create substantial new sources of nighttime light that would affect adjacent residential areas or open space. Therefore, the project's impact related to light and glare would be less than significant.

3.2 Agriculture and Forestry Resources

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FORESTRY RESOURCES** – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
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 12220(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?	☐	☐	☐	☒

a) ***Would the project 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?***

No Impact. Based on farmland maps prepared by the California Department of Conservation, the project site is not in an area designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The site is designated as "Urban and Built Up" (DOC 2016). Therefore, no impacts associated with conversion of Important Farmland would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Williamson Act, also known as the California Land Conversion Act of 1969 (California Government Code, Section 51200 et seq.), preserves agricultural and open space lands from the conversion to urban land uses by establishing a contract between local governments and private landowners to voluntarily restrict their land holdings to agricultural or open space use. The project site is not located on any lands with Williamson Act contracts. In addition, the project site and surrounding area are not zoned for agricultural uses, but for residential, commercial, business park, and open space uses (City of Rancho Santa Margarita 2015). As such, implementation of the proposed project would not conflict with existing zoning for agricultural use or land under a Williamson Act contract. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and there would be no impact.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The proposed project location is not zoned as forest land, timberland, or a Timberland Production Zone, as defined by the above-referenced government regulations. The closest area that is designated as forest land is the Cleveland National Forest, which is 1.5 miles east of the project site. The proposed project would not impact and/or rezone any forest land in the Cleveland National Forest. Therefore, the project would not conflict with existing zoning of such lands, and there would be no impact.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. Refer to Section 3.2(c). No forest land would be lost or converted to non-forest use as a result of the project, and there would be no impact.

e) Would the project 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?

No Impact. Refer to Sections 3.2(a) and 3.2(c). The proposed project would not result in the conversion of farmland to non-agricultural use, nor would the proposed project be located within land considered to be forest land. Therefore, the project would not result in the conversion of additional farmland to non-agricultural use or the conversion of forestland to non-forest use, and there would be no impact.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
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?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

This section is based on technical analysis conducted by Dudek, including quantitative estimates of air pollutant emissions based on assumptions developed in consultation with SMWD and project engineers. The results of the emissions estimates are provided as Appendix A to this MND, Air Quality and Greenhouse Gas Emissions Calculations.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less-Than-Significant Impact. Rancho Santa Margarita is within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. SCAB is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD).

The most-recently adopted Air Quality Management Plan (AQMP) for the SCAQMD is the 2022 AQMP (SCAQMD 2022), which was adopted by the SCAQMD governing board on December 2, 2022. The 2022 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2022 AQMP was developed to address the requirements for meeting the U.S. Environmental Protection Agency's National Ambient Air Quality Standards (NAAQS) for ground-level ozone (O_3). The SCAB is classified as an "extreme" non-attainment area, and the Coachella Valley is classified as a "severe-15" non-attainment area for the 2015 O_3 NAAQS. The strategies of the 2022 AQMP include wide adoption of zero-emissions technologies, low oxides of nitrogen (NOx) technologies where zero-emission technologies are not feasible, federal action, zero-emission technologies for residential and industrial sources, incentive funding in environmental justice areas, and prioritizing benefits for the most disadvantaged communities (SCAQMD 2022).

The purpose of a consistency finding regarding the AQMP is to determine if a project is consistent with the assumptions and objectives of the AQMP, and if it would interfere with the region's ability to comply with federal and state air quality standards. The SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3, of the SCAQMD CEQA Air Quality Handbook. These criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- **Consistency Criterion No. 2:** Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion, project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed in Section 3.3(b). Detailed results of this analysis are included in Appendix A. As presented in Section 3.3(b), the proposed project would not generate criteria air pollutant emissions that exceed SCAQMD's thresholds during construction or operations, and the project would therefore be consistent with Criterion No. 1.

The second criterion regarding the potential of the proposed project to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the proposed project's land use designations and its potential to generate population growth. In general, projects are considered consistent with, and not in conflict with or obstructing implementation of, the AQMP if the growth they produce in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (SCAQMD 1993).

The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2020), which is based on general plans for cities and counties in the region, for development of the AQMP emissions inventory.[1] The SCAG 2020 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the 2022 AQMP is generally consistent with local government plans. The proposed alignment is within existing streets and the SMWD ROW. A portion of the alignment is within the Las Flores Planned Community Program. The areas surrounding the alignment within the community of Las Flores are designated as Residential and Open Space. The project would be consistent with the City of Rancho Santa Margarita General Plan Land Use Element, and the Las Flores Planned Community Program. According to the City's Land Use Element (City of Rancho Santa Margarita 2020a), as development continues in Rancho Santa Margarita, utilities and public services must be available for new and existing businesses and residents. The Public Facilities and Services portion of the Land Use Element addresses the availability of utilities and services for planned development, including

[1] Information necessary to produce the emissions inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including the California Air Resources Board, California Department of Transportation, and the Southern California Association of Governments (SCAG). Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socioeconomic and transportation activities projections in its 2020–2045 RTP/SCS are integrated in the 2022 AQMP (SCAQMD 2022).

water supply, treatment, and distribution; sewer treatment; solid waste; drainage/flood control; fire protection and emergency services; law enforcement; public education; parks; community centers and recreational opportunities; and libraries. As such, the Public Facilities and Services portion of the Land Use Element ensures that adequate utilities and services are available for planned development. Therefore, implementation of the proposed project would be consistent with the Rancho Santa Margarita General Plan Land Use Element. Additionally, according to the Las Flores Planned Community Program (County of Orange 1990), public utilities buildings, structures, and facilities, including electrical, natural gas, cable, water, sewage, and telephone, and their operation, storage, distribution, and production facilities, are permitted within any planning area of the Las Flores Planned Community.

The proposed project would involve new recycled water pipelines within the SMWD ROW, a new reservoir, a new pump station, and expansion of an existing pump station, and implementation of the project would not generate an increase in population or employment that would conflict with existing projections. Additionally, as detailed above, the project is consistent with the existing land use designations. Accordingly, the proposed project is consistent with the forecasts used in the SCAQMD AQMP development.

In summary, based on the considerations presented for the two criteria, impacts relating to the proposed project's potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

b) Would the project 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?

Less-Than-Significant Impact. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are used to determine whether a project's individual emissions would have a cumulatively considerable contribution to air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

A quantitative analysis was conducted to determine whether the proposed project might result in emissions of criteria air pollutants that may cause exceedances of the NAAQS or California Ambient Air Quality Standards (CAAQS), or cumulatively contribute to existing nonattainment of ambient air quality standards. Criteria air pollutants include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}) (course particulate matter), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$) (fine particulate matter), and lead. Pollutants that are evaluated herein include volatile organic compounds (VOCs) and NO_X, which are important because they are precursors to O_3, as well as CO, sulfur oxides (SO_X), PM_{10}, and $PM_{2.5}$.

Regarding NAAQS and CAAQS attainment status,[2] the SCAB is designated as a nonattainment area for federal and state O_3 and $PM_{2.5}$ standards (CARB 2023; EPA 2021). The SCAB is also designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. The SCAB is designated as an attainment area for federal and state CO and NO_2 standards, as well as for state sulfur dioxide standards. Although the SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated as attainment for the state lead standard.[3]

The proposed project would result in emissions of criteria air pollutants for which the California Air Resources Board (CARB) and U.S. Environmental Protection Agency have adopted ambient air quality standards (i.e., the NAAQS and CAAQS). Projects that emit these pollutants have the potential to cause, or contribute to, violations of these standards. The SCAQMD CEQA Air Quality Significance Thresholds, as revised in March 2023, set forth quantitative emissions significance thresholds for criteria air pollutants that, if exceeded, would indicate the potential for a project to contribute to violations of the NAAQS or CAAQS. Table 1 lists the SCAQMD Air Quality Significance Thresholds (SCAQMD 2023).

Table 1. South Coast Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds (pounds per day)		
Pollutant	**Construction**	**Operation**
VOC	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
Toxic Air Contaminants and Odor Thresholds		
Toxic air contaminants[b]	Maximum incremental cancer risk ≥10 in 1 million Cancer Burden >0.5 excess cancer cases (in areas ≥1 in 1 million) Chronic and Acute Hazard index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

Source: SCAQMD 2023.

Notes: VOC = volatile organic compound; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); SCAQMD = South Coast Air Quality Management District

[a] The phase-out of leaded gasoline started in 1976. Because gasoline no longer contains lead, the proposed project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

[b] Toxic air contaminants include carcinogens and noncarcinogens.

[2] An area is designated as in attainment when it is in compliance with the National Ambient Air Quality Standards (NAAQS) and/or the California Ambient Air Quality Standards. These standards for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare are set by the U.S. Environmental Protection Agency and California Air Resources Board, respectively. Attainment = meets the standards; attainment/maintenance = meets the standards after a nonattainment designation; nonattainment = does not meet the standards.

[3] Re-designation of the lead NAAQS designation to attainment for the Los Angeles County portion of the SCAB is expected based on current monitoring data. The phase-out of leaded gasoline started in 1976. Because gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

The project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the proposed project's emissions exceed the SCAQMD VOC or NO_X thresholds shown in Table 1. These emission-based thresholds for O_3 precursors are intended to serve as surrogates for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (i.e., VOCs and NO_X) on O_3 levels in ambient air is difficult to reliably and meaningfully determine.

The California Emissions Estimator Model (CalEEMod) Version 2022.1 was used to estimate emissions from construction and operation of the project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction and operational activities from a variety of land use projects. The following discussion summarizes the quantitative project-generated construction and operational emissions and impacts that would result from implementation of the project. Detailed results of this analysis are provided in Appendix A.

Construction Emissions

Construction of the proposed project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (e.g., off-road construction equipment, demolition of asphalt, soil disturbance, and VOC off-gassing from asphalt pavement application) and off-site sources (e.g., vendor trucks, haul trucks, and worker vehicle trips). Specifically, the exposure of earth surfaces to wind from the direct disturbance and movement of soil can result in entrained dust and PM_{10} and $PM_{2.5}$ emissions. Internal combustion engines used by construction equipment, haul trucks, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$. Application of asphalt pavement and architectural coating would also produce VOC emissions. Construction emissions can vary substantially from day to day depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions.

For purposes of estimating proposed project emissions and based on information provided by SMWD and project engineers, it is assumed that construction of the project would commence in January 2025 and would last through January 2026. During pipeline trenching/demolition activities, 31,680 cubic yards of material would be exported and 31,680 cubic yards would be imported to the site.

Default values for horsepower and load factor provided in CalEEMod were used for all construction equipment, and the equipment mix was provided by project engineers. For the analysis, it was assumed that heavy-duty construction equipment would be operating at the site 5 days per week for a duration of 8 hours per day (Table 2). Detailed construction-equipment modeling assumptions are provided in Appendix A.

Table 2. Construction On-Road Vehicle and Equipment Use per Day

Construction Phase	Start Date	End Date	On-Road Vehicles (one-way trips per day)			Equipment (per day)	
			Worker Trips	Vendor Truck Trips	Haul Truck Trips	Type	Number
Site Preparation/ Grading Activities at Trabuco Hills Reservoir and Pump Station	1/1/25	3/31/25	18	2	20	Loader Excavator Roller	1 1 1
Portola Pump Station Building Grading	1/1/25	2/28/25	18	8	2	Loader Excavator Roller	1 1 1
Grading for Eastbrook Recycled Water Pump Station	1/1/25	1/31/25	8	2	2	Loader Excavator Roller	1 1 1
Pipeline Installation Trenching	1/1/25	11/30/25	60	4	28	Excavator Backhoe Loader Roller	3 3 3 3
Paving for Pipelines	1/1/25	11/30/25	28	48	0	Paver Roller Rubber-Tired Roller	1 1 1
Portola Pump Station Building Mechanical/ Electrical (Building Construction)	3/1/25	11/30/25	14	8	0	Crane Forklift	1 1
Architectural Coating for Portola Pump Station	12/1/25	12/15/2025	6	4	0	Air Compressor	1
Expansion of Existing Pump Station (Eastbrook Recycled Water Pump Station)	1/1/25	11/30/25	18	32	0	Crane Forklift	1 1
Architectural Coating for Eastbrook Recycled Water Pump Station	12/1/25	12/15/25	6	4	0	Air Compressor	1
Construction of Reservoir (Trabuco Hills) (Building Construction)	4/1/25	12/31/25	18	32	0	Crane Forklift	1 1

Table 2. Construction On-Road Vehicle and Equipment Use per Day

Construction Phase	Start Date	End Date	On-Road Vehicles (one-way trips per day)			Equipment (per day)	
			Worker Trips	Vendor Truck Trips	Haul Truck Trips	Type	Number
Architectural Coating for Trabuco Hills Reservoir and Pump Station	1/1/26	1/31/26	10	4	0	Air Compressor	2

Source: Appendix A

Emissions generated during construction and operation of the project are subject to the rules and regulations of the SCAQMD. Rule 403, Fugitive Dust,[4] requires implementation of measures to control the emission of visible fugitive/nuisance dust, such as wetting soils that would be disturbed. It was assumed that the active sites would be watered at least two times daily to represent compliance with SCAQMD standard dust control measures in Rule 403. Application of architectural coatings, such as exterior/interior paint and other finishes, and application of asphalt pavement would produce VOC emissions; however, the contractor is required to procure architectural coatings that comply with the requirements of SCAQMD's Rule 1113, Architectural Coatings.[5]

Table 3 shows the estimated maximum daily construction emissions associated with the construction phase of the proposed project.

Table 3. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Construction Season/Year	VOCs	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Summer Emissions						
2025	3.76	35.47	45.19	0.11	7.08	2.38
Winter Emissions						
2025	4.01	37.60	49.45	0.11	7.44	2.48
2026	5.00	1.02	1.65	0.00	0.19	0.06
Maximum of Summer or Winter Emissions	*5.00*	*37.60*	*49.45*	*0.11*	*7.44*	*2.48*
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

4 SCAQMD Rule 403 requires implementation of various best available fugitive dust control measures for different sources for all construction activity within its jurisdictional boundaries. Dust control measures include maintaining stability of soil through pre-watering of site prior to clearing, grubbing, cut and fill, and earth-moving activities; stabilizing soil during and immediately after clearing, grubbing, cut and fill, and other earth-moving activities; stabilizing backfill during handling and at completion of activity; and pre-watering material prior to truck loading and ensuring that freeboard exceeds 6 inches. SCAQMD Rule 403 requires fugitive dust control beyond watering control measures, but compliance with Rule 403 is represented in CalEEMod by assuming twice daily watering of active sites (61% reduction in PM_{10} and $PM_{2.5}$).

5 SCAQMD Rule 1113, Architectural Coatings, requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); SCAQMD = South Coast Air Quality Management District.
See Appendix A for detailed results.

As shown in Table 3, the proposed project's maximum daily construction emissions would not exceed the SCAQMD thresholds for any criteria air pollutant, and impacts would be less than significant.

Operational Emissions

Operation of the project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from area sources, energy sources, and mobile sources, which are discussed below. Emissions from these sources were estimated based on CalEEMod default assumptions for ongoing operations of the project land use. For further detail on the assumptions and results of this analysis, please refer to Appendix A.

Area Sources

Area sources include emissions from consumer products, landscape equipment, and architectural coatings. The area source emissions for consumer products, landscape equipment, and architectural coatings were estimated based on CalEEMod default assumptions for ongoing operations of the project.

Energy Sources

Energy sources include emissions associated with building electricity of the pump stations. The reservoir and recycled water pipelines would not require consumption of electricity. No natural gas would be used during operation of the project. Electricity use for the pump stations would contribute indirectly to criteria air pollutant emissions; however, CalEEMod does not quantify criteria air pollutants from electricity because criteria air pollutant emissions occur at the site of the power plant, which is typically off site. The energy source emissions were estimated based on CalEEMod default assumptions for ongoing operations.

Mobile Sources

Operation of the project would also generate criteria air pollutant emissions from mobile sources (vehicular traffic) as a result of vehicle maintenance trips to and from the project. For purposes of this analysis, it was conservatively assumed that each station would require two passenger worker trips per day. CalEEMod default emission factors representing the vehicle mix and emissions were used to estimate emissions associated with vehicular sources.

Table 4 summarizes the estimated maximum daily emissions associated with operation of the project by source for 2026. As shown, the project's maximum daily operational emissions of VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ would not exceed the SCAQMD's significance thresholds. Complete details of the emissions calculations are provided in Appendix A.

Table 4. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Source	VOCs	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Summer Emissions						
Mobile	0.01	0.01	0.14	0.00	0.03	0.01
Area	0.15	0.00	0.08	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.16**	**0.01**	**0.22**	**0.00**	**0.03**	**0.01**
Winter Emissions						
Mobile	0.01	0.01	0.13	0.00	0.03	0.01
Area	0.14	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.15**	**0.01**	**0.13**	**0.00**	**0.03**	**0.01**
Maximum of Summer or Winter Emissions	*0.16*	*0.01*	*0.22*	*0.00*	*0.03*	*0.01*
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: SCAQMD 2023.
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); SCAQMD = South Coast Air Quality Management District.
The total values may not add up exactly due to rounding.
See Appendix A for detailed results.

As shown in Table 4, project-generated operational emissions would not exceed SCAQMD's emission-based significance thresholds for any criteria pollutant.

Cumulative Emissions

As discussed previously, the SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$, and a California nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operational activities of the proposed project would generate VOC and NO_X emissions (precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. However, as indicated in Tables 3 and 4, project-generated construction and operational emissions would not exceed the SCAQMD emission-based significance thresholds for VOCs, NO_X, PM_{10}, or $PM_{2.5}$.

Cumulative localized impacts would potentially occur if a project were to occur concurrently with another off-site project. Schedules for potential future projects near the project area are currently unknown; therefore, potential impacts associated with two or more simultaneous projects would be considered speculative.[6] However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to

[6] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145).

SCAQMD Rule 403, Fugitive Dust, which sets forth general and specific requirements for all sites in the SCAQMD service area.

Overall, based on the above considerations, the proposed project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts during construction and operation would be less than significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less-Than-Significant Impact. The proposed project would not expose sensitive receptors to substantial pollutant concentrations, as evaluated below.

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, older adults, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include sites such as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993).

The closest off-site sensitive receptors are existing multi-family and single-family residences located along the recycled water pipeline alignment and adjacent to the pump stations and reservoir.

Localized Significance Thresholds

The SCAQMD recommends a localized significance threshold (LST) analysis to evaluate localized air quality impacts to sensitive receptors in the immediate vicinity of a project resulting from project activities. The impacts were analyzed using methods consistent with those in SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2008a). A portion of the proposed project would be located within Source Receptor Area (SRA) 21 (Capistrano Valley). However, the majority of project construction would occur within SRA 19 (Saddleback Valley). Notably, the LSTs for SRA 19 and SRA 21 are the same. As such, this analysis applies the SCAQMD LST values for a 1-acre site within SRA 19 with a receptor distance of 25 meters (82 feet), which is the shortest and most stringent source-receptor distance recommended by the SCAQMD.

Project construction activities would result in temporary sources of on-site criteria air pollutant emissions associated with off-road equipment exhaust and fugitive dust generation. According to the Final Localized Significance Threshold Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2008a). Trucks and worker trips associated with the proposed project are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways because emissions would be relatively brief and would cease once the vehicles pass through the main streets. Therefore, off-site emissions from trucks and worker vehicle trips are not included in the LST analysis.

The maximum daily on-site emissions generated by construction of the proposed project is presented in Table 5 and compared to the SCAQMD localized significance criteria for SRA 19 to determine whether project-generated on-site emissions would result in potential LST impacts.

Table 5. Construction Localized Significance Thresholds Analysis

Construction Year/Season	NO_x	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Summer Emissions				
2025	29.24	36.16	3.34	1.38
Winter Emissions				
2025	29.99	40.78	3.34	1.38
2026	0.90	1.24	0.02	0.02
Maximum Daily On-Site Emissions	*29.99*	*40.78*	*3.34*	*1.38*
SCAQMD LST Criteria[a]	*91.00*	*696.00*	*4.0*	*3.0*
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: SCAQMD 2008a.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix A for detailed results. The values shown are the maximum summer or winter daily emissions results from CalEEMod and reflect control of fugitive dust required by SCAQMD Rule 403.
[a] Localized significance thresholds are shown for a 1-acre disturbed area corresponding to a distance to a sensitive receptor of 25 meters in Source Receptor Area 19, Saddleback Valley.

As shown in Table 5, proposed construction activities would not generate emissions in excess of site-specific LSTs; therefore, localized impacts of the proposed project would be less than significant.

CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed "CO hotspots." The transport of CO is extremely limited, as it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (LOS) (LOS E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

Code of Federal Regulations Title 40, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (Hot-Spot Analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site that is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last 5 years or less at any individual site." Project construction would involve on-road vehicle trips from trucks and workers during construction and minimal maintenance trips during operations. Construction activities would last approximately 267 days and would not require a project-level construction hotspot analysis. Additionally, because the project was conservatively assumed to have four worker trips per day (two worker trips per pump station), a project-level operational hotspot analysis is not required.

Accordingly, the proposed project would not generate traffic that would contribute to potential adverse traffic impacts that may result in the formation of CO hotspots. In addition, because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Based on these considerations, the proposed project would result in a less-than-significant impact to air quality from potential CO hotspots.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. As discussed under the LST analysis, the nearest sensitive receptors to the proposed project are residences located adjacent to the proposed recycled water pipeline construction area, pump stations, and a reservoir. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard California Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. The SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects.[7] The greatest potential for TAC emissions during construction would be diesel particulate matter emissions from heavy equipment operations and heavy-duty trucks. Use of heavy-duty construction equipment is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions, and use of diesel trucks is also subject to an Airborne Toxics Control Measure.

As described for the LST analysis, PM_{10} (representative of diesel particulate matter) exposure would be minimal. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period and duration of activities associated with the proposed project (OEHHA 2015). The duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. The active construction period for the proposed project would be approximately 267 days (1 year and 1 month), after which construction-related TAC emissions would cease. A 1-year and 1-month construction schedule represents a short duration of exposure (approximately 4% of a 30-year exposure period), while cancer and chronic risk from diesel particulate matter are typically associated with long-term exposure. Also, during pipeline construction, construction would proceed along the linear alignment, and therefore would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs.

Due to the relatively short period of exposure at any individual sensitive receptor and the minimal particulate emissions generated, TACs emitted during construction would not be expected to result in concentrations causing significant health risks, which would be a less-than-significant impact. Further, the project would not result in sources of TACs during operations because the project is only anticipated to

[7] Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the proposed project to published reference exposure levels that can cause adverse health effects.

include passenger vehicles associated with maintenance trips, and passenger vehicles are not a source of diesel particulate matter emissions.

Health Impacts of Criteria Air Pollutants

Construction of the proposed project would generate minimal criteria air pollutant emissions and would not exceed the SCAQMD mass-emission thresholds. The SCAB is designated as nonattainment for O_3 for the NAAQS and CAAQS. Thus, existing O_3 levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O_3 generally result in reduced lung function. Because the proposed project would not involve activities that would result in O_3 precursor emissions (i.e., VOCs or NO_X) that would exceed the SCAQMD thresholds, as shown in Tables 3 and 4, the proposed project is not anticipated to substantially contribute to regional O_3 concentrations or their associated health impacts during construction.

In addition to O_3, NO_X emissions contribute to potential exceedances of the NAAQS and CAAQS for NO_2.[8] Exposure to NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. As shown in Tables 3 and 4, construction of the proposed project would not exceed the SCAQMD thresholds for NOx or NO_2. Thus, the proposed project is not expected to result in exceedances of the NO_2 standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, thereby reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as an impact. Thus, the proposed project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as a nonattainment area for PM_{10} under the CAAQS and for $PM_{2.5}$ under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can be transmitted into the lungs and cause serious health problems. Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2023). As with O_3 and NO_X, and as shown in Tables 3 and 4, the proposed project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the SCAQMD's thresholds. Accordingly, the proposed project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause an increase in related health effects for this pollutant.

In summary, the proposed project would not make a potentially significant contribution to regional concentrations of nonattainment pollutants, and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Therefore, impacts would be less than significant.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less-Than-Significant Impact**.** Other emissions associated with the project are anticipated to be limited to odors. The occurrence and severity of potential odor impacts depend on numerous factors. The nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receiving location each contributes to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying, cause distress, and generate citizen complaints.

[8] NO_2 is a constituent of NOx.

The SCAQMD provides a list of land uses associated with odor concerns, which include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding facilities (SCAQMD 1993). The proposed project would involve development of recycled water pipelines, and construction of pump stations and a water reservoir, which is not anticipated to generate new odors or increase emissions of odors. During project construction, exhaust from equipment may produce discernible odors typical of most construction sites. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from the tailpipes of construction equipment. However, such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Accordingly, impacts associated with odors during construction would be less than significant. Further, the project would not result in sources of odor during operations, and impacts would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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 a tree preservation policy or ordinance?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐

The following analysis relies on a biological resources assessment conducted by Dudek biologist Kimberly Narel on May 23, 2023. This assessment included a review of the latest available literature, published research, maps, and soils data, and data on biological resources, special-status habitats, and species distributions to determine those resources that have the potential to occur within the project site and surrounding 100-foot buffer (study area) (Figure 1). A field reconnaissance was conducted to characterize the environmental conditions, vegetation communities/land covers, and plants and wildlife (including habitats) that could be impacted during project implementation.

Vegetation communities and land covers were catalogued and mapped based on existing site conditions. Vegetation communities were mapped according to the California Department of Fish and Wildlife (CDFW) List of Vegetation Alliances and Associations (or Natural Communities List), which is based on A Manual of California Vegetation, Second Edition (Sawyer et al. 2009). Dudek biologists compiled a general inventory of plant and wildlife species detected by sight, calls, tracks, scat, or other field indicators, and made determinations on the potential for special-status species to occur within the study area based on existing conditions.

Dudek biologists conducted a search of CDFW's California Natural Diversity Database (CDFW 2023a, 2023b, 2023c, 2023d, 2023e), the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2023), and the U.S. Fish and Wildlife Service's (USFWS) Environmental Conservation Online Service-Information on Planning and Consultation (USFWS 2023a) to identify special-status biological resources known to occur in the region. The California Natural Diversity Database and California Native Plant Society were searched based on the U.S. Geological Survey's 7.5-minute topographic quadrangle maps for San Juan Capistrano, Canada Gobernadora, El Toro, and Santiago Peak, where the study area is located, as well as the surrounding five U.S. Geological Survey 7.5-minute quadrangle maps (i.e., Laguna Beach, Dana Point, San Clemente, Sitton Peak, and Alberhill). Potential and/or historical drainages and aquatic features were investigated based on a review of U.S. Geological Survey topographic maps (1:24,000 scale), aerial photographs, the National Wetlands Inventory database (USFWS 2023b), and the Natural Resource Conservation Service Web Soil Survey (USDA 2023).

The study area is predominantly developed. The project site is within Rancho Santa Margarita, which contains residential, commercial, and municipal developments; asphalt-paved public ROWs; and open space associated with O'Neil Regional Park. The vast majority of the project's impact areas would occur via trenching within developed ROWs and disturbed habitat, but there are areas containing landscaped ornamental trees associated with public parkways and ROWs. Further, portions of the 100-foot buffer overlap undeveloped portions of open space. In addition, the proposed second water tank for the Trabuco Hills Reservoir lies on sloped coastal sage scrub immediately adjacent to O'Neil Regional Park, which is a reserve system of the Southern Subregion Habitat Conservation Plan (HCP) of Orange County (Figure 3, Southern Subregion HCP). Finally, the Eastbrook Recycled

Water Pump Station abuts Oso Creek, which contains riparian habitat and wetland opportunities. Native coastal sage scrub was observed within the proposed impact area for the Trabuco Hills Reservoir. Specifically, vegetation communities and land cover types observed within the study area during the field assessment include coastal sage scrub (*Artemesia californica* alliance), mixed willow – California sycamore riparian woodland, parks and ornamental plantings, disturbed habitat, and urban/developed land. Vegetation communities and land covers mapped in the study area are depicted in Figures 4A–4J, Biological Resources.

A limited number of wildlife species were observed or detected during the field survey of the study area, including mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), common raven (*Corvus corax*), Bewick's wren (*Thryomanes bewickii*), lesser goldfinch (*Spinus psaltria*), house finch (*Haemorhous mexicanus*), spotted towhee (*Pipilo maculatus*), American crow (*Corvus brachyrhynchos*), and northern mockingbird (*Mimus polyglottus*). A complete list of wildlife and plant species observed in the study area during the biological reconnaissance is included in Appendix B1, Species Compendium.

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less-Than-Significant Impact with Mitigation Incorporated. The project site is predominantly in an urban setting within existing disturbed and developed areas of the Santa Margarita area of Orange County, although there are some areas of undeveloped open space associated with regional and local parks. The proposed project components would be contained within existing ROWs that are lined with ornamental trees, including eucalyptus (*Eucalyptus camaldulensis, E. globulus*) windrows, western sycamore (*Platanus racemosa*), and pines (*Pinus* sp.). One native vegetation community occurs within the project boundaries of the Trabuco Hills Reservoir: coastal sage scrub dominated by California sagebrush (*Artemisia californica*), which can support special-status plants and wildlife. Further, the existing Eastbrook Recycled Water Pump Station abuts Oso Creek, which contains native riparian habitat capable of supporting special-status plants and wildlife (Figures 4A–4J).

A review of the CNPS inventory and California Natural Diversity Database (CDFW 2023) determined that 91 special-status plants and 57 special-status wildlife have been previously recorded within the vicinity of the project site and surrounding eight 7.5-minute U.S. Geological Survey topographic quadrangles (CNPS 2023; USFWS 2023a). Of these species, only two plants and three wildlife species have a moderate to high potential to occur within undeveloped sage scrub and riparian habitat at or in the vicinity of the project site at Trabuco Hills Reservoir and the Eastbrook Recycled Water Pump Station. The other 89 plants and 54 special-status wildlife are not expected to occur or have low potential to occur due to lack of suitable habitat (i.e., substrates and vegetation) (Appendix B2, Special-Status Plants with a Potential to Occur in the Study Area, and Appendix B3, Special-Status Wildlife with a Potential to Occur in the Study Area). No project components are anticipated to encroach into Oso Creek or its associated riparian habitat. Figures 5A–5D, Vegetation Community Impacts, depict proposed project impacts to California sagebrush scrub, upland shortpod mustard (*Hirschfeldia incana*), ornamental vegetation, disturbed habitat, and developed land within the project site.

One special-status wildlife species has a moderate potential to occur within the California sagebrush coastal sage scrub habitat located at the proposed second water tank for Trabuco Hills Reservoir. The federally threatened and state Species of Special Concern coastal California gnatcatcher (*Polioptila californica*

californica) occurs within sloped coastal sage scrub habitats in the region. It has been recorded in the vicinity of the project site within similar habitat, and could occupy habitat within the project site.

Although native coastal sage scrub that could support coastal California gnatcatcher would be impacted by development of a proposed second water tank at Trabuco Hills Reservoir, coastal California gnatcatcher is a Covered Species under the Orange County Southern Subregion Master Streambed Alteration Agreement and Habitat Conservation Plan, of which SMWD is a "Participating Landowner" (County of Orange 2006) (Figure 3). Further, the proposed project, which would involve maintenance, modification, and upgrading existing water facilities and pipelines, is considered a Covered Activity under the Master Streambed Alteration Agreement and HCP. If construction activities occur during the species' breeding season of March through June, there is a potential for direct and indirect impacts to occur if this species is occupying the coastal sage scrub habitat. Project-related indirect impacts to coastal California gnatcatcher would still be significant and would require mitigation to offset impacts and permit the take of a listed species. Therefore, implementation of Mitigation Measure (MM) BIO-1 would be required to reduce potential impacts to coastal California gnatcatcher to less than significant.

Additionally, although the project is not anticipated to impact trees, the project site contains landscaped trees throughout the ROWs and public areas that may provide nesting sites for birds. Birds and their nests are protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3500. The project would not trim or remove landscaped trees on the project site, reducing the potential for a significant direct impact to occur. However, due to the proximity of the trees to the proposed areas of disturbance, the project may result in an indirect impact from construction noise and increased human disturbance if construction activities occur during the general avian nesting season of February through August. Project-related indirect impacts that result in nest failure of a protected bird species and/or its nest would be significant. Implementation of MM-BIO-2 would reduce potential indirect impacts to less than significant.

MM-BIO-1 Coastal California Gnatcatcher. To reduce any potential indirect impacts to nesting coastal California gnatcatchers, a pre-construction survey shall be conducted by a permitted biologist to determine the presence/absence of gnatcatchers at any time of the year. The 1-day survey shall be conducted within 3 days prior to the start of construction and shall focus on all suitable habitat areas within 300 feet of the project site. If a gnatcatcher or nest is found, additional avoidance measures shall be required, such as limiting construction to outside of the species' breeding season of March through June. If project activities must commence during the breeding season and a gnatcatcher has been previously found, a biological monitor must be on site during construction activities adjacent to suitable/occupied habitat to ensure no incidental indirect take of the species occurs. If the monitor determines that an indirect take may occur from project activities, coordination with the U.S. Fish and Wildlife Service shall be required to establish appropriate avoidance measures for a Covered Species that will be impacted by a Covered Activity.

MM-BIO-2 Nesting Birds. To reduce any potential indirect impact to nesting birds, project construction shall commence outside of the general avian nesting season of February through August. If construction activities cannot avoid the nesting season, then a pre-construction survey shall be conducted by a trained biologist to determine the presence/absence of any nesting birds within the project site and 500-foot buffer around the site. If an active nest is found, a suitable buffer based on the species' sensitivity and

proximity to the project site shall be placed around the nest for the duration of the nesting period. Construction may continue within this buffer only at the discretion of a monitoring biologist. The buffer can be removed when the nest is no longer active, as determined by a trained biologist.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less-Than-Significant Impact. The existing Eastbrook Recycled Water Pump Station occurs in the vicinity of riparian habitat associated with Oso Creek, but the proposed pump station expansion is contained within the boundaries of the existing fencing and paved foundation. The portion of Oso Creek within the 100-foot buffer is moderately disturbed by non-native ornamental plantings, including golden wattle (*Acacia pycnantha*) and Peruvian pepper tree (*Schinus molle*), as well as non-native shrubs and forbs accustomed to disturbed areas, including shortpod mustard, tree tobacco (*Nicotiana glauca*), and yellow sweet clover (*Melilotus indicus*). However, dominant species in the tree and shrub overstory include arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), western sycamore, coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), curly docks (*Rumex crispus*), and common cattail (*Typha latifolia*). These native species are characteristic of arroyo willow woodland. Oso Creek contains relatively undisturbed arroyo willow riparian habitat that is listed as an S4 community by CDFW (2023c) and is therefore not considered sensitive. However, because this community is associated with a potentially jurisdictional water feature, project impacts to this community would require permits and mitigation for impacts. Due to the relatively small project footprint of the Eastbrook Recycled Water Pump Station expansion on existing developed land, no direct impacts would occur to the arroyo willow vegetation community through trimming or removal. Furthermore, any potential indirect impact from any of the proposed components of the project would be less than significant with the required best management practices (BMPs) installed during construction as part of the project's Stormwater Pollution Prevention Plan (SWPPP) to comply with the Construction General Permit and National Pollutant Discharge Elimination System (NPDES) permit. These BMPs would prevent any toxics, drainage, or hazards from spilling into the adjacent arroyo willow riparian habitat associated with Oso Creek.

Further, although the California sagebrush vegetation community within the impact area of the proposed Trabuco Hills Reservoir expansion is not considered sensitive by CDFW, if this habitat is occupied by coastal California gnatcatcher, it is considered a sensitive vegetation community. Direct impacts to occupied coastal California gnatcatcher California sagebrush habitat would be a significant impact to sensitive vegetation communities absent mitigation.

In addition, Arroyo Trabuco occurs within the 100-foot buffer of a portion of the proposed recycled water pipeline located immediately east of Santa Margarita Parkway and Alicia Parkway. Arroyo Trabuco supports a relatively undisturbed western sycamore–coast live oak (*Quercus agrifolia*) riparian habitat, as well as unvegetated wash and river bottom that lies beneath the bridge supporting a portion of Santa Margarita Road. This mature riparian woodland is ranked S3 by CDFW and is considered sensitive (CDFW 2023c). No direct impacts to Arroyo Trabuco would occur from construction of the proposed water pipeline because no trimming or removal are anticipated. However, because the western sycamore–coast live oak woodland is associated with Arroyo Trabuco, a potentially jurisdictional water feature, project impacts to this sensitive community would require permits and mitigation for impacts. The same BMPs installed during construction

as part of the project's SWPPP to comply with the Construction General Permit and NPDES permit would prevent any toxins, drainage, and hazards from spilling into Arroyo Trabuco.

Finally, a mature coast live oak woodland vegetation community borders a portion of the proposed recycled water pipeline along Coto De Caza Drive. Coast live oak woodland is ranked S4 by CDFW and is not considered sensitive (CDFW 2023c). No direct impacts would occur to this vegetation community because no trimming or tree removal is anticipated to occur from project implementation. No other components of the project would occur within or adjacent to any sensitive natural communities or riparian habitats; therefore, impacts would be less than significant.

c) Would the project 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?

Less-Than-Significant Impact. Arroyo Trabuco and Oso Creek occur within the 100-foot buffer of a portion of the proposed recycled water pipeline installation and the Eastbrook Recycled Water Pump Station expansion, respectively. Both are potentially subject to regulatory agency jurisdiction under Clean Water Act Sections 404 and 401, and California Fish and Game Code Section 1600 et seq. The recycled water pipeline installation would be contained entirely within existing ROWs, with the exception of a previously graded rectangular swath of shortpod mustard along Antonio Parkway. Arroyo Trabuco lies approximately 200 feet below the bridge supporting Santa Margarita Road, where the proposed recycled water pipeline would be trenched. Further, the Eastbrook Recycled Water Pump Station expansion would be contained entirely within existing fencing and paved foundation. Therefore, the proposed project would not result in a direct impact to either potentially jurisdictional feature. However, there is a potential for indirect impacts to occur during construction activities from toxics and other pollutants being inadvertently discharged into either feature. BMPs installed as part of the project's required SWPPP would reduce potential indirect impacts from spilling into either jurisdictional feature that could pollute and reduce water quality. Additionally, no other project components would be within or adjacent to any jurisdictional feature that could be potentially impacted by the project. Therefore, potential impacts to state or federally protected waters and wetlands would be less than significant.

d) Would the project 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?

No Impact. Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site is contained within existing disturbed and developed areas associated with developments within the Santa Margarita and Coto De Caza areas of Orange County. The project site and Santa Margarita/Coto De Caza are adjacent to undeveloped open space (O'Neil Regional Park, Arroyo Trabuco), but do not contain any potential wildlife corridors or linkages that would support wildlife movement between these open space areas, particularly for small to medium-sized mammals. The project is also not proposing to construct new buildings or aboveground structures that would results in a significant alteration to the land that could prevent wildlife use in the area.

Additionally, no project-related activities would result in the closure or impediment of potential wildlife corridors in the vicinity of the project site. Arroyo Trabuco and O'Neil Regional Park do function as corridors for wildlife movement throughout the region, particularly between the Santa Ana Mountains and the Pacific Ocean. The proposed recycled water pipeline along Santa Margarita Road would be approximately 200 feet above Arroyo Trabuco and would be contained on the bridge, so would not result in any impacts to wildlife movement through this area. Further, Trabuco Hills Reservoir and the California sagebrush scrub within the associated impact area are not within the boundaries of O'Neil Regional Park, nor are they mapped as part of the Habitat Reserve System of the Orange County Southern Subregion HCP (County of Orange 2006) (Figure 3). O'Neil Regional Park supports thousands of acres of high-quality upland coastal sage scrub habitat, so direct impacts to the relatively small portion of upland California sage scrub habitat from proposed water tank expansion would have no impact to wildlife movement throughout this area. Therefore, the project would have no impact on wildlife movement corridors.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The proposed project would occur in the vicinity of a number of street and parkway trees located throughout the developed portions of the SMWD service area. However, based on the project description, no trees would be trimmed or removed to implement the proposed project. Therefore, there would be no impact to any local policies or ordinances protecting biological resources.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less-Than-Significant Impact with Mitigation Incorporated. Portions of the proposed project would occur within the boundaries of the Orange County Southern Subregion HCP and Master Streambed Alteration Agreement (County of Orange 2006), and primarily within areas not proposed for conservation due to existing development. However, mapped conservation areas occur immediately adjacent to the Trabuco Hills Reservoir expansion component of the project. No project activities for this component would encroach into the conservation area, and implementation of BMPs for the project's SWPPP would reduce any potential indirect impact from encroaching into the conservation area. Additionally, coastal California gnatcatcher and its associated habitat are considered covered under the Orange County Southern Subregion HCP and Master Streambed Alteration Agreement, and with project implementation of MM-BIO-1, potential project-related impacts to this species and its habitat would be reduced to less than significant. Therefore, with implementation of MM-BIO-1, impacts from the proposed project on local conservation planning would be less than significant.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a 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 any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

The analysis presented in this section is based on the results of Dudek's 2023 geomorphological context review; California Historical Resources Information Systems (CHRIS) records search; archival information review; and pedestrian survey conducted for the four project impact areas beyond the trench-based work in existing roads, which are referred to as Location 1, Eastbrook Recycled Water Pump Station Expansion; Location 2, Trabuco Hills Recycled Water Reservoir; Location 3, Portola Reservoir Recycled Water Pump Station; and Location 4, Plano Recycled Water Reservoir Pipe Placement (referred to as the cultural resources study area). See Appendix C1, Cultural Resources Letter Report, and confidential Appendix C2, Records Search, for more information.

Geomorphological Context

According to the U.S. Department of Agriculture Natural Resources Conservation Services (USDA 2023), two soil types are mapped within the project area. Most of the cultural resources study area (Locations 2, 3, and 4) consists of Calleguas clay loam, 50% to 75% slopes, eroded. The Calleguas clay loam soil series generally occurs in settings with hillslopes deriving from residuum weather from calcareous shale and is found in areas with elevations ranging from 220 to 2,110 feet above sea level. The remainder of the cultural resources study area (Location 1) consists of Sorrento loam, 2% to 9% slopes. The Sorrento loam soil series generally occurs in settings with alluvial fans deriving from sedimentary rock and is found in areas with elevations ranging from 0 to 1,340 feet above sea level. Alluvial soils are present in the cultural resources study area, which have moderate potential for subsurface cultural deposits.

Archival Research

Dudek performed a CHRIS records search on June 26, 2023, at the South Central Coastal Information Center (SCCIC) located on the campus of California State University, Fullerton. The records search provided information on all documented cultural resources and previous archaeological investigations within the cultural resources study area and a 0.5-mile radius.

The SCCIC records search results revealed that 40 previous cultural resources studies have been conducted within a 0.5-mile radius of the cultural resources study area. Of the 40 previous studies, three studies intersect the study area. These studies consist of three archaeological surveys. Overall, approximately 75% of the study area has been subject to previous cultural resources investigations.

The SCCIC records search results did not identify any cultural resources within the cultural resources study area, although it did identify 12 cultural resources within a 0.5-mile radius of the study area. Of the 12 resources identified, seven are prehistoric lithic and groundstone scatters, two are prehistoric lithic scatters, one is a prehistoric midden deposit with associated artifacts and features, one is a prehistoric archaeological district, and one is a historic-era built environment resource. No historic addresses are within a 0.5-mile radius of the study area.

In addition to the SCCIC records search, Dudek conducted an online review of historical aerial photographs and historical topographic (topo) maps to better understand development of the cultural resources study area and surrounding properties over time. Overall, it appears that most of the study area (with the exception of the northeast) remained largely undeveloped throughout the 20th century until the 1980s. By the 1980s, development of water infrastructure spurred the growth of residential communities within the Plano Trabuco and the hillsides of Trabuco Canyon into the early 2000s. It appears that most of the study area has been disturbed by roadway development, grading activities, and construction of SMWD facilities/water infrastructure. There appears to be no historic-era built environment features within the study area, as indicated by this archival review (NETR 2023; USGS 2023).

Pedestrian Survey

Dudek archaeologist Makayla Murillo conducted intensive-level pedestrian and reconnaissance surveys of the cultural resources study area on July 12, 2023. The site visit employed standard archaeological procedures and techniques consistent with the Secretary of the Interior's Standards for Archaeology and Historic Preservation. When possible, 15-meter interval survey transects were conducted oriented in a cardinal direction. Where the ground surface was visible, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock, imported marine shell), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as rodent/reptile burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. All fieldwork was documented using field notes and an Apple iPad equipped with ESRI Field Maps. Location-specific photographs were taken using a digital camera to create georeferenced PDF maps of the study area. Accuracy of this device ranged from 2 to 8 meters. All field notes, photographs, and records related to the current study are on file at Dudek's San Juan Capistrano, California, office.

The study area is largely disturbed, consisting predominantly of existing roads, smaller connector streets within residential and commercial properties, paved access roads, minor landscaping, and existing infrastructure associated with SMWD facilities and the T-Y Nursery. During the intensive-level pedestrian survey, the study area was divided and surveyed in four sections (Location 1, Location 2, Location 3, and Location 4). No prehistoric or historic-era cultural resources were identified within these locations during the pedestrian survey.

A reconnaissance survey of the proposed pipeline alignment was also conducted in a vehicle and on foot when necessary or appropriate. The proposed pipeline alignment is largely obscured by existing roadway infrastructure. A reconnaissance survey was conducted along the entire 18-mile proposed pipeline alignment. Ground disturbance

associated with initial roadway construction and water/sewer pipeline placement in the 1980s is assumed to be extensive. No cultural resources were identified during this portion of the field effort.

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

No Impact. The proposed Rancho Santa Margarita Recycled Water System Project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5, and no impact would occur.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less-Than-Significant Impact with Mitigation Incorporated. A geomorphological context and archival information review, CHRIS records search, and cultural resources pedestrian survey were conducted at Locations 1, 2, 3, and 4 in support of the CEQA analysis performed for this project. The records search did not identify any cultural resources within the cultural resources study area, but it did identify 12 cultural resources within a 0.5-mile radius of the study area. Of the 12 resources identified, seven are prehistoric lithic and groundstone scatters, two are prehistoric lithic scatters, one is a prehistoric midden deposit with associated artifacts and features, one is a prehistoric archaeological district, and one is an historic-era built environment resource. No historic addresses are located within a half-mile radius of the study area.

As described above through the SCCIC record search, most of the study area (with the exception of the northeast quadrant) remained largely undeveloped throughout the 20th century until the 1980s. By the 1980s, development of water infrastructure spurred the growth of residential communities within the Plano Trabuco and the hillsides of Trabuco Canyon into the early 2000s. Most of the study area has been disturbed by roadway development, grading activities, and construction of SMWD facilities/water infrastructure. No historic-era built environment features are within the study area (NETR 2023; USGS 2023).

Dudek archaeologist Makayla Murillo conducted an intensive-level pedestrian survey and reconnaissance survey of the cultural resources study area (including the proposed pipeline alignment) on July 12, 2023. The site visit employed standard archaeological procedures and techniques consistent with the Secretary of the Interior's Standards for Archaeology and Historic Preservation. When possible, 15-meter interval survey transects were conducted oriented in a cardinal direction. The study area is largely disturbed, consisting predominantly of existing roads, smaller connector streets within residential and commercial properties, paved access roads, minor landscaping, and existing infrastructure associated with SMWD facilities and the T-Y Nursery. During the intensive-level pedestrian survey, the study area was divided and surveyed in four sections (Location 1, Location 2, Location 3, and Location 4). A reconnaissance survey of the proposed pipeline alignment was conducted in a vehicle and on foot when necessary or appropriate. No prehistoric or historic-era cultural resources were identified during the pedestrian and reconnaissance surveys.

Dudek's cultural resources inventory of the project indicates that there is moderate potential for the inadvertent discovery of cultural resources during project implementation. Although the SCCIC records search and the pedestrian survey did not identify any cultural resources within the study area, there are 12 cultural resources within a 0.5-mile radius of the study area. Additionally, the Native American Heritage

Commission has indicated that the study area and 0.5-mile radius are positive for Native American cultural resources (see Section 3.18, Tribal Cultural Resources). Given the project's location within the Plano Trabuco and the hillsides of Trabuco Canyon, the study area would have likely been used by indigenous Native American inhabitants prior to Euromerican contact (Appendix C1).

Thus, mitigation is required to address impacts related to the inadvertent discovery of archaeological resources, as outlined in MM-CUL-1, MM-CUL-2, and MM-CUL-3. With implementation of MM-CUL-1, MM-CUL-2, and MM-CUL-3, significant impacts to archaeological resources would be reduced to less than significant.

MM-CUL-1 Workers Environmental Awareness Program. A Workers Environmental Awareness Program shall be implemented prior to the start of construction. This shall include development of a training handout or other materials by a qualified archaeologist to be implemented during on-site training with contractors. Training materials shall include a summary of roles and responsibilities, regulatory conditions, and actions to be taken in the event of an inadvertent archaeological discovery.

MM-CUL-2 Archaeological and Native American Monitoring. Full-time archaeological monitoring shall occur during initial ground-disturbing activities for the project within Locations 1, 2, 3, and 4. Additionally, archaeological monitors shall be present for periodic sampling during ground-disturbing activities for the remainder of the project impact area (within the established roadways) to confirm the presence or absence of cultural resources, and to assess the potential for subsurface soils to support the presence of buried cultural resources. Any identified cultural resources shall be assessed using best practice methods and standards and evaluated for eligibility to be listed on the CRHR, pursuant to CEQA. If disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall coordinate with SMWD and oversee monitoring strategies. A Native American monitor that is culturally affiliated with the project area shall be invited to be present in tandem with cultural resource monitoring. The archaeological monitor shall be responsible for preparing daily monitoring logs and a cultural resources monitoring report shall be prepared within 60 days following construction, even if no cultural resources are identified. This report shall be reviewed by SMWD and submitted to the SCCIC, once finalized.

MM-CUL-3 Unanticipated Discovery of Archaeological Resources. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the project, all construction work occurring within 50 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find. Construction activities may continue in other areas, or use existing paths of travel, but shall be redirected a safe distance from the find. Avoidance and/or preservation in place shall be considered the preferred management approach wherever possible. If the new discovery is evaluated and found to be significant under the California Environmental Quality Act and avoidance is not feasible, additional work, such as data recovery, may be warranted. A data recovery plan shall be developed by the qualified archaeologist for approval by SMWD in consultation

with consulting Native American tribes, if applicable. Ground disturbance can continue only after the resources has been properly mitigated with approval by the SMWD.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less-Than-Significant Impact. No prehistoric or historic-period burials, including those interred outside of formal cemeteries, were identified within the cultural resources study area as a result of the CHRIS records search or pedestrian survey. Should human remains be unexpectedly encountered during ground-disturbing activities, they must be treated consistent with applicable laws, including Health and Safety Code Section 7050.5, PRC Section 5097.98, and CEQA Guidelines Section 15064.5(e). In accordance with Health and Safety Code Section 7050.5, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains can occur until the county coroner has determined the appropriate treatment and disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, the county coroner will follow all required protocols according to PRC Section 5097.98. Compliance with these regulations would ensure that impacts to human remains resulting from the project would be less than significant.

3.6 Energy

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy – Would the project:				
a) Result in potentially significant environmental impact 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?	☐	☐	☒	☐

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-Than-Significant Impact**.** Project implementation would result in energy use for construction and operation, including use of electricity, natural gas, and petroleum-based fuels. The electricity and natural gas used for construction of the proposed project would be temporary, and the energy use for project operation would be negligible. The proposed project's impact on energy resources is analyzed qualitatively and discussed separately below for construction and operation.

Construction Energy Use

Construction of the proposed project would require the use of electric power for as-necessary lighting and electronic equipment. The amount of electricity used during construction would be minimal because typical energy demand stems from the use of electrically powered equipment. This electricity demand would be temporary and would cease upon completion of construction; therefore, the proposed project would not adversely impact the available electricity supply. During construction, natural gas would typically not be consumed on the project site. The majority of the energy used during construction would be from petroleum.

Petroleum would be consumed throughout construction of the proposed project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and vehicle miles traveled associated with the transportation of construction materials and construction worker commutes also would result in petroleum consumption. However, the proposed project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Additionally, petroleum used during construction would be temporary and minimal, and would not be wasteful or inefficient. Therefore, short-term construction impacts associated with energy consumption would be less than significant.

Operational Energy Use

The proposed project would result in the operation of recycled water pipelines, a reservoir, and a pump station, and the expansion of an existing pump station. Regarding operational energy use, the pump stations are estimated to consume 275,000 kilowatts of electricity per year, per pump station, but the reservoir and recycled water pipelines would require no consumption of electricity. Energy consumption to operate the project's pump stations would be less than is consumed for conveying and delivering the same volume of imported water, as occurs under existing conditions. No natural gas would be used during operation of the project. In addition, the pump stations would be constructed in accordance with the California Code of Regulations (CCR) Title 24, Part 6, Energy Efficiency Standards for Residential and Nonresidential Buildings. This would reduce energy consumption for lighting and other energy-using fixtures. The project would likely result in consumption of petroleum as a result of maintenance trips; however, these trips would be on the order of four trips per day for the pump stations and would represent a nominal consumption of energy. Therefore, the proposed project would have a less-than-significant impact on energy consumption.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-Than-Significant Impact. The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. At a minimum, the proposed project would be subject to and would comply with the California Building Standards Code, within Title 24.

The proposed project would also not conflict with CARB's Climate Change Scoping Plan (CARB 2022), which identifies several strategies to reduce greenhouse gas (GHG) emissions through energy efficiency. As discussed in further detail in Section 3.8, Greenhouse Gas Emissions, the proposed project would be subject to these strategies. As such, implementation of the proposed projects would not conflict with applicable plans for energy efficiency, and impacts during construction and operation would be less than significant.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
i) ii) Strong seismic ground shaking?	☐	☐	☒	☐
ii) iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iii) 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?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

a) Would the project 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? Refer to Division of Mines and Geology Special Publication 42.

No Impact. The Alquist–Priolo Earthquake Zoning Act (Alquist–Priolo Act) requires the delineation of fault zones along active faults in California. The purpose of the Alquist–Priolo Act is to regulate development on or near active fault traces to reduce hazards associated with fault rupture. The Alquist–Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. Active faults within Orange County include the Whittier Fault and Newport–Inglewood Fault (CGS 2010). The project site is not within a designated Alquist–Priolo Earthquake Fault Zone. The nearest active Alquist–Priolo Fault Zone to the project site is the Newport–Inglewood–Rose Canyon fault zone, located approximately 11 miles west of the project site (CGS 2010). According to the California Department of Conservation Fault Activity Map (DOC 2010), the project site is not located in a designated earthquake fault zone. Therefore, no impact associated with fault rupture would occur.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. The proposed project is within a seismically active region of Southern California; however, there are no known active, or potentially active, faults that traverse the project site. The nearest active major faults are the Newport–Inglewood–Rose Canyon fault zone fault approximately 11 miles west of the project site (CGS 2010). The most significant seismic hazard that has the potential to occur would be considered strong ground shaking caused by an earthquake occurring on a nearby or distant active fault. However, all project components would be constructed in accordance with the seismic design parameters of the most recent California Building Code, SMWD's Standard Specifications for Public Works Construction (Green Book), and other regulatory requirements, which would reduce the potential for risks related to strong seismic events. Therefore, because the proposed project would be in compliance with all applicable regulatory requirements and professional standards, impacts associated with strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less-Than-Significant Impact. Liquefaction is the phenomenon in which loosely deposited granular soils and silts located below the water table undergo rapid loss of shear strength when subjected to strong earthquake-induced ground shaking. Ground shaking of sufficient duration causes the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-saturated cohesion-less soils at depths shallower than 50 feet below the ground surface. The City's General Plan includes a liquefaction map covering the project site (City of Rancho Santa Margarita 2020b). Areas of high liquefaction potential generally follow the local canyons and drainages, including a few areas crossed by proposed pipeline alignments. None of the project's aboveground features are proposed in high liquefaction zones. All components would be designed in accordance with the seismic parameters of the most recent version of the California Building Code, SMWD's Standard Specifications for Public Works Construction (Green Book), and other regulatory requirements, which would minimize potential effects of seismic-related ground failure and liquefaction. Compliance with such standards would ensure impacts associated with seismic-related ground failure, including liquefaction, would be less than significant.

iv) Landslides?

Less-Than-Significant Impact**.** Landslides are typical on moderate to steep slopes. Many factors, including slope height, slope steepness, shear strength, and orientation of weak layers in the underlying geologic units, contribute to landslide susceptibility. The project site is in close proximity to landslide-designated areas, which surround the project site. According to the City's General Plan, the portion of the project site in the City of Rancho Santa Margarita is not located in a landslide area, but a small portion of proposed pipeline within the community of Las Flores is within a landslide area. However, the pipeline would be located underground and would not have any potential to be affected by landslides. The proposed reservoir is located in a landslide zone (City of Rancho Santa Margarita 2020b). Construction of the reservoir would require excavating material to create a suitable elevation and level foundation for the proposed tank. Therefore, the reservoir would not be located on a steep slope and would not result in landslide impacts. In addition, all project components would be designed and built in accordance with the seismic parameters of the most recent California Building Code, SMWD's Standard Specifications for Public Works Construction (Green Book), and other regulatory requirements. Compliance with such regulations would further reduce potential impacts related to landslides. Adverse impacts related to landslides is consider low and impacts would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact**.** Excavation and ground-disturbing activities during construction of the proposed project could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on the project site is critical in reducing potential soil erosion and the loss of topsoil. SMWD would be required to prepare and implement a SWPPP, which would include construction BMPs to control erosion and sediment during construction activities. With adherence to the SWPPP and associated construction BMPs related to erosion and sediment control, construction-related impacts to soil erosion and the loss of topsoil would remain below a level of significance. Upon completion of construction, all disturbed surfaces would be stabilized and restored to initial condition. It is therefore not anticipated that the proposed project would result in substantial soil erosion or significant losses in topsoil. Impacts to soil erosion and topsoil would be less than significant.

c) Would the project 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?

Less-Than-Significant Impact. As previously discussed, the project site is in close proximity to liquefaction-designated and landslide-designated zones. As such, small portions of the project site traverse these designated areas; however, the portion of proposed pipelines that traverse these areas are minimal and would be located underground. The reservoir would involve cut and fill of a small hill in order to stabilize the foundation for the reservoir. Following construction, the aboveground project components would be located on flat, paved ground. Additionally, no regional subsidence events have been reported for the Rancho Santa Margarita area. According to the City's General Plan, based on the City's high liquefaction potential, most of the lowlands and areas within Trabuco Canyon Creek and near Tijeras Creek could be susceptible to liquefaction-induced lateral spreading (City of Rancho Santa Margarita 2020b). Thus, the potential for lateral spreading in these areas due to a nearby seismic event is considered high. However, as previously mentioned, an insignificant amount of the proposed project would be within a liquefaction

zone. Additionally, compliance with federal, state, and local building regulations would reduce potential impacts associated with unstable soils. With adherence to all recommendations for the proposed project, impacts related to unstable soils would be less than significant.

d) Would the project 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?

Less-Than-Significant Impact. Expansive soils are characterized by the ability to undergo significant volume change (shrink and swell) as a result of variation in soil moisture content. Soil moisture content can change due to many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. Expansive soils are commonly very fine-grained with a high to very high percentage of clay. The Rancho Santa Margarita and the community of Las Flores are mostly underlain by sedimentary units (both bedrock and alluvium) that are composed primarily of granular soils (silty sand, sand, and gravel). Such soils are typically in the low to moderately low range for expansion potential. The areas that are most susceptible to expansive soils are located along the western boundary of the City. As such, the portion of the proposed project located on the western portion of Rancho Santa Margarita has small amounts of Bosanko Clay (USDA 2020). However, the majority of the project site consists of Modjeska gravelly loam and Myford sandy loam, which are not characterized as expansive soils. Additionally, the proposed project components would be constructed in accordance with their respective agency requirements for construction, which would reduce potential risks involving expansive soils. Impacts associated with expansive soils would be less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. As a result, the proposed project would have no impact to soils related to the use of alternative wastewater disposal systems.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-Than-Significant Impact with Mitigation Incorporated. Paleontological resources are the remains or traces of plants and animals that are preserved in earth's crust, and per the Society of Vertebrate Paleontology (SVP 2010) guidelines, are older than written history or older than approximately 5,000 years. They are limited, nonrenewable resources of scientific and educational value that are afforded protection under state laws and regulations.

The project site is within the northern Peninsular Ranges geomorphic province (CGS 2002; Harden 2004; Norris and Webb 1990). This geomorphic province is characterized by northwest-trending mountain ranges and valleys that extend more than 900 miles from the tip of the Baja California Peninsula to the Transverse Ranges (e.g., the San Bernardino and San Gabriel Mountains in Southern California). Regionally, the Peninsular Ranges are bounded to the east by the Colorado Desert and the west by the continental shelf and offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente) (CGS 2002; Harden 2004; Norris and Webb 1990). Regional mountain ranges in the Peninsular Ranges geomorphic province include the Santa Ana, San Jacinto, and Santa Rosa Mountains. Geologically, these mountains are dominated by Mesozoic, plutonic igneous, and metamorphic rocks that are part of the Peninsular Ranges batholith (Southern California batholith) (Harden 2004; Jahns 1954).

According to surficial geological mapping by Morton and Miller (2006) at a 1:100,000 scale, the project site is underlain by a variety of geological units/formations, ranging from Holocene (less than 11,700 years ago) (Cohen et al. 2023) to late Eocene (approximately 38 million years ago) (Cohen et al. 2023). Geological units from youngest to oldest, their ages and paleontological sensitivities, and the number of Natural History Museum of Los Angeles County fossil localities are presented in Table 6. Geological ages are from the International Chronostratigraphic Chart of Cohen et al. (2023).

Table 6. Geological Units, Paleontological Sensitivities, and NHMLAC Fossil Localities within a 0.5-Mile Radius of the Project Site

Geological Unit (Map Unit)	Epoch, Period, or Era	Geological Age (Millions of Years)	Paleontological Sensitivity	No. of NHMLAC Localities within 0.5 Miles of the Project Site
Young Axial-Channel Deposits (Qya)	Holocene to Late Pleistocene	Less than 0.129	Low (increasing with depth)	0
Young Landslide Deposits (Qyls)	Holocene and Late Pleistocene	Less than 0.129	Low (increasing with depth)	0
Undivided Old Axial-Channel Deposits (Qoa)	Late to Middle Pleistocene	approx. 0.117–0.774	High	0
Arenaceous Very Old Axial-Channel Deposits ($Qvoa_a$)	Middle to Early Pleistocene	approx. 0.774–2.58	High	0
Very Old Axial-Channel Deposits, Unit 2 ($Qvoa_2$)	Early Pleistocene	approx. 1.8–2.58	High	0
Soquel Member of the Puente Formation (Tpsq)	Late Miocene	approx. 5.33–11.63	High	0
Monterey Formation (Tm)	Late to Middle Miocene	approx. 5.33–15.97	High	3
Topanga Formation (Tt)	Middle Miocene	approx. 11.63–15.97	High	1
Vaqueros Formation (Tv)	Early Miocene	approx. 15.97–23.03	High	1
Sespe Formation (Ts)	Early Miocene to Late Eocene	approx. 15.97–41.2	High	2
Undifferentiated Sespe/Vaqueros Formation (Tvs)	Early Miocene to Late Eocene	approx. 15.97–41.2	High	2
Ladd Formation	Late Cretaceous	approx. 66–100.5	High	1

Note:
NHMLAC = Natural History Museum of Los Angeles County; approx. = approximately

Dudek submitted a paleontological records search request to the Natural History Museum of Los Angeles County of the project site and the surrounding vicinity on July 11, 2023, and the results were received on July 16, 2023. The Natural History Museum of Los Angeles County reported no fossil localities from within

the project site; however, it did report numerous nearby fossil sites from the Monterey Formation, Topanga Formation, Vaqueros Formation, Undifferentiated Sespe/Vaqueros Formation, and late Cretaceous (approximately 66 million years ago to 100.5 million years ago) Ladd Formation (NHMLAC 2023). The Ladd Formation is not mapped within the project site but is mapped just to the east of the northeastern portion of the project alignment and possibly underlies the project site at depth. Fossils recovered from the Ladd Formation include multiple species of ammonites, scaphopods, and gastropods (LACM IP [Los Angeles County Museum Invertebrate Paleontology] 9909–9935 and 270630), collected from an indurated, dark gray, calcareous mudstone on the surface and shallow subsurface. The next closest fossil localities, which include LACM VP [Vertebrate Paleontology] 4545–4560, 5495, 5496, and 5497, and LACM IP 5824–5827, 5895, 5898, 6282, and 6283, were recovered from the Topanga Formation in the vicinity of Oso Reservoir. Some of the taxa recovered from these localities include cartilaginous fishes (Chondrichthyes and *Isurus*), birds (*Puffinus*, Anatinae, *Alcodes*, Sulidae), marine mammals (dolphin, *Desmostylus*, eared seals, baleen whale), and leatherback turtle. The fossils were collected at an unknown depth below the ground surface from a massive, yellowish brown sand unit below a gray siltstone and were originally mapped as the Puente and Monterey Formations but later interpreted to be from the Topanga Formation (NHMLAC 2023). Another very nearby locality, LACM IP 7700, produced uncatalogued invertebrates from a limy sandstone facies of the Vaqueros Formation from the surface of a cliff along Arroyo Trabuco. LACM VP 5448 yielded uncatalogued birds and mammals at an unknown depth below the ground surface from an interstratified gray to green sandstone bed within the marine portion of the undifferentiated Vaqueros/Sespe Formation (NHMLAC 2023). Cetaceans, rodents, opossum, oreodont, camel, tortoise, and iguanid lizard (LACM VP 6935–6945, 7326, and 7328) were collected from the Sespe/Vaqueros Formation red clay facies during excavations for a nearby landfill. LACM VP 4947 produced a toothed whale (Odontoceti) on the surface from a black, Monterey Formation, petroliferous clayey siltstone with interbedded sands within Oso Creek, upstream from the Upper Oso Dam (NHMLA 2023). Finally, uncatalogued fish and marine mammals (LACM VP 4103–4114) were collected from the surface of well-bedded, Monterey Formation diatomaceous shale.

Although the Natural History Museum of Los Angeles County did not report any Pleistocene fossil localities from within the project site or the 0.5-mile radius buffer (NHMLAC 2023), Pleistocene fossil localities are known from this portion of Orange County. In his compilation of Quaternary vertebrate fossils from California, Jefferson (1991) reported numerous fossils from Pleistocene deposits in south Orange County. One Pleistocene fossil locality in San Juan Capistrano produced a bottlenose dolphin (*Tursiops* sp.). Nearby fossil localities in Laguna Niguel yielded the following Pleistocene taxa: ground sloth (*Paramylodon* sp.), mastodon (*Mammut* sp.), mammoth (*Mammuthus* sp.) horse (*Equus* sp.), tapir (*Tapirus* sp. cf. *T. californicus* and *Tapir* sp.), horse (*Equus* sp. [large size]), deer (*Odocoileus hemionus*), and bison (*Bison* sp.) During excavations in Laguna Hills, paleontologists recovered frogs (*Bufo boreas* and *Rana aurora*), salamander (*Aneides lugubris*), turtles (cf. *Clemmys marmorata* and *Gopherus* sp.), lizards (*Sceloporus* sp. and *Cnemidophorus* sp.), snakes (*Crotalus viridis* and *Pituophis melanoleucas*), birds (*Anas* sp. *Buteogallus* sp., *Callipepla* sp., *Fulica* sp. cf. *F. americana*, *Athene* sp., and *Passeriformes*), ground sloth (*Paramylodon* sp. cf. *P. harlani*), shrew (*Notiosorex crawfordi*), rabbit/hare (*Sylvilagus* sp. cf. *S. bachmani, S. audubonii,* and *Lepus* sp. cf. *L. californicus*), rodents (*Spermophilus beecheyi, Thomomys bottae, Dipodomys* sp., *Perognathus* sp. cf. *P. californicus, Reithrodontomys* sp. cf. *R. humulus, Peromyscus maniculatus, Neotoma* sp., *Microtus* sp., and *Ondatra* sp.), carnivorous mammals (*Canis* sp. cf. *C. latrans, Canis* sp. cf. *C. dirus*, *Mustela frenata,* and *Smilodon* sp. cf. *S. fatalis*), mammoth (*Mammuthus columbi*), small and large horses (cf. *Equus* sp. and *Equus* sp.), camels (*Camelops* sp. cf. *C. hesternus* and *Hemiauchenia* sp.), deer (*Cervidae*), antelope (*Capromeryx* sp.), and bison (*Bison latifrons* and *B. antiquus*) (Jefferson 1991). Other

south Orange County fossil sites include a Dana Point locality, which produced mammoth (*Mammuthus* sp.) and bison (*Bison* sp.), and four San Clemente fossil localities, which produced fish (*Osteichthyes*), salamander (*Plethodontidae*), turtle (*Chelonia*), lizard (*Gerrhonotus multicarinatus*), snakes (*Pituophis melanoleucus, Tantilla* sp*., Thamnophis* sp. cf. *T. couchii, Lampropeltis getulus, Salvadora* sp. or *Coluber constrictor*), birds (*Lophortyx californicus* and *Zonotrichia* sp.), ground sloths (*Nothrotheriops shastensis*, *Nothrotheriops* sp., and *Paramylodon* sp.), shrews (*Sorex* sp. cf. *S. ornatus, Sorex* sp*., and* cf. *Sorex* sp.), mole (?*Scapanus* sp.), rabbit (*Sylvilagus* sp.), rodents (*Thomomys* sp., cf. *Thomomys* sp., *Perognathus* sp., cf. *Dipodomys* sp., *Peromyscus* sp. cf. *P. boylii*, *Peromyscus* sp. cf. *P. maniculatus*, *Peromyscus* sp., cf. *Peromyscus* sp., *Microtus californicus,* and rodentia), mammoth (*Mammuthus columbi* and *Mammuthus* sp.), horses (*Equus* sp. cf. *E. occidentalis* and *Equus* sp.), camel (*Camelops* sp.), and bison (*Bison* sp. cf. *B. latifrons* and *Bison* sp.) (Jefferson 1991).

With regards to paleontological resources and unique geological features, no paleontological resources were identified within the project site as a result of the institutional records search or desktop geological and paleontological review, and the project site is not anticipated to be underlain by unique geologic features. Holocene to late Pleistocene young axial-channel and landslide deposits have low paleontological sensitivity or potential on the surface, which increases to high with depth where they become old enough to preserve fossils or are potentially underlain by geological units/formations with high paleontological sensitivity or potential. The late to middle Pleistocene undivided old axial-channel deposits; middle to late Pleistocene arenaceous very old axial-channel deposits; early Pleistocene very old axial channel deposits, unit 2; the late Miocene Soquel Member of the Puente Formation; the late to middle Miocene Monterey Formation; the middle Miocene Topanga Formation; the early Miocene Vaqueros Formation; the early Miocene to late Eocene Sespe Formation and undivided Sespe/Vaqueros Formations; and late Cretaceous Ladd Formation have high paleontological sensitivity or potential throughout their geographic and stratigraphic extent. As such, there is a possibility of encountering previously undiscovered paleontological resources at subsurface levels during ground-disturbing activities associated with the project. Implementation of MM-GEO-1 would ensure that potential impacts to paleontological resources during construction activities would be reduced to less than significant.

MM-GEO-1 Paleontological Resources Impact Mitigation Plan and Paleontological Monitoring. Prior to commencement of any grading activity on site, the Santa Margarita Water District shall retain a qualified Orange County certified paleontologist meeting the Society of Vertebrate Paleontology's 2010 standards. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the project. The PRIMP shall be consistent with the Society of Vertebrate Paleontology's 2010 guidelines and shall outline requirements for preconstruction meeting attendance and worker environmental awareness training, where monitoring is required within the project site based on construction plans and/or geotechnical reports, procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microvertebrate fossils); reporting; and collections management. The PRIMP shall also include a statement that any fossil lab or curation costs (if necessary due to fossil recovery) shall be the responsibility of the project applicant/proponent. The qualified paleontologist shall attend the preconstruction meeting and a qualified paleontological monitor shall be on site during all rough grading and other significant ground-disturbing activities (including augering) in previously undisturbed geological units/formations with high paleontological resources sensitivity or potential. In the event that paleontological

resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot-radius buffer. Once documentation and collection of the find are completed, the monitor shall remove the rope and allow grading to recommence in the area of the find.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
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?	☐	☐	☒	☐

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-Than-Significant Impact. Climate change refers to any significant change in measures of climate (e.g., temperature, precipitation, or wind patterns) lasting for an extended period of time (i.e., decades or longer). Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and buildup of heat in the atmosphere near Earth's surface (the troposphere). The greenhouse effect is a natural process that contributes to regulating Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also 14 CCR 15364.5).[9] The three GHGs evaluated herein are CO_2, CH_4, and

[9] Climate-forcing substances include GHGs and other substances, such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in California Health and Safety Code Section 38505; impacts associated with other climate-forcing substances are not evaluated herein.

N_2O. Emissions of HFCs, PFCs, SF_6, and NF_3 are generally associated with industrial activities, including the manufacturing of electrical components, heavy-duty air conditioning units, and insulation of electrical transmission equipment (substations, power lines, and switch gears). Therefore, emissions of these GHGs were not evaluated or estimated in this analysis because the project would not include these activities or components and would not generate HFCs, PFCs, SF_6, or NF_3 in measurable quantities.

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of carbon dioxide equivalent (CO_2e). Consistent with CalEEMod version 2022.1, this GHG emissions analysis assumed the GWP for CH_4 is 25 (i.e., emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

This analysis uses the SCAQMD's recommended (not adopted) numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of industrial development projects. In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects, as presented in its Draft Guidance Document—Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008b). This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO_2e per year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land-use development projects. The most recent proposal issued by the SCAQMD (in September 2010) uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1. Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2. Consider whether the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3. Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial

projects. If the proposed project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4. Consider whether the proposed project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project-level analyses and 6.6 MT CO_2e per service population for plan-level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5. Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

To determine the project's potential to generate GHG emissions that would have a significant impact on the environment, because the project does not conform to the standard land use types, the project's GHG emissions were compared to the non-industrial land project quantitative threshold of 3,000 MT CO_2e per year, which was identified under Tier 3 Option 1.

Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, establish specific thresholds of significance, or mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance that are consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009).

To determine the proposed projects' potential to generate GHG emissions that would have a significant impact on the environment, its GHG emissions were compared to the SCAQMD 3,000 MT CO_2e per year screening threshold recommended for non-industrial projects.

Construction Emissions

Construction of the proposed project would result in GHG emissions that are primarily associated with the use of off-road construction equipment, on-road haul and vendor trucks, and worker vehicles. The SCAQMD recommends that "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies" (SCAQMD 2008b). Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO_2e per year. Therefore, the determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.3, Air Quality. Construction of the proposed project is anticipated to commence in January 2025 and end in January 2026 (approximately 267 work days). Table 3 of Section 3.3 details the project-specific off-road equipment and vehicle use during construction. On-site sources of GHG emissions would include off-road

equipment; off-site sources would include haul trucks, vendor trucks, and worker vehicles. Table 7 presents construction GHG emissions for the proposed project from on-site and off-site emission sources.

Table 7. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
2025	1,674.95	0.08	0.13	1.20	1,716.48
2026	3.84	0.00	0.00	0.00	3.91
				Total	**1,720.40**
				Amortized 30-Year Construction Emissions	***57.35***

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerant; CO_2e = carbon dioxide equivalent.
Values of <0.01 indicate that the estimated emissions are less than two decimals.
Totals may not sum due to rounding.
See Appendix A for complete results.

As shown in Table 7, the estimated total GHG emissions during construction of the proposed project would be approximately 1,720 MT CO_2e. Estimated project-generated construction emissions amortized over 30 years would be approximately 57 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the proposed project would be short-term, lasting only the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Operational Emissions

CalEEMod was used to estimate potential project-generated operational GHG emissions from vehicular sources, area sources (i.e., landscape maintenance), electrical generation, water and wastewater, refrigerants, and solid waste. All details for criteria air pollutants discussed in Section 3.3 are also applicable for the estimation of operational mobile source GHG emissions. In regard to long-term operations, the project is conservatively assumed to include two maintenance trips per day per pump station. The pump stations would consume 500,000 kilowatt hours per year of electricity, as provided by the project engineer.

Table 8 presents the annual GHG emissions associated with operation of the proposed project, which was based on CalEEMod default assumptions, except where otherwise specified. Additional details are provided in Appendix A.

Table 8. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Mobile	6.02	0.00	0.00	0.01	6.11
Area	0.04	0.00	0.00	0.00	0.04
Energy	79.07	0.01	0.00	0.00	79.53
Water	0.58	0.01	0.00	0.00	1.02
Waste	0.20	0.02	0.00	0.00	0.70

Table 8. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Refrigerant	0.00	0.00	0.00	0.08	0.08
				Proposed Project Total	**87.46**
				Amortized Construction Emissions	*65.38*
				Operation Plus Amortized Construction Total	**152.84**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerant; CO_2e = carbon dioxide equivalent.
See Appendix A for detailed results.
Values of <0.01 indicate that the estimated emissions are less than two decimals. Totals may not sum due to rounding.

As shown in Table 8, the estimated annual project-generated GHG emissions would be approximately 87 MT CO_2e per year as a result of project operation. When summed with the amortized project construction emissions, the project's total GHG emissions would be approximately 145 MT CO_2e per year. Annual operational GHG emissions with amortized construction emissions would be minimal and would not exceed the SCAQMD threshold of 3,000 MT CO_2e per year. Therefore, the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, and this impact would be less than significant.

b) Would the project generate conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less-Than-Significant Impact. The City, County, or SMWD have not adopted a Climate Action Plan or plan for the purposes of reducing GHG emissions. Although there are no mandatory GHG plans, policies, or regulations, or finalized agency guidelines that would apply to implementation of the proposed project, a description of relevant plans with GHG reduction strategies (CARB Scoping Plan and SCAG's RTP/SCS) is provided below.

Potential to Conflict with the CARB Scoping Plan

CARB's Proposed Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) was issued on November 16, 2022 (CARB 2022). The 2022 Scoping Plan lays out a path not just to carbon neutrality by 2045, but also to the 2030 GHG emissions reduction target. The 2022 Scoping Plan is not directly applicable to specific projects, and it is not intended to be used for project-level evaluations.[10] Under the 2022 Scoping Plan, however, there are several state regulatory measures aimed at identifying and reducing GHG emissions. CARB and other state agencies have adopted many of the measures identified in the 2022 Scoping Plan. Most of these measures focus on area-source emissions (e.g., energy usage and high-GWP GHGs in consumer products) and changes to the vehicle fleet (e.g., hybrid, electric, and more-fuel-efficient vehicles) and associated fuels, among others.

[10] The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

State Reduction Targets and CARB's Scoping Plan

The Global Warming Solutions Act of 2006 (AB 32) provided initial direction to limit California's GHG emissions to 1990 levels by 2020, and initiates the state's long-range climate objectives. Since adoption of AB 32, the state has adopted GHG emissions reduction targets for future years beyond the initial 2020 horizon year. For the proposed project, the relevant GHG emissions reduction targets include those established by Senate Bill (SB) 32 and AB 1279, which require GHG emissions be reduced to 40% below 1990 levels by 2030, and 85% below 1990 levels by 2045, respectively. In addition, AB 1279 requires the state to achieve net-zero GHG emissions by no later than 2045, and to achieve and maintain net-negative GHG emissions thereafter.

As defined by AB 32, CARB is required to develop a Scoping Plan, which provides the framework for actions to achieve the state's GHG emission targets. The Scoping Plan is required to be updated every 5 years, and requires CARB and other state agencies to adopt regulations and initiatives that will reduce GHG emissions statewide. The first Scoping Plan was adopted in 2008 and was updated in 2014, 2017, and most recently in 2022 (CARB 2014, 2017, 2022). Although the Scoping Plan is not directly applicable to specific projects or intended to be used for project-level evaluations,[11] it is the official framework for the measures and regulations that will be implemented to reduce California's GHG emissions in alignment with the adopted targets. Therefore, a project would be found to not conflict with the statutes if it would meet Scoping Plan policies and would not impede attainment of the goals therein.

CARB's 2017 Scoping Plan update was the first to address the state's strategy for achieving the 2030 GHG reduction target set forth in SB 32 (CARB 2017), and the most recent CARB 2022 Scoping Plan update outlines the state's plan to reduce emissions and achieve carbon neutrality by 2045 in alignment with AB 1279, and assesses progress the state is making toward the 2030 SB 32 target (CARB 2022). Given that SB 32 and AB 1279 are the relevant GHG emission targets, the 2017 and 2022 Scoping Plan updates that outline the strategies to achieve those targets are the most applicable to the proposed project.

The 2017 Climate Change Scoping Plan (Second Update) included measures to promote renewable energy and energy efficiency (including the mandates of SB 350), measures to increase stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and measures to increase stringency of SB 375 targets (CARB 2017). The 2022 Scoping Plan for Achieving Carbon Neutrality (Third Update) builds on and accelerates programs currently in place, including moving to zero-emission transportation; phasing out use of fossil gas for heating homes and buildings; reducing chemicals and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; and displacing fossil-fuel-fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines) (CARB 2022).

Many of the measures and programs included in the Scoping Plan would result in the reduction of project-related GHG emissions with no action required at the project level, including GHG emission reductions through increased energy efficiency and renewable energy production (SB 350), reduction in carbon intensity of transportation fuels (Low Carbon Fuel Standard), and accelerated efficiency and

[11] The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

electrification of the statewide vehicle fleet (Mobile Source Strategy). Given that the proposed project would result in a nominal number of maintenance worker trips per day (see Section 3.17, Transportation), the project would also not conflict with the Second Update's goal of reducing GHG emissions through reductions in vehicle miles traveled statewide.

The 2045 carbon neutrality goal required CARB to expand proposed actions in the 2022 Scoping Plan to include those that capture and store carbon, in addition to those that reduce anthropogenic sources of GHG emissions. Given that the specific path to neutrality will require development of technologies and programs that are not currently known or available, the project's role in supporting the statewide goal would be speculative and cannot be wholly identified at this time.

Potential to Conflict with SCAG's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy

SCAG's Connect SoCal 2020–2045 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS is a regional growth management strategy that targets per-capita GHG reductions from passenger vehicles and light-duty trucks in the Southern California region pursuant SB 375. In addition to demonstrating the region's ability to attain the GHG emissions reduction targets set forth by CARB, the 2020–2045 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands (SCAG 2020). Thus, successful implementation of the 2020–2045 RTP/SCS would result in more complete communities with various transportation and housing choices while reducing automobile use.

The primary objective of the RTP/SCS is to provide guidance for future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the region, as stipulated under SB 375. Given that the proposed project would involve development of recycled water pipelines, pump stations, and a water reservoir, implementation would not involve regional growth, and the goals and strategies of the RTP/SCS are not directly applicable. Accordingly, the proposed project would not conflict with the goals and policies of the RTP/SCS.

The SCAQMD uses Executive Order S-3-05 as the basis for its screening level; Executive Order S-3-05 includes the long-term goal to reduce GHG emissions to 80% below 1990 levels by 2050. Any project that is consistent with SCAQMD's thresholds would also be consistent with the goal of SB 32 (to reduce GHG emissions to 40% below 1990 levels by 2030). Therefore, projects that meet the current interim emissions targets/thresholds established by the SCAQMD would also be on track to meet the reduction targets for 2030. As shown in Table 8, the proposed project is not anticipated to generate GHG emissions during construction or operation that would exceed SCAQMD's recommended threshold of 3,000 MT CO_2e per year for non-industrial projects. Furthermore, all post-2020 reductions in GHG emissions are addressed via regulatory requirements at the state level, and a project would be required to comply with these regulations as they come into effect. In addition, the proposed project would not conflict with the state's trajectory toward future GHG reductions. Based on the preceding considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; therefore, the impact would be less than significant.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the 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 that 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?	☐	☐	☐	☒
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?	☐	☐	☒	☐

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction Impacts

Less-Than-Significant Impact. A variety of hazardous substances and wastes would be stored, used, and generated during construction of the proposed project. These would include fuels for machinery and vehicles, new and used motor oils, cleaning solvents, paints, and storage containers and applicators containing such materials. All contractors would be required to comply with applicable laws and regulations regarding hazardous materials, hazardous waste management, and disposal. Furthermore, the proposed project would be required to be under a Construction General Permit, which requires a SWPPP and development of BMPs for all phases of construction and for potential pollutants generated by construction activities.

All chemicals that would be used during construction of the proposed project would be required to be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR Division 4.5). Compliance with all applicable regulations regarding the transport, use, and disposal of hazardous materials would ensure that impacts would remain below a level of significance. Thus, impacts related to creation of a significant hazard to the public or the environment as a result of the proposed project would be less than significant.

Operational Impacts

Less-Than-Significant Impact. SMWD uses a number of hazardous materials for the maintenance and repair of its facilities. These hazardous materials consist of small quantities of off-the-shelf substances that do not represent a significant potential health hazard, and include materials such as lubricant oils, paints, and diesel fuel (used to power emergency generators). SMWD is one of 18 water and wastewater utilities that participates in the Orange County Regional Water and Wastewater Hazard Mitigation Plan, which provides a framework for water and wastewater utilities in Orange County to reduce their vulnerability to the impacts of natural and human-caused hazard events, such as earthquakes, flooding, and hazardous materials spills (MWDOC 2019). SMWD provides equipment and training to its personnel to detect, respond to, mitigate, and abate hazards that could occur during an accidental release of hazardous materials. The proposed project would not introduce any additional hazardous materials to the site during the operation and maintenance phase that do not currently exist at the facility. Therefore, the proposed project would pose a less-than-significant impact to the public and the environment through the routine transport, use, or disposal of hazardous materials.

b) Would the project 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?

Construction Impacts

Less-Than-Significant Impact. Construction activities on the project site would involve the transport of gasoline and other materials to the site. Relatively small amounts of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents, would be used on site for construction and maintenance. The materials alone and use of these materials for their intended purpose would not pose a significant risk to the public or environment; however, accidental spills of hazardous

materials during construction could potentially result in soil contamination or water quality impacts. To minimize/eliminate fuel spillage, all construction vehicles would be adequately maintained and equipped. All equipment maintenance work, including refueling, would occur off site or within the designated construction staging area. All potentially hazardous construction waste, including trash, litter, garbage, other solid wastes, petroleum products, and other potentially hazardous materials, would be removed to a hazardous waste facility permitted to treat, store, or dispose of such materials.

The proposed pipelines would be installed adjacent to active and closed hazardous material remediation and cleanup sites, as shown on Figure 6, Hazards, and summarized in Table 9. The environmental characteristics of each of these sites has been reviewed using data provided in environmental investigation and cleanup reports (OCHCA 2002, 2013; SWRCB 2023; Terrax 2023; WSP 2023). As summarized in Table 9, impacts from these sites do not appear to extend into public ROWs, and therefore are not likely to be impacted by construction of the proposed project. As such, with compliance with all applicable federal, state, and local regulations, construction of the project would not 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, and impacts would be less than significant.

Table 9. Adjoining Hazardous Material Release Sites

Site Name and Address	Cleanup Case and Status	Details
Control Components 22591 Avenida Empresa Rancho Santa Margarita	Cleanup Program Completed, Case Closed	Industrial cleanup overseen by the Orange County Health Care Agency (OCHCA). Stained soils found during clarifier decommissioning; petroleum and metal contamination in soil was found to be below regulatory screening levels. Case received regulatory closure in 2005. Based on regulatory status and available data, site is not likely to have remaining off-site impacts (SWRCB 2023).
Plaza Empresa, Rancho Cleaners 29941 Aventura, Suite J Rancho Santa Margarita	Local Agency Cleanup (OCHCA) Open Remediation	Industrial cleanup overseen by OCHCA. Case is ongoing due to soil vapor impacts from on-site dry cleaner. Impacts are limited to the commercial site, and do not appear to extend into Avenida Empresa (Terrax 2023).
Al Phillips The Cleaner 22307 El Paseo Rancho Santa Margarita	Local Agency Cleanup (OCHCA) Completed, Case Closed	Industrial cleanup overseen by OCHCA. Following limited soil characterization, case received regulatory closure due to limited detections of contaminants of concern. Chemical use list provided by owner indicated typical contaminants of concern were not used in dry cleaning activities (OCHCA 2013).
Mobil 31421 Santa Margarita Rancho Santa Margarita	Leaking Underground Storage Tank (LUST) Completed, Case Closed	LUST cleanup overseen by OCHCA. Petroleum contamination was limited to soil; groundwater depth was greater than 115 feet at the site. Impacted soils were excavated; remaining contamination was below regulatory screening levels (OCHCA 2002).

Table 9. Adjoining Hazardous Material Release Sites

Site Name and Address	Cleanup Case and Status	Details
Mercado Cleaners 31451 Santa Margarita Parkway Rancho Santa Margarita	Voluntary Cleanup Open Remediation	Ongoing remediation activities overseen by the Department of Toxic Substances Control. Remediation includes soil vapor impacts due to dry cleaning chemical releases. Impacts do not appear to extend into public rights-of-way (WSP 2023). Past cleanup activities also related to soil vapor impacts, overseen by OCHCA, did not appear to extend into public rights-of-way (PSI 1997).

Operational Impacts

Less-Than-Significant Impact. Any potentially hazardous materials handled on the project site during operation of the project would be limited in quantity and concentration, and any handling, transport, use, and disposal would be consistent with SMWD protocols and would comply with applicable federal, state, and local regulations. Therefore, with compliance with all applicable federal, state, and local regulations, the project would not 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, and impacts would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-Than-Significant Impact. Land uses and activities typically associated with hazardous emissions and handling of hazardous or acutely hazardous materials, substances, or waste include heavy commercial, manufacturing, research, and industrial uses.

The proposed project would involve construction of new recycled water pipelines, a new reservoir, and a new pump station, and the expansion of an existing pump station. Minor components of the proposed project would include installation of isolation valves and replacement of existing potable-water meters with recycled-water meters. Schools within 0.25 miles of the project site include Rancho Santa Margarita Intermediate, Melinda Heights Elementary, Cielo Vista Elementary, Trabuco Mesa Elementary, Tijeras Creek Elementary, and Arroyo Vista Elementary and Middle Schools. However, the proposed pipelines would be within existing roadways and the SWWD ROW, and would not expose schools to hazardous material or substances. The aboveground components of the project, including the pump stations and reservoir, would not be within 0.25 miles of a school. Additionally, the proposed pump stations and reservoir would not emit hazardous emissions.

As discussed in Section 3.9(a), during construction of the project, potentially hazardous materials would likely be handled on the project site. These materials would include fuels for machinery and vehicles, new and used motor oils, cleaning solvents, paints, and storage containers and applicators containing such materials. Handling of these potentially hazardous materials would be done in compliance with applicable regulations and would be temporary, coinciding with the short-term construction phase of the project.

Therefore, impacts associated with the emitting or handling of hazardous materials within 0.25 miles of a school would be less than significant.

d) Would the project be located on a site that 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?

Less-Than-Significant Impact**.** As discussed in Section 3.9(b), there are multiple hazardous material cleanup sites, both open and closed, within the project area. These sites and their status are summarized in Table 9 and shown in Figure 6. Only one of these sites is identified on a Cortese List database (pursuant to Government Code Section 65962.5), and this is the Mobil leaking underground storage tank case. This case received regulatory closure in 2002 (OCHCA 2002). None of the aforementioned sites overlap the project site. As such, the project would not impact hazardous materials or waste associated with a hazardous materials site, and impacts related to hazardous materials sites would be less than significant.

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?

No Impact. The closest airport to the project site is the John Wayne Airport, located approximately 13.1 miles to the west. The proposed project would not be located in the airport influence area for the John Wayne Airport (ALUC 2008). Therefore, the project would not result in a safety hazard for people residing or working in the project area, and there would be no impact.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. Emergency response within the Orange County Operational Area is managed by the County's Emergency Operations Center, which coordinates disaster response and recovery for the operational area, including all political subdivisions of the County, and communicates resource requirements and availability with the State Regional Operations Center. The Emergency Operations Center has a number of emergency response plans in place should an emergency or disaster occur. Additionally, the City maintains an Emergency Operations Plan (EOP) to address the planned response to emergencies. The EOP's primary focus is coordinated mutual aid within Rancho Santa Margarita and fulfilling reporting requirements for the Orange County Operational Area. The EOP establishes policies and procedures for emergency response, identifies authorities, and assigns responsibilities for response activities (City of Rancho Santa Margarita 2016). Major arterials serve as the primary routes for evacuation; however, evacuation routes depend on the emergency event and area affected. Construction activities related to the proposed project could potentially result in temporary lane closures. However, any lane or driveway closures would be coordinated with the appropriate jurisdiction in which the project takes place (City of Rancho Santa Margarita or County of Orange) as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in case of an emergency. In addition, SMWD would notice the neighborhood regarding dates for construction, hours of construction activities, and access requirements for emergency vehicles and residents. Once constructed, the pipelines would be entirely underground, and the pump stations and reservoir would be adjacent to roads, colocated with existing SMWD infrastructure.

Therefore, construction and operation of the proposed project would not interfere with an adopted emergency response plan or evacuation plan, nor would it substantially impede public access or roadway circulation. Therefore, the proposed project would have less-than-significant impacts.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less-Than-Significant Impact**.** The project area is subject to wildland fires and urban fires. Weather, topography, and vegetation types all affect the intensity of wildfires. The County identifies the project site as being within, or in close proximity to, a very high fire hazard severity zone (CAL FIRE 2023). The project site is in an area that contains residential, commercial, and institutional uses, as well as open space. However, once constructed, the pipelines would be entirely underground, and the reservoir and pump stations would be located within or adjacent to existing developed SMWD facilities. The proposed project would not involve development of any human occupancy structures. As such, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires; therefore, impacts would be less than significant.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
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	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-Than-Significant Impact. Construction of the project would include earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Stormwater runoff during the construction phase may contain silt and debris, resulting in a short-term increase in the sediment load of the municipal storm drain system. Substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project site and subsequently conveyed via stormwater to nearby drainages, watersheds, and groundwater.

Because the project would result in more than 1 acre of ground disturbance, the project would be subject to the NPDES stormwater program, which includes obtaining coverage under the State Water Resources Control Board's Construction General Permit. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires development and implementation of a SWPPP. Among the required items that must be included within a SWPPP are project design features intended to protect against substantial soil erosion as a result of water and wind erosion, commonly known as BMPs. Implementation of the Construction General Permit, including preparation of a SWPPP and implementation of BMPs, would reduce stormwater runoff during project construction impacts to acceptable levels. It follows that because construction of the project would not violate any water quality standards or waste discharge requirements, the project would not otherwise substantially degrade surface water or groundwater quality. Therefore, impacts related to water quality would be less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less-Than-Significant Impact. The proposed project is not anticipated to encounter groundwater during excavation or ground-disturbing activities; however, the potential for encountering groundwater exists depending on the depth to groundwater. Should groundwater be encountered and dewatering be necessary during construction, a general NPDES dewatering permit from the San Diego Regional Water Quality Control Board would be obtained. Discharges would be made in accordance with the San Diego Regional Water Quality Control Board requirements outlined in Order No. R9-2008-0002, General Waste Discharge Requirements for Discharges from Groundwater Extraction and Similar Discharges to Surface Waters within

the San Diego Region, which includes southern Orange County. If necessary, groundwater would be pumped out of the excavation and discharged in accordance with the SWPPP and/or general waste discharge requirements. The amount of potential groundwater pumped would have minimal effects on the local aquifer because it would be temporary, would be localized, and would most likely consist of perched groundwater. Potential impacts associated with dewatering would be further reduced through the incorporation of waste management and materials pollution control BMPs and non-stormwater management BMPs included in the SWPPP. For these reasons, the proposed project would have less-than-significant impacts on groundwater.

c) Would the project 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?

Less-Than-Significant Impact. The existing drainage pattern along the proposed alignment would be temporarily altered as a result of open-cut trenching. Surface disturbances associated with open-cut trenching and installation of the proposed pipelines would alter existing drainage patterns, so a SWPPP would be prepared and BMPs would be implemented during project construction to prevent pollutants from contacting stormwater and to reduce the potential for on-site and off-site erosion and sedimentation. With regard to sedimentation, control measures could include perimeter protection, storm drain inlet protection, and/or velocity reduction measures. Once the proposed pipelines are installed, the disturbed areas would be returned to pre-project conditions. Additionally, the pump stations would be located in previously disturbed areas; thus, the site would not change substantially, and changes to the existing drainage pattern would be minimal. As such, the project pipelines and pump stations would have a minimal impact on existing drainage patterns that could potentially result in substantial on-site or off-site erosion or siltation. Construction of the proposed reservoir would require clearing native vegetation from a small hill and excavating material to create a suitable elevation and level foundation for the proposed tank. The new reservoir would follow the same drainage patters as the adjacent tank. Therefore, with implementation of BMPs identified in the SWPPP, construction impacts associated with substantial on- or off-site erosion or sedimentation would be less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

Less-Than-Significant Impact. Although surface disturbance associated with construction of the proposed project is not anticipated to increase the rate or amount of surface runoff, a SWPPP would be prepared and erosion- and sedimentation-control BMPs would be implemented to reduce the potential for on-site or off-site flooding. Also, upon completion of construction, trenches and other disturbed areas would be returned to pre-project conditions, and existing drainage patterns would be restored. The proposed pipelines would be installed underground, and disturbed areas would be returned to pre-project conditions. Installation and expansion of pump stations would occur in previously disturbed areas; thus, the site would not change substantially, and changes to surface runoff would be minimal. Construction of the reservoir would result in impervious surfaces; however, runoff would be directed to existing drainage facilities. Therefore, impacts associated with surface runoff and on-site or off-site flooding during construction would be less than significant.

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?

Less-Than-Significant Impact. As discussed, a SWPPP would be prepared and erosion- and sedimentation-control BMPs would be implemented to reduce the potential for on-site and off-site flooding. Upon completion of pipeline construction, trenches and other disturbed areas would be returned to pre-project conditions or similar conditions, and existing drainage patterns would be restored. Upon restoration of pipeline project areas, the project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Construction and expansion of the pump stations would occur in previously disturbed areas; therefore, runoff would not increase significantly. Construction of the reservoir would increase impervious surfaces on the existing vegetated hill; however, drainage patters would be similar to the existing adjacent tank, and with the inclusion of a SWPPP and BMPs, the project would not substantially contribute to runoff water. Therefore, impacts associated with runoff would be less than significant.

iv) Impede or redirect flood flows?

No Impact. The project site is not within or near a 100-year flood hazard zone and is considered an area of minimal flood hazard (FEMA 2009a, 2009b). Therefore, no impact would occur.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

No Impact. The project site is not within a flood hazard zone (FEMA 2009a, 2009b) or in the vicinity of a water body that would result in a tsunami or seiche. Therefore, no impact would occur.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-Than-Significant Impact. As discussed above, the proposed project would have less-than-significant impacts on water quality with implementation of a SWPPP, and would not conflict with or obstruct with a water quality control plan. Additionally, implementation of the proposed project would expand on SMWD's efforts to promote water use efficiency. This goal is consistent with SMWD's 2015 Urban Water Management Plan (SMWD 2016) and the Integrated Regional Water Management Plan for South Orange County (County of Orange and IRWM Group 2018), which have the stated goals of developing strategies to reduce risks from drought climate change. Implementation of the project would permanently conserve 4,000 AFY by providing a new source of recycled water supply for irrigation, thereby reducing drought impacts on the San Juan Basin, which is impacted by limited groundwater supply and storage. Over time, as drought conditions occur, implementation of projects similar to the proposed project would allow SMWD to free up additional water supply that would otherwise come from the San Juan Basin. Therefore, because the project would indirectly assist long-term management of the San Juan Basin and is consistent with the goals of the SMWD's 2015 Urban Water Management Plan and the Integrated Regional Water Management Plan for South Orange County, impacts would be less than significant.

3.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
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?	☐	☐	☒	☐

a) Would the project physically divide an established community?

Less-Than-Significant Impact. The physical division of an established community is typically associated with construction of a linear feature, such as a major highway or railroad tracks, or removal of a means of access, such as a local road or bridge, which would impair mobility within an existing community or between a community and an outlying area. Construction activities related to the proposed project could potentially result in temporary lane closures. However, any lane or driveway closures would be coordinated with the appropriate jurisdiction in which the project takes place (City of Rancho Santa Margarita or County of Orange) as part of the encroachment permit process, which sets forth requirements for traffic control measures. Upon completion, the pipelines would be located entirely underground and would not physically divide an established community. The expanded pump station, new pump station, and reservoir would be within or adjacent to existing developed SMWD facilities and would not divide established communities. Upon completion of the project components, access and mobility to existing communities would remain the same. Therefore, the proposed project would not physically divide an established community upon completion, and impacts would be less than significant.

b) Would the project 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?

Less-Than-Significant Impact**.** The proposed project would involve installation construction of new recycled water pipelines to extend SMWD's recycled water service to ID 4A in Rancho Santa Margarita. The proposed pipes would run parallel to existing SMWD pipes, with the vast majority occurring in existing roads and smaller collector streets within residential and commercial developments. One short pipeline segment is planned outside of existing roads within the SMWD ROW connecting facilities in Coto de Caza Drive to the Portola Reservoir. The project pump stations would be adjacent to roads in previously disturbed areas within or adjacent to existing developed SMWD facilities. The reservoir would be built on partially undeveloped SMWD property adjacent to an existing SMWD reservoir north of Los Alisos Boulevard. The majority of the project site is within Rancho Santa Margarita, and a small portion of the project site is in Mission Viejo and the unincorporated communities of Las Flores and Coto de Caza. The project would be

consistent with the City's General Plan Land Use Element, the Las Flores Planned Community Program, and the Coto de Caza Specific Plan.

According to the City's Land Use Element (City of Rancho Santa Margarita 2020a), as development continues in Rancho Santa Margarita, utilities and public services must be available for new and existing businesses and residents. The Public Facilities and Services portion of the Land Use Element addresses the availability of utilities and services for planned development, including water supply, treatment, and distribution; sewer treatment; solid waste; drainage/flood control; fire protection and emergency services; law enforcement; public education; parks, community centers, and recreational opportunities; and libraries. As such, the Public Facilities and Services portion of the Land Use Element ensures that adequate utilities and services are available for planned development. Therefore, implementation of the proposed project would be consistent with the Rancho Santa Margarita General Plan Land Use Element. A small portion of the pipelines and expansion of an existing pump station would be in Mission Viejo. The Mission Viejo Land Use Element (City of Mission Viejo 2021) states that the maintenance and replacement of existing facilities will continue as Mission Viejo ages. The project would be consistent with Goal 9 to maintain a consistent level of quality water and sewer services by expanding the SMWD's recycled water system. Additionally, according to the Las Flores Planned Community Program (County of Orange 1990), public utilities buildings, structures, and facilities, including electrical, natural gas, cable, water, sewage, and telephone, and their operation, storage, distribution, and production facilities are permitted within any planning area of the Las Flores Planned Community. As such, implementation of the proposed project would be consistent with the Las Flores Planned Community Program. A small portion of the pipelines and the proposed pump station would be in rural residential land in Coto de Caza. According to the Coto de Caza Specific Plan, public utilities are permitted in Rural Residential land uses (County of Orange 1995). Therefore, the proposed project would not conflict with any applicable plans or regulations, and impacts would be less than significant.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Would the project 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?

No Impact. The State Mining and Reclamation Act of 1975 (PRC Section 2710 et seq.) requires that the California State Geologist implement a mineral land classification system to identify and protect mineral resources of regional or statewide significance in areas where urban expansion or other irreversible land uses may occur, thereby potentially restricting or preventing future mineral extraction on such lands. As mandated by the State Mining and Reclamation Act of 1975, aggregate mineral resources within the state are classified by the State Mining and Geology Board through application of the Mineral Resource Zone (MRZ) system. The MRZ system is used to map all mineral commodities within identified jurisdictional boundaries, with priority given to areas where future mineral resource extraction may be prevented or restricted by land use compatibility issues, or where mineral resources may be mined during the 50-year period following their classification. The MRZ system classifies lands that contain mineral deposits, and identifies the presence or absence of substantial sand and gravel deposits and crushed rock source areas (i.e., commodities used as, or in the production of, construction materials). The state geologist classifies MRZs within a region based on the following factors:

MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

MRZ-3: Areas containing mineral deposits for which the significance cannot be determined from available data.

According to the City of Rancho Santa Margarita General Plan Final Environmental Impact Report (EIR), the City includes areas designated as MRZs 1, 2, and 3 (City of Rancho Santa Margarita 2019). Three MRZ-2 areas in Rancho Santa Margarita lie within the general area of O'Neill Park along Arroyo Trabuco Creek and continue along the Trabuco Creek through the sphere of influence, both north and south of Rancho Santa Margarita. However, based on the built-out nature of Rancho Santa Margarita and the project's impact area, it is unlikely that suitable mineral resources would be available in areas of adequate size and remoteness to be economically viable for mineral extraction. The County of Orange General Plan Resources Element (County of Orange 2005b) identifies several aggregate resources areas, including the Santa Ana River, Lower Santiago Creek, Upper Santiago Creek, San Juan Creek, and Arroyo Trabuco. The project would not have an effect on those operations. The City of Mission Viejo General Plan EIR concluded that there are no known mineral resources of value in Mission Viejo (City of Mission Viejo 2013).

The project's trench-based pipeline installation would occur beneath or adjacent to established roads in a developed area, which would not affect the availability of mineral resources. The project's additional impacts occur in or adjacent to developed areas that are not currently used and would not be used in the future for mineral extraction. Therefore, there would be no impacts on mineral resources.

b) Would the project 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?

No Impact. See discussion in Section 3.12(a). The project would have not impact on mineral resources.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
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 groundborne vibration or groundborne 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 project area to excessive noise levels?	☐	☐	☒	☐

The analysis in this section is based on Dudek's Noise and Vibration Assessment for the Rancho Santa Margarita Recycled Water System Project, which is included in this MND as Appendix D.

a) ***Would the project result in 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?***

Less-Than-Significant Impact with Mitigation Incorporated. Construction noise and vibration are temporary phenomena. Although construction noise, stationary operations, and vibration levels vary from hour to hour and day to day, depending on the equipment in use, the operations performed, and the distance between the source and receptor, noise exposure levels from the aggregate of concurrently operating equipment can be accurately predicted with industry-proven and standardized sound propagation modeling techniques. Hence, the following subsections evaluate conventional construction equipment noise emission along the project pipeline alignment and from each of the proposed pump station construction areas, as well as the stationary operation noise levels from the proposed pump stations.

Construction Noise Prediction and Impact Assessment

The predictive construction noise analysis conducted for the project locates one or multiple sound-emitting sources (i.e., stationary and mobile equipment) associated with a distinct construction activity or phase as a collective single point at an approximate geographic position of the activity considered closest to the studied NSR. Although the exact positions of these equipment are unknown at any moment, they would not stray beyond the defined zone or area on which they are expected to work; hence, the collective equipment

sound source single-point approximation is assumed to be along the pipeline alignment for the trenching activities. For the pump station areas, concurrent pipeline installation trenching (the loudest of the two pipeline construction phases) and pump station construction noise were calculated if the project schedule provided by the client indicated overlapping work on relevant phases.

As shown in Attachment A of Appendix D, predicted noise from each distinct phase or activity populates a matrix that depicts the project schedule at a monthly level of granularity. The assumed schedule of listed activities is based on estimated time periods provided in the current project description. The total concurrent noise exposure level, expressed as an energy equivalent sound level (L_{eq}), is predicted for each successive month at an indicated NSR position as the project progresses.

Table 10 lists the modeled construction activities and their associated noise-producing equipment. The reference sound emission levels for the listed equipment used as model input parameters are based on maximum sound levels (L_{max}) and acoustical usage factor values appearing in the Roadway Construction Noise Model User's Guide. For example, the Roadway Construction Noise Model guide indicates 85 A-weighted decibels (dBA) L_{max} at a distance of 50 feet for an "excavator" (FHWA 2006).

Table 10. Modeled Project Construction Activities and Equipment Types

Project Phase Description	Operating Equipment Types*
Site Prep/Grading at Trabuco Reservoir	Front End Loader, Excavator, Roller
Portola Booster Pump Station Building Earthwork (Grading)	Front End Loader, Excavator, Roller
Grading for Eastbrook Recycled Water Pump Station	Front End Loader, Excavator, Roller
Pipeline Installation Trenching	Excavator, Backhoe, Front End Loader, Roller
Paving for Pipelines	Paver, Roller, Front End Loader
Portola Booster Pump Station Building Mechanical/Electrical (Building Construction)	Crane, Man Lift
Architectural Coating for Portola Booster Pump Station	Compressor (air)
Expansion of Existing Pump Station (Eastbrook Recycled Water Pump Station)	Crane, Man Lift
Architectural Coating for Eastbrook Recycled Water Pump Station	Compressor (air)
Construction of Reservoir (Trabuco Hills) (Building Construction)	Crane, Man Lift
Architectural Coating for Trabuco Hills Reservoir	Compressor (air)
Construction of Reservoir (Plano)	Crane, Man Lift

Note:
* Per the Federal Highway Administration Roadway Construction Noise Model equipment type designations (FHWA 2006).

Figure 2 of the noise technical memorandum presents the studied NSR position for the Trabuco Reservoir and pump station area of the project; Figure 3 of the noise technical memorandum presents the studied NSR position for the Portola Booster Pump Station area of the project; and Figure 4 of the noise technical memorandum presents the studied NSR position for the Eastbrook Recycled Water Pump Station expansion area of the project (Appendix D). Additionally, the associated pump station location and description for each of the studied NSR positions are provided in Table 11.

Table 11. Description of Studied Noise-Sensitive Receptors Near Project Locations

Studied NSR	Associated Project Area	Description
NSR1	Trabuco Reservoir/Pump Station	Multi-Family Residences at 22648 Los Alisos Boulevard
NSR2	Portola Booster Pump Station	Single-Family Residence at 31361 Trigo Trail
NSR3	Eastbrook Recycled Water Pump Station	Multi-Family Residences at 21622 Marguerite Parkway

Notes:
NSR = noise-sensitive receptor
Each NSR position assumes a listener elevation of 5 feet above local grade elevation.

Representing application of the sound prediction methodology described in the preceding paragraphs, Table 12 presents predicted noise level exposures from project-attributed conventional construction activity sources during daytime hours at the indicated receptor locations, which appear in Figures 2 through 4 of the noise technical memorandum (Appendix D).

Table 12. Predicted Conventional Construction Noise at Modeled Receptor Locations

Modeled Receptor Location	Predicted Construction Noise Level Range (8-hour dBA Leq)
NSR1	65–80
NSR2	70–90
NSR3	70–80

Note:
dBA = A-weighted decibels; L_{eq} = equivalent continuous sound level (time-averaged sound level); NSR = noise-sensitive receptor

As shown in Table 12, the estimated hourly construction noise levels are predicted to exceed the Federal Transit Administration's (FTA) 80 dBA 8-hour L_{eq} (FTA 2018) at the nearest studied NSR for the Portola booster pump station. Under these conditions, predicted operation of daytime construction equipment and processes would exceed the FTA-based threshold limit (i.e., 80 dBA L_{eq} over an 8-hour period) identified for this assessment.

Worksheets for each NSR featured in Attachment A of the noise technical memorandum (Appendix D) highlight predicted levels that exceed the 80 dBA 8-hour L_{eq} limit, and thus help inform when construction BMPs may be needed.

Distances to the FTA's 80 dBA 8-hour L_{eq} contour line were calculated using the worksheets found in Attachment A of the noise technical memorandum (Appendix D). Table 13 contains the distance from the pipeline up to which a predicted impact could be expected based on the pipeline construction phase, as well as a worst-case distance calculated by combining the two pipeline construction phases.

Table 13. Distance to 80 dBA Noise Contour by Construction Phase

Phase	Distance to the FTA 80 dBA 8-hour L_{eq} Contour From Pipeline Centerline (feet)
Pipeline installation trenching	95
Paving for pipelines	45

Note:
dBA = A-weighted decibel; FTA = Federal Transit Administration; L_{eq} = equivalent continuous sound level (time-averaged sound level)

Although nearby off-site residences would be exposed to elevated construction noise levels, the exposure would be short term and would cease upon completion of project construction. It is anticipated that active construction associated with the proposed project would take place within the allowable hours per Section 4.6-7 of the County of Orange Codified Code of Ordinances (7:00 a.m. through 8:00 p.m. Monday through Saturday), and would not occur outside of those hours or on Sundays or national holidays. In the event that construction is required to extend beyond these times, extended hours permits would be required. As such, construction would not violate the County's standards for construction noise.

MM-NOI-1 and MM-NOI-2 would be required to reduce construction noise associated with the proposed project and to ensure that nearby NSRs are informed of construction activities. The effectiveness of the measures listed in MM-NOI-1 would vary from several decibels (which is a relatively small change) to 10 or more decibels (which would be perceived as a substantial change). The range of effectiveness would vary based on the equipment in use, the original condition of the equipment, the specific location of the noise source and receiver, and other conditions. The noise reduction achieved by equipment silencers, for example, would range from several decibels to well over 10 decibels. Limiting equipment idling could reduce overall noise levels up to several decibels. However, the measures listed in MM-NOI-1, in combination, would result in a substantial decrease in construction noise. Although MM-NOI-2 would not reduce construction noise levels, it would ensure that NSRs in the project area are prepared for any nuisances that may occur, and would allow them to plan accordingly. Upon implementation of MM-NOI-1 and MM-NOI-2, impacts would be less than significant.

MM-NOI-1 Construction Noise Reduction**.** The Santa Margarita Water District shall require its construction contractor to comply with the following measures during construction:

1. Construction activities shall not occur between the hours of 8:00 p.m. and 7:00 a.m. Monday through Saturday, or on Sundays or national holidays. In the event that construction is required to extend beyond these times, extended hours permits shall be required.
2. Pumps and associated equipment (e.g., portable generators) shall be situated and configured to minimize noise at nearby noise-sensitive receivers.
3. Where possible, staging of construction equipment shall be situated at least 45 feet from noise- or vibration-sensitive land uses.
4. All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
5. All mobile or fixed noise-producing equipment used for the project that are regulated for noise output by a local, state, or federal agency shall be in compliance with regulations.
6. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses.
7. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.

8. Mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
9. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be used for safety warning purposes only.

MM-NOI-2 Notification. Effective communication with local residents shall be maintained prior to and during construction. Specifically, the Santa Margarita Water District or its designee shall inform local residents of the schedule, duration, and progress of construction. Additionally, residents shall be provided contact information for noise- or vibration-related complaints.

Although this assessment uses the FTA 80 dBA 8-hour L_{eq} as the threshold for construction noise impacts, the aforementioned threshold is not a regulation, but merely a recommendation, and provides informative context on what may be considered a reasonably acceptable limit for construction noise exposure over such a time period. Should SMWD choose to adopt the 80 dBA 8-hour L_{eq} value as an appropriate construction noise limit for the limited purposes of the project and this predictive assessment of potential environmental noise impact, the BMPs outlined in this section may be implemented where recommended herein.

Pump Station Stationary Noise Prediction and Impact Assessment

The project's pump stations would include a variety of noise-producing mechanical equipment that were analyzed as stationary sources. The aggregate noise emissions from outdoor-exposed sound sources were predicted with the Datakustik CadnaA sound propagation program. The CadnaA computer software allows sources of sound emissions to be positioned in simulated three-dimensional space, having heights and footprints consistent with project architectural plans and elevations. In addition to the sound source inputs and building-block structures that define the three-dimensional sound propagation model space, the following assumptions and parameters are included in this CadnaA-supported stationary noise source assessment:

- Ground effect acoustical absorption coefficient equal to 0.5, which intends to represent an average or blending of ground covers that are characterized largely by hard reflective pavements and existing building surfaces across the project site and the surroundings
- Reflection order of 1, which allows for a single reflection of sound paths on encountered structural surfaces, such as the modeled building masses
- Calm meteorological conditions (i.e., no wind) with 68°F and 50% relative humidity
- All of the modeled noise sources are operating concurrently and continuously for a minimum of 1 hour

Based on design assumptions developed for the project, the proposed facilities would contain booster pumps rated at up to 600 horsepower. Table 14 contains the modeled sound power level data for a sample pump unit. Reference sound levels for the pumps were calculated for use in the CadnaA model from a combination of inputs that include the revolutions per minute and motor power. For the analysis of noise from pump operation, the assumed revolutions per minute was set to 1,800, and the 600-horsepower value was converted to kilowatts for use in the calculation.

Table 14. Modeled Sound Power Levels for Stationary Sources

Building	Sound Source	Overall L_{eq} (dB)	Unweighted Decibel at Octave Band Center Frequency (Hertz)								
			32.5	63	125	250	500	1000	2000	4000	8000
Pump Station	Pump	104.5	92.0	93.0	94.0	96.0	96.0	99.0	96.0	92.0	86.0

Note:
dB = decibel; L_{eq} = equivalent continuous sound level (time-averaged sound level)

The proposed project buildings may feature other noise emitters, but their contributions would tend to be sporadic or otherwise occur infrequently, and thus be expected to have no greater acoustic contribution to an hourly L_{eq} than the continuous-type pump noise studied herein.

Table 15 presents the predicted pump station operational noise exposure level at the NSRs for each of the pump stations within the project site.

Table 15. Predicted Pump Station Operational Noise Levels

Pump Station ID	Nearest Noise-Sensitive Receptor	Predicted Noise Level (dBA, L_{eq})
Trabuco	NSR1 (22648 Los Alisos Boulevard)	43.3
Portola	NSR2 (31361 Trigo Trail)	49.0
Eastbrook	NSR3 (21622 Marguerite Parkway)	48.0

Note:
dBA = A-weighted decibel; L_{eq} = equivalent continuous sound level (time-averaged sound level); NSR = noise-sensitive receptor

All predicted pump station area noise levels appearing in Table 15 are less than 50 dBA L_{eq}, which means that modeled on-site pump station noise would not require further noise control or sound abatement to be compliant with the County's exterior nighttime noise level limit. Details of the prediction results appear in Attachment B of the noise technical memorandum (Appendix D), along with figures showing noise level contours for each of the pump station areas. Therefore, impacts related to stationary operation noise would be less than significant.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. Under certain conditions, construction activities may expose persons to excessive groundborne vibration or groundborne noise, causing a potentially significant impact. The California Department of Transportation has collected groundborne vibration information related to construction activities (Caltrans 2020), and indicates that continuous vibrations with a peak particle velocity (PPV) of approximately 0.2 inches per second (ips) is considered annoying. For context, heavier pieces of construction equipment, such as a bulldozer, which may be expected on the project site, have reference PPV values of approximately 0.089 ips or less at a reference distance of 25 feet (FTA 2018).

Groundborne vibration attenuates rapidly, even over short distances. The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and California Department of Transportation guidance. By way of example, for the same bulldozer operating on site, the estimated vibration velocity level at a source-to-receptor distance of just 15 feet would be 0.19 ips PPV per the equation that follows (FTA 2018):

$$PPV_{rcvr} = PPV_{ref} * (25/D)^{1.5} = 0.19 = 0.089 * (25/15)^{1.5}$$

where PPV_{rcvr} is the predicted vibration velocity at the receiver position, PPV_{ref} is the reference value at 25 feet from the vibration source (the bulldozer), and variable "D" is the actual horizontal distance (in feet) to the receiver.

Therefore, at this predicted PPV for such a very close receptor distance that is not foreseen for the majority of project activities, the potential impact of vibration-induced annoyance to occupants of nearby existing homes would not exceed the 0.2 ips PPV or the 0.3 ips PPV thresholds identified herein for building occupant annoyance and façade damage risk to older residential structures. Therefore, impacts related to vibration would be less than significant.

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 project area to excessive noise levels?***

Less-Than-Significant Impact. There are no private airstrips within the vicinity of the project site. The closest airport to the project site is the John Wayne Airport, approximately 13 miles west of the project boundary. Therefore, airport noise impacts would be less than significant.

3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
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?	☐	☐	☐	☒

a) Would the project 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)?

Less-Than-Significant Impact. The proposed project would involve installation of new recycled water pipelines, a new reservoir, a new pump station, and expansion of an existing pump station. Minor project components would include installation of isolation valves and replacement of existing potable-water meters with recycled-water meters. The proposed project would help enable SMWD to provide up to 4,000 AFY of additional tertiary-treated recycled water to existing dedicated irrigation customers within the SMWD service area. The proposed project would expand SMWD's ability to distribute recycled water within its service area, which would potentially reduce the demand on available potable water supplies. However, no direct growth constraint would be removed, nor would a direct stimulus to growth be added. Therefore, the impact on local population trends would be less than significant.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would be located within existing roadways in the SWMD ROW and on property owned by SMWD, where no housing currently exists. Therefore, housing would not be displaced and no impact would occur.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
iv) Fire protection?	☐	☐	☐	☒
v) Police protection?	☐	☐	☐	☒
vi) Schools?	☐	☐	☐	☒
vii) Parks?	☐	☐	☐	☒
viii) Other public facilities?	☐	☐	☐	☒

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

No Impact**.** The proposed project would not include the addition of housing, schools, or other community facilities that might require fire protection or that would change service ratios. The proposed project would also not indirectly induce the addition of housing, schools, or other community facilities (see Section 3.14[a]) because the recycled water line would serve existing communities. As a result, no impact to fire protection services would occur.

Police protection?

No Impact. The proposed project would not include the addition of housing, schools, or other community facilities that might require police protection. The project would also not indirectly induce additional housing, schools, or other community facilities (see Section 3.14[a]). Construction of the distribution system would not change local police protection response times or affect demand for police protection services in the project area. Therefore, there would be no impact to police protection.

Schools?

No Impact**.** The proposed project would not involve a housing component that would result in population growth or increased demands on existing schools within the area. Therefore, no impact to schools would occur.

Parks?

No Impact. The proposed project would not involve a housing component or increase employment opportunities that would result in population growth. Therefore, additional demands on existing public parks would not occur as a result of project implementation and there would be no impact.

Other public facilities?

No Impact. Refer to the responses above. Because the proposed project would not involve any housing or increase in employment opportunities within the area, there would be no impact on other public facilities.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) ***Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?***

No Impact**.** The proposed project would not involve a housing component or substantially increase employment opportunities within the area; therefore, the project would not increase the use of existing neighborhood or regional parks or other recreational facilities, and there would be no impact.

b) ***Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?***

No Impact. The proposed project would not affect existing recreational resources or require the need for new or expanded recreational facilities. Therefore, there would be no impact associated with recreational facilities.

3.17 Transportation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION – Would the project:				
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)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less-Than-Significant Impact. The proposed project has the potential to create temporary lane closures, sidewalk closures, and bicycle lane closures during installation of pipelines within Antonio Parkway, Avenida de las Banderas, Avenida Empresa, Santa Margarita Parkway, Avenida de las Flores, Coto de Caza Drive, and smaller collector streets within residential and commercial developments, which may increase congestion during peak travel times due to a decrease of vehicle lane capacity. Any potential lane and driveway closures would be coordinated with area residents and businesses to provide proper access. In addition, SMWD would obtain encroachment permits from the City for work in City streets (i.e., Antonio Parkway, Avenida de las Banderas, Avenida Empresa, Santa Margarita Parkway, Avenida de las Flores, Coto de Caza Drive, and collector streets) and from the County for work in County streets (i.e., portion of Antonio Parkway), and would be required to prepare a traffic control plan to minimize impacts to area roadways. With implementation of the traffic control plan, construction impacts would be less than significant.

Once constructed, the pipelines would be below the surface of the roadways, and the reservoir and the pump stations would be located adjacent to roads, featuring existing SMWD infrastructure. The proposed pipelines, reservoir, and pump stations would only require occasional maintenance. Thus, impacts due to operation of the proposed project would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact. CEQA Guidelines Section 15064.3(b) sets forth specific criteria for determining the significance of transportation impacts. Subdivision (b) pertains to land use projects, and describes factors that may indicate whether the amount of a land use project's vehicle miles traveled may be significant or not. Project-related traffic would be limited predominantly to a relatively small number of temporary trips during the construction period and an occasional trip for maintenance purposes. Because the proposed project is not a land use project and would not generate substantial vehicle miles traveled, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and no impact would result.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less-Than-Significant Impact. The proposed project would use existing roadways and would not involve permanent alteration of existing roadways, nor would it require incompatible vehicular access. As discussed previously, the project has the potential to create temporary lane closures, sidewalk closures, and bicycle

lane closures during installation of pipelines within Antonio Parkway, Avenida de las Banderas, Avenida Empresa, Santa Margarita Parkway, Avenida de las Flores, Coto de Caza Drive, and smaller collector streets within residential and commercial developments, which may increase hazards to users of those facilities. Heavy machinery would also be used during construction of the project; however, operation of all construction machinery would be conducted in accordance with the procedures set forth within the project's traffic control plan, as required by the City and County. SMWD would obtain an encroachment permit from the City and County, and would be required to prepare a traffic control plan to minimize impacts to area roadways. With implementation of the traffic control plan, the project's increase in potential hazards would be less than significant.

d) Would the project result in inadequate emergency access?

Less-Than-Significant Impact**.** As discussed previously, construction activities related to the pipeline installation, reservoir, and pump stations would not affect normal circulation flow or emergency access. Construction along the paved portions of the road within existing roadway ROWs could potentially result in temporary lane closures. However, any lane or driveway closures would be coordinated with the City and County, and all local emergency service providers as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the case of an emergency. In addition, SMWD would notice neighborhoods regarding dates for construction, hours of construction activities, and access requirements for emergency vehicles and residents. Once constructed, the pipelines would be entirely underground, and the reservoir and pump stations would be adjacent to roads colocated with existing SMWD infrastructure, and thus, would not impair or interfere with the applicable emergency access. Therefore, impacts would be less than significant.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
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:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) 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	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?				

The evaluation of potential impacts to tribal cultural resources is based on the background research conducted to inform this analysis, including the results of archival research, a CHRIS records search, Native American Heritage Commission (NAHC) and tribal correspondence, and the results of formal tribal consultation completed by SMWD pursuant to AB 52, a brief summary of which is provided in this section (see also Appendix E).

Native American Heritage Commission and Tribal Correspondence

Dudek requested an NAHC search of its Sacred Lands File for the cultural resources study area (including the proposed pipeline alignment) and a 0.5-mile radius on June 1, 2023. The Sacred Lands File consists of a database of known Native American resources. These resources may not be included in the SCCIC database. The NAHC replied via email on June 27, 2023, stating that the Sacred Lands File search was completed with positive results. Positive results indicate the presence of Native American resources within 0.5 miles of the study area, and not necessarily directly within the study area. Additionally, the NAHC provided a list of Native American tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in the area. Tribal outreach letters were mailed on July 7, 2023, to all Native American group representatives included on the NAHC contact list. These letters attempted to solicit information relating to Native American resources that may be impacted by project implementation. Native American representatives were requested to define a general area where known resources intersect the study area.

Dudek notified 18 California Native American tribal representatives and received one response from the following tribal entity: the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes. Table 16 summarizes the results of Dudek's NAHC and tribal correspondence efforts for the project.

Assembly Bill 52 Consultation Outreach

The project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process and that the lead agency notify California Native American tribal representatives (who have requested notification) who are traditionally or culturally affiliated with the geographic area of the project. All NAHC-listed California Native American tribal representatives who have requested project notification pursuant to AB 52 were sent letters by SMWD on July 17, 2023, via United States Postal Service certified mailing. The notification letters contained a project description, an outline of AB 52 timing, an invitation to consult, a project site plan, and contact information for the appropriate lead agency representative. AB 52 allows tribes 30 days after receiving notification to request consultation. If a response is not received within the allotted 30 days, it can be assumed that consultation is declined. The 30-day tribal consultation request window pursuant to AB 52 closed on August 17, 2023.

SMWD notified 18 California Native American tribal representatives and received one response from the following tribal entity: the Gabrielino Tongva Indians of California Tribal Council. Table 16 summarizes the results of the AB 52 consultation efforts for the project. The confidential AB 52 consultation records are on file with SMWD.

Table 16. Tribal Correspondence and Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Consultation Record
Christina Conley, Cultural Resources Director Gabrielino Tongva Indians of California Tribal Council	**August 3, 2023** Email from Ms. Conley to the Santa Margarita Water District (SMWD) acknowledging receipt of Assembly Bill (AB) 52 notification letter for the project and requesting a cultural resources report for the project. **September 20, 2023** Email from SMWD to Ms. Conley acknowledging receipt of Ms. Conley's request for a cultural report and consultation on the project. In the email, SMWD proposed to Ms. Conley a series of dates and times for the purposes of an AB 52 consultation meeting and requested that Ms. Conley provide additional information regarding any tribal cultural resources that may be affected by the project. **November 1, 2023** Cultural resources technical report sent to Ms. Conley by a Dudek cultural resources specialist. **November 15, 2023** Follow-up email from SMWD to Ms. Conley proposing a series of additional dates and times for the purposes of an AB 52 consultation meeting. The email further requested that Ms. Perry provide additional information regarding any tribal cultural resources that may be affected by the project and to reply by December 5, 2023. To date, no additional record of communication has been received by SMWD from Ms. Conley or the Gabrielino Tongva Indians of California Tribal Council.
Joyce Perry, Cultural Resources Director Juaneño Band of Mission Indians, Acjachemen Nation-Belardes	**August 14, 2023** Email from Ms. Perry to Dudek acknowledging receipt of information request letter for the project and requesting a cultural resources report and proposed mitigation measures for the project. Ms. Perry also noted that the project is located within what the Juaneño consider their territory. Additionally, Ms. Perry indicated that the project site and 0.5-mile radius include several habitation and village sites of cultural significance to the Acjachemen people. Ms. Perry also indicated that the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes wish to consult on this project going forward. **September 20, 2023** Email from SMWD to Ms. Perry acknowledging receipt of Ms. Perry's request for a cultural report and consultation on the project. In the email, SMWD proposed to Ms. Perry a series of dates and times for the purposes of an AB 52 consultation meeting and requested that

Table 16. Tribal Correspondence and Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Consultation Record
	Ms. Perry provide additional information regarding any tribal cultural resources that may be affected by the project. **November 1, 2023** Cultural resources technical report sent to Ms. Perry by a Dudek cultural resources specialist. **November 15, 2023** Follow-up email from SMWD to Ms. Perry proposing a series of additional dates and times for the purposes of an AB 52 consultation meeting. The email further requested that Ms. Perry provide additional information regarding any tribal cultural resources that may be affected by the project and to reply by December 5, 2023. **November 16, 2023** Email from Ms. Perry to SMWD stating their availability for an AB 52 consultation meeting. Email from Ms, Perry to Dudek confirming receipt of the cultural resources technical report and requesting that Native American monitoring during ground disturbing activities be included as a mitigation measure for the Project. **December 14, 2023** A virtual AB 52 consultation meeting between SMWD and Ms. Perry was conducted. In this meeting, Ms. Perry stated that there were several Juaneño village sites throughout the study area, as well as within Trabuco Hills and Rancho Santa Margarita. Ms. Perry expressed interest in continuing communication with SMWD regarding the project and recommended that Native American monitoring be included in the budget during project implementation.
Andrew Salas, Chairperson Gabrieleno Band of Mission Indians – Kizh Nation	No response has been received to date.
Christina Swindall Martinez, Secretary Gabrieleno Band of Mission Indians – Kizh Nation	No response has been received to date.
Anthony Morales, Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians	No response has been received to date.
Sandonne Goad, Chairperson Gabrielino /Tongva Nation	No response has been received to date.
Robert Dorame, Chairperson Gabrielino Tongva Indians of California Tribal Council	No response has been received to date.

Table 16. Tribal Correspondence and Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Consultation Record
Charles Alvarez, Chairperson Gabrielino-Tongva Tribe	No response has been received to date.
Sam Dunlap, Cultural Resource Director Gabrielino-Tongva Tribe	No response has been received to date.
Sonia Johnston, Chairperson Juaneno Band of Mission Indians	No response has been received to date.
Heidi Lucero, Chairperson, Tribal Historic Preservation Officer Juaneno Band of Mission Indians Acjachemen Nation 84A	No response has been received to date.
Norma Contreras, Chairperson La Jolla Band of Luiseno Indians	No response has been received to date.
Shasta Gaughen, Tribal Historic Preservation Officer Pala Band of Mission Indians	No response has been received to date.
Alexis Wallick, Assistant Tribal Historic Preservation Officer Pala Band of Mission Indians	No response has been received to date.
Temet Aguilar, Chairperson Pauma Band of Luiseno Indians	No response has been received to date.
Lovina Redner, Tribal Chair Santa Rosa Band of Cahuilla Indians	No response has been received to date.
Isaiah Vivanco, Chairperson Soboba Band of Luiseno Indians	No response has been received to date.
Joseph Ontiveros, Cultural Resources Department Soboba Band of Luiseno Indians	No response has been received to date.

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)?

Less-Than-Significant Impact**.** As discussed in Section 3.5, Cultural Resources, while the NAHC does have records of sacred sites in the larger search area, no previously recorded cultural resources of Native American origin or Tribal Cultural Resources (TCRs) listed in the CRHR or a local register were identified within the study area as a result of the SCCIC records search or as a result of information provided from consulting tribes. Therefore, the project would not adversely affect TCRs that are listed or eligible for listing in the state or local register. Impacts would be less than significant.

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?

Less-Than-Significant Impact with Mitigation Incorporated**.** An appropriate approach to potential impacts to TCRs is developed in response to the identified presence of a TCR by California Native American Tribes through the process of consultation. The AB 52 process requires consideration of impacts to TCRs as part of the CEQA process and requires lead agencies notify and, if requested, consult with California Native American tribal representatives who are traditionally or culturally affiliated with the geographic area of the project. As a result of SMWD's outreach efforts, two tribal organizations responded expressing interest in the project: the Gabrielino Tongva Indians of California Tribal Council and the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes.

Following an initial response to project notification, the Gabrielino Tongva Indians of California Tribal Council did not respond to subsequent follow up coordination attempts intended to schedule consultation meetings initiated by SMWD. Based on communications to date, it is understood that this Ms. Conley, acting on behalf of the tribe, does not desire to consult further on the project.

The Juaneño Band of Mission Indians, Acjachemen Nation-Belardes responded to project notification with a request to consult further. Through emails and a subsequent consultation meeting, Ms. Perry indicated that the project is proposed within areas that contain Juaneño village sites. No accompanying detail was provided pertaining to the significance-defining characteristics of these identified resources or supporting the presence of specific, geographically defined TCRs that could be affected by project-related construction or operation. As noted previously, no known cultural resources of Native American origin or association have been identified within areas that would be affected by the project. While SMWD acknowledges that the landscape surrounding the project was traditionally used by indigenous peoples, no substantial evidence was presented demonstrating that the project has the potential for affecting TCRs, as defined by California Public Resources Code, Section 21074(a).

However, in acknowledgement of information provided through consultation and in an effort to protect unknown TCRs, SMWD has developed mitigation measures (**MM-CUL-1** through **MM-CUL-3**) as outlined in Section 3.5, Cultural Resources, to ensure proper treatment of unknown cultural and tribal resources in the event of an inadvertent discovery. In addition to stipulated mitigation, SMWD had committed to continued coordination and communication between SMWD and the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes as the project continues through planning and implementation.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, 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 provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
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 management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less-Than-Significant Impact. The proposed project would involve installation of new recycled water pipelines, a new reservoir, and a new pump station, and expansion of an existing pump station to extend SMWD's recycled water service to ID 4A in the City of Rancho Santa Margarita. Any potential environmental

impacts related to installation of new water facilities are already accounted for in this MND as part of the impact assessment conducted for the entirety of the proposed project. No adverse physical effects beyond those already disclosed in this MND would occur as a result of installation of new water facilities. As such, impacts associated with the installation of new water facilities would be less than significant.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

No Impact. The proposed project would permanently convert 4,000 AFY of irrigation demand from potable water to recycled water. Consequently, the proposed project would expand SMWD's potable water supplies, and no impact would occur.

c) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed project would permanently convert 4,000 AFY of irrigation demand from potable water to recycled water. This would not affect existing wastewater collection and or increase treatment demand, and no impact would occur.

d) Would the project 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?

Less-Than-Significant Impact**.** Waste generation and disposal requirements associated with the proposed project would be limited to minor quantities derived from construction activities (e.g., material packaging) and employees (e.g., food-related trash). Solid waste from the proposed project would be disposed of at the County's Prima Deshecha Landfill south of the project site near San Juan Capistrano. The Prima Deshecha Landfill has a remaining capacity of 134,300,000 cubic yards and a maximum permitted throughput of 4,000 tons per day (CalRecycle 2019). Therefore, given the minimal waste that would be produced by the proposed project and the remaining capacity and permitted throughput of the Prima Deshecha Landfill, it is anticipated that the landfill would have sufficient capacity to accommodate the minimal amount of project-related waste. Associated potential impacts from project implementation would be less than significant.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-Than-Significant Impact. Construction and operation of the proposed project would generate minimal solid waste and would not affect landfill capacity. During construction of the proposed project, construction debris (e.g., excavated soil, asphalt) would be generated. Solid waste debris would be disposed of at a permitted landfill. Moreover, AB 939, also known as the Integrated Waste Management Act, mandates the reduction of solid waste disposal in landfills by requiring a minimum of 50% diversion rate. Accordingly, at least one-half of the potential construction waste would be diverted from a landfill. The remaining quantity is reasonably anticipated to be within the permitted capacity of the permitted landfills serving the project area. Therefore, impacts related to solid waste would be less than significant.

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
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) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact**.** As discussed in Section 3.9, Hazards and Hazardous Materials, emergency response within the Orange County Operational Area is managed by the County's Emergency Operations Center, which coordinates disaster response and recovery for the operational area, including all political subdivisions of the County, and communicates resource requirements and availability with the State Regional Operations Center. The Emergency Operations Center has a number of emergency response plans in place should an emergency or disaster occur. Additionally, the City maintains an EOP to address the planned response to emergencies. The EOP's primary focus is coordinated mutual aid within the City and fulfilling reporting requirements to the Orange County Operational Area. The EOP establishes policies and procedures for emergency response, identifies authorities, and assigns responsibilities for response activities. Major arterials serve as the primary routes for evacuation; however, evacuation routes would depend on the emergency event and area affected (City of Rancho Santa Margarita 2016). Construction activities related to the proposed project could potentially result in temporary lane closures. However, any lane or driveway closures would be coordinated with the appropriate jurisdiction in which the construction takes place (City of Rancho Santa Margarita and/or County of Orange) as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented, including measures

to preserve access in the case of an emergency. In addition, SMWD would notice the neighborhood regarding dates for construction, hours of construction activities, and access requirements for emergency vehicles and residents. Once constructed, the proposed pipelines would be entirely underground, and the reservoir and pump stations would be adjacent to roads, colocated with existing SMWD infrastructure.

Therefore, construction and operation of the proposed project would not interfere with an adopted emergency response plan or evacuation plan, nor would it substantially impede public access or roadway circulation. Therefore, the proposed project would have less-than-significant impacts.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less-Than-Significant Impact. The project site is within proximity to very high fire hazard severity zones (Figure 7, Fire Hazard Severity Zones). However, upon completion of construction, the proposed pipelines would be underground in streets, and the reservoir and pump stations would be within or adjacent to existing developed SMWD facilities. The project would not introduce new project occupants to the project site. Consequently, in the case of a wildfire, project implementation would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant.

c) Would the project 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?

Less-Than-Significant Impact. The proposed project would involve installation and maintenance of infrastructure within, or in close proximity to, very high fire hazard severity zones. However, upon completion of construction, the proposed pipelines would be located entirely underground and would not exacerbate fire risk. On the contrary, the project would involve installation of a recycled water irrigation system, which could potentially mitigate wildfire risks by ensuring that landscaping is well-irrigated, even during times of drought. Additionally, the reservoir and pump stations would be aboveground within or adjacent to existing developed SMWD facilities. Although the project would result in temporary impacts to the environment associated with the installation of infrastructure within, or in close proximity to, very high fire hazard severity zones, as discussed throughout this MND, all project impacts are at, or have been sufficiently mitigated to, less-than-significant levels. Therefore, impacts associated with the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment would be less than significant.

d) Would the project 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?

Less-Than-Significant Impact. As discussed in Section 3.10, Hydrology and Water Quality, construction of the reservoir would require clearing native vegetation from a small hill and excavating material to create a suitable elevation and level foundation for the proposed tank. However, the new reservoir would follow the same drainage patters as the adjacent tank. The new pump station would be placed in a developed area that is clear of vegetation and used for equipment staging, and would not result in runoff, post-fire instability, or drainage changes. The expansion of the existing pump station would occur in an area that is currently developed and would not result in a significant change. Once construction of the pipeline is completed, the project site would be restored to a condition similar to that of existing conditions. The

majority of the proposed project is underground and would not result in a permanent change to ground surfaces or topography, and the minor, aboveground components of the project would result in minor changes in topography. Therefore, the project would not 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, and impacts would be less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project 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) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a) Does the project 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?

Less-Than-Significant Impact with Mitigation Incorporated. As discussed in Section 3.4, Biological Resources, potential indirect impacts could occur to sensitive vegetation communities. Although the project site occurs within an urban setting and there is an existing, baseline level of disturbance, indirect impacts associated with construction noise could be significant to coastal California gnatcatcher if impacts occur

during the breeding/nesting season. Implementation of MM-BIO-1 and MM-BIO-2 would reduce these indirect impacts to less than significant.

In addition, it is always possible that intact archaeological deposits are present at subsurface levels. For this reason, the project site should be treated as potentially sensitive for archaeological resources. Therefore, MM-CUL-1 is recommended to reduce potential impacts to unanticipated archaeological resources to less than significant. Furthermore, in the event that intact paleontological resources are located on the project site, ground-disturbing activities associated with construction of the proposed project, such as excavating during site preparation, have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of MM-GEO-1, impacts would be reduced to less than significant.

b) ***Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?***

Less-Than-Significant Impact with Mitigation Incorporated. When evaluating cumulative impacts, it is important to remain consistent with Section 15064(h) of the CEQA Guidelines, which states that an EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Alternatively, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable through mitigation measures set forth in an MND, or if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, HCP, natural community conservation plan, and/or plans or regulations for the reduction of GHG emissions) that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.

The proposed project would potentially result in project-related biological resources, cultural resources, geological resources, and tribal cultural resources impacts that could be potentially significant without the incorporation of mitigation. Thus, when coupled with biological resources, cultural resources, geological resources, and tribal cultural resources impacts related to the implementation of other related projects throughout the broader project area, the project would potentially result in cumulative-level impacts if these significant impacts are left unmitigated.

However, with the incorporation of mitigation identified herein, the project's impacts to biological resources, cultural resources, geological resources, and tribal cultural resources would be reduced to less-than-significant levels and would not considerably contribute to cumulative impacts in the greater project region. In addition, these other related projects would presumably be bound by their applicable lead agency to (1) comply with the all applicable federal, state, and local regulatory requirements, and (2) incorporate all feasible mitigation measures, consistent with CEQA, to further ensure that their potentially cumulative impacts would be reduced to less-than-significant levels.

Although cumulative impacts are always possible, the project, by incorporating all mitigation measures outlined herein, would reduce its contribution to any such cumulative impacts to less than cumulatively considerable; therefore, the project would result in individually limited, but not cumulatively considerable, less-than-significant impacts with mitigation incorporated.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less-Than-Significant Impact. As evaluated throughout this MND, environmental impacts associated with the proposed project would be reduced to less-than-significant levels. Thus, the proposed project would not directly or indirectly cause substantial adverse effects on human beings. Impacts would be less than significant.

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4.2 List of Preparers

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Dudek

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Cole Martin, Noise Analyst
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Tommy Molioo, Senior Biologist
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Michael Williams, PhD, Senior Paleontologist
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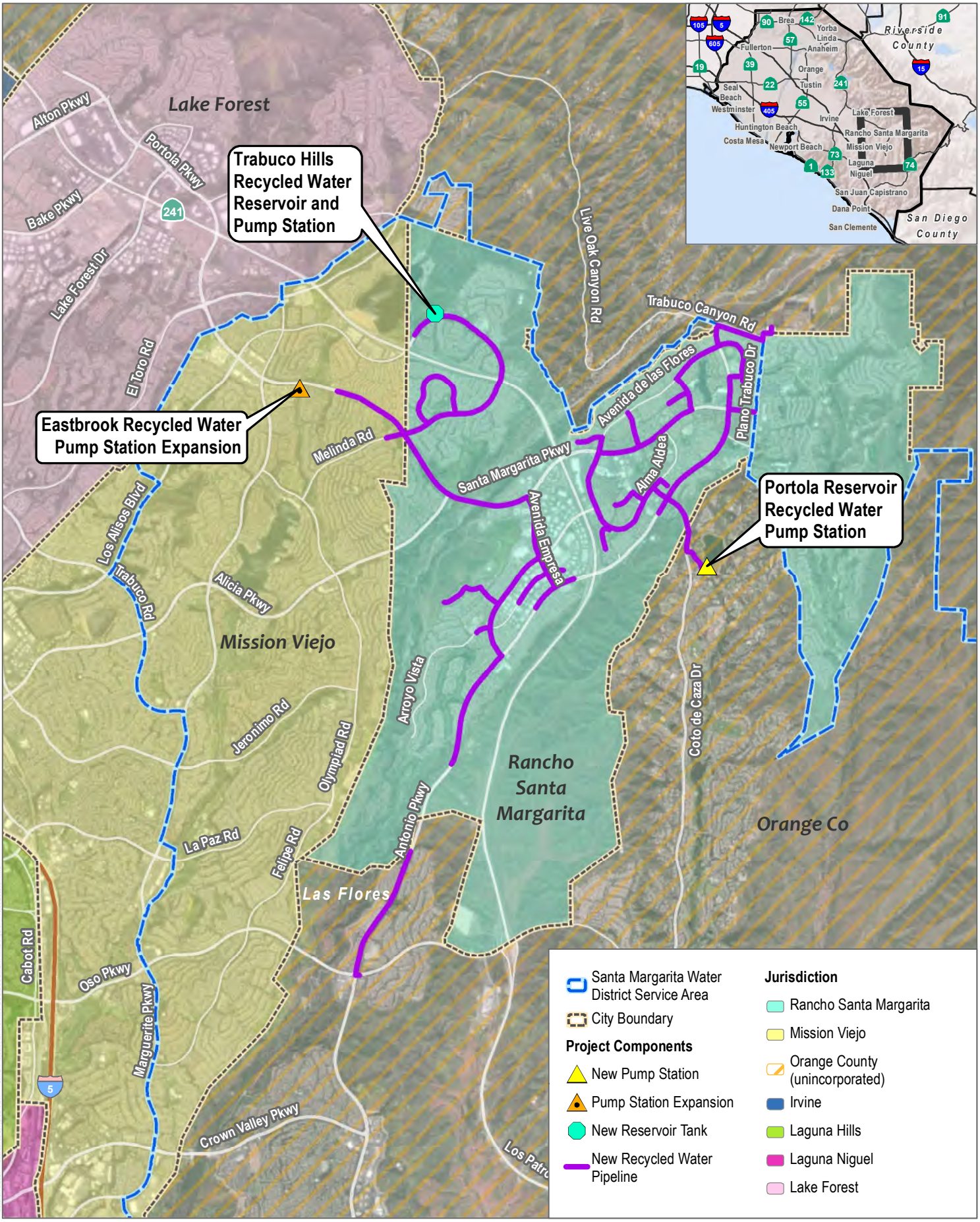

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 0.5 1 Miles

FIGURE 1

Project Location

Rancho Santa Margarita Recycled Water System Project MND

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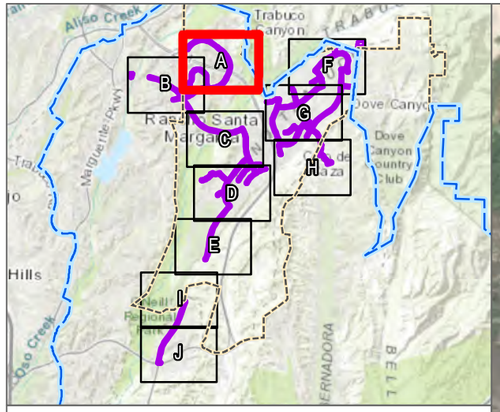

- New Recycled Water Pipeline
- Proposed Tank and Pump Station Areas
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

Trabuco Hills Recycled Water Reservoir and Pump Station

Altisima
Ceramica
Porcelana
Baldosa
Placita
Colorido
Los Alisos Blvd
La Sordina
Los Platillos
La Cuerda
La Flauta
El Pandero
Via Trompeta
La Sinfonia
El Guiro
Mira Mesa
Tierra Plano
Tierra Montanosa
El Tambor
Las Castanetas
Rancho Trabuco
Tierra Seguro
Paseo Viento
Paseo Primero
241
Foothill Transportation Corridor
Calle San Luis Rey
Via Cuidado
Calle Liberacion
Calle Alamitos
Calle Sonoma
Via Arribo
Brisa Fresca
Via Rosado
Campamento
Relampago
Via Tronido
Via Boyero
Via Carmin
Mira Segura
Via Estampida
El Potro
Via Balin
El Balazo
Las Balas
Via Topacio
Via Azure
El Morro
Via Regressos
Via Silla
Via Brida
Via Pastura
Pyrite
Plushstone
Tanzanite
Ametrine Way
Korite
Lazurite
Anglesite
Ammolite
El Prisma
Via Gatillo
El Cencerro
Melinda Rd
Via Frontera
Via Encaro
Camino del Oro
Paseo del Sol
Via Vison
Las Fieras
Turritella Way
Feldspar Way

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2A

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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- New Recycled Water Pipeline
- Proposed Tank and Pump Station Areas
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2B

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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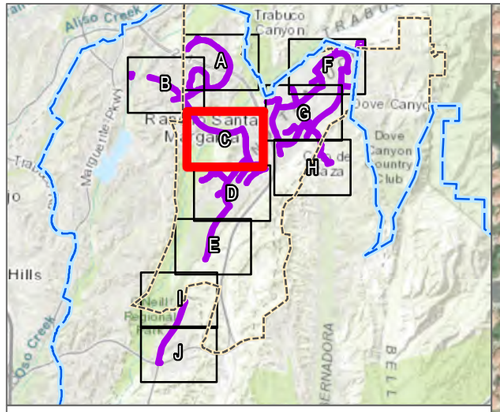

New Recycled Water Pipeline
Santa Margarita Water District Service Area
City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2C

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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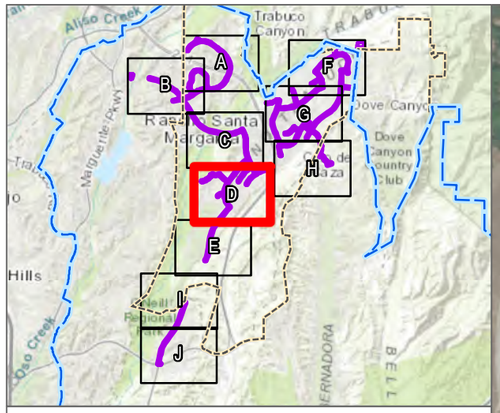

- New Recycled Water Pipeline
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK 0 250 500 Feet

FIGURE 2D

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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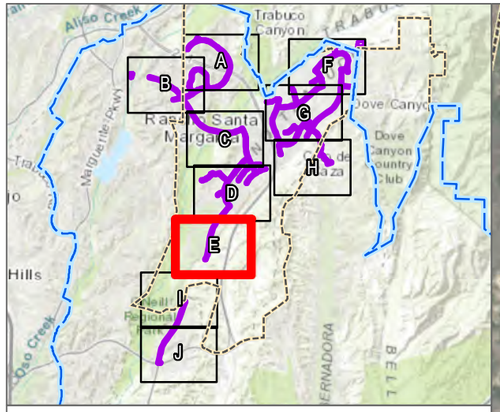

- New Recycled Water Pipeline
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK 0 250 500 Feet

FIGURE 2E

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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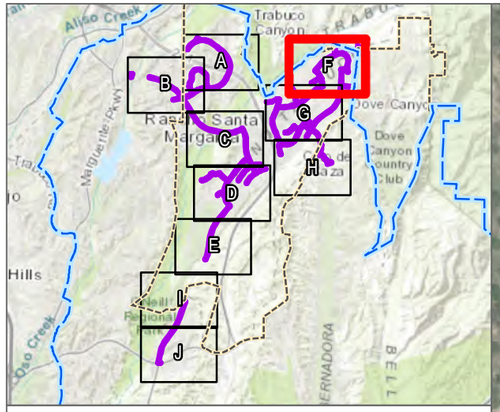

- New Recycled Water Pipeline
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2F

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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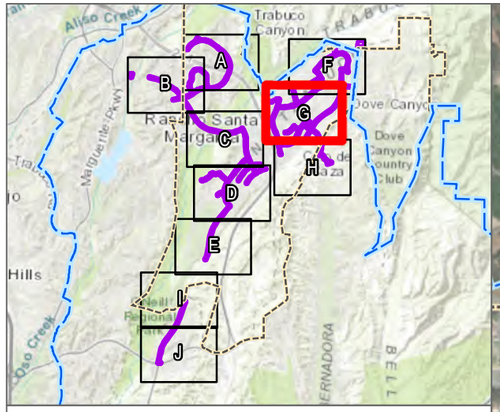

New Recycled Water Pipeline
Santa Margarita Water District Service Area
City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2G

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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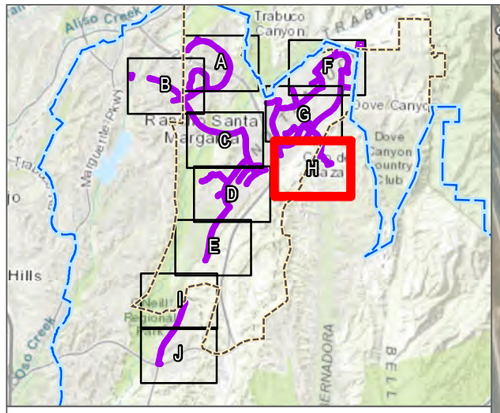

- New Recycled Water Pipeline
- Proposed Tank and Pump Station Areas
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

Sevilla
Ibiza
Calle de Los Ninos
Alma Aldea
Santa Fe
Milagro
Las Cruces
Socorro
Pecos
Taos
Bienvenidos
El Prado
Foothill Transportation Corridor
Antonio Pkwy
241
Marquette Way
Mandarina Ln
Portola Reservoir
Portola Reservoir Recycled Water Pump Station
Manzana Way
Via Presea
Via Peralta
Coto de Caza Dr
Alta Dr
Via Celeste
Via Masala
Vista del Verde
Via Dorado
Skylark Way
Quail Pl
Trigo Trail
Maravilla Ln
Sanriente Trail
Via Pajaro
Pradera Rd
Via Alondra

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2H

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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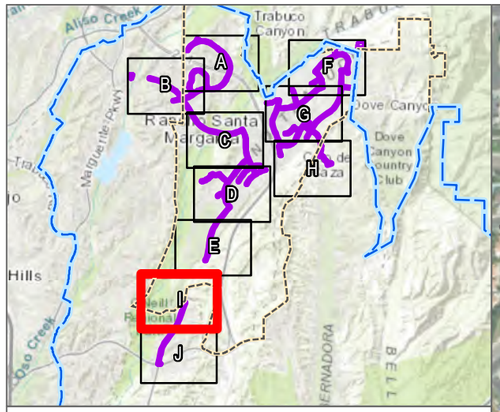

New Recycled Water Pipeline
Santa Margarita Water District Service Area
City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 2I

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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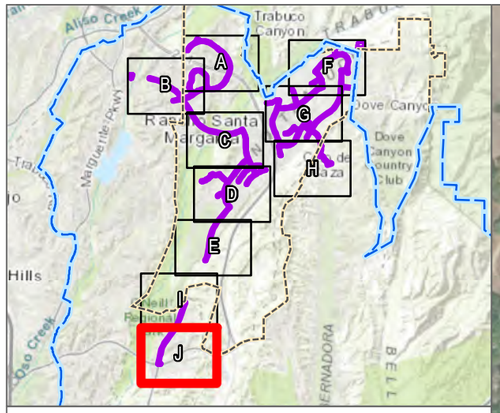

- New Recycled Water Pipeline
- Santa Margarita Water District Service Area
- City of Rancho Santa Margarita

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK 0 250 500 Feet

FIGURE 2J

Pipeline Alignment and System Details

Rancho Santa Margarita Recycled Water System Project MND

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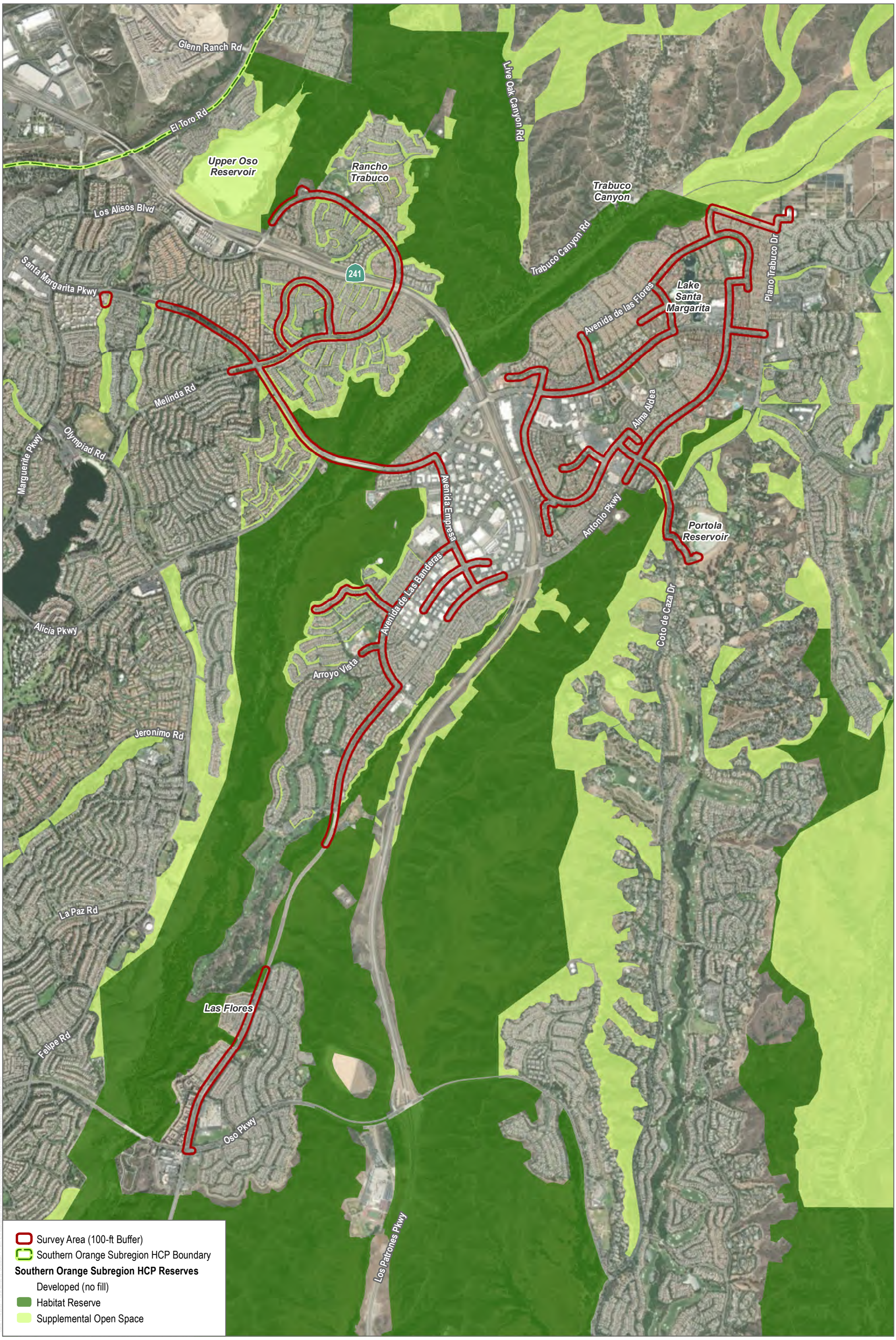

SOURCE: Maxar 2022; Open Street Map 2019; County of Orange 2019

DUDEK

0 1,250 2,500 Feet

FIGURE 3

Southern Subregion HCP

Rancho Santa Margarita Recycled Water System Project MND

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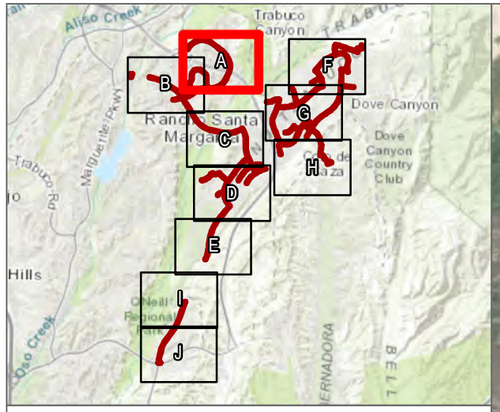

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)
- Proposed Tank and Pump Station Areas
- Nest point - common raven (Corvus corax)

Vegetation Communities and Land Covers

- Artcal, California sagebrush
- DEV, Urban/Developed
- DH, Disturbed Habitat
- ORN, Ornamental plantings

Artcal
Artcal
Trabuco Hills Recycled Water Reservoir and Pump Station
Artcal
DH
Altisima
Ceramica
Porcelana
Baldosa
Placita
Colorido
La Flauta
La Cuerda
La Sordina
Via Trompeta
El Pandero
La Sinfonia
Los Platillos
El Guiro
Mira Mesa
Los Alisos Blvd
Tierra Plano
El Tambor
Las Castanetas
Tierra Montanosa
Rancho Trabuco
Tierra Seguro
Paseo Viento
Paseo Primero
241
Foothill Transportation Corridor
Calle San Luis Rey
Via Cuidado
Calle Liberacion
Calle Alamitos
Calle Sonoma
Brisa Fresca
Via Arribo
Via Rosado
Campamento
Relampago
Via Tronido
Via Boyero
Via Carmin
Mira Segura
Via Estampida
El Potro
Plushstone
Pyrite
Via Balin
El Balazo
Las Balas
Via Topacio
Via Pastura
Tanzanite
Via Azure
El Morro
Via Regressos
Via Silla
Via Brida
Ametrine Way
El Prisma
Via Gatillo
El Cencerro
Melinda Rd
Korite
Lazurite
Anglesite
Via Frontera
Las Fieras
Turritella Way
Feldspar Way
Ammolite
Camino del Oro
Paseo del Sol
Via Encaro
Via Vison

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4A

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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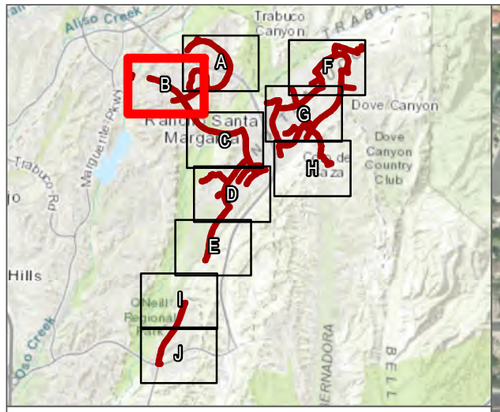

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)
- Proposed Tank and Pump Station Areas

Vegetation Communities and Land Covers

- DEV, Urban/Developed
- Hirinc, Shortpod Mustard
- ORN, Ornamental plantings
- Sallas, Arroyo willow

Eastbrook Recycled Water Pump Station Expansion

Hirinc

Sallas

Hirinc

Santa Margarita Pkwy

Los Alisos Blvd

Foothill Transportation Corridor

241

Bishop
Shore
Singleleaf
Limber
Pinecrest
Virginia
Manzanillo
Cancun
Mazatlan
San Miguel
Capri
Tivoli
Acapulco
Monterey
Miramar
Medina
Basilia
Canaria
Marana
Andorra
Amora
Carabela
Astoria
Alanya
Riviera
Valletta
Canea
Tarraco
Serreta
Cythera
Promenade
Paseo Sabatini
Paseo Picasso
Paseo Campana
San Pablo
San Solarie
Paseo Venezia
Paseo Palmetto
Paseo Maravia
Paseo Theresa
Paseo Caravella
Paseo del Sol
San Leandro
Camino del Oro
Via Madera
Via Encaro
Via Gatillo
El Morro
El Prisma
Via Azure
Via Topacio
Via Carmin
Via Rosado
Via Balin
El Balazo
Las Balas
Mira Segura
Campamento
Via Regressos
Brisa Fresca
Calle Sonoma
Calle Liberacion
Calle San Luis Rey
Via Cuidado
Calle Alamitos
Membrilla
Criptana
Jomada
Prudente
Esmalte
Santa Pola
Lanar
Tomelloso
Bolanos
Melinda Rd
Peach Blossom
Greystone
Hedgerow
Stoney Brook
Walnut Grove
Oak Grove
Greenacres
Deepcreek
Westcliff
Fieldbrook
Mill Pond
Munera
Anaya
Teresa
Castlewood
Bahamas
Cedarwood
Birchwood
Ontur
Constancia
Calatrava
Herencia
La Barca
Alderbrook
Tobarra
Brentwood
Palanca
Consuegra
Fernbrook
Castlebrook
Fairbrook
Flamenco
Balerma
Bogarra
Hiddenbrook
Oakbrook
Pinebrook
Eastbrook
Glenbrook
Sallas
Buenaventura
Mission St
San Fernando
Via Arribo
Via Onza
Via Indomado
Via Torre
Calle Gazapo
Obispo
San Gabriel
La Purisima
San Sebastian
Calle Serra

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4B

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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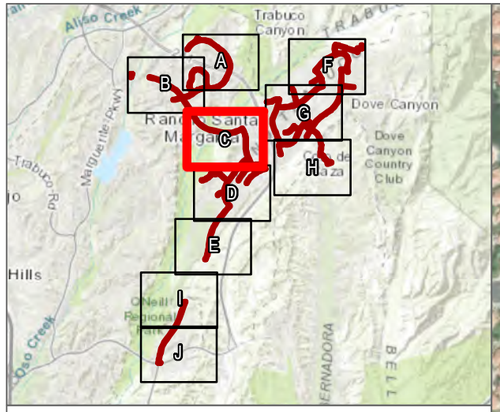

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

- Adefas, Chamise
- DEV, Urban/Developed
- NNG, Non-Native Grassland
- ORN, Ornamental plantings
- Plarac-Queagr, California sycamore-coast live oak
- UW, Unvegetated wash and river bottom

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK 0 250 500 Feet

FIGURE 4C

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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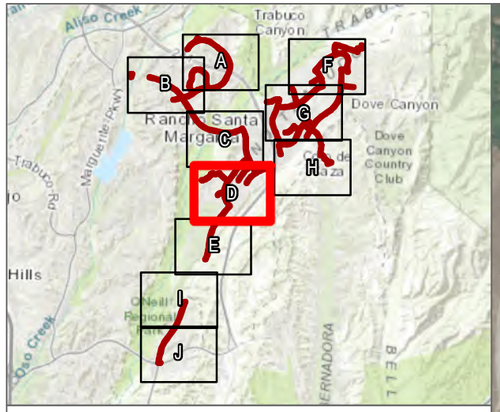


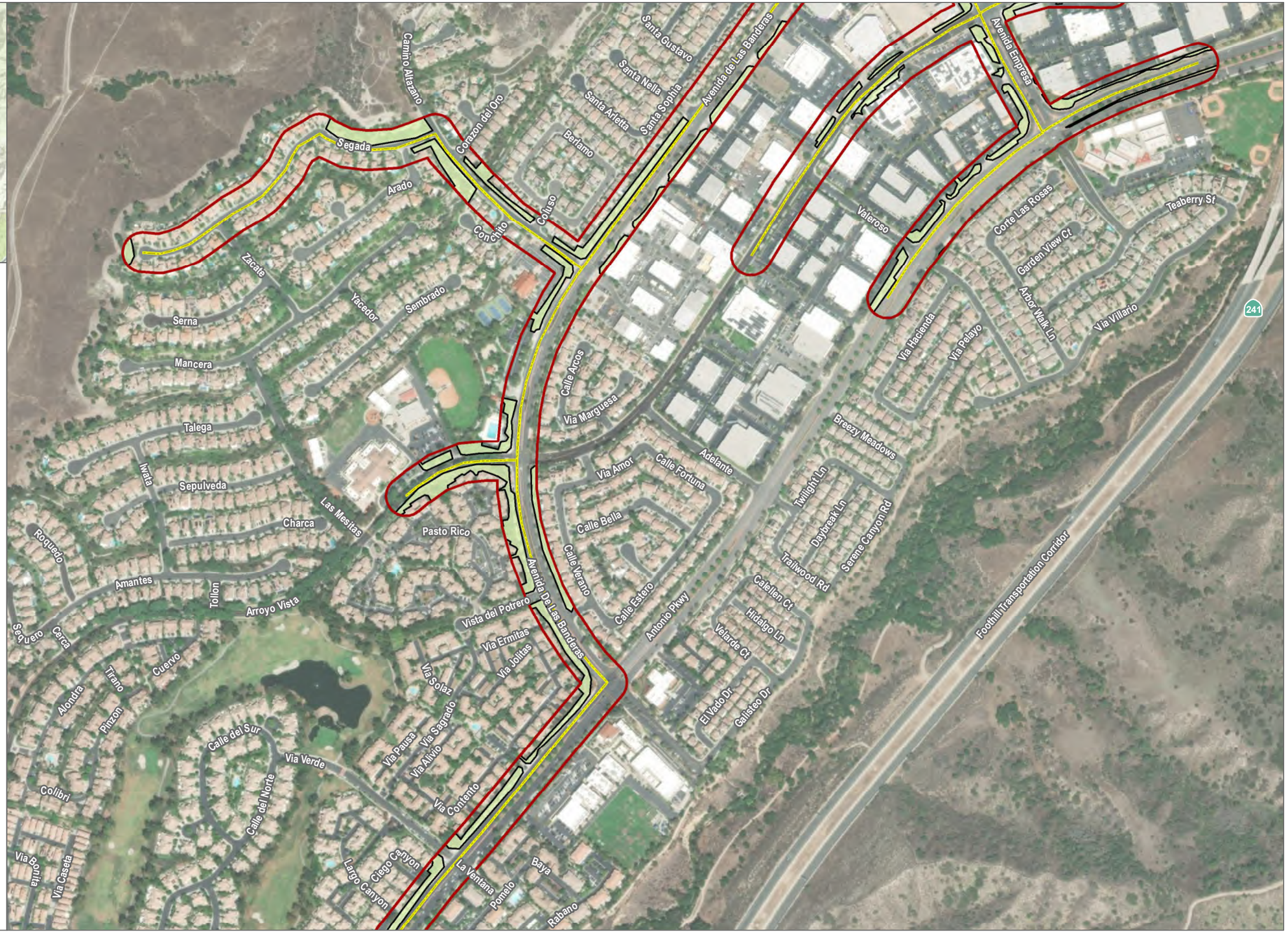
New Recycled Water Pipeline

Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

DEV, Urban/Developed

ORN, Ornamental plantings



SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4D

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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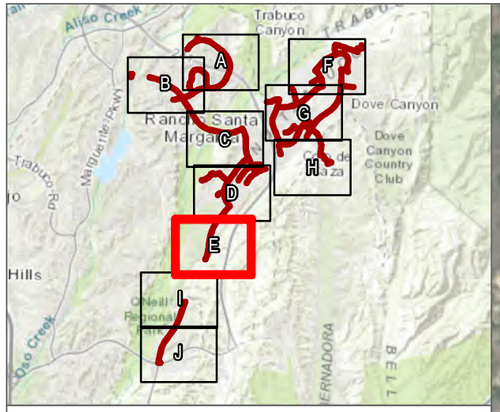

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

- Adefas, Chamise
- DEV, Urban/Developed
- DH, Disturbed Habitat
- Erifas, California buckwheat
- ORN, Ornamental plantings
- Queagr, Coast live oak

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4E

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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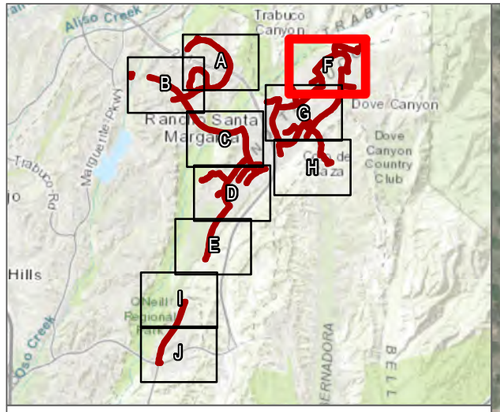

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

- DEV, Urban/Developed
- DH, Disturbed Habitat
- Hirinc, Shortpod Mustard
- ORN, Ornamental plantings
- Queagr, Coast live oak

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4F

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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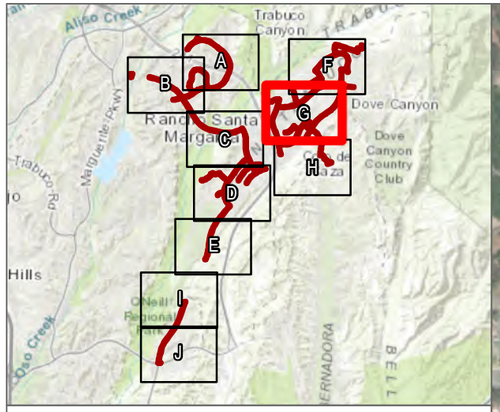

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

- DEV, Urbanized/Developed
- ORN, Ornamental plantings
- Queagr, Coast live oak

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK 0 250 500 Feet

FIGURE 4G

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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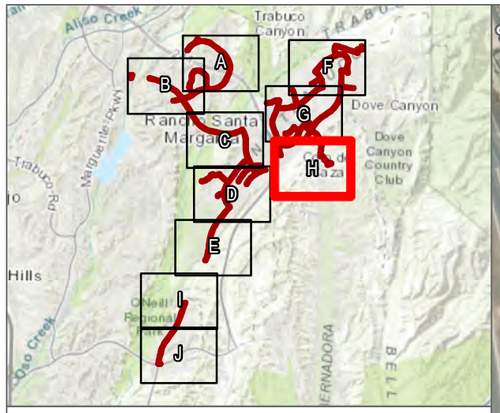

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)
- Proposed Tank and Pump Station Areas

Vegetation Communities and Land Covers

- DEV, Urban/Developed
- DH, Disturbed Habitat
- ORN, Ornamental plantings
- Queagr, Coast live oak

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4H

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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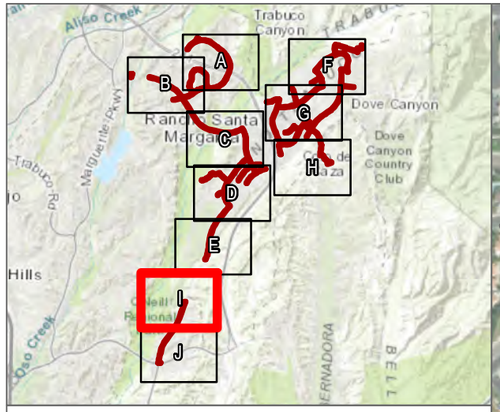

New Recycled Water Pipeline

Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

DEV, Urban/Developed

ORN, Ornamental plantings

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4I

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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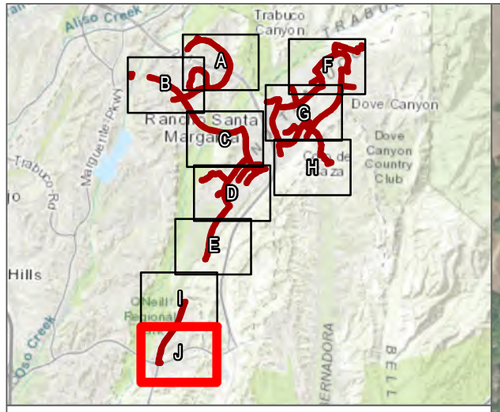

- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

- DEV, Urban/Developed
- ORN, Ornamental plantings

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 250 500 Feet

FIGURE 4J

Biological Resources

Rancho Santa Margarita Recycled Water System Project MND

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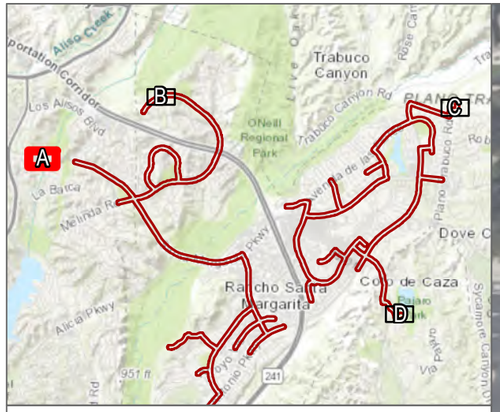

Survey Area (100-ft Buffer)

Proposed Tank and Pump Station Areas

Vegetation Communities and Land Covers

DEV, Urban/Developed

Hirinc, Shortpod Mustard

ORN, Ornamental plantings

Sallas, Arroyo willow

SOURCE: Bing Maps 2023; Open Street Map 2019

DUDEK

0 40 80 Feet

FIGURE 5A

Vegetation Community Impacts

Rancho Santa Margarita Recycled Water System Project MND

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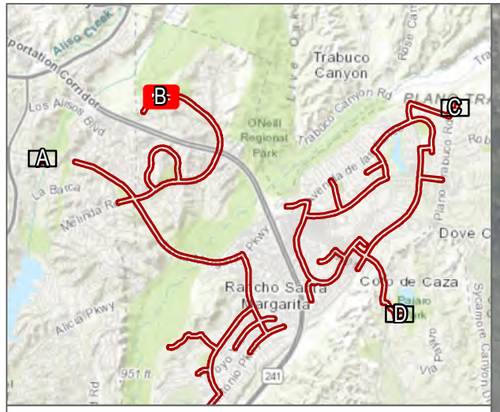
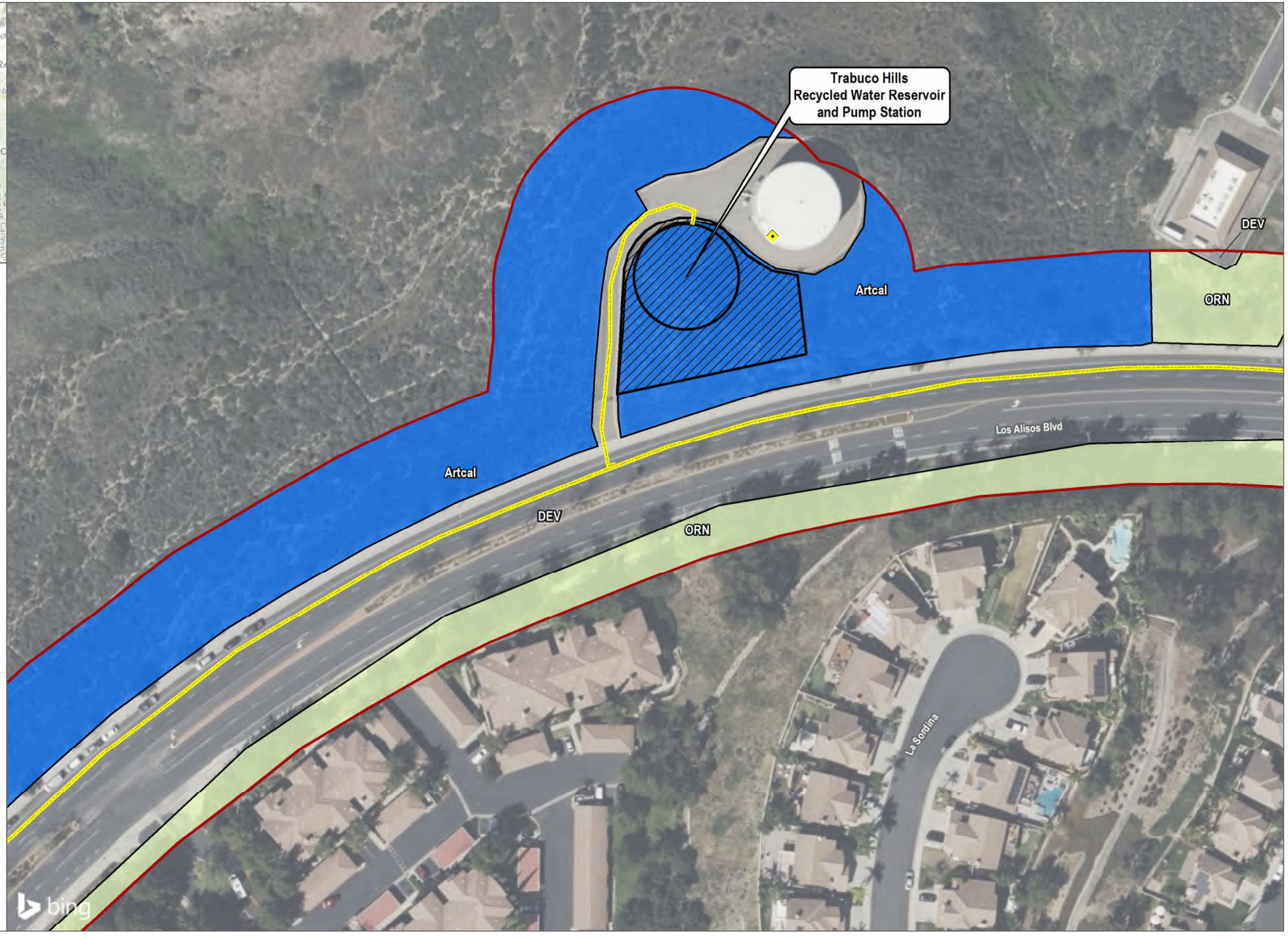


- New Recycled Water Pipeline
- Survey Area (100-ft Buffer)
- Proposed Tank and Pump Station Areas
- Nest point - common raven (Corvus corax)

Vegetation Communities and Land Covers

- Artcal, California sagebrush
- DEV, Urban/Developed
- ORN, Ornamental plantings



SOURCE: Bing Maps 2023; Open Street Map 2019

DUDEK

0 40 80 Feet

FIGURE 5B

Vegetation Community Impacts

Rancho Santa Margarita Recycled Water System Project MND

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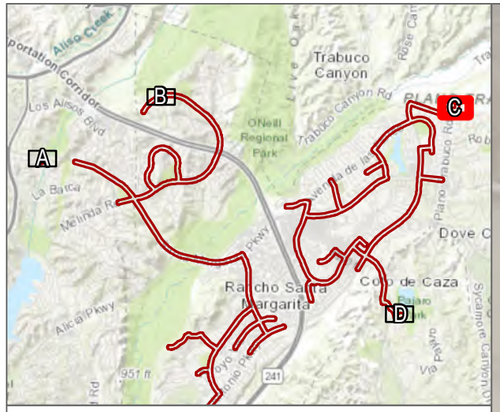

New Recycled Water Pipeline

Survey Area (100-ft Buffer)

Vegetation Communities and Land Covers

DEV, Urban/Developed

DH, Disturbed Habitat

Hirinc, Shortpod Mustard

ORN, Ornamental plantings

SOURCE: Bing Maps 2023; Open Street Map 2019

DUDEK 0 40 80 Feet

FIGURE 5C

Vegetation Community Impacts

Rancho Santa Margarita Recycled Water System Project MND

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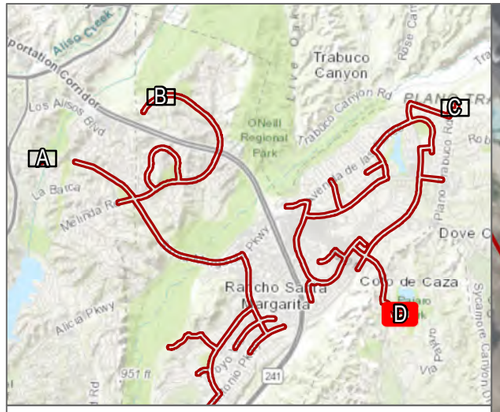

New Recycled Water Pipeline
Survey Area (100-ft Buffer)
Proposed Tank and Pump Station Areas

Vegetation Communities and Land Covers

DEV, Urban/Developed
DH, Disturbed Habitat
ORN, Ornamental plantings

SOURCE: Bing Maps 2023; Open Street Map 2019

DUDEK

0 40 80 Feet

FIGURE 5D

Vegetation Community Impacts

Rancho Santa Margarita Recycled Water System Project MND

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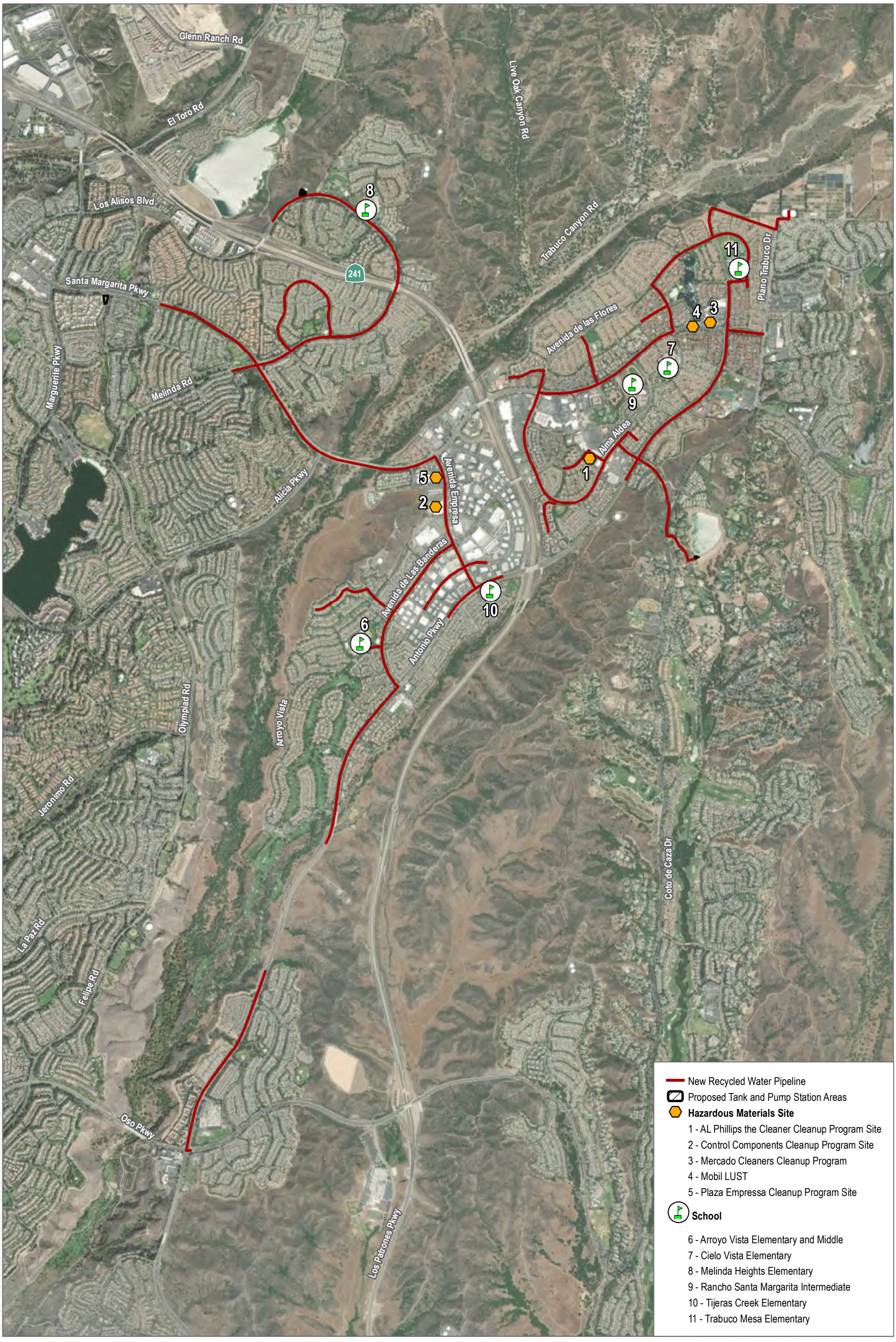

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 1,250 2,500 Feet

FIGURE 6

Hazards

Rancho Santa Margarita Recycled Water System Project MND

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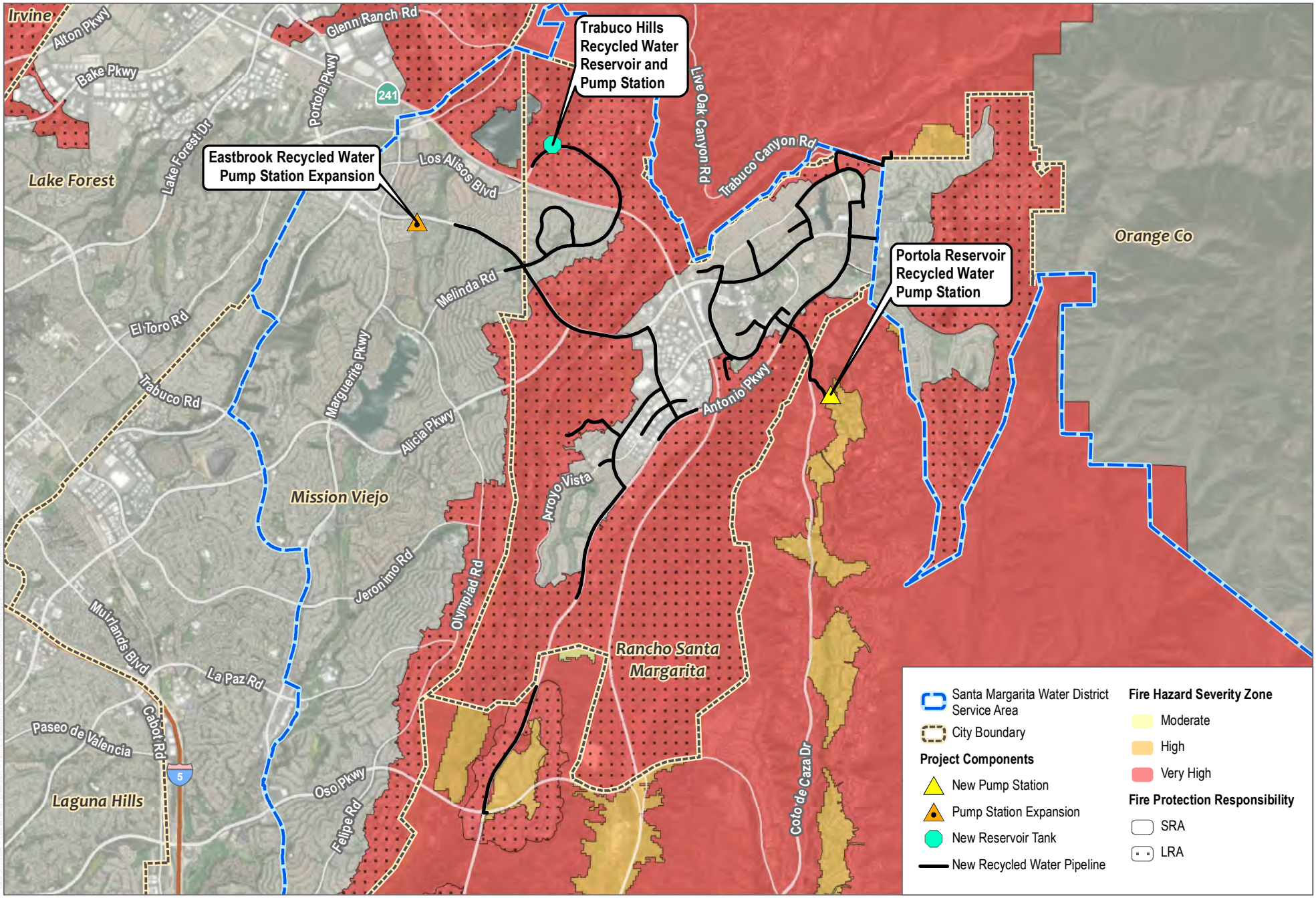

SOURCE: Esri World Imagery 2022; CAL FIRE 2007, 2011

DUDEK

0 0.5 1 Miles

FIGURE 7

Fire Hazard Severity Zones

Rancho Santa Margarita Recycled Water System Project MND

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SMWD Recycled Water Project Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SMWD Recycled Water Project
Construction Start Date	1/1/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	2.80
Location	33.63799934279298, -117.61650972192074
County	Orange
City	Rancho Santa Margarita
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6026
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Light Industry	1.80	1000sqft	0.04	1,800	0.00	0.00	—	Booster Pump Station
Other Asphalt Surfaces	475	1000sqft	10.9	0.00	0.00	0.00	—	Repaving
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0.00	0.00	—	Above Ground Storage Tank

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.67	3.76	35.5	45.2	0.11	1.19	5.89	7.08	1.10	1.28	2.38	—	15,291	15,291	0.73	1.14	24.9	15,674
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.05	5.00	37.6	49.4	0.11	1.20	6.24	7.44	1.11	1.37	2.48	—	15,821	15,821	0.80	1.29	0.69	16,227
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.11	2.51	23.8	29.8	0.07	0.78	3.91	4.70	0.72	0.85	1.58	—	10,117	10,117	0.49	0.78	7.23	10,368
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.46	4.35	5.44	0.01	0.14	0.71	0.86	0.13	0.16	0.29	—	1,675	1,675	0.08	0.13	1.20	1,716

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	145	150	150	55.0	150	55.0	55.0	0.00	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	145	150	150	55.0	150	55.0	55.0	0.00	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.67	3.76	35.5	45.2	0.11	1.19	5.89	7.08	1.10	1.28	2.38	—	15,291	15,291	0.73	1.14	24.9	15,674
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.05	4.01	37.6	49.4	0.11	1.20	6.24	7.44	1.11	1.37	2.48	—	15,821	15,821	0.80	1.29	0.69	16,227
2026	0.19	5.00	1.02	1.65	< 0.005	0.02	0.16	0.19	0.02	0.04	0.06	—	383	383	0.01	0.02	0.02	390
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.11	2.51	23.8	29.8	0.07	0.78	3.91	4.70	0.72	0.85	1.58	—	10,117	10,117	0.49	0.78	7.23	10,368
2026	0.01	0.30	0.06	0.10	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.2	23.2	< 0.005	< 0.005	0.02	23.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.57	0.46	4.35	5.44	0.01	0.14	0.71	0.86	0.13	0.16	0.29	—	1,675	1,675	0.08	0.13	1.20	1,716

2026	< 0.005	0.06	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.84	3.84	< 0.005	< 0.005	< 0.005	3.91

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.16	0.01	0.22	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	518	520	0.25	0.01	0.61	530
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.15	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	516	518	0.25	0.01	0.47	528
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.16	0.01	0.18	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	517	519	0.25	0.01	0.53	528
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.03	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.33	85.6	85.9	0.04	< 0.005	0.09	87.5

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.14	38.0
Area	0.01	0.15	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	478	478	0.05	0.01	—	480

Water	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Waste	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	0.03	0.16	0.01	0.22	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	518	520	0.25	0.01	0.61	530
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.0	36.0	< 0.005	< 0.005	< 0.005	36.4
Area	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	478	478	0.05	0.01	—	480
Water	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Waste	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	0.01	0.15	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	516	518	0.25	0.01	0.47	528
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.4	36.4	< 0.005	< 0.005	0.06	36.9
Area	0.01	0.15	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	478	478	0.05	0.01	—	480
Water	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Waste	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	0.02	0.16	0.01	0.18	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	517	519	0.25	0.01	0.53	528
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11
Area	< 0.005	0.03	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	79.1	79.1	0.01	< 0.005	—	79.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.13	0.45	0.58	0.01	< 0.005	—	1.02
Waste	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.70

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	< 0.005	0.03	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.33	85.6	85.9	0.04	< 0.005	0.09	87.5

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.60	1.35	11.8	17.5	0.02	0.45	—	0.45	0.42	—	0.42	—	2,592	2,592	0.11	0.02	—	2,601
Demolition	—	—	—	—	—	—	2.21	2.21	—	0.33	0.33	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.60	1.35	11.8	17.5	0.02	0.45	—	0.45	0.42	—	0.42	—	2,592	2,592	0.11	0.02	—	2,601
Demolition	—	—	—	—	—	—	2.21	2.21	—	0.33	0.33	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.88	7.67	11.4	0.02	0.29	—	0.29	0.27	—	0.27	—	1,690	1,690	0.07	0.01	—	1,696

Demolition	—	—	—	—	—	—	1.44	1.44	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.40	2.08	< 0.005	0.05	—	0.05	0.05	—	0.05	—	280	280	0.01	< 0.005	—	281
Demolition	—	—	—	—	—	—	0.26	0.26	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.21	0.21	3.36	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	796	796	0.01	0.03	3.02	808
Vendor	0.10	0.04	1.33	0.66	0.01	0.01	0.34	0.35	0.01	0.09	0.10	—	1,275	1,275	0.07	0.18	3.47	1,333
Hauling	0.19	0.04	2.37	1.05	0.01	0.02	0.51	0.53	0.02	0.14	0.17	—	1,953	1,953	0.16	0.32	4.11	2,055
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.21	0.24	2.90	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	758	758	0.01	0.03	0.08	767
Vendor	0.10	0.03	1.38	0.67	0.01	0.01	0.34	0.35	0.01	0.09	0.10	—	1,276	1,276	0.07	0.18	0.09	1,331
Hauling	0.19	0.04	2.46	1.06	0.01	0.02	0.51	0.53	0.02	0.14	0.17	—	1,953	1,953	0.16	0.32	0.11	2,052
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.15	1.98	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	501	501	0.01	0.02	0.85	508
Vendor	0.06	0.02	0.90	0.43	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	832	832	0.05	0.12	0.98	868
Hauling	0.12	0.03	1.62	0.69	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,273	1,273	0.10	0.21	1.16	1,339
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.36	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	82.9	82.9	< 0.005	< 0.005	0.14	84.0

Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	138	138	0.01	0.02	0.16	144
Hauling	0.02	< 0.005	0.30	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	211	211	0.02	0.03	0.19	222

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.82	3.92	0.01	0.11	—	0.11	0.10	—	0.10	—	574	574	0.02	< 0.005	—	576
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.49	0.69	< 0.005	0.02	—	0.02	0.02	—	0.02	—	101	101	< 0.005	< 0.005	—	101
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.09	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.7
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.87	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	227	227	< 0.005	0.01	0.02	230
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	63.8	63.8	< 0.005	0.01	< 0.005	66.5
Hauling	0.13	0.03	1.76	0.76	0.01	0.02	0.36	0.38	0.02	0.10	0.12	—	1,395	1,395	0.11	0.23	0.08	1,465
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.4	40.4	< 0.005	< 0.005	0.07	40.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.7
Hauling	0.02	0.01	0.31	0.13	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	245	245	0.02	0.04	0.22	257
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.69	6.69	< 0.005	< 0.005	0.01	6.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.85	1.85	< 0.005	< 0.005	< 0.005	1.93
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.5	40.5	< 0.005	0.01	0.04	42.6

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.82	3.92	0.01	0.11	—	0.11	0.10	—	0.10	—	574	574	0.02	< 0.005	—	576
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.2	36.2	< 0.005	< 0.005	—	36.3
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.99	5.99	< 0.005	< 0.005	—	6.01
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.39	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	63.8	63.8	< 0.005	0.01	< 0.005	66.5
Hauling	0.01	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	140	140	0.01	0.02	0.01	147
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.46	6.46	< 0.005	< 0.005	0.01	6.54
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	< 0.005	4.20
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.79	8.79	< 0.005	< 0.005	0.01	9.24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.07	1.07	< 0.005	< 0.005	< 0.005	1.08
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.69
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.53

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.82	3.92	0.01	0.11	—	0.11	0.10	—	0.10	—	574	574	0.02	< 0.005	—	576

Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.33	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	67.6	67.6	< 0.005	< 0.005	—	67.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.2	11.2	< 0.005	< 0.005	—	11.2
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.87	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	227	227	< 0.005	0.01	0.02	230
Vendor	0.02	0.01	0.28	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	255	255	0.01	0.04	0.02	266
Hauling	0.01	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	140	140	0.01	0.02	0.01	147

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.2	27.2	< 0.005	< 0.005	0.05	27.5
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.1	30.1	< 0.005	< 0.005	0.04	31.4
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.02	17.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.50	4.50	< 0.005	< 0.005	0.01	4.55
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.98	4.98	< 0.005	< 0.005	0.01	5.19
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.72	2.72	< 0.005	< 0.005	< 0.005	2.86

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.26	0.22	2.11	2.02	0.01	0.09	—	0.09	0.08	—	0.08	—	544	544	0.02	< 0.005	—	546
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.37	< 0.005	0.02	—	0.02	0.02	—	0.02	—	90.1	90.1	< 0.005	< 0.005	—	90.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.78	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	186	186	< 0.005	0.01	0.70	189
Vendor	0.02	0.01	0.27	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	255	255	0.01	0.04	0.69	267
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.06	0.68	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	177	177	< 0.005	0.01	0.02	179
Vendor	0.02	0.01	0.28	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	255	255	0.01	0.04	0.02	266
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.38	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.8	95.8	< 0.005	< 0.005	0.16	97.0
Vendor	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.16	142
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.9	15.9	< 0.005	< 0.005	0.03	16.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.6	22.6	< 0.005	< 0.005	0.03	23.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.57	2.46	0.01	0.11	—	0.11	0.10	—	0.10	—	664	664	0.03	0.01	—	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	110	110	< 0.005	< 0.005	—	110
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	1.01	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	239	239	< 0.005	0.01	0.90	242
Vendor	0.08	0.03	1.06	0.53	0.01	0.01	0.27	0.28	0.01	0.08	0.08	—	1,020	1,020	0.06	0.14	2.78	1,067
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.87	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	227	227	< 0.005	0.01	0.02	230
Vendor	0.08	0.03	1.10	0.54	0.01	0.01	0.27	0.28	0.01	0.08	0.08	—	1,021	1,021	0.06	0.14	0.07	1,064
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.25	152
Vendor	0.05	0.02	0.72	0.35	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05	—	665	665	0.04	0.09	0.79	695
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.9	24.9	< 0.005	< 0.005	0.04	25.2
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	110	110	0.01	0.02	0.13	115
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.13	2.04	0.01	0.09	—	0.09	0.08	—	0.08	—	550	550	0.02	< 0.005	—	552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.37	< 0.005	0.02	—	0.02	0.02	—	0.02	—	91.1	91.1	< 0.005	< 0.005	—	91.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	1.01	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	239	239	< 0.005	0.01	0.90	242
Vendor	0.08	0.03	1.06	0.53	0.01	0.01	0.27	0.28	0.01	0.08	0.08	—	1,020	1,020	0.06	0.14	2.78	1,067
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.87	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	227	227	< 0.005	0.01	0.02	230

Vendor	0.08	0.03	1.10	0.54	0.01	0.01	0.27	0.28	0.01	0.08	0.08	—	1,021	1,021	0.06	0.14	0.07	1,064
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.49	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	124	124	< 0.005	< 0.005	0.21	126
Vendor	0.04	0.02	0.60	0.29	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	551	551	0.03	0.08	0.65	575
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.6	20.6	< 0.005	< 0.005	0.03	20.9
Vendor	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.2	91.2	0.01	0.01	0.11	95.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.73	4.99	0.01	0.17	—	0.17	0.16	—	0.16	—	756	756	0.03	0.01	—	758
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.73	4.99	0.01	0.17	—	0.17	0.16	—	0.16	—	756	756	0.03	0.01	—	758
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.43	3.25	< 0.005	0.11	—	0.11	0.10	—	0.10	—	493	493	0.02	< 0.005	—	494
Paving	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	81.6	81.6	< 0.005	< 0.005	—	81.9
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.57	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	372	372	< 0.005	0.01	1.41	377
Vendor	0.12	0.04	1.59	0.79	0.01	0.01	0.41	0.42	0.01	0.11	0.12	—	1,530	1,530	0.09	0.21	4.17	1,600
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.11	1.36	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	354	354	< 0.005	0.01	0.04	358
Vendor	0.12	0.04	1.65	0.81	0.01	0.01	0.41	0.42	0.01	0.11	0.12	—	1,531	1,531	0.09	0.21	0.11	1,597
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.92	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	234	234	< 0.005	0.01	0.40	237
Vendor	0.08	0.03	1.09	0.52	0.01	0.01	0.27	0.27	0.01	0.07	0.08	—	998	998	0.06	0.14	1.18	1,042

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.7	38.7	< 0.005	< 0.005	0.07	39.2
Vendor	0.01	< 0.005	0.20	0.10	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	165	165	0.01	0.02	0.19	173
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.02	4.02	< 0.005	< 0.005	—	4.04
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.8	75.8	< 0.005	< 0.005	0.01	76.7
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	128	128	0.01	0.02	0.01	133
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.32	2.32	< 0.005	< 0.005	< 0.005	2.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.84	3.84	< 0.005	< 0.005	< 0.005	4.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.64	0.64	< 0.005	< 0.005	< 0.005	0.66
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.02	4.02	< 0.005	< 0.005	—	4.04
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.8	75.8	< 0.005	< 0.005	0.01	76.7
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	128	128	0.01	0.02	0.01	133
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.32	2.32	< 0.005	< 0.005	< 0.005	2.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.84	3.84	< 0.005	< 0.005	< 0.005	4.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.64	0.64	< 0.005	< 0.005	< 0.005	0.66
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	4.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.05	8.05	< 0.005	< 0.005	—	8.07
Architectural Coatings	—	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.33	1.33	< 0.005	< 0.005	—	1.34
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.45	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	124	124	< 0.005	< 0.005	0.01	125
Vendor	0.01	< 0.005	0.13	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	0.01	0.02	0.01	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.57	7.57	< 0.005	< 0.005	0.01	7.67
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.56	7.56	< 0.005	< 0.005	0.01	7.90
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.01	0.01	0.01	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.14	38.0
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.01	0.01	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.14	38.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.0	36.0	< 0.005	< 0.005	< 0.005	36.4
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.0	36.0	< 0.005	< 0.005	< 0.005	36.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	—	79.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	—	79.5

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Total	0.01	0.15	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04
Total	< 0.005	0.03	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.13	0.45	0.58	0.01	< 0.005	—	1.02
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.13	0.45	0.58	0.01	< 0.005	—	1.02

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.70
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.70

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Pipeline Demo-Trenching	Demolition	1/1/2025	11/30/2025	5.00	238	—
Trabuco Res Grading	Grading	1/1/2025	3/31/2025	5.00	64.0	—
Eastbrook Booster Grading	Grading	1/1/2025	1/31/2025	5.00	23.0	—
Portola Booster Grading	Grading	1/1/2025	2/28/2025	5.00	43.0	—
Portola Booster Building	Building Construction	3/1/2025	11/30/2025	5.00	195	—
Expansion of Pump Station	Building Construction	1/1/2025	11/30/2025	5.00	238	—
Trabuco Reservoir	Building Construction	4/1/2025	12/31/2025	5.00	197	—
Pipeline Paving	Paving	1/1/2025	11/30/2025	5.00	238	—
Arch Coating Portola	Architectural Coating	12/1/2025	12/15/2025	5.00	11.0	—
Arch Coating Eastbrook	Architectural Coating	12/1/2025	12/15/2025	5.00	11.0	—
Trabuco Arch Coating	Architectural Coating	1/1/2026	1/31/2026	5.00	22.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Pipeline Demo-Trenching	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Pipeline Demo-Trenching	Tractors/Loaders/Backhoes	Diesel	Average	6.00	8.00	84.0	0.37
Pipeline Demo-Trenching	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Trabuco Res Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trabuco Res Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trabuco Res Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Eastbrook Booster Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Eastbrook Booster Grading	Tractors/Loaders/Backh	Diesel	Average	1.00	8.00	84.0	0.37
Eastbrook Booster Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Portola Booster Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Portola Booster Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Portola Booster Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Portola Booster Building	Cranes	Diesel	Average	1.00	7.00	367	0.29
Portola Booster Building	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Expansion of Pump Station	Cranes	Diesel	Average	1.00	7.00	367	0.29
Expansion of Pump Station	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Trabuco Reservoir	Cranes	Diesel	Average	1.00	7.00	367	0.29
Trabuco Reservoir	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Pipeline Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Pipeline Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Pipeline Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Arch Coating Portola	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Arch Coating Eastbrook	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trabuco Arch Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Portola Booster Building	—	—	—	—
Portola Booster Building	Worker	14.0	18.5	LDA,LDT1,LDT2

Portola Booster Building	Vendor	8.00	10.2	HHDT,MHDT
Portola Booster Building	Hauling	0.00	20.0	HHDT
Portola Booster Building	Onsite truck	—	—	HHDT
Expansion of Pump Station	—	—	—	—
Expansion of Pump Station	Worker	18.0	18.5	LDA,LDT1,LDT2
Expansion of Pump Station	Vendor	32.0	10.2	HHDT,MHDT
Expansion of Pump Station	Hauling	0.00	20.0	HHDT
Expansion of Pump Station	Onsite truck	—	—	HHDT
Trabuco Reservoir	—	—	—	—
Trabuco Reservoir	Worker	18.0	18.5	LDA,LDT1,LDT2
Trabuco Reservoir	Vendor	32.0	10.2	HHDT,MHDT
Trabuco Reservoir	Hauling	0.00	20.0	HHDT
Trabuco Reservoir	Onsite truck	—	—	HHDT
Pipeline Paving	—	—	—	—
Pipeline Paving	Worker	28.0	18.5	LDA,LDT1,LDT2
Pipeline Paving	Vendor	48.0	10.2	HHDT,MHDT
Pipeline Paving	Hauling	0.00	20.0	HHDT
Pipeline Paving	Onsite truck	—	—	HHDT
Trabuco Res Grading	—	—	—	—
Trabuco Res Grading	Worker	18.0	18.5	LDA,LDT1,LDT2
Trabuco Res Grading	Vendor	2.00	10.2	HHDT,MHDT
Trabuco Res Grading	Hauling	20.0	20.0	HHDT
Trabuco Res Grading	Onsite truck	—	—	HHDT
Eastbrook Booster Grading	—	—	—	—
Eastbrook Booster Grading	Worker	8.00	18.5	LDA,LDT1,LDT2
Eastbrook Booster Grading	Vendor	2.00	10.2	HHDT,MHDT
Eastbrook Booster Grading	Hauling	2.00	20.0	HHDT

Eastbrook Booster Grading	Onsite truck	—	—	HHDT
Portola Booster Grading	—	—	—	—
Portola Booster Grading	Worker	18.0	18.5	LDA,LDT1,LDT2
Portola Booster Grading	Vendor	8.00	10.2	HHDT,MHDT
Portola Booster Grading	Hauling	2.00	20.0	HHDT
Portola Booster Grading	Onsite truck	—	—	HHDT
Arch Coating Portola	—	—	—	—
Arch Coating Portola	Worker	6.00	18.5	LDA,LDT1,LDT2
Arch Coating Portola	Vendor	4.00	10.2	HHDT,MHDT
Arch Coating Portola	Hauling	0.00	20.0	HHDT
Arch Coating Portola	Onsite truck	—	—	HHDT
Arch Coating Eastbrook	—	—	—	—
Arch Coating Eastbrook	Worker	6.00	18.5	LDA,LDT1,LDT2
Arch Coating Eastbrook	Vendor	4.00	10.2	HHDT,MHDT
Arch Coating Eastbrook	Hauling	0.00	20.0	HHDT
Arch Coating Eastbrook	Onsite truck	—	—	HHDT
Trabuco Arch Coating	—	—	—	—
Trabuco Arch Coating	Worker	10.0	18.5	LDA,LDT1,LDT2
Trabuco Arch Coating	Vendor	4.00	10.2	HHDT,MHDT
Trabuco Arch Coating	Hauling	0.00	20.0	HHDT
Trabuco Arch Coating	Onsite truck	—	—	HHDT
Pipeline Demo-Trenching	—	—	—	—
Pipeline Demo-Trenching	Worker	60.0	18.5	LDA,LDT1,LDT2
Pipeline Demo-Trenching	Vendor	40.0	10.2	HHDT,MHDT
Pipeline Demo-Trenching	Hauling	28.0	20.0	HHDT
Pipeline Demo-Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Arch Coating Portola	0.00	0.00	430	143	0.00
Arch Coating Eastbrook	0.00	0.00	430	143	0.00
Trabuco Arch Coating	0.00	0.00	11,500	11,500	0.00

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Pipeline Demo-Trenching	0.00	0.00	0.00	38,016	—
Trabuco Res Grading	100	12,500	0.00	0.00	—
Eastbrook Booster Grading	10.0	10.0	0.00	0.00	—
Portola Booster Grading	10.0	10.0	0.00	0.00	—
Pipeline Paving	0.00	0.00	0.00	0.00	10.9

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%
Other Asphalt Surfaces	10.9	100%
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	3.60	3.60	3.60	1,314	48.6	48.6	48.6	17,721
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	25,700	23,900	0.00

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	500,000	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
User Defined Industrial	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	416,250	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	2.23	—
Other Asphalt Surfaces	0.00	—
User Defined Industrial	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	4.55	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	24.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	69.3
AQ-PM	51.5
AQ-DPM	15.3
Drinking Water	51.4
Lead Risk Housing	2.51

Pesticides	39.2
Toxic Releases	54.2
Traffic	35.4
Effect Indicators	—
CleanUp Sites	19.9
Groundwater	16.8
Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	77.3
Solid Waste	0.00
Sensitive Population	—
Asthma	3.85
Cardio-vascular	25.7
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	15.8
Housing	9.81
Linguistic	0.92
Poverty	4.02
Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	86.30822533
Employed	93.50699346
Median HI	93.19902477

Education	—
Bachelor's or higher	86.52636982
High school enrollment	100
Preschool enrollment	51.68741178
Transportation	—
Auto Access	95.6242782
Active commuting	4.106249198
Social	—
2-parent households	48.82586937
Voting	73.20672398
Neighborhood	—
Alcohol availability	93.94328243
Park access	81.35506224
Retail density	25.1764404
Supermarket access	11.67714616
Tree canopy	47.8121391
Housing	—
Homeownership	84.11394842
Housing habitability	89.09277557
Low-inc homeowner severe housing cost burden	58.24457847
Low-inc renter severe housing cost burden	89.41357629
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	92.01847812
Arthritis	91.8
Asthma ER Admissions	95.8
High Blood Pressure	92.9

Cancer (excluding skin)	52.2
Asthma	72.9
Coronary Heart Disease	96.0
Chronic Obstructive Pulmonary Disease	92.7
Diagnosed Diabetes	96.0
Life Expectancy at Birth	67.1
Cognitively Disabled	94.6
Physically Disabled	99.6
Heart Attack ER Admissions	85.7
Mental Health Not Good	80.9
Chronic Kidney Disease	95.6
Obesity	87.5
Pedestrian Injuries	19.6
Physical Health Not Good	93.2
Stroke	95.7
Health Risk Behaviors	—
Binge Drinking	5.5
Current Smoker	77.7
No Leisure Time for Physical Activity	91.2
Climate Change Exposures	—
Wildfire Risk	91.4
SLR Inundation Area	0.0
Children	43.1
Elderly	95.9
English Speaking	65.4
Foreign-born	30.6
Outdoor Workers	91.4

Climate Change Adaptive Capacity	—
Impervious Surface Cover	75.4
Traffic Density	18.8
Traffic Access	23.0
Other Indices	—
Hardship	12.0
Other Decision Support	—
2016 Voting	81.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	10.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Engineer-provided information
Construction: Off-Road Equipment	Information provided by Engineer
Construction: Trips and VMT	Engineer provided data, assuming most-conservative scenario of everything occuring mostly at once.
Construction: Architectural Coatings	Architectural Coating Acrylic polymer, epoxy. Polysiloxane paint- Sherwin Williams will be used (<100 g/L paint).
Operations: Architectural Coatings	.
Operations: Vehicle Data	maintenance trips
Operations: Energy Use	No natural gas, kWH provided by engineer

SMWD Recycled Water Project_2023_0719_LST Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SMWD Recycled Water Project_2023_0719_LST
Construction Start Date	1/1/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	2.80
Location	33.63799934279298, -117.61650972192074
County	Orange
City	Rancho Santa Margarita
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6026
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Light Industry	1.80	1000sqft	0.04	1,800	0.00	0.00	—	Booster Pump Station
Other Asphalt Surfaces	475	1000sqft	10.9	0.00	0.00	0.00	—	Repaving
User Defined Industrial	2.00	User Defined Unit	0.00	0.00	0.00	0.00	—	Above Ground Storage Tanks

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.10	3.56	29.2	36.2	0.06	1.13	2.21	3.34	1.04	0.33	1.38	—	6,632	6,632	0.37	0.09	0.00	6,670
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.38	4.99	30.0	40.8	0.06	1.13	2.21	3.34	1.04	0.33	1.38	—	6,636	6,636	0.38	0.09	0.00	6,673
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.72	2.37	19.3	24.3	0.04	0.74	1.44	2.18	0.68	0.22	0.90	—	4,307	4,307	0.25	0.06	0.00	4,332
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.50	0.43	3.52	4.44	0.01	0.14	0.26	0.40	0.12	0.04	0.16	—	713	713	0.04	0.01	0.00	717

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	145	150	150	55.0	150	55.0	55.0	0.00	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	145	150	150	55.0	150	55.0	55.0	0.00	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.10	3.56	29.2	36.2	0.06	1.13	2.21	3.34	1.04	0.33	1.38	—	6,632	6,632	0.37	0.09	0.00	6,670
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.38	3.78	30.0	40.8	0.06	1.13	2.21	3.34	1.04	0.33	1.38	—	6,636	6,636	0.38	0.09	0.00	6,673
2026	0.18	4.99	0.90	1.24	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	—	139	139	0.01	< 0.005	0.00	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.72	2.37	19.3	24.3	0.04	0.74	1.44	2.18	0.68	0.22	0.90	—	4,307	4,307	0.25	0.06	0.00	4,332
2026	0.01	0.30	0.05	0.07	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	—	8.39	8.39	< 0.005	< 0.005	0.00	8.44
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.50	0.43	3.52	4.44	0.01	0.14	0.26	0.40	0.12	0.04	0.16	—	713	713	0.04	0.01	0.00	717

2026	< 0.005	0.05	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	—	1.39	1.39	< 0.005	< 0.005	0.00	1.40

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.16	0.01	0.22	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	518	520	0.25	0.01	0.61	530
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.15	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	516	518	0.25	0.01	0.47	528
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.16	0.01	0.18	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	517	519	0.25	0.01	0.53	528
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.03	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.33	85.6	85.9	0.04	< 0.005	0.09	87.5

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.14	38.0
Area	0.01	0.15	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	478	478	0.05	0.01	—	480

Water	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Waste	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	0.03	0.16	0.01	0.22	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	518	520	0.25	0.01	0.61	530
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.0	36.0	< 0.005	< 0.005	< 0.005	36.4
Area	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	478	478	0.05	0.01	—	480
Water	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Waste	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	0.01	0.15	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	516	518	0.25	0.01	0.47	528
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.4	36.4	< 0.005	< 0.005	0.06	36.9
Area	0.01	0.15	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	478	478	0.05	0.01	—	480
Water	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Waste	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	0.02	0.16	0.01	0.18	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	2.00	517	519	0.25	0.01	0.53	528
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11
Area	< 0.005	0.03	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	79.1	79.1	0.01	< 0.005	—	79.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.13	0.45	0.58	0.01	< 0.005	—	1.02
Waste	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.70

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	< 0.005	0.03	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.33	85.6	85.9	0.04	< 0.005	0.09	87.5

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.60	1.35	11.8	17.5	0.02	0.45	—	0.45	0.42	—	0.42	—	2,592	2,592	0.11	0.02	—	2,601
Demolition	—	—	—	—	—	—	2.21	2.21	—	0.33	0.33	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.60	1.35	11.8	17.5	0.02	0.45	—	0.45	0.42	—	0.42	—	2,592	2,592	0.11	0.02	—	2,601
Demolition	—	—	—	—	—	—	2.21	2.21	—	0.33	0.33	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.88	7.67	11.4	0.02	0.29	—	0.29	0.27	—	0.27	—	1,690	1,690	0.07	0.01	—	1,696

Demolition	—	—	—	—	—	—	1.44	1.44	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.40	2.08	< 0.005	0.05	—	0.05	0.05	—	0.05	—	280	280	0.01	< 0.005	—	281
Demolition	—	—	—	—	—	—	0.26	0.26	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.04	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	10.3	10.3	0.01	< 0.005	0.00	11.7
Vendor	0.04	0.02	0.36	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	39.6	39.6	0.02	0.01	0.00	41.9
Hauling	0.04	0.02	0.38	0.28	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	45.2	45.2	0.02	0.01	0.00	48.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.04	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	10.5	10.5	0.01	< 0.005	0.00	11.9
Vendor	0.03	0.02	0.38	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	40.2	40.2	0.02	0.01	0.00	42.4
Hauling	0.04	0.01	0.40	0.29	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	45.9	45.9	0.02	0.01	0.00	48.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.03	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	6.80	6.80	0.01	< 0.005	0.00	7.75
Vendor	0.02	0.01	0.24	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	26.0	26.0	0.01	< 0.005	0.00	27.5
Hauling	0.03	0.01	0.25	0.19	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	29.7	29.7	0.01	< 0.005	0.00	31.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	< 0.005	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.13	1.13	< 0.005	< 0.005	0.00	1.28

Vendor	< 0.005	< 0.005	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	4.30	4.30	< 0.005	< 0.005	0.00	4.55
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	4.91	4.91	< 0.005	< 0.005	0.00	5.21

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.82	3.92	0.01	0.11	—	0.11	0.10	—	0.10	—	574	574	0.02	< 0.005	—	576
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.49	0.69	< 0.005	0.02	—	0.02	0.02	—	0.02	—	101	101	< 0.005	< 0.005	—	101
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.09	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.7
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.14	3.14	< 0.005	< 0.005	0.00	3.57
Vendor	< 0.005	< 0.005	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	2.01	2.01	< 0.005	< 0.005	0.00	2.12
Hauling	0.03	0.01	0.29	0.21	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	32.8	32.8	0.02	0.01	0.00	34.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.55	0.55	< 0.005	< 0.005	0.00	0.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.35	0.35	< 0.005	< 0.005	0.00	0.37
Hauling	< 0.005	< 0.005	0.05	0.04	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	5.70	5.70	< 0.005	< 0.005	0.00	6.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.09	0.09	< 0.005	< 0.005	0.00	0.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.06	0.06	< 0.005	< 0.005	0.00	0.06
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	0.94	0.94	< 0.005	< 0.005	0.00	1.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.82	3.92	0.01	0.11	—	0.11	0.10	—	0.10	—	574	574	0.02	< 0.005	—	576
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.2	36.2	< 0.005	< 0.005	—	36.3
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.99	5.99	< 0.005	< 0.005	—	6.01
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.39	1.39	< 0.005	< 0.005	0.00	1.59
Vendor	< 0.005	< 0.005	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	2.01	2.01	< 0.005	< 0.005	0.00	2.12
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	3.28	3.28	< 0.005	< 0.005	0.00	3.48
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.09	0.09	< 0.005	< 0.005	0.00	0.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.13	0.13	< 0.005	< 0.005	0.00	0.13
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	0.20	0.20	< 0.005	< 0.005	0.00	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.01	0.01	< 0.005	< 0.005	0.00	0.02
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.02	0.02	< 0.005	< 0.005	0.00	0.02
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	0.03	0.03	< 0.005	< 0.005	0.00	0.04

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	2.82	3.92	0.01	0.11	—	0.11	0.10	—	0.10	—	574	574	0.02	< 0.005	—	576

Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.33	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	67.6	67.6	< 0.005	< 0.005	—	67.8
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.2	11.2	< 0.005	< 0.005	—	11.2
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.14	3.14	< 0.005	< 0.005	0.00	3.57
Vendor	0.01	< 0.005	0.08	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	8.03	8.03	< 0.005	< 0.005	0.00	8.49
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	3.28	3.28	< 0.005	< 0.005	0.00	3.48

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.37	0.37	< 0.005	< 0.005	0.00	0.42
Vendor	< 0.005	< 0.005	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.94	0.94	< 0.005	< 0.005	0.00	0.99
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	0.38	0.38	< 0.005	< 0.005	0.00	0.41
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.06	0.06	< 0.005	< 0.005	0.00	0.07
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.16	0.16	< 0.005	< 0.005	0.00	0.16
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	—	0.06	0.06	< 0.005	< 0.005	0.00	0.07

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.26	0.22	2.11	2.02	0.01	0.09	—	0.09	0.08	—	0.08	—	544	544	0.02	< 0.005	—	546
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.37	< 0.005	0.02	—	0.02	0.02	—	0.02	—	90.1	90.1	< 0.005	< 0.005	—	90.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	2.40	2.40	< 0.005	< 0.005	0.00	2.73
Vendor	0.01	< 0.005	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	7.92	7.92	< 0.005	< 0.005	0.00	8.37
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	2.44	2.44	< 0.005	< 0.005	0.00	2.78
Vendor	0.01	< 0.005	0.08	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	8.03	8.03	< 0.005	< 0.005	0.00	8.49
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	< 0.005	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.30	1.30	< 0.005	< 0.005	0.00	1.48
Vendor	< 0.005	< 0.005	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	4.26	4.26	< 0.005	< 0.005	0.00	4.50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.22	0.22	< 0.005	< 0.005	0.00	0.25
Vendor	< 0.005	< 0.005	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.70	0.70	< 0.005	< 0.005	0.00	0.74
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.57	2.46	0.01	0.11	—	0.11	0.10	—	0.10	—	664	664	0.03	0.01	—	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	110	110	< 0.005	< 0.005	—	110
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.09	3.09	< 0.005	< 0.005	0.00	3.52
Vendor	0.03	0.01	0.29	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	31.7	31.7	0.01	< 0.005	0.00	33.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.14	3.14	< 0.005	< 0.005	0.00	3.57
Vendor	0.03	0.01	0.30	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	32.1	32.1	0.01	< 0.005	0.00	34.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	2.04	2.04	< 0.005	< 0.005	0.00	2.32
Vendor	0.02	0.01	0.19	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	20.8	20.8	0.01	< 0.005	0.00	22.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.34	0.34	< 0.005	< 0.005	0.00	0.38
Vendor	< 0.005	< 0.005	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.44	3.44	< 0.005	< 0.005	0.00	3.64
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.94	3.77	0.01	0.17	—	0.17	0.16	—	0.16	—	1,019	1,019	0.04	0.01	—	1,023
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.13	2.04	0.01	0.09	—	0.09	0.08	—	0.08	—	550	550	0.02	< 0.005	—	552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.37	< 0.005	0.02	—	0.02	0.02	—	0.02	—	91.1	91.1	< 0.005	< 0.005	—	91.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.09	3.09	< 0.005	< 0.005	0.00	3.52
Vendor	0.03	0.01	0.29	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	31.7	31.7	0.01	< 0.005	0.00	33.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.14	3.14	< 0.005	< 0.005	0.00	3.57

Vendor	0.03	0.01	0.30	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	32.1	32.1	0.01	< 0.005	0.00	34.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.69	1.69	< 0.005	< 0.005	0.00	1.92
Vendor	0.02	0.01	0.16	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	17.2	17.2	0.01	< 0.005	0.00	18.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.28	0.28	< 0.005	< 0.005	0.00	0.32
Vendor	< 0.005	< 0.005	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	2.85	2.85	< 0.005	< 0.005	0.00	3.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.73	4.99	0.01	0.17	—	0.17	0.16	—	0.16	—	756	756	0.03	0.01	—	758
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.73	4.99	0.01	0.17	—	0.17	0.16	—	0.16	—	756	756	0.03	0.01	—	758
Paving	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.43	3.25	< 0.005	0.11	—	0.11	0.10	—	0.10	—	493	493	0.02	< 0.005	—	494
Paving	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	81.6	81.6	< 0.005	< 0.005	—	81.9
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.02	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	4.81	4.81	< 0.005	< 0.005	0.00	5.47
Vendor	0.04	0.02	0.44	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	47.5	47.5	0.02	0.01	0.00	50.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.02	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	4.88	4.88	< 0.005	< 0.005	0.00	5.56
Vendor	0.04	0.02	0.45	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	48.2	48.2	0.02	0.01	0.00	50.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.17	3.17	< 0.005	< 0.005	0.00	3.61
Vendor	0.03	0.01	0.29	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	31.2	31.2	0.01	< 0.005	0.00	32.9

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.53	0.53	< 0.005	< 0.005	0.00	0.60
Vendor	0.01	< 0.005	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	5.16	5.16	< 0.005	< 0.005	0.00	5.46
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.02	4.02	< 0.005	< 0.005	—	4.04
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	< 0.005	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.05	1.05	< 0.005	< 0.005	0.00	1.19
Vendor	< 0.005	< 0.005	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	4.02	4.02	< 0.005	< 0.005	0.00	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.03	0.03	< 0.005	< 0.005	0.00	0.04
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.12	0.12	< 0.005	< 0.005	0.00	0.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.01	0.01	< 0.005	< 0.005	0.00	0.01
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.02	0.02	< 0.005	< 0.005	0.00	0.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.02	4.02	< 0.005	< 0.005	—	4.04
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	< 0.005	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.05	1.05	< 0.005	< 0.005	0.00	1.19
Vendor	< 0.005	< 0.005	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	4.02	4.02	< 0.005	< 0.005	0.00	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.03	0.03	< 0.005	< 0.005	0.00	0.04
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.12	0.12	< 0.005	< 0.005	0.00	0.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.01	0.01	< 0.005	< 0.005	0.00	0.01
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.02	0.02	< 0.005	< 0.005	0.00	0.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	4.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.05	8.05	< 0.005	< 0.005	—	8.07
Architectural Coatings	—	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.33	1.33	< 0.005	< 0.005	—	1.34
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	1.70	1.70	< 0.005	< 0.005	0.00	1.95
Vendor	< 0.005	< 0.005	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.97	3.97	< 0.005	< 0.005	0.00	4.20
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.10	0.10	< 0.005	< 0.005	0.00	0.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.24	0.24	< 0.005	< 0.005	0.00	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.02	0.02	< 0.005	< 0.005	0.00	0.02
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.04	0.04	< 0.005	< 0.005	0.00	0.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.01	0.01	0.01	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.14	38.0
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.01	0.01	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.14	38.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.0	36.0	< 0.005	< 0.005	< 0.005	36.4
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	36.0	36.0	< 0.005	< 0.005	< 0.005	36.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.11

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	478	478	0.05	0.01	—	480
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	—	79.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	—	79.5

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Total	0.01	0.15	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04
Total	< 0.005	0.03	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.80	2.71	3.50	0.08	< 0.005	—	6.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.13	0.45	0.58	0.01	< 0.005	—	1.02
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.13	0.45	0.58	0.01	< 0.005	—	1.02

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.20	0.00	1.20	0.12	0.00	—	4.21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.70
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.70

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Pipeline Demo-Trenching	Demolition	1/1/2025	11/30/2025	5.00	238	—
Trabuco Res Grading	Grading	1/1/2025	3/31/2025	5.00	64.0	—
Eastbrook Booster Grading	Grading	1/1/2025	1/31/2025	5.00	23.0	—
Portola Booster Grading	Grading	1/1/2025	2/28/2025	5.00	43.0	—
Portola Booster Building	Building Construction	3/1/2025	11/30/2025	5.00	195	—
Expansion of Pump Station	Building Construction	1/1/2025	11/30/2025	5.00	238	—
Trabuco Reservoir	Building Construction	4/1/2025	12/31/2025	5.00	197	—
Pipeline Paving	Paving	1/1/2025	11/30/2025	5.00	238	—
Arch Coating Portola	Architectural Coating	12/1/2025	12/15/2025	5.00	11.0	—
Arch Coating Eastbrook	Architectural Coating	12/1/2025	12/15/2025	5.00	11.0	—
Trabuco Arch Coating	Architectural Coating	1/1/2026	1/31/2026	5.00	22.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Pipeline Demo-Trenching	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Pipeline Demo-Trenching	Tractors/Loaders/Backhoes	Diesel	Average	6.00	8.00	84.0	0.37
Pipeline Demo-Trenching	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Trabuco Res Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trabuco Res Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trabuco Res Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Eastbrook Booster Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Eastbrook Booster Grading	Tractors/Loaders/Backh	Diesel	Average	1.00	8.00	84.0	0.37
Eastbrook Booster Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Portola Booster Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Portola Booster Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Portola Booster Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Portola Booster Building	Cranes	Diesel	Average	1.00	7.00	367	0.29
Portola Booster Building	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Expansion of Pump Station	Cranes	Diesel	Average	1.00	7.00	367	0.29
Expansion of Pump Station	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Trabuco Reservoir	Cranes	Diesel	Average	1.00	7.00	367	0.29
Trabuco Reservoir	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Pipeline Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Pipeline Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Pipeline Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Arch Coating Portola	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Arch Coating Eastbrook	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trabuco Arch Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Portola Booster Building	—	—	—	—
Portola Booster Building	Worker	14.0	0.00	LDA,LDT1,LDT2

Portola Booster Building	Vendor	8.00	0.00	HHDT,MHDT
Portola Booster Building	Hauling	0.00	0.00	HHDT
Portola Booster Building	Onsite truck	—	—	HHDT
Expansion of Pump Station	—	—	—	—
Expansion of Pump Station	Worker	18.0	0.00	LDA,LDT1,LDT2
Expansion of Pump Station	Vendor	32.0	0.00	HHDT,MHDT
Expansion of Pump Station	Hauling	0.00	0.00	HHDT
Expansion of Pump Station	Onsite truck	—	—	HHDT
Trabuco Reservoir	—	—	—	—
Trabuco Reservoir	Worker	18.0	0.00	LDA,LDT1,LDT2
Trabuco Reservoir	Vendor	32.0	0.00	HHDT,MHDT
Trabuco Reservoir	Hauling	0.00	0.00	HHDT
Trabuco Reservoir	Onsite truck	—	—	HHDT
Pipeline Paving	—	—	—	—
Pipeline Paving	Worker	28.0	0.00	LDA,LDT1,LDT2
Pipeline Paving	Vendor	48.0	0.00	HHDT,MHDT
Pipeline Paving	Hauling	0.00	0.00	HHDT
Pipeline Paving	Onsite truck	—	—	HHDT
Trabuco Res Grading	—	—	—	—
Trabuco Res Grading	Worker	18.0	0.00	LDA,LDT1,LDT2
Trabuco Res Grading	Vendor	2.00	0.00	HHDT,MHDT
Trabuco Res Grading	Hauling	20.0	0.00	HHDT
Trabuco Res Grading	Onsite truck	—	—	HHDT
Eastbrook Booster Grading	—	—	—	—
Eastbrook Booster Grading	Worker	8.00	0.00	LDA,LDT1,LDT2
Eastbrook Booster Grading	Vendor	2.00	0.00	HHDT,MHDT
Eastbrook Booster Grading	Hauling	2.00	0.00	HHDT

Eastbrook Booster Grading	Onsite truck	—	—	HHDT
Portola Booster Grading	—	—	—	—
Portola Booster Grading	Worker	18.0	0.00	LDA,LDT1,LDT2
Portola Booster Grading	Vendor	8.00	0.00	HHDT,MHDT
Portola Booster Grading	Hauling	2.00	0.00	HHDT
Portola Booster Grading	Onsite truck	—	—	HHDT
Arch Coating Portola	—	—	—	—
Arch Coating Portola	Worker	6.00	0.00	LDA,LDT1,LDT2
Arch Coating Portola	Vendor	4.00	0.00	HHDT,MHDT
Arch Coating Portola	Hauling	0.00	0.00	HHDT
Arch Coating Portola	Onsite truck	—	—	HHDT
Arch Coating Eastbrook	—	—	—	—
Arch Coating Eastbrook	Worker	6.00	0.00	LDA,LDT1,LDT2
Arch Coating Eastbrook	Vendor	4.00	0.00	HHDT,MHDT
Arch Coating Eastbrook	Hauling	0.00	0.00	HHDT
Arch Coating Eastbrook	Onsite truck	—	—	HHDT
Trabuco Arch Coating	—	—	—	—
Trabuco Arch Coating	Worker	10.0	0.00	LDA,LDT1,LDT2
Trabuco Arch Coating	Vendor	4.00	0.00	HHDT,MHDT
Trabuco Arch Coating	Hauling	0.00	0.00	HHDT
Trabuco Arch Coating	Onsite truck	—	—	HHDT
Pipeline Demo-Trenching	—	—	—	—
Pipeline Demo-Trenching	Worker	60.0	0.00	LDA,LDT1,LDT2
Pipeline Demo-Trenching	Vendor	40.0	0.00	HHDT,MHDT
Pipeline Demo-Trenching	Hauling	28.0	0.00	HHDT
Pipeline Demo-Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Arch Coating Portola	0.00	0.00	430	143	0.00
Arch Coating Eastbrook	0.00	0.00	430	143	0.00
Trabuco Arch Coating	0.00	0.00	11,500	11,500	0.00

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Pipeline Demo-Trenching	0.00	0.00	0.00	38,016	—
Trabuco Res Grading	100	12,500	0.00	0.00	—
Eastbrook Booster Grading	10.0	10.0	0.00	0.00	—
Portola Booster Grading	10.0	10.0	0.00	0.00	—
Pipeline Paving	0.00	0.00	0.00	0.00	10.9

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%
Other Asphalt Surfaces	10.9	100%
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	3.60	3.60	3.60	1,314	48.6	48.6	48.6	17,721
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	25,700	23,900	0.00

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	500,000	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
User Defined Industrial	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	416,250	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	2.23	—
Other Asphalt Surfaces	0.00	—
User Defined Industrial	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	4.55	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	24.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	69.3
AQ-PM	51.5
AQ-DPM	15.3
Drinking Water	51.4
Lead Risk Housing	2.51

Pesticides	39.2
Toxic Releases	54.2
Traffic	35.4
Effect Indicators	—
CleanUp Sites	19.9
Groundwater	16.8
Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	77.3
Solid Waste	0.00
Sensitive Population	—
Asthma	3.85
Cardio-vascular	25.7
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	15.8
Housing	9.81
Linguistic	0.92
Poverty	4.02
Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	86.30822533
Employed	93.50699346
Median HI	93.19902477

Education	—
Bachelor's or higher	86.52636982
High school enrollment	100
Preschool enrollment	51.68741178
Transportation	—
Auto Access	95.6242782
Active commuting	4.106249198
Social	—
2-parent households	48.82586937
Voting	73.20672398
Neighborhood	—
Alcohol availability	93.94328243
Park access	81.35506224
Retail density	25.1764404
Supermarket access	11.67714616
Tree canopy	47.8121391
Housing	—
Homeownership	84.11394842
Housing habitability	89.09277557
Low-inc homeowner severe housing cost burden	58.24457847
Low-inc renter severe housing cost burden	89.41357629
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	92.01847812
Arthritis	91.8
Asthma ER Admissions	95.8
High Blood Pressure	92.9

Cancer (excluding skin)	52.2
Asthma	72.9
Coronary Heart Disease	96.0
Chronic Obstructive Pulmonary Disease	92.7
Diagnosed Diabetes	96.0
Life Expectancy at Birth	67.1
Cognitively Disabled	94.6
Physically Disabled	99.6
Heart Attack ER Admissions	85.7
Mental Health Not Good	80.9
Chronic Kidney Disease	95.6
Obesity	87.5
Pedestrian Injuries	19.6
Physical Health Not Good	93.2
Stroke	95.7
Health Risk Behaviors	—
Binge Drinking	5.5
Current Smoker	77.7
No Leisure Time for Physical Activity	91.2
Climate Change Exposures	—
Wildfire Risk	91.4
SLR Inundation Area	0.0
Children	43.1
Elderly	95.9
English Speaking	65.4
Foreign-born	30.6
Outdoor Workers	91.4

Climate Change Adaptive Capacity	—
Impervious Surface Cover	75.4
Traffic Density	18.8
Traffic Access	23.0
Other Indices	—
Hardship	12.0
Other Decision Support	—
2016 Voting	81.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	10.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Engineer-provided information
Construction: Off-Road Equipment	Information provided by Engineer
Construction: Trips and VMT	Engineer provided data, assuming most-conservative scenario of everything occurring mostly at once. mileage zero'd out to show LST emissions
Construction: Architectural Coatings	for Water tank's exterior, Acrylic polymer, epoxy. Polysiloxane paint- Sherwin Williams will be used (<100 g/L paint). VOC will be captured with mechanism inside of tank.
Operations: Architectural Coatings	.
Operations: Vehicle Data	maintenance trips
Operations: Energy Use	No natural gas, kWH provided by engineer

Appendix B1
Species Compendium

Plant Species

Angiosperms (Dicots)

ANACARDIACEAE – SUMAC FAMILY

Rhus ovata – sugar bush, sugar sumac

* *Schinus molle* – Peruvian pepper tree

ASTERACEAE – SUNFLOWER FAMILY

Ambrosia psilostachya – western ragweed

Artemisia californica – California sagebrush

Baccharis pilularis – coyote brush

Baccharis salicifolia – mulefat, seep-willow, water-wally

* *Centaurea melitensis* – tocalote

* *Cynara cardunculus* – cardoon, artichoke thistle

Encelia californica – California brittlebush

Eriophyllum confertiflorum – golden yarrow

Helianthus annuus – common sunflower

* *Lactuca serriola* – prickly lettuce

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii – rancher's fireweed

Amsinckia tessellata – devil's lettuce

Cryptantha muricata – prickly cryptantha

Pectocarya penicillata – sleeping combseed

BRASSICACEAE – MUSTARD FAMILY

* *Brassica nigra* – black mustard

* *Hirschfeldia incana* – short-pod mustard

LAMIACEAE – MINT FAMILY

Salvia mellifera – black sage

MYRTACEAE – MYRTLE FAMILY

* *Eucalyptus camaldulensis* – red gum Eucalyptus

* *Eucalyptus globulus* – blue gum Eucalyptus

* *Eucalyptus cinerea* – silver dollar Eucalyptus

FABACEAE – LEGUME FAMILY

* *Acacia pycnantha* – golden wattle
  Lupinus succulentus – arroyo lupine
* *Melilotus indicus* – yellow sweet clover

PLATANACEAE – PLANTAIN FAMILY

Platanus racemosa – western sycamore

POLYGONACEAE – BUCKWHEAT FAMILY

Eriogonum fasciculatum – California buckwheat
Rumex crispus – curly dock

PRIMULACEAE – PRIMROSE FAMILY

* *Anagallis arvensis* - scarlet pimpernel

SALICACEAE – WILLOW FAMILY

Salix gooddingii – Goodding's black willow
Salix lasiolepis – arroyo willow

SOLANACEAE- NIGHTSHADE FAMILY

* *Nicotiana glauca* – tree tobacco

Angiosperms (Monocots)

ASPERAGACEAE – ASPARAGAS FAMILY

* Hesperoyucca whipplei

IRIDACEAE – IRIS FAMILY

Sisyrinchium bellum – western blue-eyed grass

POACEAE – GRASS FAMILY

* *Arundo donax* – giant reed
* *Avena barbata* – slender wild oat
* *Avena fatua* – common wild oat
* *Bromus diandrus* – ripgut brome, great brome
* *Bromus madritensis sp*. rubens- red brome, foxtail chess, compact brome

TYPHACEAE – CATTAIL FAMILY

Typha latifolia – common cattail, bulrush

Gymnosperms (Dicots)

PINACEAE – PINE FAMILY

Pinus sp. – Pine species

Wildlife Species – Vertebrates

Reptiles

IGUANIDAE – IGUANID LIZARDS

Sceloporus occidentalis – western fence lizard

Birds

COLUMBIDAE – PIGEONS AND DOVES

Zenaida macroura – mourning dove

CORVIDAE – JAYS AND CROWS

Corvus brachyrhynchos – American crow

Corvus corax – common raven

FRINGILLIDAE – FINCHES

Carpodacus mexicanus – house finch

Carduelis psaltria – lesser goldfinch

MIMIDAE – MIMIDS

Mimus polyglottos – northern mockingbird

PASSERELLIDAE – NEW WORLD SPARROWS

Pipilo maculatus – spotted towhee

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

TROGLODYTIDAE – WRENS

Thryomanes bewickii – Bewick's wren

* Signifies introduced (non-native) species.

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Appendix B2

Special-Status Plants with a Potential to Occur in the Study Area

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia villosa var. *aurita*	chaparral sand-verbena	None/None/1B.1	Chaparral, Coastal scrub, Desert dunes; Sandy/annual herb/(Jan)Mar–Sep/ 245–5,245	Not expected to occur. No suitable sandy substrate present. Chaparral and coastal scrub are in dense upland habitats.
Allium marvinii	Yucaipa onion	None/None/1B.2	Chaparral (clay, openings)/perennial bulbiferous herb/Apr–May/2,490–3,490	Not expected to occur. The site is outside of the species' known elevation range.
Allium munzii	Munz's onion	FE/ST/1B.1	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland; Clay, Mesic/perennial bulbiferous herb/Mar–May/975–3,510	Not expected to occur. No clay substrate or mesic habitat present.
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Alkaline (sometimes), Clay (sometimes), Disturbed areas (often), Loam (sometimes), Sandy (sometimes)/perennial rhizomatous herb/Apr–Oct/65–1,360	Not expected to occur. No vernal pools, alkaline habitat, or clay substrate present.
Aphanisma blitoides	aphanisma	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/annual herb/Feb–June/ 5–1,000	Not expected to occur. No suitable vegetation present.
Arctostaphylos rainbowensis	Rainbow manzanita	None/None/1B.1	Chaparral/perennial evergreen shrub/ Dec–Mar/675–2,195	Not expected to occur. No suitable vegetation present.
Artemisia palmeri	San Diego sagewort	None/None/4.2	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Mesic, Sandy/perennial deciduous shrub/ (Feb)May–Sep/15–3,000	Not expected to occur. No mesic habitat present.
Asplenium vespertinum	western spleenwort	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub; Rocky/perennial rhizomatous herb/Feb–June/590–3,280	Not expected to occur. No rocky substrate present.
Astragalus brauntonii	Braunton's milk-vetch	FE/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland; Burned areas (sometimes), Carbonate, Disturbed areas (sometimes),	Low potential to occur. Disturbed habitat, grassland, and coastal scrub present, but no sandstone or burned areas.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			Sandstone (usually)/perennial herb/ Jan–Aug/15–2,095	
Atriplex coulteri	Coulter's saltbush	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Alkaline (sometimes), Clay (sometimes)/perennial herb/Mar–Oct/10–1,505	Low potential to occur. Grassland and coastal scrub present, but no clay or alkaline substrates onsite.
Atriplex pacifica	south coast saltscale	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0–460	Not expected to occur. The site is outside of the species' known elevation range.
Atriplex parishii	Parish's brittlescale	None/None/1B.1	Chenopod scrub, Playas, Vernal pools; Alkaline/annual herb/June–Oct/80–6,230	Not expected to occur. No suitable vegetation or vernal pools present.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None/1B.2	Coastal bluff scrub, Coastal scrub; Alkaline/annual herb/Apr–Oct/35–655	Low potential to occur. Coastal scrub present but no alkaline habitat.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)/ perennial bulbiferous herb/Mar–June/ 80–3,670	Not expected to occur. No vernal pools or clay soils present.
Brodiaea santarosae	Santa Rosa Basalt brodiaea	None/None/1B.2	Valley and foothill grassland/perennial bulbiferous herb/May–June/1,850–3,425	Not expected to occur. The site is outside of the species' known elevation range.
Calochortus catalinae	Catalina mariposa lily	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial bulbiferous herb/(Feb)Mar–June/50–2,295	Low potential to occur. Grassland, coastal scrub, and chaparral present. Mariposa lily known to occur in O'Neil Regional Park, adjacent to Trabuco Hills Reservoir expansion component of project site.
Calochortus plummerae	Plummer's mariposa-lily	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Granitic, Rocky/perennial bulbiferous herb/ May–July/330–5,575	Low potential to occur. Grassland, coastal scrub, and chaparral present. Mariposa lily known to occur in O'Neil Regional Park, adjacent to Trabuco Hills Reservoir expansion component of project site. Lacking granitic and rocky soils.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Calochortus weedii var. *intermedius*	intermediate mariposa-lily	None/None/1B.2	Chaparral, Coastal scrub, Valley and foothill grassland; Rocky/perennial bulbiferous herb/May–July/345–2,805	Low potential to occur. Grassland, coastal scrub, and chaparral present. Mariposa lily known to occur in O'Neil Regional Park, adjacent to Trabuco Hills Reservoir expansion component of project site. Lacking rocky soils.
Caulanthus simulans	Payson's jewelflower	None/None/4.2	Chaparral, Coastal scrub; Granitic, Sandy/annual herb/(Feb)Mar–May(June)/ 295–7,215	Not expected to occur. No sandy or granitic soils present within the chaparral and coastal scrub habitats onsite.
Centromadia parryi ssp. australis	southern tarplant	None/None/1B.1	Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools/annual herb/May–Nov/0–1,570	Not expected to occur. No vernal pools or mesic habitat present.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; Alkaline/annual herb/Apr–Sep/ 0–2,095	Not expected to occur. No alkaline habitat present.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1	Coastal bluff scrub (sandy), Coastal dunes/annual herb/Jan–Aug/0–330	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Chorizanthe leptotheca	Peninsular spineflower	None/None/4.2	Chaparral, Coastal scrub, Lower montane coniferous forest; Granitic/annual herb/ May–Aug/985–6,230	Not expected to occur. No granitic soils in chaparral or coastal scrub onsite.
Chorizanthe parryi var. *parryi*	Parry's spineflower	None/None/1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Openings, Rocky (sometimes), Sandy (sometimes)/annual herb/Apr–June/ 900–4,000	Not expected to occur. No sandy or rocky soils in the coastal scrub, grassland, or chaparral habitats onsite.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay (often)/annual herb/Apr–July/ 100–5,015	Not expected to occur. No vernal pools or clay soils present.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Cistanthe maritima	seaside cistanthe	None/None/4.2	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Sandy/annual herb/ (Feb)Mar–June(Aug)/15–985	Not expected to occur. No sandy substrate in coastal scrub or grassland onsite.
Clinopodium chandleri	San Miguel savory	None/None/1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; Gabbroic (sometimes), Rocky (sometimes)/perennial shrub/Mar–July/ 395–3,525	Not expected to occur. No rocky or gabbroic substrate present.
Collomia diversifolia	serpentine collomia	None/None/4.3	Chaparral, Cismontane woodland; Gravelly (sometimes), Rocky (sometimes), Serpentinite (sometimes)/annual herb/ May–June/655–1,965	Not expected to occur. No suitable substrate present in chaparral onsite.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2	Chaparral, Cismontane woodland/perennial evergreen shrub/Apr–June/100–2,590	Low potential to occur. Chaparral present in study area buffer. Known to occur in O'Neil Regional Park adjacent to Trabuco Hills Reservoir expansion component of project.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2	Chaparral (openings), Coastal scrub, Valley and foothill grassland; Clay, Seeps, Serpentinite/annual herb/Mar–July/ 100–2,425	Low potential to occur. Coast morning glory observed onsite in coastal scrub and grassland. No clay, seeps, or serpentine soils present.
Deinandra paniculata	paniculate tarplant	None/None/4.2	Coastal scrub, Valley and foothill grassland, Vernal pools; Sandy (sometimes), Vernally Mesic (usually)/annual herb/(Mar)Apr–Nov/ 80–3,080	Low potential to occur. No vernally mesic habitat or vernal pools present.
Dichondra occidentalis	western dichondra	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/165–1,640	Low potential to occur. Grassland, coastal scrub, and chaparral present. No occurrence records within 5 miles of the site.
Diplacus clevelandii	Cleveland's bush monkeyflower	None/None/4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Disturbed areas (often), Gabbroic, Openings, Rocky/perennial rhizomatous herb/Apr–July/1,475–6,560	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Dodecahema leptoceras	slender-horned spineflower	FE/SE/1B.1	Chaparral, Cismontane woodland, Coastal scrub (alluvial fans); Sandy/annual herb/Apr–June/655–2,490	Not expected to occur. No alluvial fans or sandy substrate present.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1	Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Clay (often), Rocky, Serpentinite/perennial herb/ Apr–June/15–1,475	Not expected to occur. No clay, rocky, or serpentine substrates present.
Dudleya cymosa ssp. *ovatifolia*	Santa Monica dudleya	FT/None/1B.1	Chaparral, Coastal scrub; Rocky, Volcanic (sometimes)/perennial herb/Mar–June/ 490–5,495	Not expected to occur. No rocky or volcanic soils present.
Dudleya multicaulis	many-stemmed dudleya	None/None/1B.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay (often)/perennial herb/ Apr–July/50–2,590	Not expected to occur. No clay substrate present.
Dudleya stolonifera	Laguna Beach dudleya	FT/ST/1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Rocky/ perennial stoloniferous herb/May–July/ 35–855	Not expected to occur. This site is outside the species' known elevation range.
Dudleya viscida	sticky dudleya	None/None/1B.2	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub; Rocky/perennial herb/May–June/35–1,800	Not expected to occur. No rocky substrate present.
Eryngium pendletonense	Pendleton button-celery	None/None/1B.1	Coastal bluff scrub, Valley and foothill grassland, Vernal pools; Clay, Vernally Mesic/perennial herb/Apr–June(July)/ 50–360	Not expected to occur. The site is outside of the species' known elevation range.
Erythranthe diffusa	Palomar monkeyflower	None/None/4.3	Chaparral, Lower montane coniferous forest; Gravelly (sometimes), Sandy (sometimes)/ annual herb/Apr–June/4,000–6,000	Not expected to occur. The site is outside of the species' known elevation range.
Euphorbia misera	cliff spurge	None/None/2B.2	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; Rocky/perennial shrub/ (Oct)Dec–Aug/35–1,640	Not expected to occur. No rocky substrate or cliff habitat present.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Openings/annual herb/ Mar–May/65–3,130	Not expected to occur. No clay soils present.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Hesperocyparis forbesii	Tecate cypress	None/None/1B.1	Chaparral, Closed-cone coniferous forest; Clay, Gabbroic (sometimes)/perennial evergreen tree//260–4,920	Not expected to occur. No gabbroic or clay substrate present. This species is conspicuous throughout the year and was not observed onsite.
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/annual herb/May–Nov/195–3,605	Low potential to occur. Coastal scrub, chaparral, and grassland present in the study area buffer. No occurrence records within 5 miles of the project site.
Hordeum intercedens	vernal barley	None/None/3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools/annual herb/Mar–June/ 15–3,280	Not expected to occur. No vernal pools or saline flats onsite.
Horkelia cuneata var. *puberula*	mesa horkelia	None/None/1B.1	Chaparral (maritime), Cismontane woodland, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/perennial herb/Feb–July(Sep)/ 230–2,655	Not expected to occur. No sandy or gravelly substrate present.
Imperata brevifolia	California satintail	None/None/2B.1	Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub; Mesic/perennial rhizomatous herb/Sep–May/0–3,985	Not expected to occur. No alkaline or mesic habitats present.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2	Chaparral, Coastal scrub (often disturbed areas, sandy)/perennial shrub/Apr–Nov/ 35–820	Low potential to occur. Disturbed habitat and coastal scrub present. Occurrence records in O'Neil Regional Park, adjacent to Trabuco Hills Reservoir expansion component of the project.
Juglans californica	Southern California black walnut	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/perennial deciduous tree/Mar–Aug/165–2,950	Not expected to occur. This conspicuous species was not observed in the chaparral, coastal scrub, or riparian woodland onsite.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps (alkaline seeps)/	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			perennial rhizomatous herb/ (Mar)May–June/10–2,950	
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/Feb–June/ 5–4,000	Not expected to occur. No suitable vegetation present.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest/perennial shrub/ Apr–July/1,705–4,490	Not expected to occur. The site is outside of the species' known elevation range.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3	Chaparral, Coastal scrub/annual herb/ Jan–July/5–2,900	Low potential to occur. Suitable vegetation present, but no known occurrence records within 5 miles of the study area.
Lessingia hololeuca	woolly-headed lessingia	None/None/3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Clay, Serpentinite/annual herb/June–Oct/50–1,000	Not expected to occur. No clay or serpentine substrates present.
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland; Openings/perennial bulbiferous herb/Mar–July(Aug)/100–5,905	Low potential to occur. Chaparral and riparian woodland present. No occurrence records within 5 miles of the study area.
Lilium parryi	lemon lily	None/None/1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest; Mesic/perennial bulbiferous herb/July–Aug/4,000–9,005	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Lycium brevipes var. *hassei*	Santa Catalina Island desert-thorn	None/None/3.1	Coastal bluff scrub, Coastal scrub/perennial deciduous shrub/June(Aug)/215–985	Not expected to occur. Coastal scrub present but no occurrence records within 5 miles of the project site.
Lycium californicum	California box-thorn	None/None/4.2	Coastal bluff scrub, Coastal scrub/perennial shrub/Mar–Aug(Dec)/15–490	Not expected to occur. The site is outside the species' known elevation range.
Malacothrix saxatilis var. *saxatilis*	cliff malacothrix	None/None/4.2	Coastal bluff scrub, Coastal scrub/perennial rhizomatous herb/Mar–Sep/10–655	Not expected to occur. Coastal scrub present but no occurrence records within 5 miles of the project site.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/ annual herb/Mar–May/50–3,510	Not expected to occur. No vernal pools or clay soils present.
Monardella hypoleuca ssp. *intermedia*	intermediate monardella	None/None/1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest (sometimes)/ perennial rhizomatous herb/Apr–Sep/ 1,310–4,100	Not expected to occur. Chaparral present but no species occurrence records within 5 miles of the project site.
Monardella macrantha ssp. *hallii*	Hall's monardella	None/None/1B.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland/perennial rhizomatous herb/ June–Oct/2,395–7,200	Not expected to occur. The site is outside of the species' known elevation range.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1	Valley and foothill grassland, Vernal pools (alkaline)/annual herb/Mar–June/65–2,095	Not expected to occur. No vernal pools or alkaline habitat present.
Nama stenocarpa	mud nama	None/None/2B.2	Marshes and swamps (lake margins, riverbanks)/annual/perennial herb/ Jan–July/15–1,640	Not expected to occur. No suitable vegetation present.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.2	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools; Mesic/annual herb/Apr–July/ 10–3,965	Not expected to occur. No vernal pools or alkaline habitat present.
Nolina cismontana	chaparral nolina	None/None/1B.2	Chaparral, Coastal scrub; Gabbroic (sometimes), Sandstone (sometimes)/ perennial evergreen shrub/(Mar)May–July/ 460–4,180	Not expected to occur. No gabbroic or sandstone substrates present.
Orcuttia californica	California Orcutt grass	FE/SE/1B.1	Vernal pools/annual herb/Apr–Aug/ 50–2,165	Not expected to occur. No suitable vegetation present.
Pentachaeta aurea ssp. *allenii*	Allen's pentachaeta	None/None/1B.1	Coastal scrub (openings), Valley and foothill grassland/annual herb/Mar–June/ 245–1,705	Not expected to occur. No open coastal scrub and non-native grassland onsite is frequently maintained.
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest,	Low potential to occur. Chaparral, grassland, coastal scrub, and

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			Riparian woodland, Valley and foothill grassland/annual herb/Mar–July/ 260–6,065	riparian woodland present. No occurrence records within 5 miles of the study area.
Phacelia hubbyi	Hubby's phacelia	None/None/4.2	Chaparral, Coastal scrub, Valley and foothill grassland; Gravelly, Rocky, Talus/annual herb/Apr–July/0–3,280	Low potential to occur. Chaparral, coastal scrub, and grassland present. Branching phacelia and Canterbury bells observed onsite.
Phacelia keckii	Santiago Peak phacelia	None/None/1B.3	Chaparral, Closed-cone coniferous forest/ annual herb/May–July/1,785–5,245	Not expected to occur. The site is outside of the species' known elevation range.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); Rocky (sometimes), Sandy/perennial herb/ Mar–Aug/15–985	Low potential to occur. Chaparral and coastal scrub present. No marshes or rocky substrate present. Branching phacelia and Canterbury bells observed onsite.
Piperia cooperi	chaparral rein orchid	None/None/4.2	Chaparral, Cismontane woodland, Valley and foothill grassland/perennial herb/Mar–June/ 50–5,200	Not expected to occur. Chaparral and grassland present but no occurrence records within 5 miles of the study area.
Piperia leptopetala	narrow-petaled rein orchid	None/None/4.3	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest/perennial herb/May–July/ 1,245–7,295	Not expected to occur. No suitable vegetation present.
Polygala cornuta var. *fishiae*	Fish's milkwort	None/None/4.3	Chaparral, Cismontane woodland, Riparian woodland/perennial deciduous shrub/ May–Aug/330–3,280	Low potential to occur. Chaparral and riparian woodland present. No occurrence records within 5 miles of the study area.
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; Gravelly, Sandy/perennial herb/(July)Aug–Nov(Dec)/ 0–6,885	Low potential to occur. Chaparral, coastal scrub, and riparian woodland present. Rabbit tobacco present onsite but not blooming during survey.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1	Chaparral, Closed-cone coniferous forest, Coastal scrub; Clay, Loam, Sandy/perennial	Low potential to occur. Chaparral and coastal scrub present with loam

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			evergreen shrub/Feb–Apr(May–Aug)/ 50–1,310	soils. Nearest occurrence record is in O'Neil Regional Park.
Quercus engelmannii	Engelmann oak	None/None/4.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/ perennial deciduous tree/Mar–June/ 165–4,265	Moderate potential to occur. Riparian woodland containing mature coast live oak woodland onsite could support this species.
Romneya coulteri	Coulter's matilija poppy	None/None/4.2	Chaparral, Coastal scrub; Burned areas (often)/perennial rhizomatous herb/ Mar–July(Aug)/65–3,935	Moderate potential to occur. Chaparral and coastal scrub in O'Neil Regional Park support this species. Occurrence records from this year are adjacent to San Juan Creek and in O'Neil Regional Park.
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	None/None/1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Mesic/perennial rhizomatous herb/June–Aug/1,390–6,560	Not expected to occur. The site is outside of the species' known elevation range.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)/annual herb/ Jan–Apr(May)/50–2,620	Not expected to occur. No alkaline substrate present.
Sidalcea neomexicana	salt spring checkerbloom	None/None/2B.2	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; Alkaline, Mesic/perennial herb/ Mar–June/50–5,015	Not expected to occur. No alkaline or mesic habitats present.
Suaeda esteroa	estuary seablite	None/None/1B.2	Marshes and swamps (coastal salt)/ perennial herb/(Jan–May)July–Oct/0–15	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Suaeda taxifolia	woolly seablite	None/None/4.2	Coastal bluff scrub, Coastal dunes, Marshes and swamps (coastal margins)/perennial evergreen shrub/Jan–Dec/0–165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Symphyotrichum defoliatum	San Bernardino aster	None/None/1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland (vernally mesic);	Not expected to occur. No vernally mesic habitat or streambanks present.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			Streambanks/perennial rhizomatous herb/ July–Nov/5–6,690	
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2	Chaparral, Coastal scrub/perennial deciduous shrub/Apr–May/540–3,280	Low potential to occur. Chaparral and coastal scrub present. No occurrence records within 5 miles of the study area.
Tortula californica	California screw moss	None/None/1B.2	Chenopod scrub, Valley and foothill grassland; Sandy/moss//35–4,790	Not expected to occur. No sandy substrate or mossy habitat present.
Verbesina dissita	big-leaved crownbeard	FT/ST/1B.1	Chaparral (maritime), Coastal scrub/ perennial herb/(Mar)Apr–July/150–675	Not expected to occur. Coastal scrub present but no occurrence records within 5 miles of the study area.
Viguiera laciniata	San Diego County viguiera	None/None/4.3	Chaparral, Coastal scrub/perennial shrub/ Feb–June(Aug)/195–2,460	Low potential to occur. Suitable habitat present but no occurrence records within 5 miles of the study area.
Viguiera purisimae	La Purisima viguiera	None/None/2B.3	Chaparral, Coastal bluff scrub/shrub/ Apr–Sep/1,195–1,390	Low potential to occur. Chaparral present but no occurrence records within 5 miles of the study area.

***Status Legend:**
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
SE: State listed as endangered
ST: State listed as threatened
SC: State Candidate for listing
SR: State Rare
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

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Appendix B3
Special-Status Wildlife with a Potential to Occur in the Study Area

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. No suitable vegetation or aquatic habitat present.
Spea hammondii	western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Not expected to occur. No suitable vegetation or aquatic habitat present.
Taricha torosa (Monterey Co. south only)	California newt	None/SSC	Wet forests, oak forests, chaparral, and rolling grassland	Not expected to occur. No suitable vegetation present.
Reptiles				
Anniella stebbinsi	southern California legless lizard	None/SSC	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Not expected to occur. Limited chaparral and riparian woodland is disturbed and in an urban setting.
Arizona elegans occidentalis	California glossy snake	None/SSC	Arid scrub, rocky washes, grasslands, chaparral, open areas with loose soil	Not expected to occur. No open grassland or chaparral with loose soils present.
Aspidoscelis hyperythra	orange-throated whiptail	None/WL	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Not expected to occur. Site is not arid.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Not expected to occur. Site is not arid.
Crotalus ruber	red diamondback rattlesnake	None/SSC	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not expected to occur. Limited coastal scrub and chaparral are in an urban setting.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Emys marmorata	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. No suitable aquatic habitat present.
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Not expected to occur. Site is not arid.
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	Not expected to occur. Limited grasslands and chaparral are in an urban setting.
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Not expected to occur. No small animal burrows present.
Thamnophis hammondii	two-striped gartersnake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur .No suitable vegetation or aquatic habitat present.
Birds				
Accipiter cooperii (nesting)	Cooper's hawk	None/WL	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Low potential to occur. Stands of live oak, riparian woodland and open water present on study area. However, site is in an urban setting.
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	Low potential to occur. Stands of live oak, riparian woodland and open water present on study area. However, site is in an urban setting. Limited to reservoirs onsite.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Low potential to occur. Coastal sage scrub and chaparral present. However, site is in an urban setting.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Not expected to occur. No suitable vegetation present
Aquila chrysaetos (nesting and wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur. No suitable vegetation present and site is in an urban setting.
Asio otus (nesting)	long-eared owl	BCC/SSC	Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats	Not expected to occur. No forested habitat present.
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. No animal burrows present.
Buteo regalis (wintering)	ferruginous hawk	None/WL	Winters and forages in open, dry country, grasslands, open fields, agriculture	Not expected to occur. No suitable vegetation present.
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only)	coastal cactus wren	None/SSC	Southern cactus scrub patches	Not expected to occur. No cactus scrub patches present.
Charadrius nivosus nivosus (nesting)	western snowy plover	FT, BCC/SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. No suitable foraging or nesting habitat present.
Circus hudsonius (nesting)	northern harrier	BCC/SSC	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Not expected to occur. No suitable foraging or nesting habitat present.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Coturnicops noveboracensis	yellow rail	BCC/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	Not expected to occur. No suitable vegetation present.
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Not expected to occur. No suitable foraging or nesting habitat present.
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. No dense riparian habitat present. No cottonwoods present.
Eremophila alpestris actia	California horned lark	None/WL	This subspecies of horned lark occurs on the state's southern and central coastal slope and in the San Joaquin Valley. Nests and forages in grasslands, disturbed lands, agriculture, and beaches.	Not expected to occur. No suitable nesting or foraging habitat present.
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to occur. No dense riparian habitat present. No cottonwoods present. Black willows onsite are sparse.
Pandion haliaetus (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Low potential to occur. Multiple reservoirs and Oso creek could provide nesting and foraging habitat for this species onsite. However, due to the urban setting, it is unlikely to occupy the site.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	BCC/SE	Nests and forages in coastal saltmarsh dominated by pickleweed (Salicornia spp.)	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Plegadis chihi (nesting colony)	white-faced ibis	None/WL	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Not expected to occur. No suitable foraging or nesting habitat present.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Moderate potential to occur. Suitable sloped coastal sage scrub onsite.
Setophaga petechia (nesting)	yellow warbler	None/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. Riparian and oak woodlands onsite are sparse and in an urban setting.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur. No suitable foraging or nesting habitat present. No dense cottonwoods, and willows are sparse and not near water.
Fishes				
Eucyclogobius newberryi	tidewater goby	FE/None	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	Not expected to occur. No suitable aquatic habitat present.
Gila orcuttii	arroyo chub	None/SSC	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	Not expected to occur. No suitable aquatic habitat present.
Oncorhynchus mykiss irideus pop. 10	southern steelhead - southern California DPS	FE/SCE	Clean, clear, cool, well-oxygenated streams; needs relatively deep pools in migration and gravelly substrate to spawn	Not expected to occur. No suitable aquatic habitat present.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Rhinichthys osculus ssp. 8	Santa Ana speckled dace	None/SSC	Headwaters of the Santa Ana and San Gabriel Rivers; may be extirpated from the Los Angeles River system	Not expected to occur. No suitable aquatic habitat present.
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Low potential to occur. Foraging and roosting habitat present at buildings, ornamental trees, and native coast live oak - CA sycamore woodland onsite.
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Not expected to occur. No ground burrows present.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	Not expected to occur. No ground burrows present.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. No foraging habitat present and limited roosting habitat in buildings.
Dipodomys stephensi	Stephens' kangaroo rat	FT/ST	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	Not expected to occur. No ground burrows present.
Eumops perotis californicus	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Low potential to occur. Suitable roosting and foraging habitat present. Chaparral and coastal scrub as well as coast live oak woodland are onsite.
Myotis yumanensis	Yuma myotis	None/None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Low potential to occur. Riparian woodland, trees, and buildings onsite could provide foraging and roosting habitat.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Low potential to occur. Coastal sage scrub and chaparral present. However, site is in an urban setting, and no woodrat middens were observed.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	not expected to occur. No suitable foraging or roosting habitat present.
Nyctinomops macrotis	big free-tailed bat	None/SSC	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Low potential to occur. Limited foraging habitat present over reservoirs, and limited roosting habitat present in trees and buildings.
Onychomys torridus ramona	southern grasshopper mouse	None/SSC	Grassland and sparse coastal scrub	Not expected to occur. Coastal scrub onsite is dense and grassland onsite is disturbed, with no small animal burrows.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. No suitable vegetation present.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. Site is not arid and there are no friable soils present.
Lasiurus frantzii	western red bat	None/SSC	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Low potential to occur. Roosting and foraging habitat present in ornamental trees, riparian woodland onsite.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/SCE	Open grassland and scrub communities supporting suitable floral resources.	Moderate potential to occur. Native coastal sage scrub, ornamental vegetation, and grassland onsite contain floral resources capable of supporting this species.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No vernal pools present.
Streptocephalus woottoni	Riverside fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No vernal pools present.
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	FC/None	Wind-protected tree groves with nectar sources and nearby water sources	Moderate potential to occur. Nearby water sources with floral resources present.

***Status Abbreviations**:
FE: Federally listed as endangered
FT: Federally listed as threatened
FPE: Federally proposed for listing as endangered
PFT: Federally proposed for listing as threatened
FC: Federal candidate species (former Category 1 candidates)
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State listed as endangered
ST: State listed as threatened
SC: State candidate for listing as threatened or endangered
SCE: State candidate for listing as endangered
SCT: State candidate for listing as threatened

Appendix C1
Cultural Resources Letter Report

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August 24, 2023 12711

Don Bunts
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Subject: Cultural Resources Letter Report for the Santa Margarita Water District ID 4A Recycled Water System Project, City of Rancho Santa Margarita, California

To Whom it May Concern:

This letter documents the negative findings of the cultural resources inventory conducted by Dudek for the Santa Margarita Water District ID 4A Recycled Water System Project (Project), located in the City of Rancho Santa Margarita, California. The Project involves the installation of approximately 18-miles of new recycled water pipelines, two pump stations, and one aboveground reservoir tank to extend the District's recycled water service in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California (Figure 1, Project Location). The Santa Margarita Water District (District) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA) and local regulations. In accordance with CEQA and local regulations, Dudek performed a cultural resources inventory of the Project areas that exist outside of established roadways (Figure 2, Project Area).

Dudek conducted a records search for the proposed Project area and surrounding half-mile radius at the South Central Coastal Information Center (SCCIC). The records search did not identify any cultural resources within the Project area; however, 12 cultural resources were identified within a half-mile radius of the Project area. A Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search was requested, and results were positive. Tribal outreach letters were mailed to Tribal representatives on July 7, 2023. To date, one response has been received, requesting further cultural resources information and Assembly Bill 52 (AB) consultation.

A qualified Dudek archaeologist conducted an intensive-level pedestrian survey of the proposed Project area and a reconnaissance-level survey (i.e. an inspection of focused locations representing a beneficial sample and/or otherwise having a higher relative potential for containing cultural resources) of the proposed 18-mile pipeline alignment on June 12, 2023. No cultural resources were identified within the Project area nor were any observed during the renaissance survey. Additionally, archival research indicates that the majority of the Project area has been disturbed in the past by roadway development, grading activities, and the construction of SMWD/water infrastructure.

Although the records search and pedestrian survey did not identify any cultural resources within the Project area, based on the quantity and significance of the cultural resources adjacent to the Project area, and in consideration of the Project's size and location with the Plano Trabuco and the hillsides of Trabuco Canyon, there is a moderate potential for the inadvertent discovery of subsurface archaeological resources during Project implementation.

Dudek recommends the following management strategies in order to help ensure that the Project will not result in impacts to cultural resources:

- Full-time archaeological monitoring during initial subsurface ground disturbing activities for the Project within Locations 1, 2, 3, and 4 (Figure 2).
    - The requirement for Native American monitoring, while recommended, is left to the discretion of the District, and based on the results of government-to-government consultation (AB 52).
- The presence of archaeological monitors for periodic sampling during ground disturbing activities for the remainder of the Project. This is to confirm the absence or presence of cultural resources and to assess the potential for subsurface soils to support the presence of buried cultural resources.
    - If disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated.
- The implementation of a Worker Environmental Awareness Program (WEAP) prior to the start of construction. This should include the development of a training handout or other materials by a qualified archaeologist to be implemented during on-site training with contractors. Training materials should include a summary of roles and responsibilities, regulatory conditions, and actions to be taken in the event of an inadvertent archaeological discovery.
- Post-construction reporting. This will provide a primary record of compliance with CEQA and District-approved management strategies.

1 Project Description and Location

The Project involves the installation of approximately 18-miles of new recycled water pipelines, two pump stations, and one aboveground reservoir tank to extend the District's recycled water service in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. Proposed pipeline installation includes approximately 95,000 linear feet (approximately 18 miles) of pipe ranging in diameter from 6 inches to 18 inches. All proposed pipes would run parallel to existing District pipes, with nearly all occurring in existing public roads, including Antonio Parkway, Avenida de las Banderas, Avenida Empresa, Santa Margarita Parkway, Avenida de las Flores, Melinda Road, Coto de Caza Drive, and smaller collector streets within residential and commercial developments. One short pipeline segment is planned outside an existing public road and within a paved District right-of-way connecting facilities in Coto de Caza Drive to the Portola Reservoir (Figure 1). Additionally, SMWD proposes other facilities improvements outside of existing roadways. They are as follows:

- **Location 1:** Expansion of the District's existing Eastbrook Recycled Water Pump Station on Santa Margarita Parkway in Mission Viejo (Figure 2-1).
- **Location 2:** Construction of an aboveground reservoir tank adjacent to the District's existing Trabuco Hills Recycled Water Reservoir on Los Alisos Boulevard (Figure 2-2).
- **Location 3:** Construction of a small pump station on District property south of the Portola Reservoir within the community of Coto de Caza (Figure 2-3).
- **Location 4:** Installation of additional pipeline within the District's Plano Recycled Water Reservoir site on Alta Vista Ranch Road and adjacent to the T-Y nursery (Figure 2-4).

Upon completion, the Project would permanently convert an estimated total of approximately 1,250 acre-feet per year of residential and commercial irrigation demand from potable to recycled water. The Project is within public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles.

For the purposes of this cultural resources inventory, the Project area is defined as the four locations of the Project that exist outside of established roadways (Locations 1-4), unless otherwise indicated.

2 Regulatory Framework

The Project is subject to compliance with CEQA and local regulatory conditions. No federal nexus is presently anticipated.

2.1 CEQA and the California Register of Historic Resources

CEQA requires that all private and public activities not specifically exempted be evaluated for the potential to impact the environment, including effects to historical resources. Historical resources are recognized as part of the environment under CEQA. It defines historical resources as "any object, building, structure, site, area, or place, which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Division I, Public Resources Code, Section 5021.1(b)).

Lead agencies have a responsibility to evaluate historical resources against the California Register of Historic Resources (CRHR, or California Register) criteria prior to making a finding as to a proposed project's impacts to historical resources. Mitigation of adverse impacts is required if the proposed project will cause substantial adverse change. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a project which demolishes or alters those physical characteristics of a historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance.

The California Register is used in the consideration of historic resources relative to significance for purposes of CEQA. The California Register includes resources listed in, or formally determined eligible for the National Register of Historic Places (NRHP) and some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the California Register, and they are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4850 et seq.), consisting of the following:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or

2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

2.2 Native American Historic Cultural Sites (California Public Resources Code section 5097 et seq.)

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NRHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

2.3 California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, required all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

2.4 California Health and Safety Code section 7050.5 and Public Resources Code Section 5097.98

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (California Health and Safety Code Section 7050.5[b]). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (California Health and Safety Code Section 7050.5[c]). In accordance with California Public Resources Code Section 5097.98(a), the NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. Within 48 hours of being granted access

to the site, the MLD may recommend means of treatment or disposition, with appropriate dignity, of the human remains and associated grave goods.

2.5 Assembly Bill 52

California AB 52, which took effect July 1, 2015, establishes a consultation process between California Native American Tribes and lead agencies in order to address tribal concerns regarding project impacts and mitigation to "tribal cultural resources" (TCR). Public Resources Code section 21074(a) defines TCRs and states that a project that has the potential to cause a substantial adverse change to a TCR is a project that may have an adverse effect on the environment. A TCR is defined as a site, feature, place, cultural landscape, sacred place, and object with cultural value to a California Native American tribe that is either:

1. Listed or eligible for listing in the CRHR or a local register of historical resources, or
2. Determined by a lead agency to be a TCR.

2.6 City of Rancho Santa Margarita General Plan

Divided into seven elements, the City of Rancho Santa Margarita General Plan, adopted in 2020, is a statement of intent by the city as to the future development of the community. This is accomplished through sets of goals and policies that serve as a long-term policy guide for the economic, physical, and environmental growth of the city. The Conservation/Open Space Element of the Rancho Santa Margarita General Plan discusses the city's goal and policies related to the management and preservation of cultural resources. The goal and associated policies for cultural resources are as follows (City of Rancho Santa Margarita 2020):

Goal 6. Preserve and protect historical, archaeological, and paleontological resources.

Policy 6.1. Balance the benefits of development with a project's potential impacts to existing cultural resources.

Policy 6.2. Identify, designate, and protect sites of historic importance.

2.7 Guidelines for Determining Significance

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change:

> Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

The significance of an historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

- When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
- If a lead agency determines that the archaeological site is a historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
- If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
- If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report (EIR), if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

> When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with

> appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
>
> 1. The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5); and
> 2. The requirement of CEQA and the Coastal Act.

Under CEQA, an EIR is required to evaluate any impacts on unique archaeological resources (California Public Resources Code section 21083.2.) A "unique archaeological resource" is defined as:

> [A]n archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> 1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> 2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> 3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

(California Public Resources Code section 21083.2(g)). An impact to a non-unique archaeological resource is not considered a significant environmental impact and such non-unique resources need not be further addressed in the EIR (Public Resources Code section 21083.2(a); CEQA Guidelines section 15064.5(c)(4)).

As stated above, CEQA contains rules for mitigation of "unique archaeological resources." For example, "[i]f it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

1. Planning construction to avoid archaeological sites.
2. Deeding archaeological sites into permanent conservation easements.
3. Capping or covering archaeological sites with a layer of soil before building on the sites.
4. Planning parks, greenspace, or other open space to incorporate archaeological sites." (Pub. Resources Code section 21083.2(b)(1)-(4).)

Public Resources Code section 21083.2(d) states that "[e]xcavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report."

The rules for mitigating impacts to archaeological resources to qualify as "historic resources" are slightly different. According to CEQA Guidelines section 15126.4(b), "[p]ublic agencies should, whenever feasible, seek to avoid damaging effects on any historic resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

A. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
B. Preservation in place may be accomplished by, but is not limited to, the following:
    1. Planning construction to avoid archaeological sites;
    2. Incorporation of sites within parks, greenspace, or other open space;
    3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site[; and]
    4. Deeding the site into a permanent conservation easement.

Thus, although section 21083.2 of the Public Resources Code, in addressing "unique archaeological sites," provides for specific mitigation options "in no order of preference," CEQA Guidelines section 15126.4(b), in addressing "historical resources of an archaeological nature," provides that "[p]reservation in place is the preferred manner of mitigating impacts to archaeological sites."

Under CEQA, "[w]hen data recovery through excavation is the only feasible mitigation," the lead agency may cause to be prepared and adopt a "data recovery plan," prior to any excavation being undertaken. The data recovery plan must make "provision for adequately recovering the scientifically consequential information from and about the historic resource." (CEQA Guidelines section 15126.4(b)(3)(C).) The data recovery plan also "must be deposited with the California Historical Resources Regional Information Center." (*Ibid*.) Further, "[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation." (*Ibid*.)

However, "[d]ata recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center." (CEQA Guidelines Section 15126.4(b)(3)(D).)

3 Results

3.1 Records Search

Dudek performed a California Historical Resources Information Systems (CHRIS) records search on June 26, 2023, at the South Central Coastal Information Center (SCCIC) located on the campus of California State University, Fullerton. The records search provided information on all documented cultural resources and previous archaeological investigations within the Project area and a half-mile radius of the Project aera.

3.1.1 Previous Cultural Resources Reports

The records search results revealed that 40 previous cultural resources studies have been conducted within a half-mile radius of the Project area. Of the 40 previous studies, three studies intersect the Project area and are listed in Table 1 below. These studies consist of three archaeological surveys. Overall, approximately 75% of the Project area has been subject to previous cultural resources investigations. The results of this records search are attached as part of Confidential Appendix A.

Table 1. Cultural Resources Studies Intersecting Project Area

Report Number	Authors	Date	Title
OR-00543	Cottrell, Marie G.	1977	Archaeological Resource Survey of 500+ Acres in Coto De Caza, Orange County, California
OR-00582	Cottrell, Marie G.	1980	Archaeological Resources Assessment Conducted for the Trabuco Land and Cattle Company and the Plano Trabuco Properties in the Trabuco Area of Orange County
OR-01353	Weber, Carmen A.	1992	Cultural Resources Survey for the Central Pool Augmentation and Water Quality Project

OR-00543

OR-00543 details an archaeological survey of 500+ acres of land in the community of Coto de Caza. The report was authored by Marie G. Cottrell of Archaeological Research, Inc. in 1977. The survey identified two previously recorded prehistoric archaeological resources, and two newly identified prehistoric isolates, none of which are within the currently proposed Project area. This study intersects with Location 3 but is not considered an adequate technical study according to the Secretary of the Interior's standards and guidelines for Archaeology and Historic Preservation (Cottrell 1977).

OR-00582

OR-00582 details the findings of an archaeological resources assessment conducted for 4,750 acres of land in the Trabuco Canyon area of Orange County, California. The report was authored in 1980 by Marie G. Cottrell of Archaeological Resource Management Corp. The survey identified 19 archaeological resources, most of which are located on the terraces overlooking Trabuco Canyon and none of which are within the currently proposed Project area. This study intersects with the currently proposed Project area at Location 2 but is not considered an adequate technical study according to the Secretary of the Interior's standards and guidelines for Archaeology and Historic Preservation (Cottrell 1980).

OR-01353

OR-01353 discusses the cultural resources assessment conducted by Chambers Group, Inc. in 1992 in support of the Central Pool Augmentation and Water Quality Project for the metropolitan Water District of Southern California. This was a very large survey effort broken up into five regional sections, the Plan B/Plano Trabuco Site Alternative being of interest to the currently proposed Project. The field crew conducted a reconnaissance survey of a 1,500-

foot-wide corridor along the proposed pipeline alignment that followed Santa Margarita Parkway to the east, and Portola Parkway to the west. Within this segment, eight prehistoric archaeological resources were identified, none of which intersect the currently proposed Project area. The survey effort also included an investigation of the proposed location of the Plano Trabuco Water Treatment Plant (currently proposed Project area Location 4). No cultural resources were identified within the location of the proposed treatment plant, nor were any identified along the access road (Weber 1992).

3.1.2 Previously Recorded Cultural Resources

The SCCIC records search did not identify any cultural resources within the Project area, though it did identify 12 cultural resources within a half-mile radius of the Project area (Table 2). Of the 12 resources identified within a half-mile radius of the Project area, seven are prehistoric lithic and groundstone scatters, two are prehistoric lithic scatters, one is a prehistoric midden deposit with associated artifacts and features, one is a prehistoric archaeological district, and one is an historic-era built environment resource. No historic addresses are located within a half-mile radius of the Project area. The results of this records search and all DPR forms are attached as part of Confidential Appendix A.

Table 2. Previously Recorded Cultural Resources within Half-Mile of Project Area

Primary Number	Trinomial	Age	Description	In/Out of Project Area
P-30-000468	CA-ORA-000468	Prehistoric	Lithic scatter	Out
P-30-000469	CA-ORA-000469	Prehistoric	Lithic and groundstone scatter	Out
P-30-000561	CA-ORA-000561	Prehistoric	Lithic and groundstone scatter	Out
P-30-000562	CA-ORA-000562	Prehistoric	Lithic and groundstone scatter	Out
P-30-000573	CA-ORA-000573	Prehistoric	Lithic and groundstone scatter	Out
P-30-000641	CA-ORA-000641	Prehistoric	Lithic scatter	Out
P-30-000727	CA-ORA-000727	Prehistoric	Artifact scatter, midden deposit, and rock cairn	Out
P-30-000860	CA-ORA-000860	Prehistoric	Lithic and groundstone scatter	Out
P-30-000861	CA-ORA-000861	Prehistoric	Lithic and groundstone scatter	Out
P-30-000947	CA-ORA-000947	Prehistoric	Lithic and groundstone scatter	Out
P-30-001728	-	Prehistoric	Upper Aliso Creek Archaeological District	Out
P-30-177070	-	Historic	SCE Tower	Out

3.2 Archival Research

In addition to the SCCIC records search, Dudek conducted an online review of historic aerial photographs and historic topographic (topo) maps to better understand the development of the Project area and surrounding properties over time. For the purposes of the following section, the Project area (including the proposed pipeline alignment) is split up into functional areas by intercardinal direction (northwest, northeast, southwest, and southeast).

Historic aerial photographs (historic aerials) of the Project area are available from 1938 to 2020 (NETR 2023). The earliest historic aerial from 1938 shows most of the Project area as largely undeveloped, while the northeastern portion of the Project area shows some evidence of agricultural activity. The next historic aerial from 1946 shows grading in the southwestern portion of the Project area, and agricultural activity and a single structure in the northeastern portion of the Project area. There are no substantial changes between 1953 and 1967 as indicated by the historic aerials. By 1980, there is additional grading and the presence of access roads throughout the southwestern portion of the Project area, and construction activity in the southeastern portion of the Project area, likely for the Canada Gobernadora Reservoir (now Portola Reservoir; Location 3). No substantial changes are seen in the historic aerial imagery from 1981. By 1985, the historic aerial imagery shows additional mass grading in the southwestern portion of the Project area, while the Canada Gobernadora Reservoir and its surrounding access roads to the southeast are fully developed. The aerial imagery in 1987 shows construction activity for a residential community in the southwestern portion of the Project area (approximate location of Location 1). By 1992, there is mass grading and construction activity in the northwestern portion of the Project area and residential communities and roadways in the southwestern portion of the Project area. Two water tanks also appear within the northeastern portion of the Project area (Location 4) in 1992, and there is continued construction activity in the southeastern portion of the Project area. By 1993, housing foundations appear in the northwestern portion of the Project area, while the southwestern portion appears fully developed. The 1994 historic aerial shows continued construction activity in the northwestern portion of the Project area and by 1996, a water tank appears at Location 2 of the currently proposed Project. Between 1999 and 2000, the aerial imagery shows additional construction activity in the southeastern portion of the Project area. By 2004, the southeastern portion of the Project area has been developed into the community of Coto de Caza. The current condition of the Project area and surrounding areas are the same at present as seen in the 2005 aerial imagery.

Historic topographic (topo) maps of the Project area are available for the years of 1942 to 2020 (NETR 2023; USGS 2023). The earliest historic topo from 1942 depicts the general Project area within the Plano Trabuco, a flatter area of land within the larger Trabuco Canyon (sometimes called “Trabuco Arroyo”). There are several seasonal and perennial streams traversing the Project area on a north to south axis down through the Canyon. The next available historic topo from 1955 reveals a structure in the northeastern portion of the Project area. There are no significant changes in the topographic depiction of the entire Project area until 1984. By 1984, the Canada Gobernadora Reservoir (now Portola Reservoir; Location 3) in the southeastern portion of the Project area appears. By 2000, the historic topo reveals Melinda Road and various residential roads developed in the northwestern portion of the Project area. Additionally, water tanks appear in the northeastern portion of the Project area (Location 4), and Coto de Caza Drive appears in the southeastern portion of the Project area. The current condition of the Project area and surrounding areas are the same at present as seen in the 2000 topographic map (NETR 2023; USGS 2023).

Overall, it appears that most of the Project area (with the exception of the northeast) remained largely undeveloped throughout the 20th Century until the 1980s. By the 1980s, the development of water infrastructure spurred the growth of residential communities within the Plano Trabuco and the hillsides of Trabuco Canyon into the early 2000s. It appears that most of the Project area has been disturbed by roadway development, grading activities, and the construction of SMWD/water infrastructure. There appears to be no historic-era built environment features within the currently proposed Project area as indicated by this archival review.

3.3 Review of Geomorphological Context

According to the U.S. Department of Agriculture Natural Resources Conservation Services (USDA 2023), two soil types are mapped within the Project area. Most of the Project area (Location 2, 3 and 4) consists of Calleguas clay loam, 50 to 75 precent slopes, eroded. The Calleguas clay loam soil series generally occurs in settings with hillslopes deriving from residuum weather from calcareous shale and is found in areas with elevations ranging from 220 to 2,110 feet above sea level. The remainder of the Project area (Location 1) consists of Sorrento loam, 2 to 9 percent slopes. The Sorrento loam soil series generally occurs in settings with alluvial fans deriving from sedimentary rock and is found in areas with elevations ranging from 0 to 1,340 feet above sea level. Alluvial soils are present in the Project area, which have moderate potential for subsurface cultural deposits.

3.4 NAHC and Tribal Correspondence

Dudek requested a Native American Heritage Commission (NAHC) search of the Sacred Lands File (SLF) for the Project area (including the proposed pipeline alignment) and a half-mile radius on June 1, 2023. The SLF consists of a database of known Native American resources. These resources may not be included in the SCCIC database. The NAHC replied via email on June 27, 2023, stating that the SLF search was completed with positive results. Positive results indicate the presence of Native American resources within a half-mile of the Project area, and not necessarily directly within the Project area. Additionally, the NAHC provided a list of Native American tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in the area. Tribal outreach letters were mailed on July 7, 2023, to all Native American group representatives included on the NAHC contact list. These letters attempted to solicit information relating to Native American resources that may be impacted by Project implementation. Native American representatives were requested to define a general area where known resources intersect the Project area. To date, Dudek has received one response to this information request. This response is paraphrased below:

> Joyce Perry of the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes responded to the information request on August 14, 2023. Ms. Perry's response indicated that the Project area is located within what the Juaneño consider their territory. Additionally, Ms. Perry indicated that the half-mile radius of the Project area includes several habitation and village sites of cultural significance to the Acjachemen people. No specific locational information or descriptions were provided. Ms. Perry requests consultation on the Project as well as the cultural resources reporting documentation and proposed mitigation measures.

Any additional responses to these outreach letters will be forwarded to the Santa Margarita Water District and included in subsequent drafts of the report.

In compliance with Assembly Bill 52, the Santa Margarita Water District as lead agency, is responsible for conducting government to government consultation with pertinent tribal entities. For information regarding Assembly Bill 52, please refer to the Project's CEQA document.

3.5 Pedestrian Survey

Dudek archaeologist Makayla Murillo conducted a pedestrian and reconnaissance survey of the proposed Project area (including the proposed pipeline alignment) on July 12, 2023. The site visit employed standard archaeological

procedures and techniques consistent with the Secretary of the Interior Standards for Archaeology and Historic Preservation. When possible, 15-meter interval survey transects were conducted oriented in cardinal direction. Where the ground surface was visible, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock, imported marine shell), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as rodent/reptile burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. All fieldwork was documented using field notes and an Apple iPad equipped with ESRI Field Maps. Location-specific photographs were taken using a second-generation Apple iPad equipped with an eight (8) mega-pixel (MP) 1080p resolution camera and georeferenced PDF maps of the Project area. Accuracy of this device ranged between 2 and 8 meters. All field notes, photographs, and records related to the current study are on file at Dudek's San Juan Capistrano, California office.

The Project area is largely disturbed, consisting predominantly of existing roads, smaller connector streets within residential and commercial properties, paved access roads, minor landscaping, and existing infrastructure associated with the Santa Margarita Water District and the T-Y Nursery. During the intensive-level pedestrian survey, the Project area was divided and surveyed in four sections (Location 1, Location 2, Location 3, and Location 4). A reconnaissance survey of the proposed pipeline alignment was also conducted in a vehicle, and on foot when necessary or appropriate.

Location 1 is in the southwesternmost portion of the Project area, bounded by Santa Margarita Parkway to the north, a residential community to the west, and the Oso Creek to the south. This area has been previously disturbed and features existing SMWD infrastructure. Ground visibility at this location was poor (0-25%); obscured by hardscape (75-100%), imported gravel, and vegetation. Vegetation includes various species of invasive grasses, thistle (*Cirsium spp.*), and ice plant (*Delosperma sp.*). Soil consisted of dry light brown compacted sandy clay. No cultural resources were identified at Location 1 (Figure 2-1).

Location 2 is in northwesternmost portion of the Project area, bounded by Los Alisos Boulevard to the south, an access road to the west, and SMWD infrastructure to the north. This area is entirely open and situated on a steep hill with a slope of 45 degrees. Ground visibility in this area was poor (0-25%); obscured by vegetation (75-100%) including various landscaping plants, various species of invasive grasses, thistle (*Cirsium spp.* and *Cynara sp.*), jimson weed (*Datura sp.*), sage (*Salvia spp.*), mustard (*Brassica sp.*), wild sunflower (*Helianthus californicus*), orchid rose (*Cypripedium californicum*), and landscaping trees. Soil consisted of dry light brown compacted sandy clay. No cultural resources were identified at Location 2 (Figure 2-2).

Location 3 is located immediately south of the Portola Reservoir, bounded by two paved access roads. This area has been entirely disturbed by the development of the Reservoir. One flush away drainage tunnel measuring approximately 3-x-7-ft trending north-south is located approximately 3 feet under the Project area. One small subsurface concrete foundation measuring 2-x-2-ft is located on the south side of the Project area. Ground visibility in this area was fair (25-50%); obscured by imported gravel and the concrete foundation. Soil consisted of dry light brown compacted sandy clay. No cultural resources were identified at Location 3 (Figure 2-3).

Location 4 is located adjacent to the T-Y Nursery, within an SMWD facility. This area is relatively flat and has been largely disturbed by the development of the existing nursery, SMWD infrastructure, and access roads. Ground

visibility in this area was poor (0-25%); obscured by the gravel, access roads, and mulch. Soil consisted of dry light brown compacted sandy clay. No cultural resources were identified at Location 4 (Figure 2-4).

The proposed pipeline alignment is largely obscured by existing roadway infrastructure. A reconnaissance survey was conducted from a vehicle, and in some areas on foot, along the entire 18-mile proposed pipeline alignment. Overall, ground disturbance associated with initial roadway construction and water/sewer pipeline placement in the 1980s is assumed to be extensive. No cultural resources were identified during this portion of the field effort.

4 Summary and Management Considerations

Dudek's archaeological resources inventory of the Project indicates that there is moderate potential for the inadvertent discovery of archaeological resources during Project implementation. Although the SCCIC records search and the pedestrian survey did not identify any archaeological resources within the Project area, there are 12 cultural resources within a half-mile radius of the Project area. Additionally, the NAHC has indicated the Project area and half-mile radius are positive for Native American cultural resources. Given the Project's location within the Plano Trabuco and the hillsides of Trabuco Canyon, the Project area would have likely been used by indigenous Native American inhabitants prior to Euromerican contact. Due to this and based on the quantity and significance of the cultural resources adjacent to the Project area, Dudek recommends additional cultural resources management strategies to be implemented throughout the duration of Project in order to ensure that the Project will not result in impacts to cultural resources. These management strategies are summarized in detail below.

Archaeological Monitoring and WEAP

Full-time archaeological monitoring is recommended during initial ground disturbing activities for the Project within Locations 1, 2, 3, and 4. Additionally, Dudek recommends archaeological monitors be present for periodic sampling during ground disturbing activities for the remainder of the Project (within the established roadways), to confirm the absence or presence of cultural resources and to assess the potential for subsurface soils to support the presence of buried cultural resources. If disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated.

The requirement for Native American monitoring, while recommended, is left to the discretion of the District, and based on the results of government-to-government consultation (AB 52).

A Worker Environmental Awareness Program (WEAP) should be implemented prior to the start of construction. This should include the development of a training handout or other materials by a qualified archaeologist to be implemented during on-site training with contractors. Training materials should include a summary of roles and responsibilities, regulatory conditions, and actions to be taken in the event of an inadvertent archaeological discovery.

Post-construction reporting is recommended. This will provide a primary record of compliance with CEQA and District-approved management strategies.

In the event that archaeological resources or human remains are encountered during the exposure of subsurface soils within the Project area in the absence of an archaeological monitor, ground-disturbing work should be immediately halted within a minimum distance of 50 feet, and the lead archaeologist and agency contact notified.

Management recommendations to reduce potential impacts to unanticipated archaeological resources and human remains during construction activities are provided below.

Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 50 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find. Construction activities may continue in other areas, or use existing paths of travel, but should be redirected a safe distance from the find. Avoidance and/or preservation in place should be considered the preferred management approach wherever possible. If the new discovery is evaluated and found to be significant under CEQA and avoidance is not feasible, additional work such as data recovery may be warranted. A data recovery plan shall be developed by the qualified archaeologist in consultation with the District and Native American representatives, if applicable. Ground disturbance can continue only after the resources has been properly mitigated with approval by the District.

Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify the person or persons it believes to be the MLD from the deceased Native American. The MLD shall complete inspection within 48 hours of being granted access to the site and make recommendations for the treatment and disposition, in consultation with the District, of the human remains.

Should you have any questions relating to this report and its findings, please do not hesitate to contact me at 760.557.0998 or rbakhtiary@dudek.com.

Respectfully submitted,

Roshanne Bakhtiary, M.A.
Archaeologist

Makayla Murillo, B.A.
Archaeologist

Att.: *Figure 1. Project Location Map*
Figure 2. Project Area Map
Figure 3. Overview of Location 1, view facing east
Figure 4. Northern boundary of Location 2, view facing east
Figure 5. Overview of Location 3, view facing north
Figure 6. Overview of Location 4, view facing north
National Archaeological Database Information
Confidential Appendix A, SCCIC Records Search Results
Appendix B, NAHC Correspondence and Tribal Outreach

cc: *Adam Giacinto, Micah Hale, Dudek*

5 References

City of Rancho Santa Margarita. 2020. City of Rancho Santa Margarita General Plan 2020. Accessed August 2023. https://www.cityofrsm.org/DocumentCenter/View/5088/RSM-General-Plan-2020-Complete-Document

Cottrell, Marie G. 1977. Archaeological Resource Survey of 500+ Acres in Coto De Caza, Orange County, California. On File at the South Central Coastal Information Center, Fullerton, California.

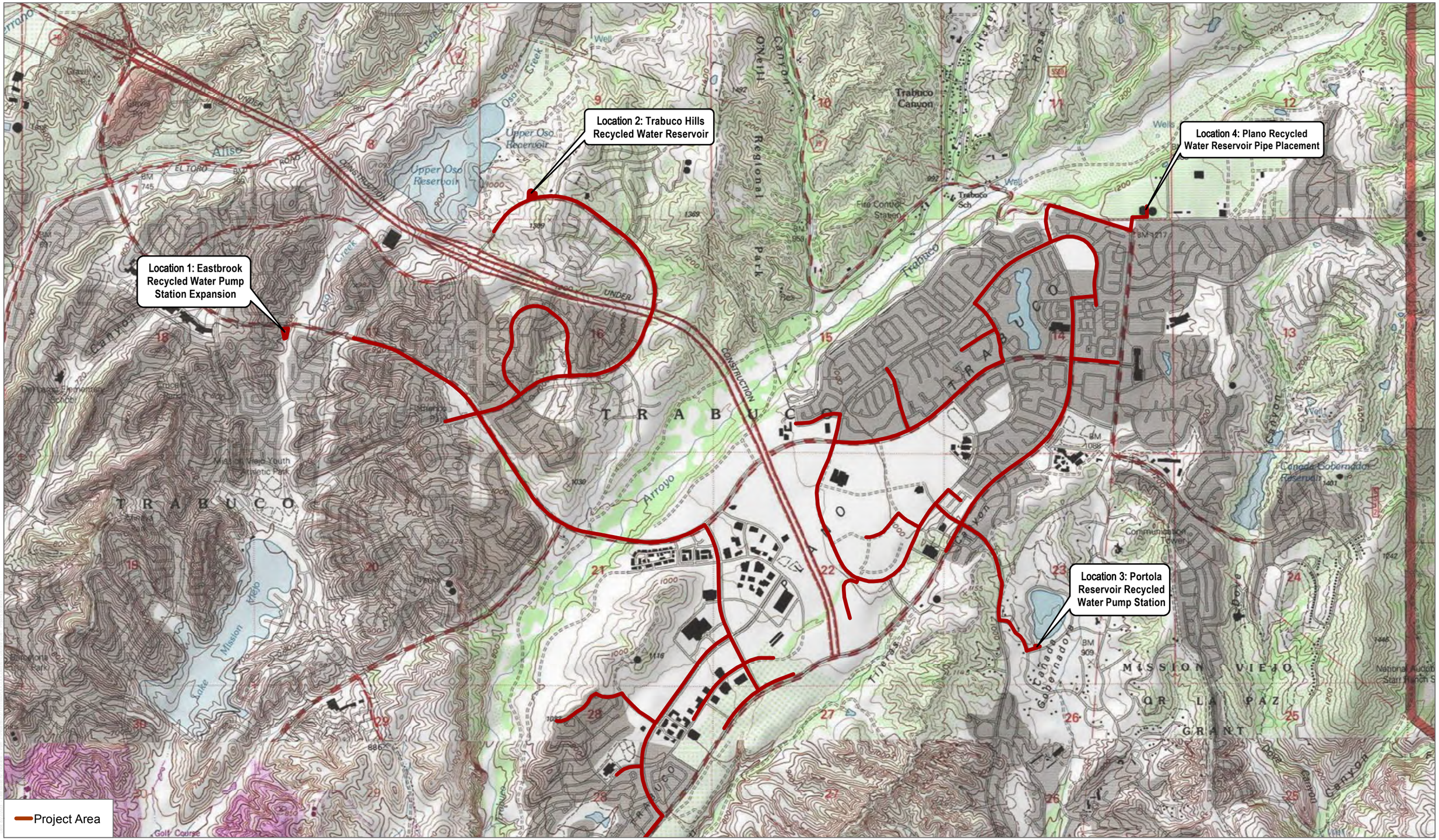
Cottrell, Marie G. 1980. Archaeological Resources Assessment Conducted for the Trabuco Land and Cattle Company and the Plano Trabuco Properties in the Trabuco Area of Orange County. On File at the South Central Coastal Information Center, Fullerton, California.

NETR (National Environmental Title Research). 2023. Search for Rancho Santa Margarita, California. Accessed July 2023. https://www.historicaerials.com/

USDA (United States Department of Agriculture). 2023. Natural Resources Conservation Service Soil Web Survey. Accessed July 2023. https://websoilsurvey.nrcs.usda.gov/

USGS. 2023. Historic Topographic Rancho Santa Margarita, CA. Accessed August 2023. https://livingatlas.arcgis.com/topoexplorer/

Weber, Carmen A. 1992. Cultural Resources Survey for the Central Pool Augmentation and Water Quality Project. On File at the South Central Coastal Information Center, Fullerton, California.



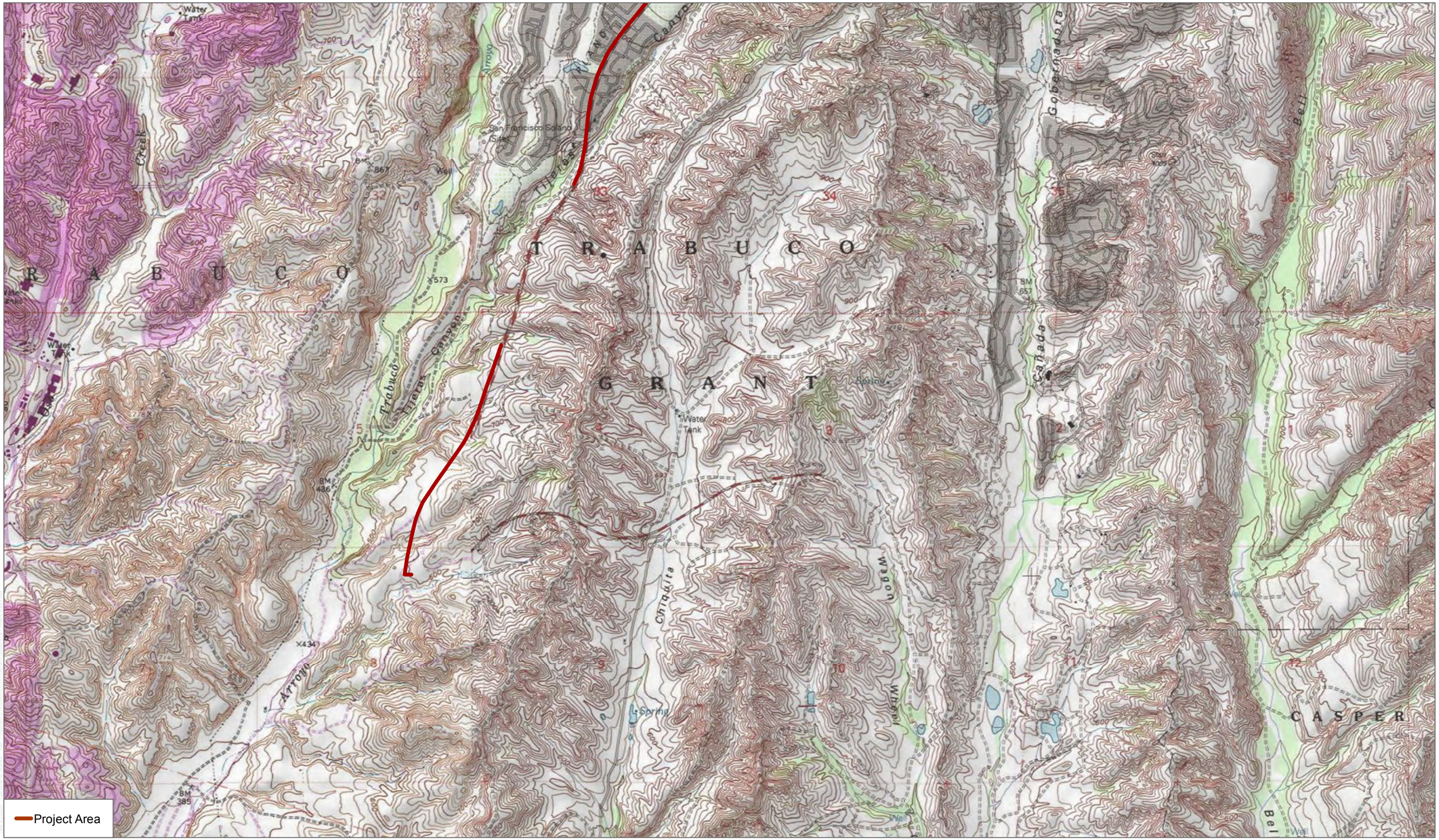
SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8

DUDEK

FIGURE 1A

Project Location

Dudek Project 12711



SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8

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FIGURE 1B
Project Location
Dudek Project 12711

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 15 30 Meters

FIGURE 2-1

Location 1 Project Area Map

Dudek Project 12711

SOURCE: Maxar 2022; Open Street Map 2019

DUDEK

0 15 30 Meters

FIGURE 2-2

Location 2 Project Area Map

Dudek Project 12711

SOURCE: Maxar 2022; Open Street Map 2019

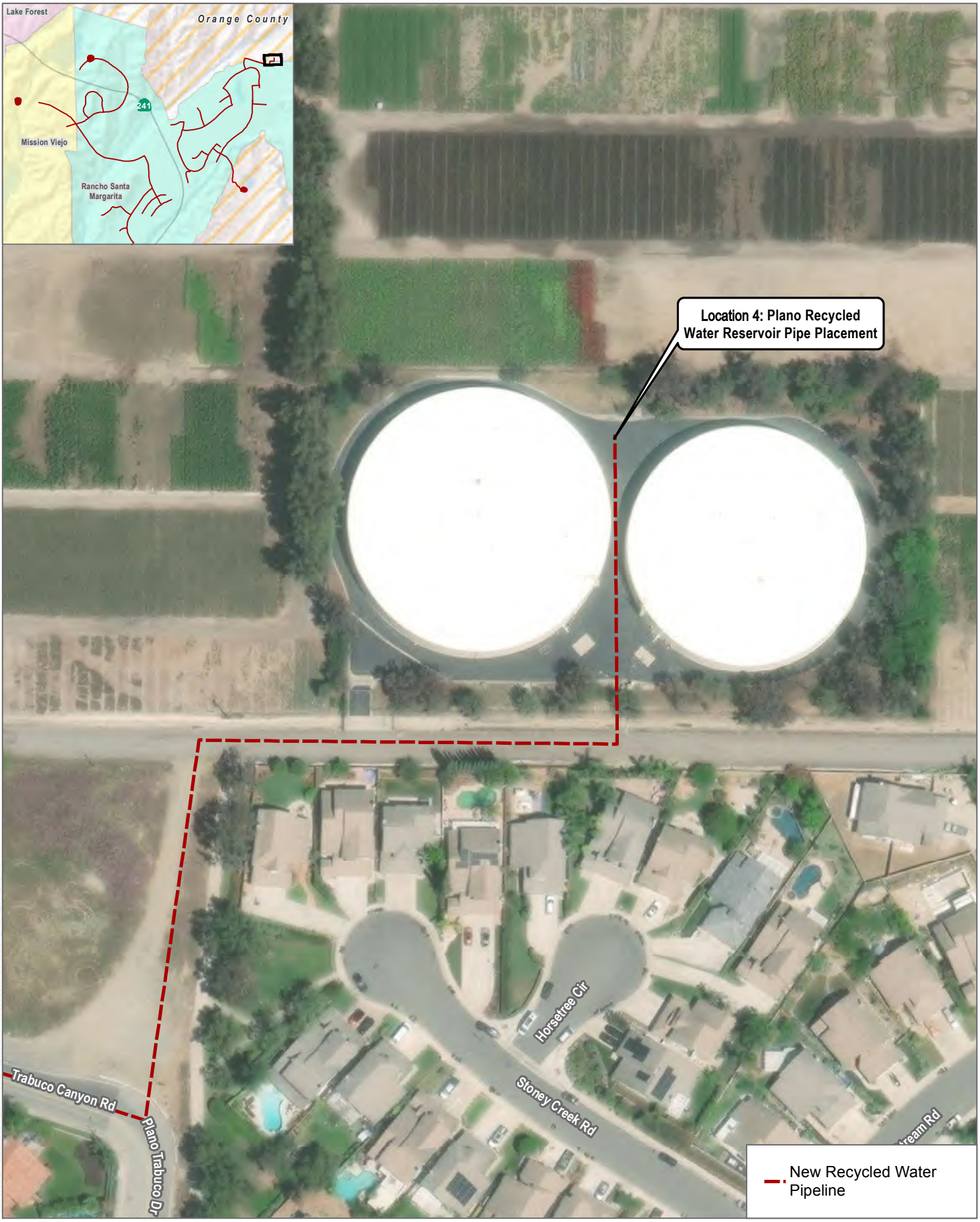
DUDEK

0 15 30 Meters

FIGURE 2-3

Location 3 Project Area Map

Dudek Project 12711



SOURCE: Maxar 2022; Open Street Map 2019

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FIGURE 2-4

Location 4 Project Area Map

Dudek Project 12711

Figure 3. Overview of Location 1, view facing east

Figure 4. Northern boundary of Location 2, view facing east.

Figure 5. Overview of Location 3, view facing north.

Figure 6. Overview of Location 4, view facing north.

National Archaeological Database (NADB) Information

Authors:	Roshanne Bakhtiary, MA, Makayla Murillo, BA, Adam Giacinto MA, RPA., Micah Hale PhD, RPA.
Firm:	Dudek
Project Proponent:	Santa Margarita Water District
Report Date:	August 2023
Report Title:	Cultural Resources Letter Report for the Santa Margarita Water District ID 4A Recycled Water System Project, City of Rancho Santa Margarita, California
Type of Study:	Cultural Resources Inventory
Resources:	None
USGS Quads:	El Toro and Santiago Peak, California Quadrangles, Township 6 South, Range 7 West, Section 9, 11, 17, 23
Acreage:	1-acre
Permit Numbers:	N/A
Keywords:	Inventory, Negative, City of Rancho Santa Margarita, Santa Margarita Water District

Confidential Appendix A

SCCIC Records Search Results

Appendix B

NAHC Correspondence and Tribal Outreach

From: Roshanne Bakhtiary

Sent: Thursday, June 1, 2023 8:28 PM

To: NAHC@NAHC

Cc: Adam Giacinto

Subject: Sacred Lands File Search Request for Dudek #12711

Attachments: 12711_NAHC_SLF_Request.pdf

Dear NAHC,

Please find attached to this email the NAHC Sacred Lands File Search request with project location map for the proposed Santa Margarita Water District ID A4 Recycled Water System Project (Dudek #12711) in Rancho Santa Margarita, CA. Dudek is requesting a NAHC Sacred Lands File Search for any sacred sites, tribal cultural resources, and other places of Native American community value that may fall within a half-mile radius of the proposed project location.

Please let me know if you have any questions regarding this project. You can email the results to me at: rbakhtiary@dudek.com.

Thank you,

Roshanne S. Bakhtiary, MA

Archaeologist

760.557.0998

www.dudek.com

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Santa Margarita Water District ID 4A Recycled Water System Project

County: Orange

USGS Quadrangle Name: El Toro, Santiago Peak, Canada Gobernadora, San Juan Capistrano

Township: 6S **Range:** 7W **Section(s):** 9, 11, 14-17, 21-23, 27, 28, 33

Township 7S / Range 7W / Sections 4, 5, 8

Company/Firm/Agency: Dudek

Street Address: 605 3rd Street

City: Encinitas, CA **Zip:** 92507

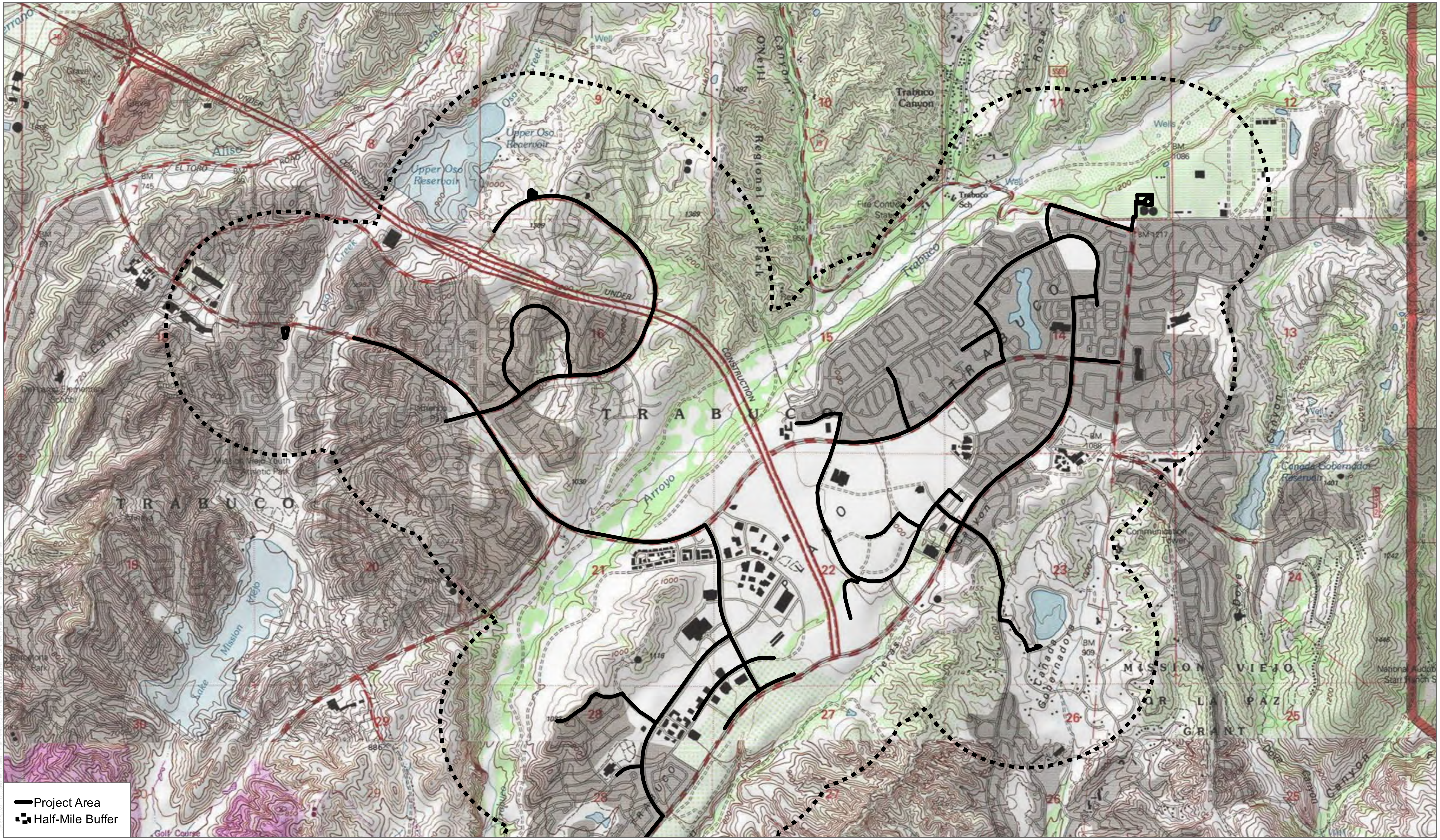
Phone: (760) 557-0998

Fax:

Email: rbakhtiary@dudek.com

Project Description:

The proposed Project involves the installation of approximately 13 miles of new recycled water pipelines, two pump/booster stations, and two water retention tanks in the city of Rancho Santa Margartia, California.



SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8

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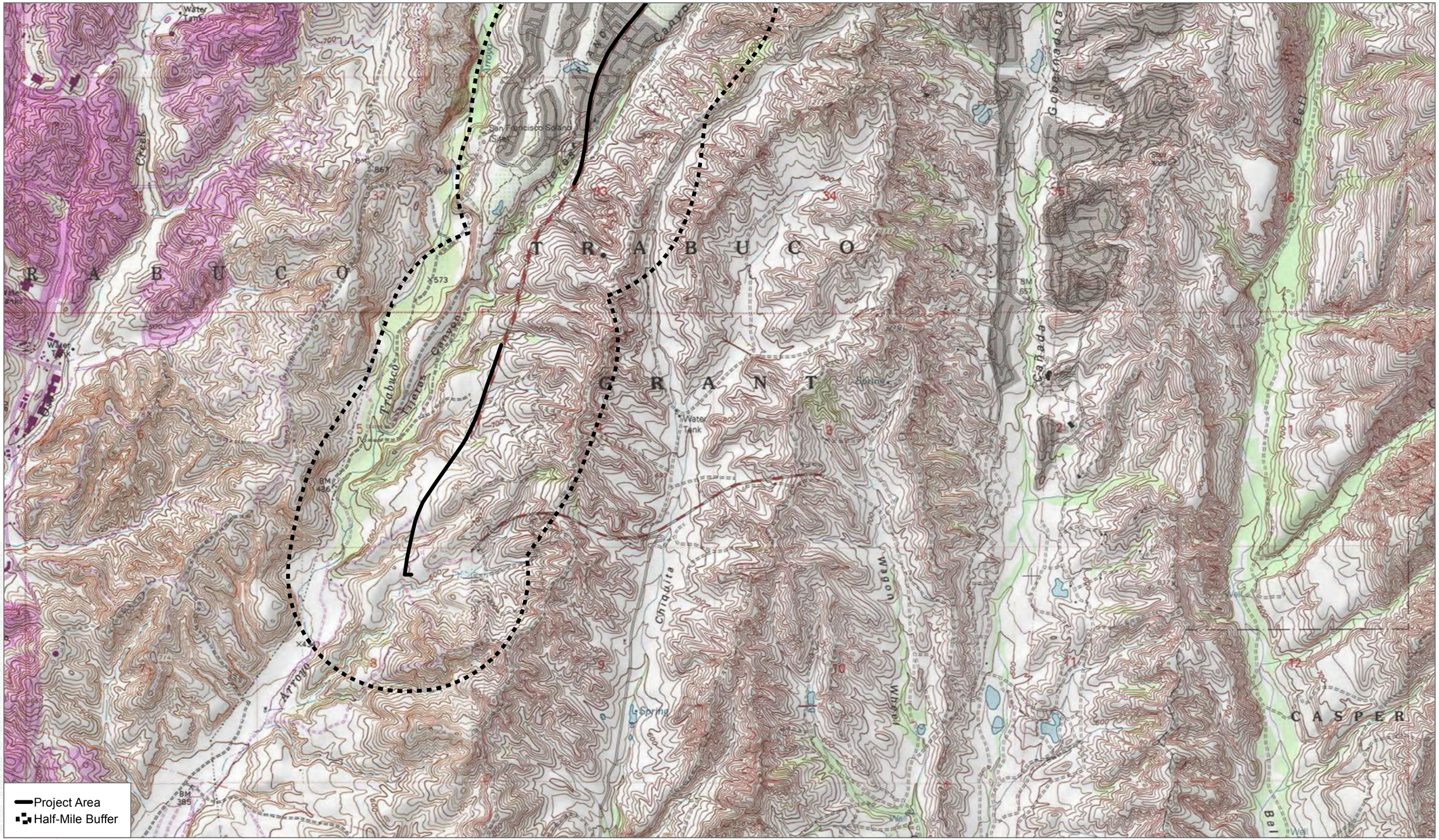
Records Search Map

Dudek Project 12711



SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8

DUDEK

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0 300 600 Meters
1:24,000

Records Search Map

Dudek Project 12711

From: Green, Andrew@NAHC <Andrew.Green@nahc.ca.gov>

Sent: Tuesday, June 27, 2023 2:49 PM

To: Roshanne Bakhtiary

Cc: kaamalam@gmail.com

Subject: Santa Margarita Water District ID 4A Recycled Water System Project

Attachments: SLF Yes Santa Margarita Water District ID 4A Recycled Water System Project 6.27.2023.pdf; Santa Margarita Water District ID 4A Recycled Water System Project 6.27.2023.pdf

Good Afternoon,

Attached is the response to the project referenced above. If you have any additional questions, please feel free to contact our office email at nahc@nahc.ca.gov.

Regards,

Andrew Green

Native American Heritage Commission

1550 Harbor Blvd., Suite 100

West Sacramento, CA 95691

Andrew.Green@nahc.ca.gov

Direct Line: (916) 573-1072

Office: (916) 373-3710

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

June 27, 2023

Roshanne Bakhtiary
Dudek

Via Email to: rbakhtiary@dudek.com

Re: Santa Margarita Water District ID 4A Recycled Water System Project, Orange County

Dear Ms. Bakhtiary:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Juaneno Band of Mission Indians Acjachemen Nation - Belardes on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological 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. Please contact all of those listed; if they cannot supply information, they may 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 the NAHC. 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
Orange County
6/27/2023
*Federally Recognized Tribe

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno Band of Mission Indians - Kizh Nation
Christina Swindall Martinez, Secretary
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (818) 406 - 1392
christinaswindall@yahoo.com

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Cultural Resource Administrator
P.O. Box 941078 Gabrielino
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu

Gabrielino-Tongva Tribe
Charles Alvarez, Chairperson
23454 Vanowen Street Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
Chavez1956metro@gmail.com

Gabrielino-Tongva Tribe
Sam Dunlap, Cultural Resource Director
P.O. Box 3919 Gabrielino
Seal Beach, CA, 90740
Phone: (909) 262 - 9351
tongvatcr@gmail.com

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628 Juaneno
Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net

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

Juaneno Band of Mission Indians Acjachemen Nation 84A
Heidi Lucero, Chairperson, THPO
31411-A La Matanza Street Juaneno
San Juan Capistrano, CA, 92675
Phone: (562) 879 - 2884
jbmian.chairwoman@gmail.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 Santa Margarita Water District ID 4A Recycled Water System Project, Orange County.

Native American Heritage Commission
Native American Contact List
Orange County
6/27/2023
*Federally Recognized Tribe

La Jolla Band of Luiseno Indians
Norma Contreras, 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 Road — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pala Band of Mission Indians
Alexis Wallick, Assistant THPO
PMB 50, 35008 Pala Temecula Road — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3537
awallick@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

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla, Luiseno
San Jacinto, CA, 92581
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

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

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 Santa Margarita Water District ID 4A Recycled Water System Project, Orange County.

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

July 7, 2023 12711

Mr. Temet Aguilar, Chairperson
Pauma & Yuima Reservation
P.O. Box 369
Pauma Valley, CA 92061

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Aguilar,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

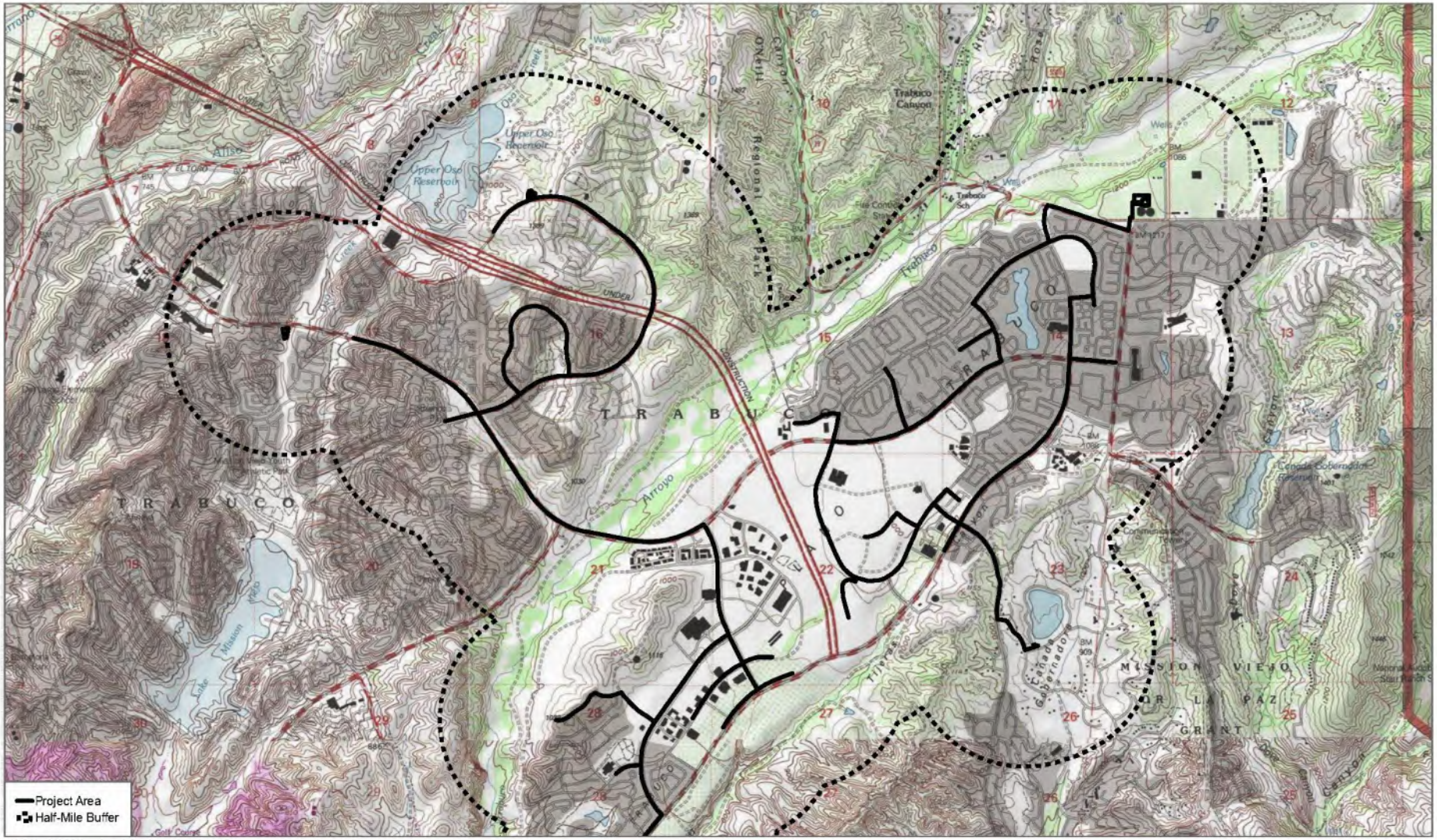
As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on June 27, 2023, which stated that the SLF search did identify the presence of Native American cultural resources within a half-mile of the Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. Tribes that wish to be notified of projects for the purposes of consultation must contact the lead agency, Santa Margarita Water District, in writing (pursuant to Public Resources Code Section 21080.3.1 (b)).

If you have any information or concerns pertaining to such information, please contact me.

Respectfully,

Makayla Murillo
Archaeologist
DUDEK
Phone: 760-846-5874
Email: mmurillo@dudek.com


Project Area
Half-Mile Buffer
T R A B U C O
Trabuco Canyon
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SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8
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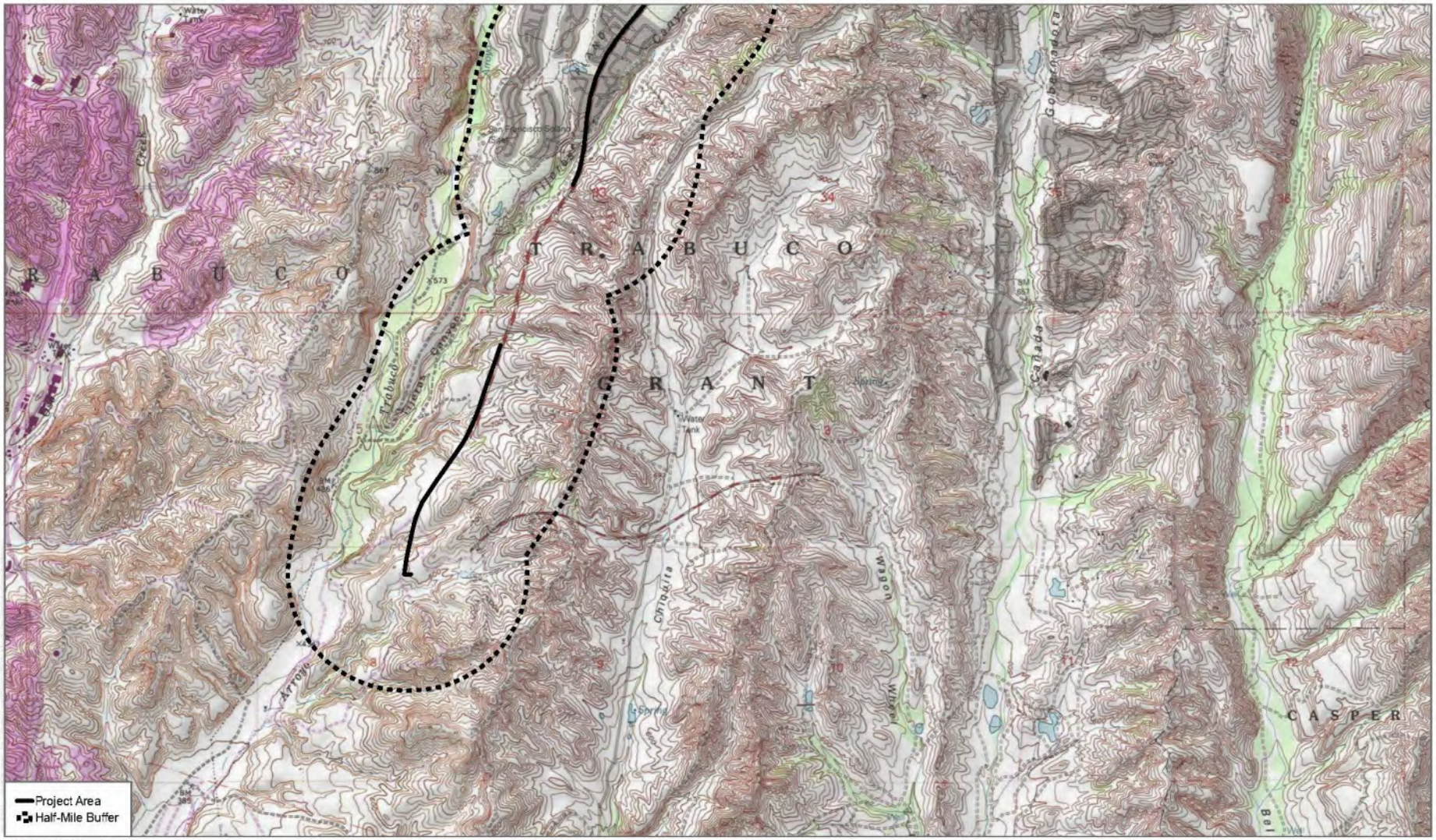
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MAIN OFFICE
605 THIRD STREET
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T 800.450.1818 F 760.632.0164

July 7, 2023 12711

Mr. Charles Alvarez, Councilman
Gabrieleno Tongva Tribe
23454 Vanowen St.
West Hills, CA 91307

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Alvarez,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on June 27, 2023, which stated that the SLF search did identify the presence of Native American cultural resources within a half-mile of the Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

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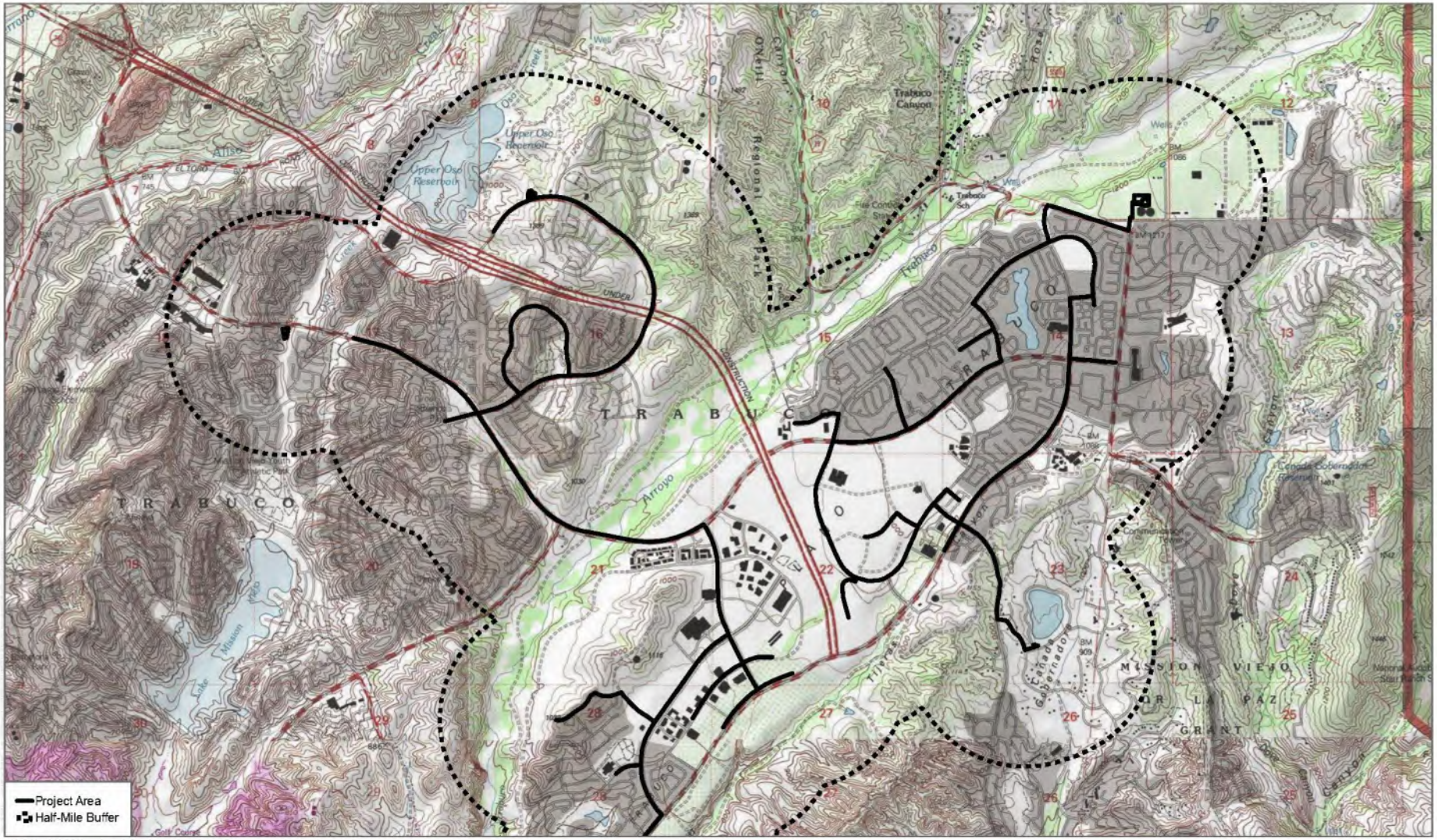
If you have any information or concerns pertaining to such information, please contact me.

Respectfully,

Makayla Murillo
Archaeologist
DUDEK
Phone: 760-846-5874
Email: mmurillo@dudek.com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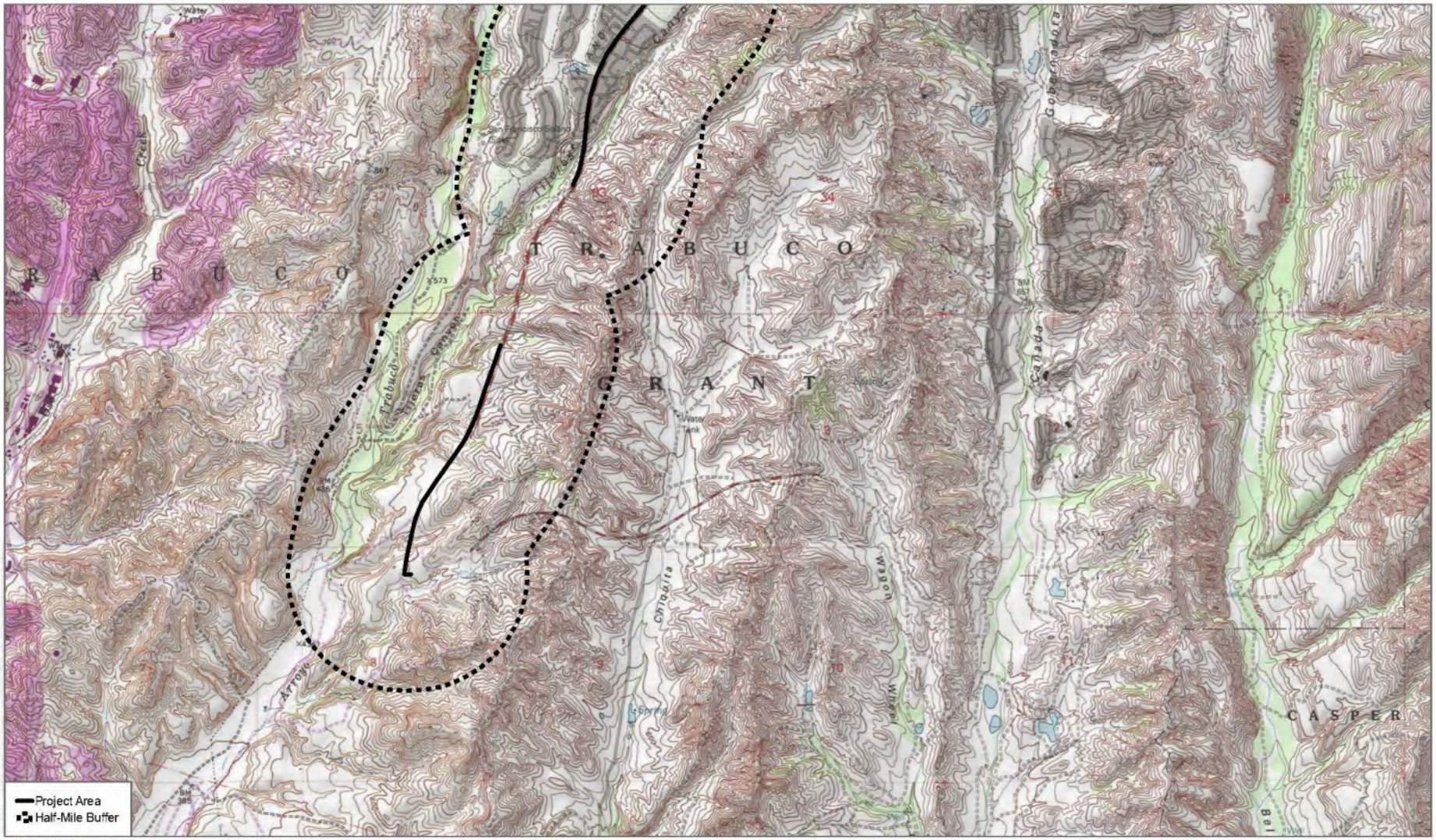
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July 7, 2023 12711

Ms. Christina Conley, Tribal Consultant and Administrator
GabrielinoTongva Indians of California Tribal Council
P.O. Box 941078
Simi Valley, CA 93094

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Conley,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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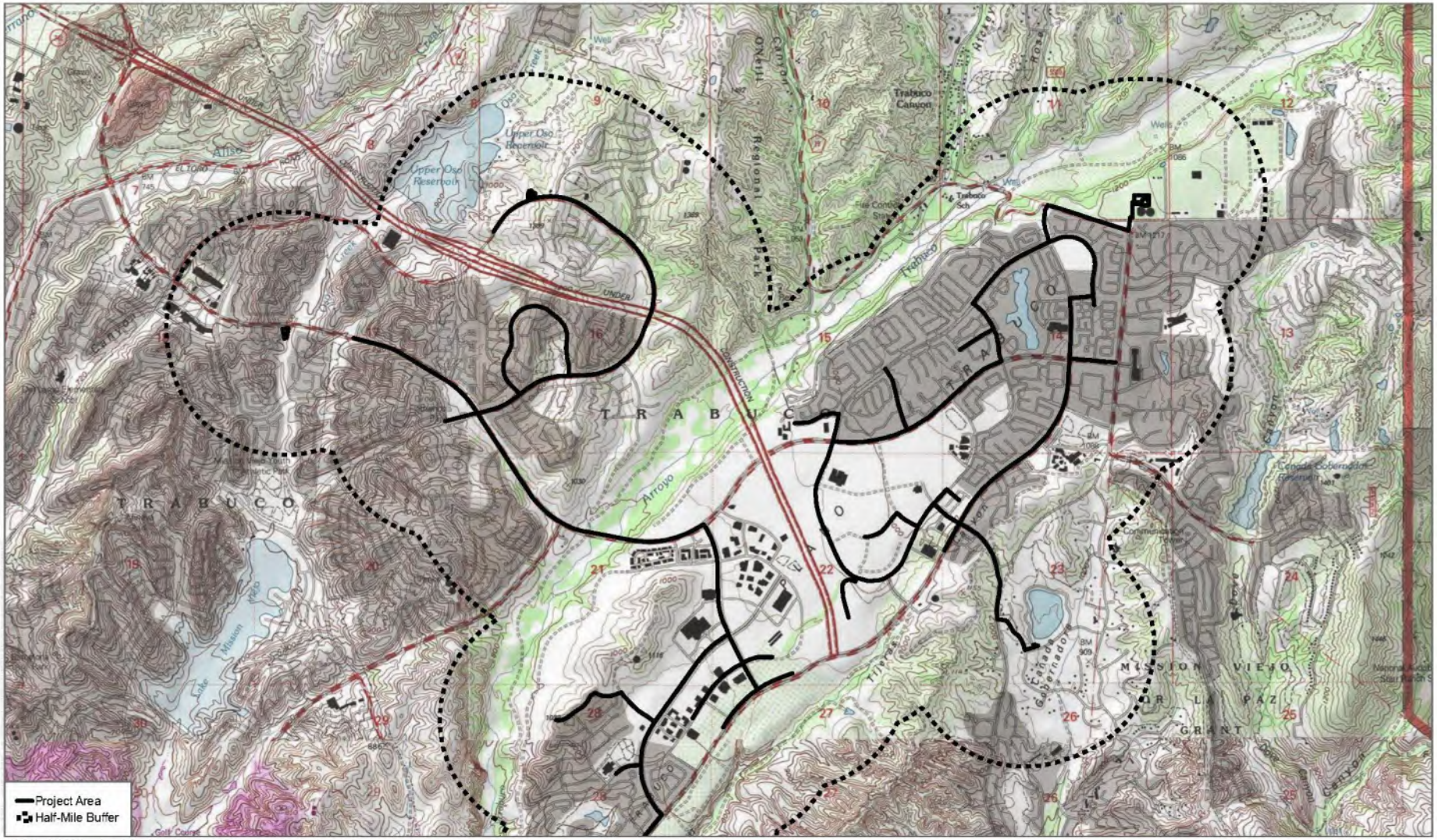
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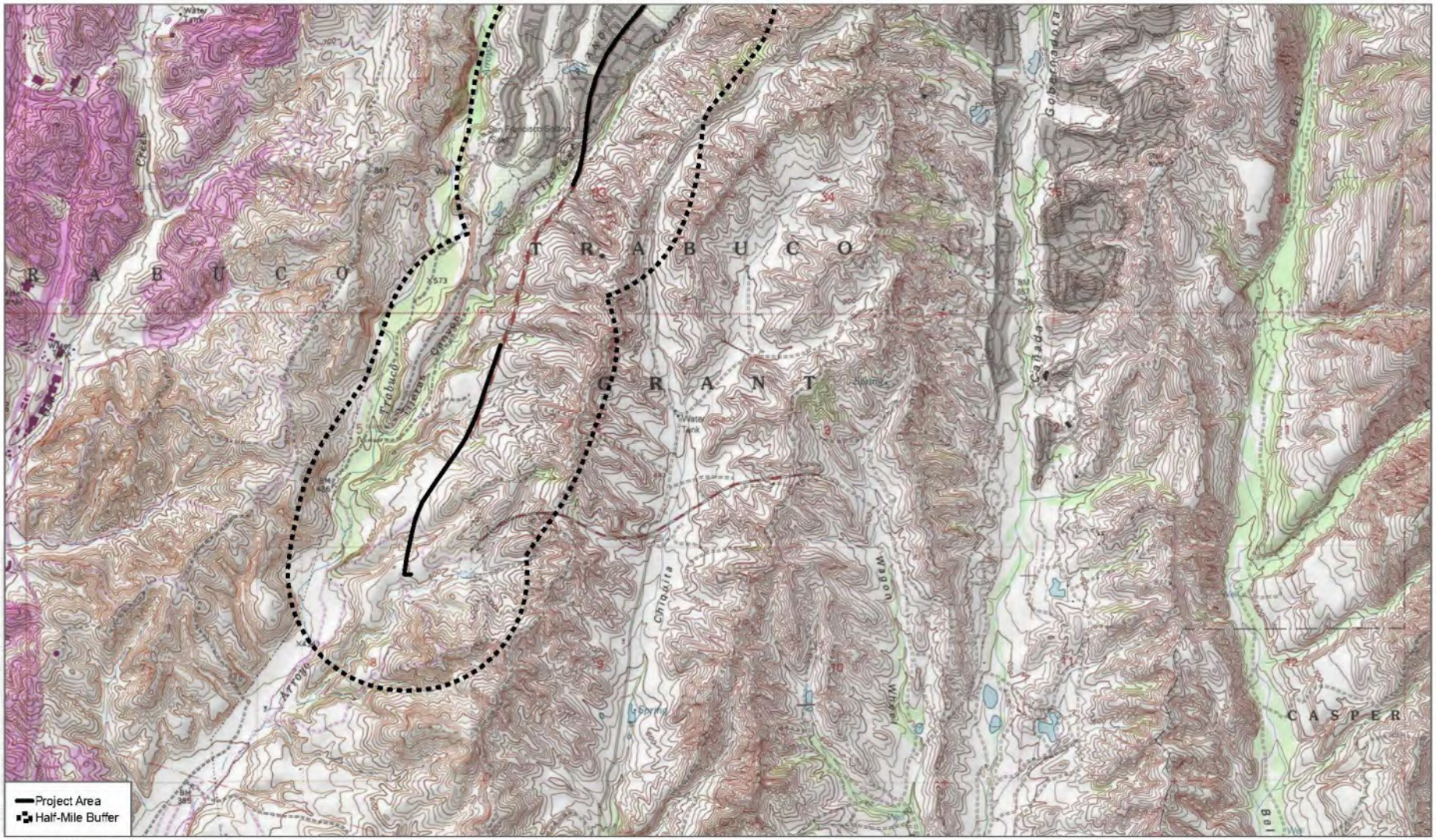
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July 7, 2023 12711

Ms. Norma Contreras, Chairperson
La Jolla Band of Mission Indians
22000 Highway 76
Pauma Valley, CA 92061

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Contreras,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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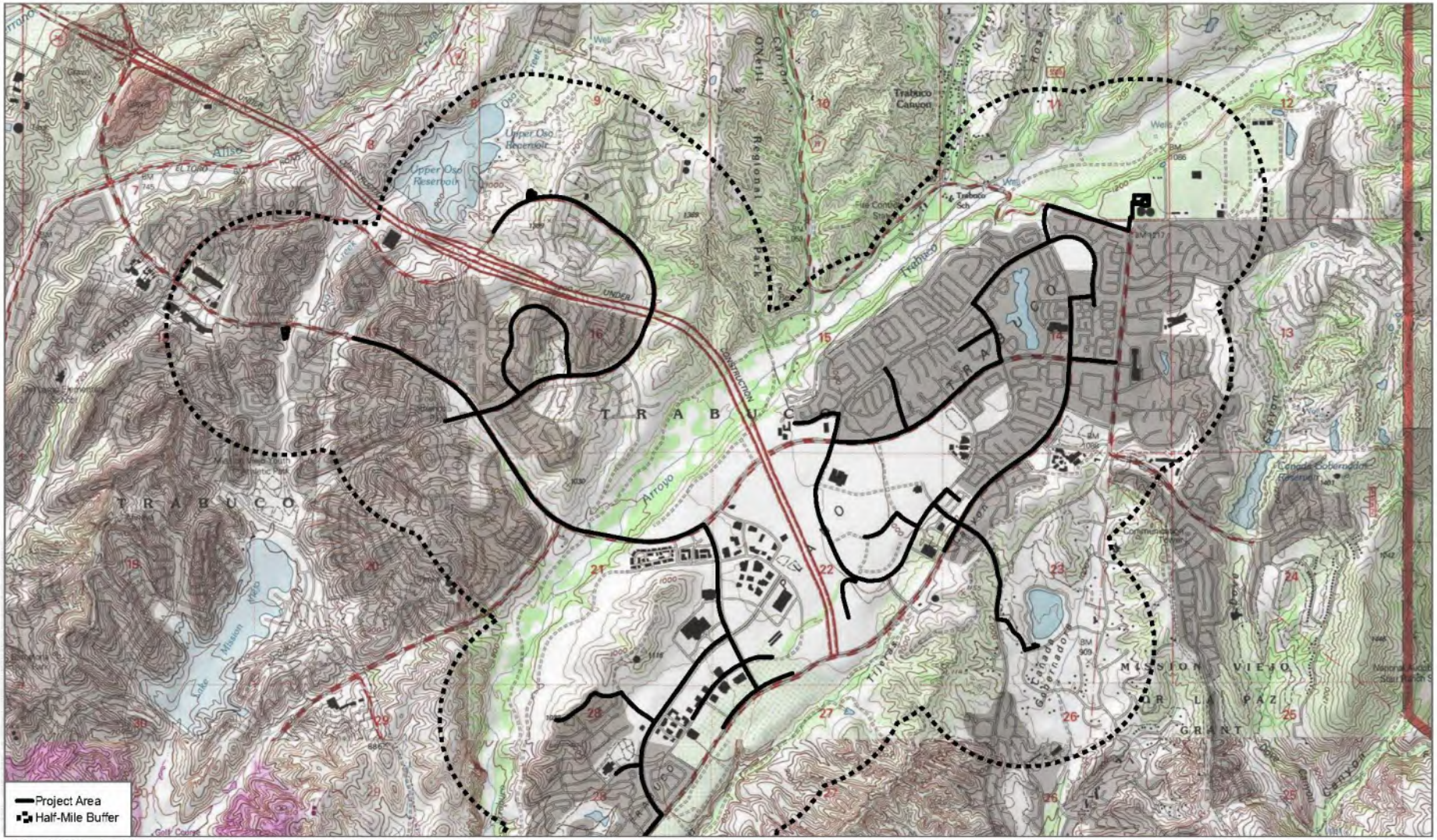
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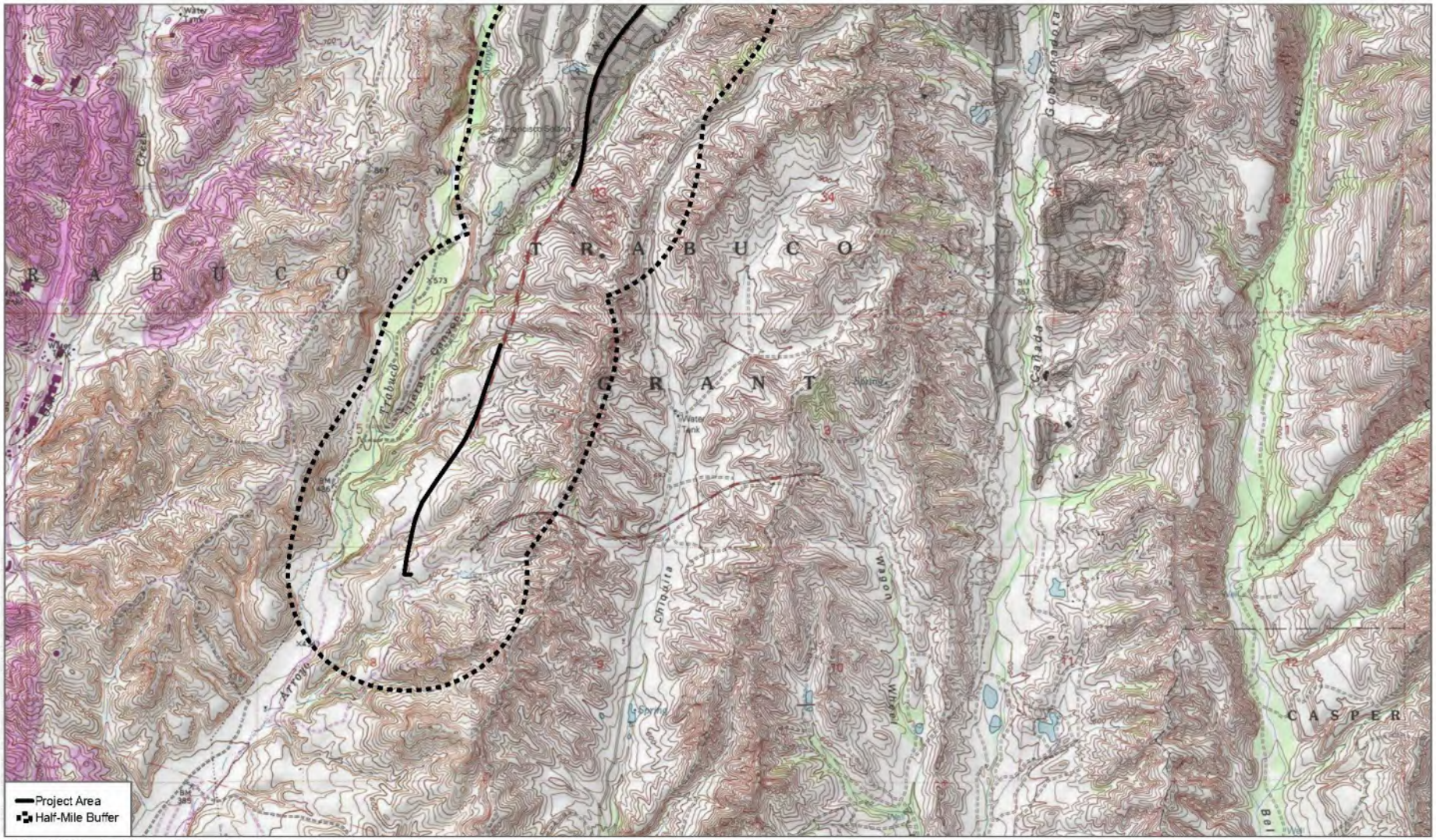
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July 7, 2023 12711

Mr. Robert F. Dorame, Tribal Chair/Cultural Resources
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Dorame,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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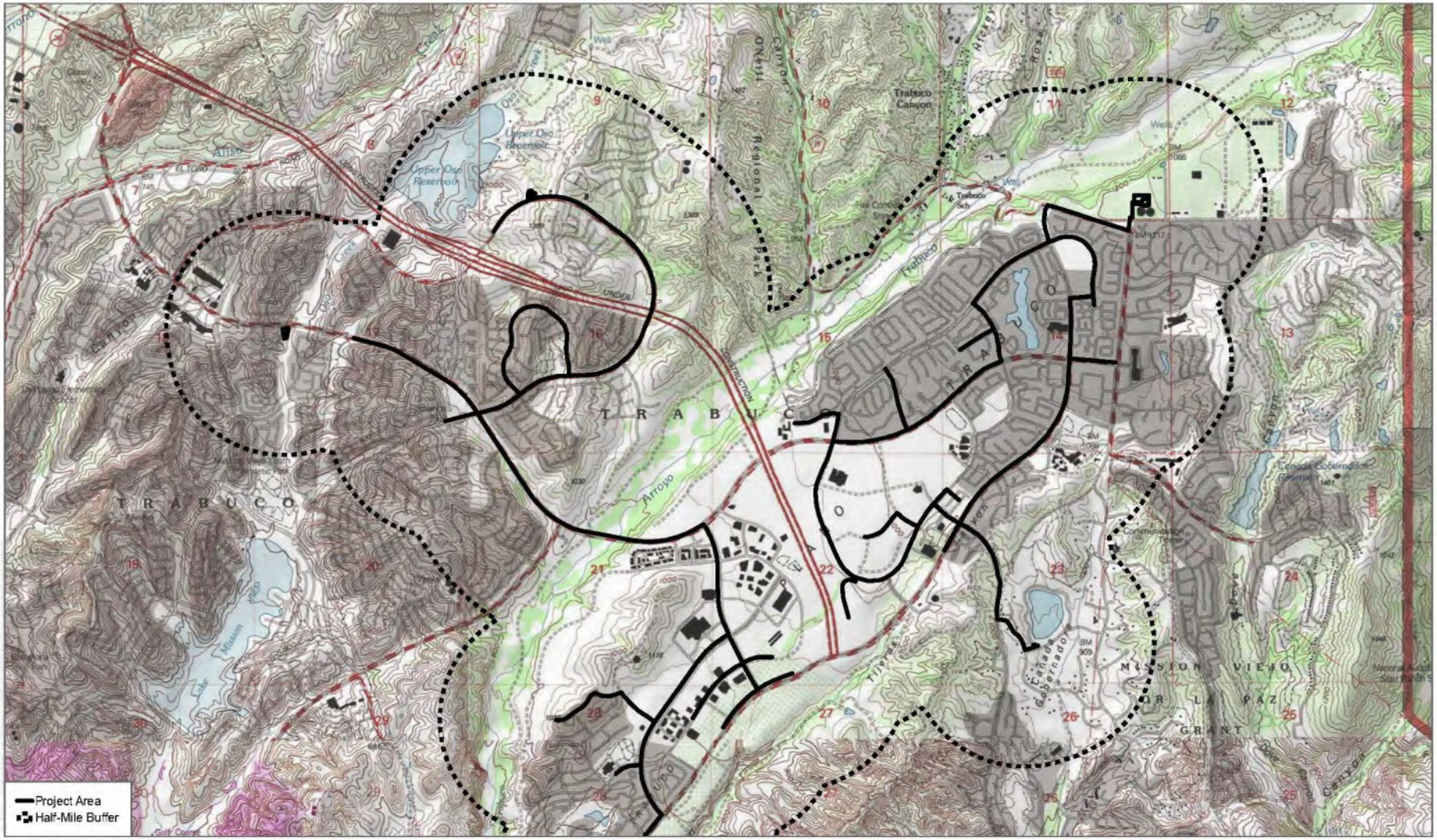
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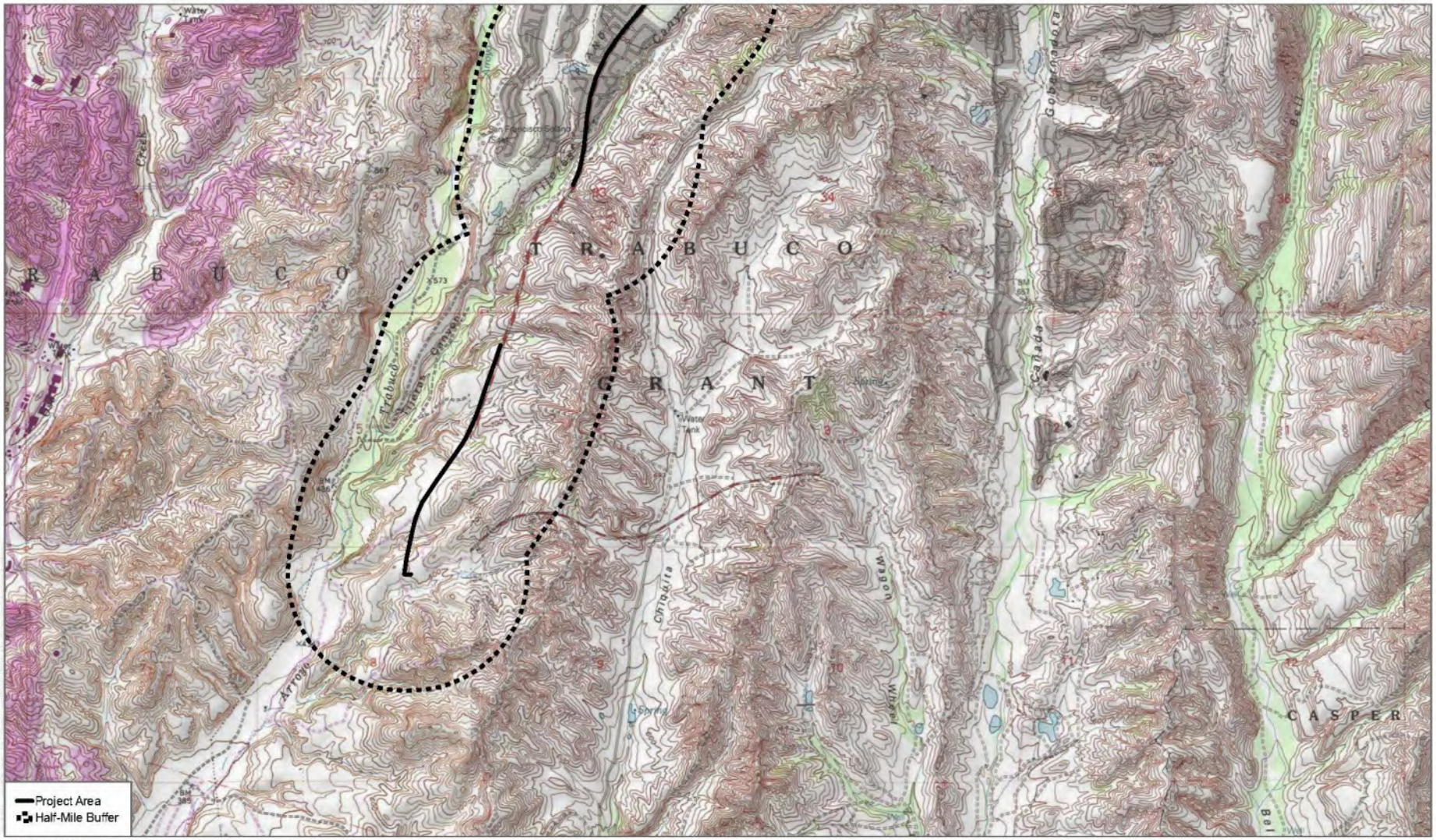
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July 7, 2023 12711

Mr. Sam Dunlap, Chairperson
Gabrieleno Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Dunlap,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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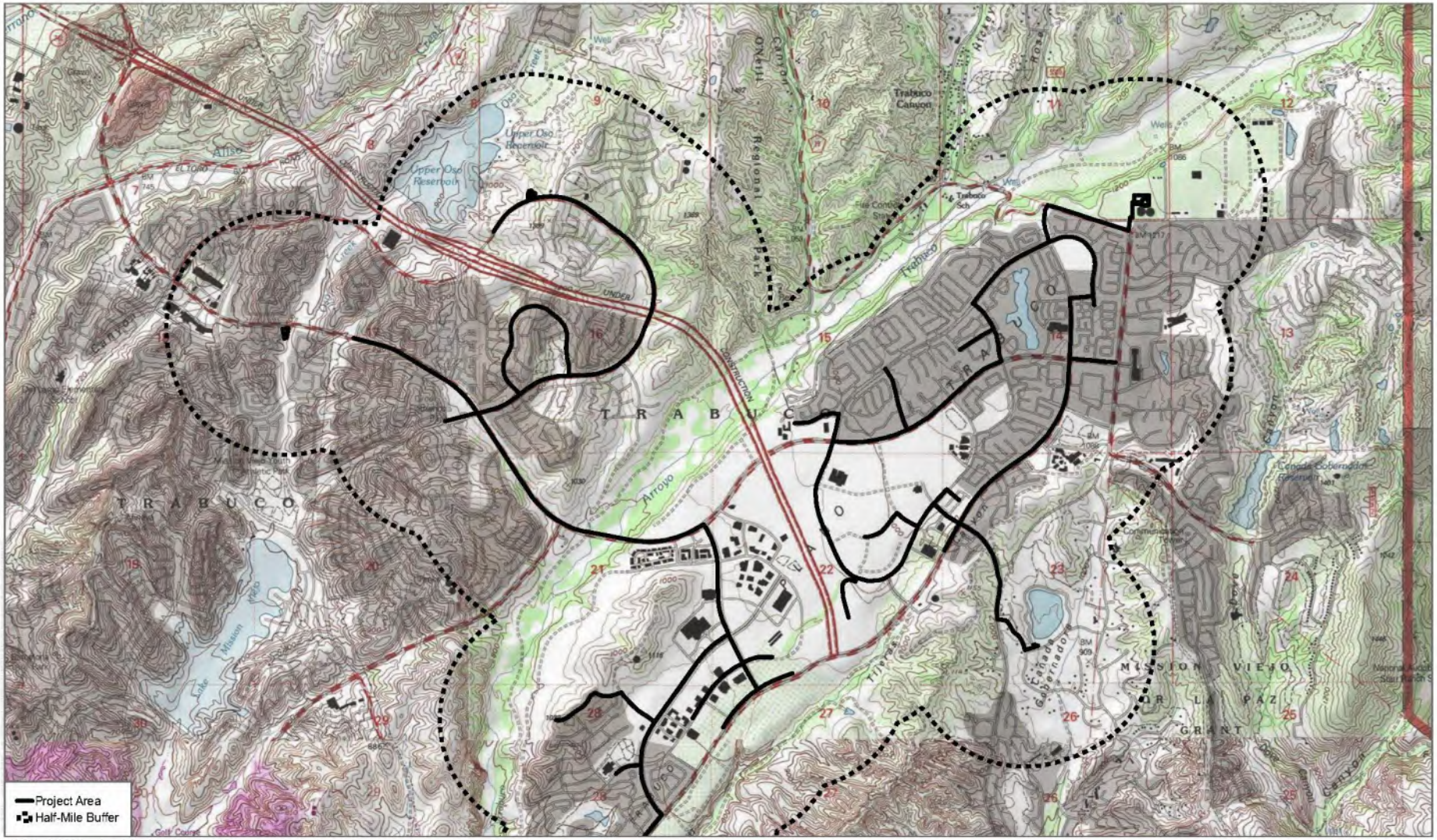
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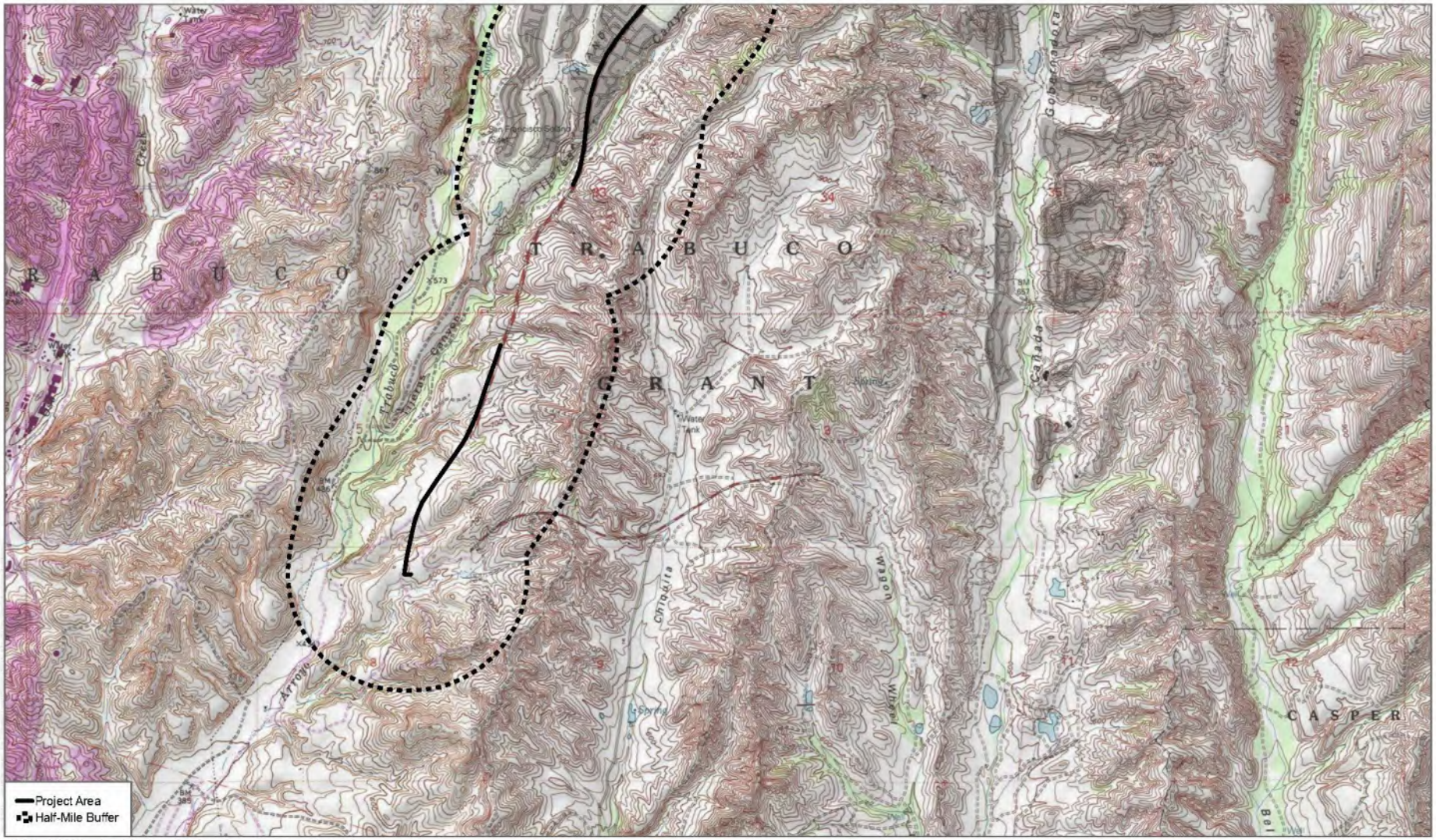
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July 7, 2023 12711

Ms. Shasta Gaughen, Tribal Historic Preservation Officer
Pala Band of Mission Indians
35008 Pala Temecula Rd.
Pala, CA 92059

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Gaughen,

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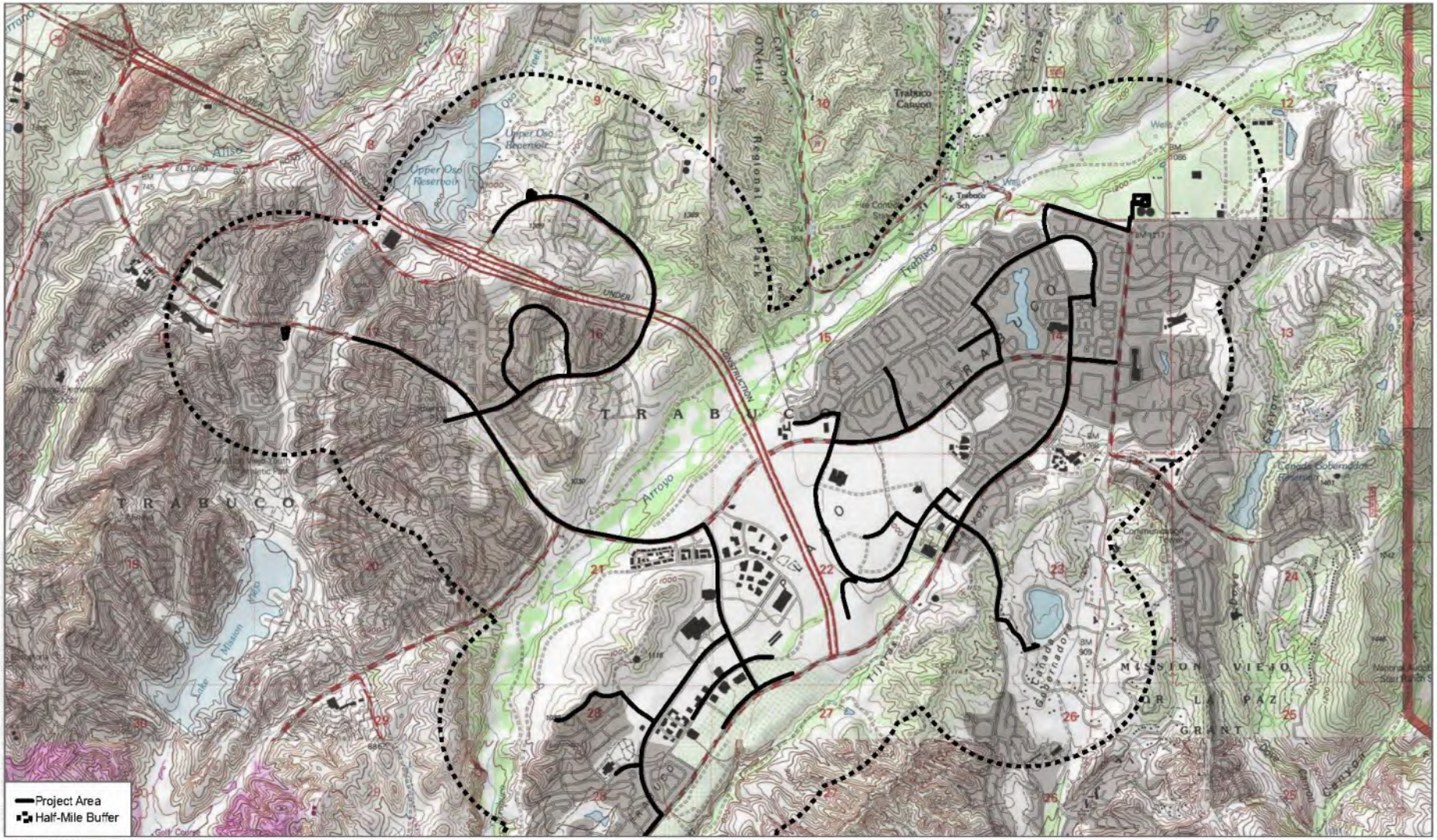
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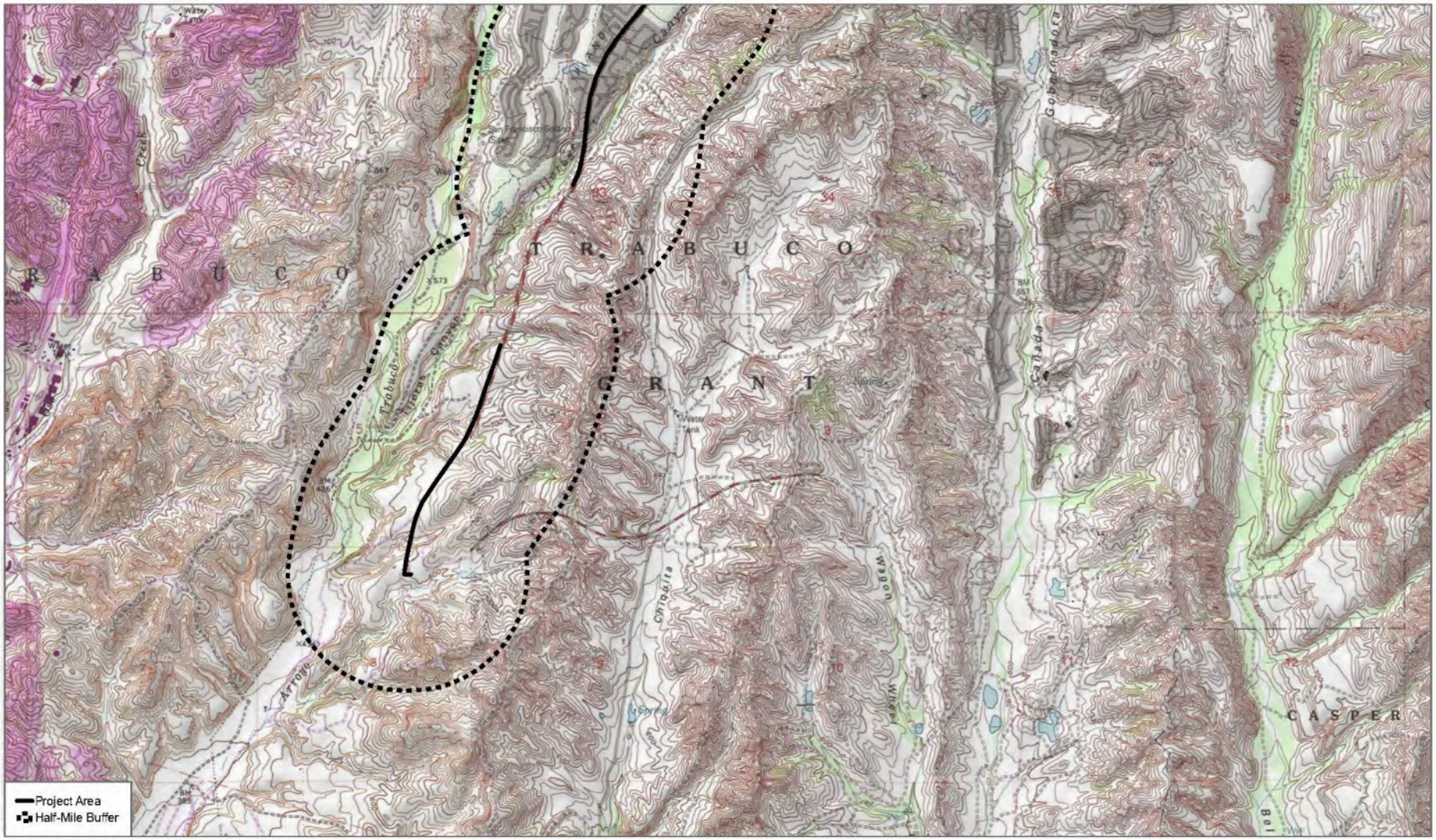
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July 7, 2023 12711

Ms. Sandonne Goad, Chairperson
Gabrielino-Tongva Nation
106 1/2 Judge John Also St.
Los Angeles, CA 90012

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Goad,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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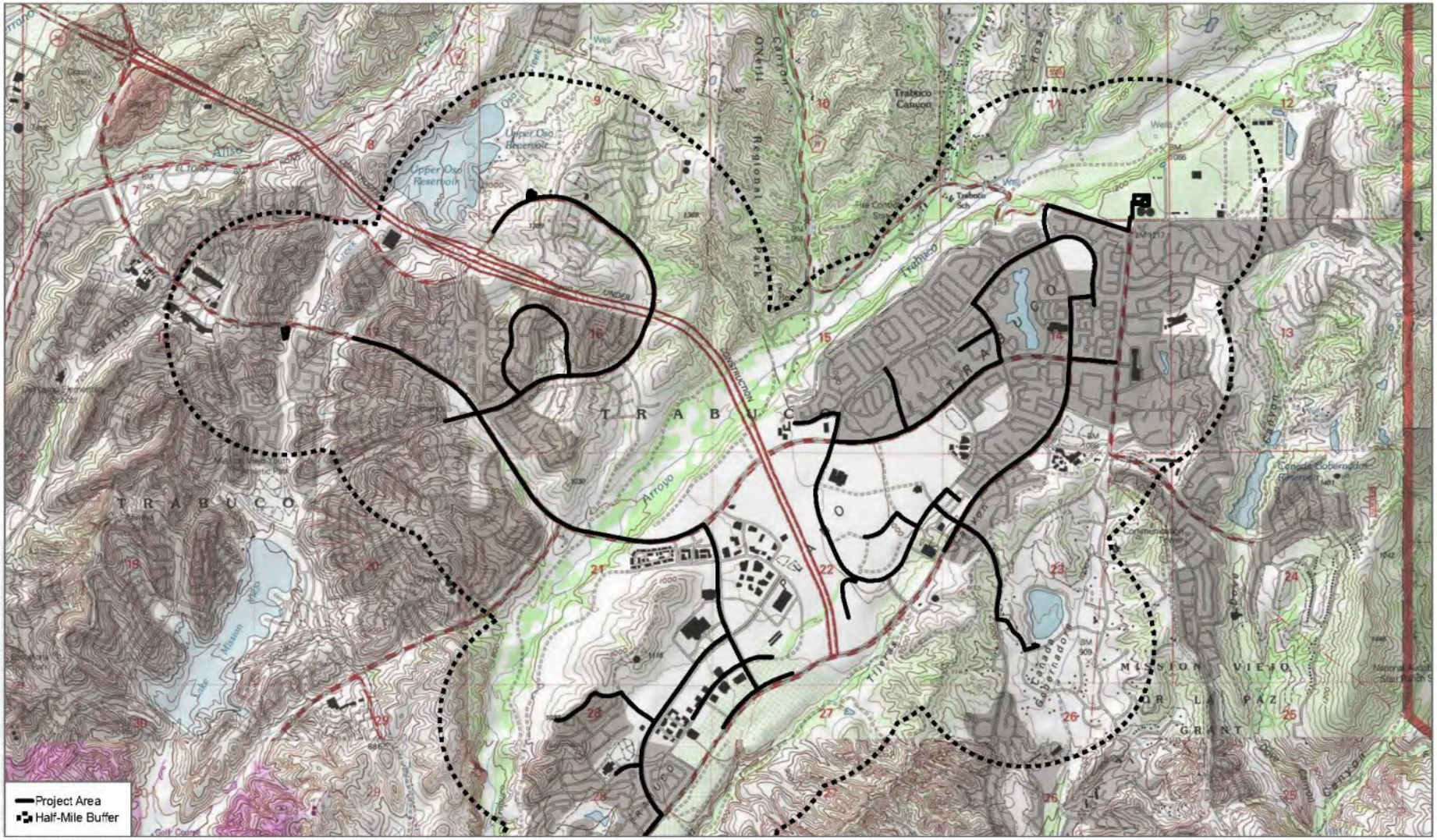
Project Area
Half-Mile Buffer
T R A B U C O
Trabuco Canyon
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SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8
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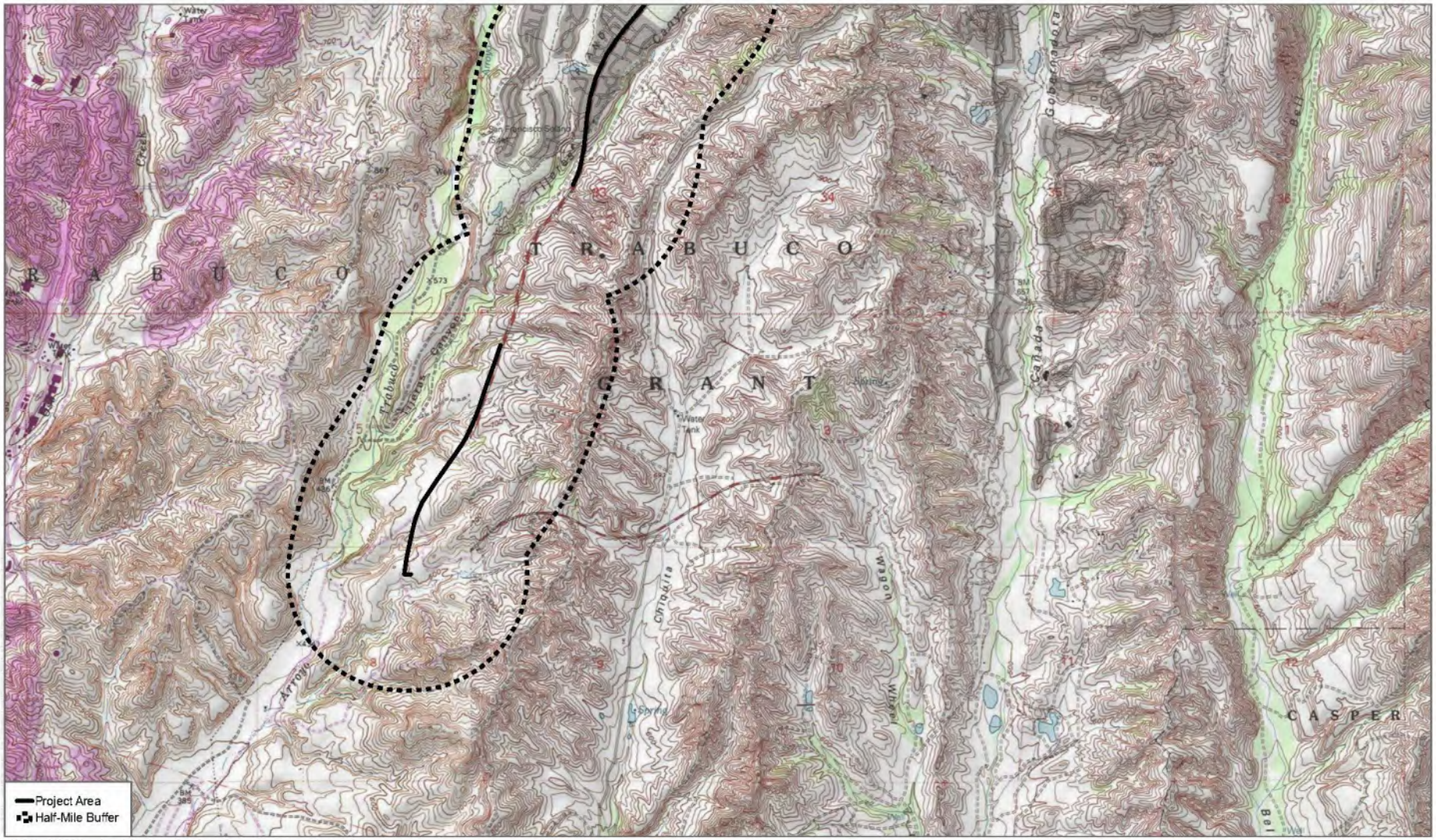
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July 7, 2023 12711

Ms. Sonia Johnston, Tribal Chairperson
Juaneno Band of Mission Indians
P.O. Box 25628
Santa Ana, CA 92799

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Johnston,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

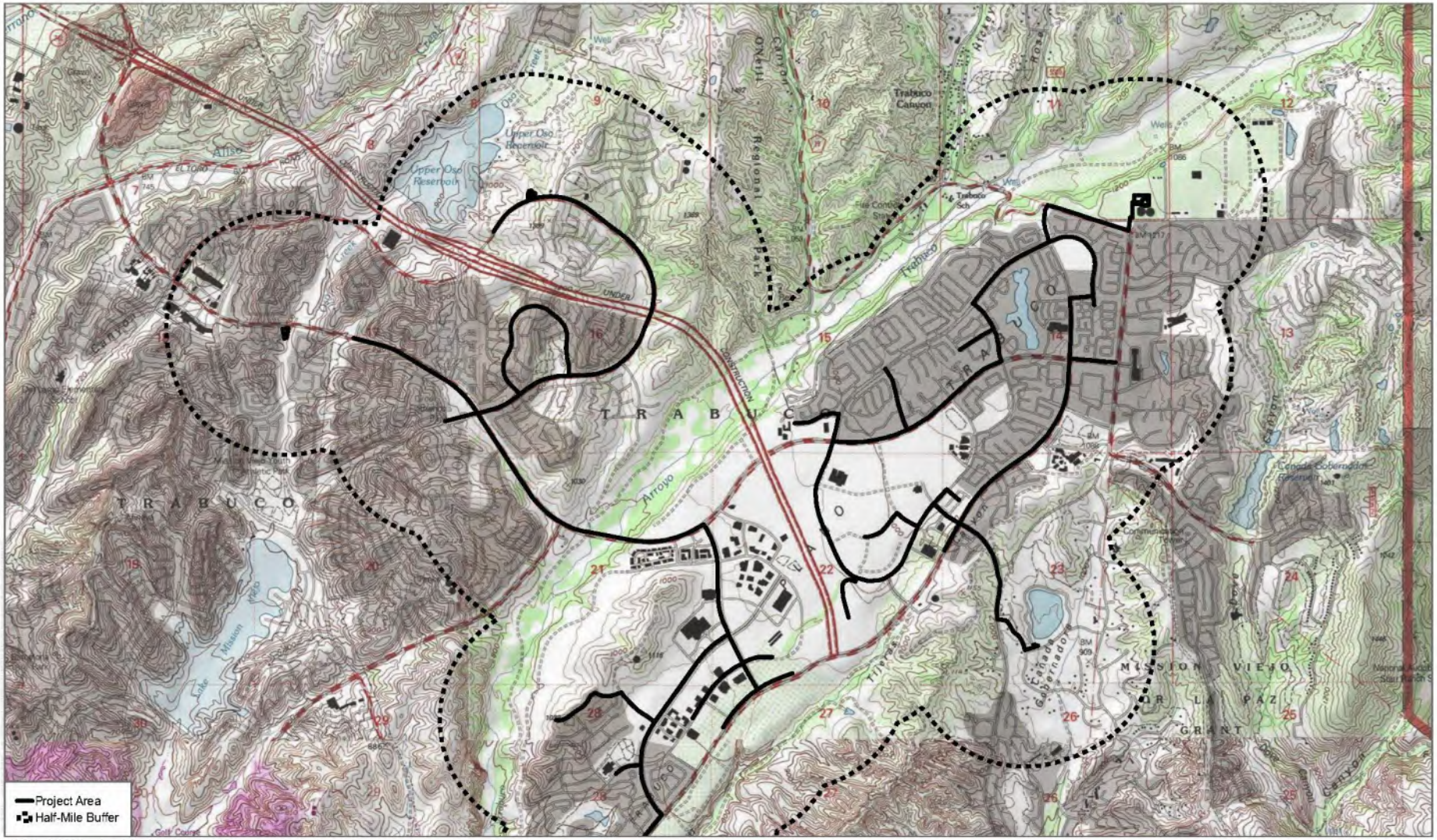
As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on June 27, 2023, which stated that the SLF search did identify the presence of Native American cultural resources within a half-mile of the Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. Tribes that wish to be notified of projects for the purposes of consultation must contact the lead agency, Santa Margarita Water District, in writing (pursuant to Public Resources Code Section 21080.3.1 (b)).

If you have any information or concerns pertaining to such information, please contact me.

Respectfully,

Makayla Murillo
Archaeologist
DUDEK
Phone: 760-846-5874
Email: mmurillo@dudek.com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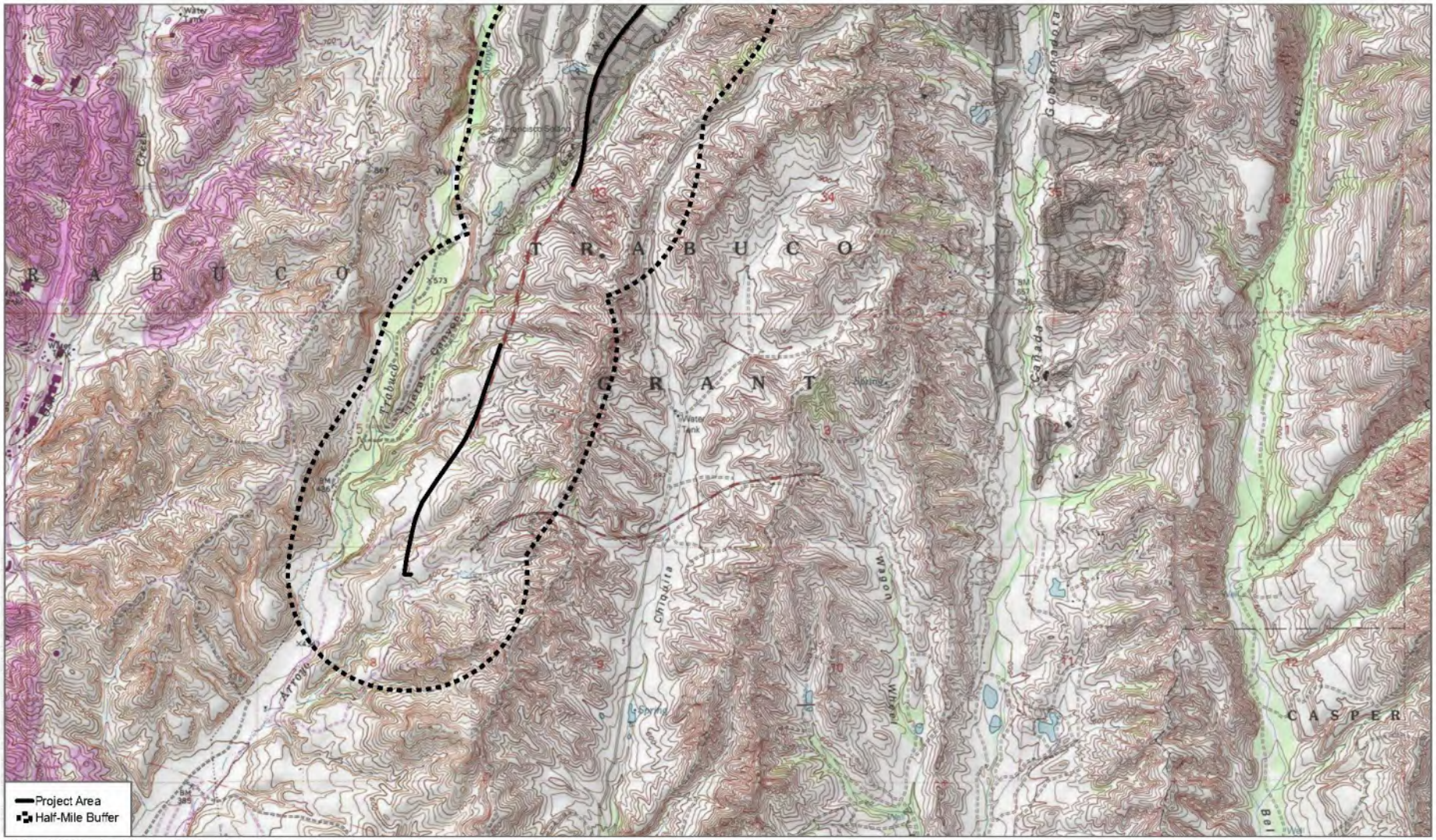
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July 7, 2023 12711

Ms. Heidi Lucero, Chairperson
Juaneno Band of Mission Indians Acjachemen Nation
31411-A La Matanza Street
San Juan Capistrano, CA 92675

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Lucero,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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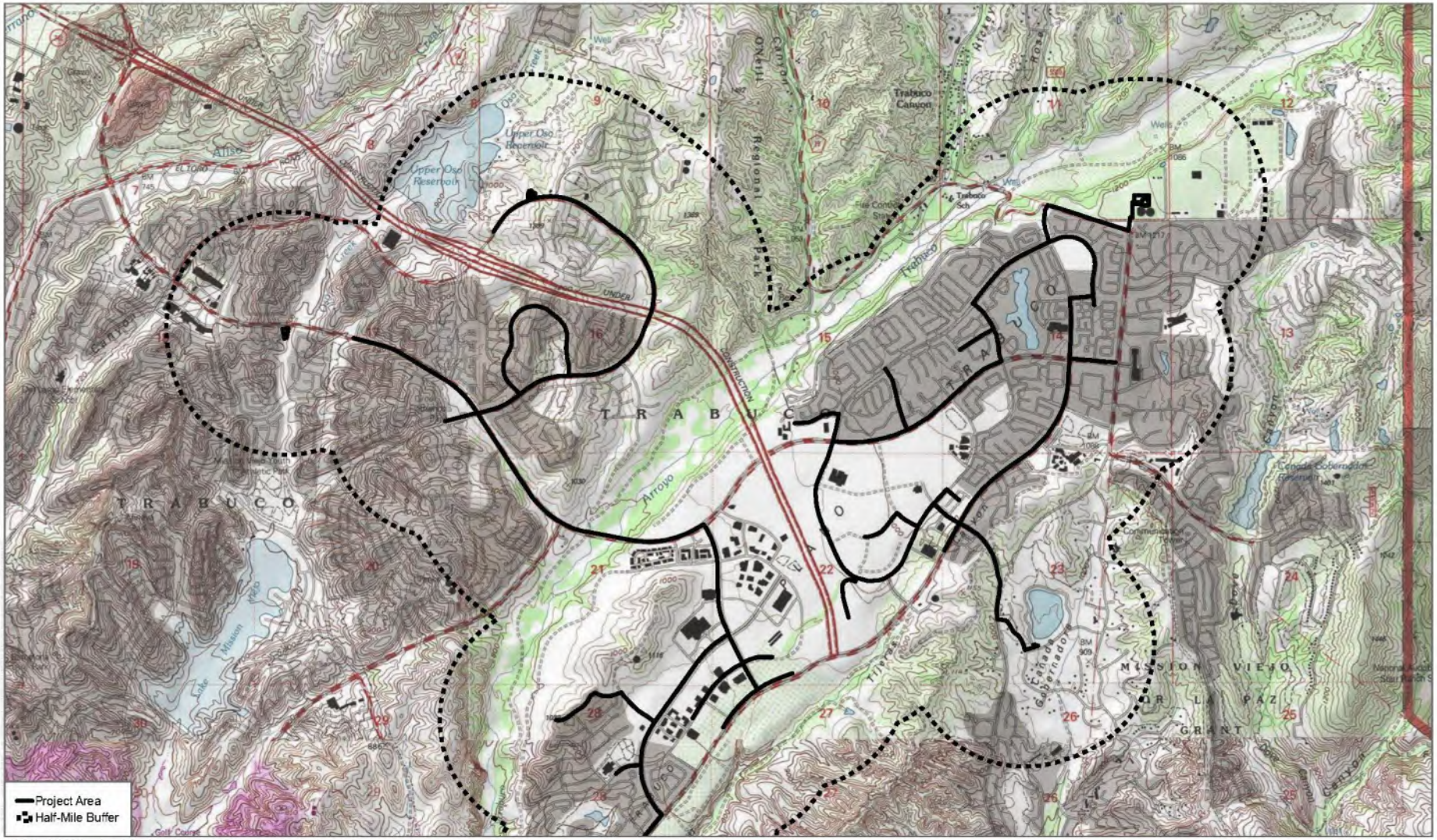
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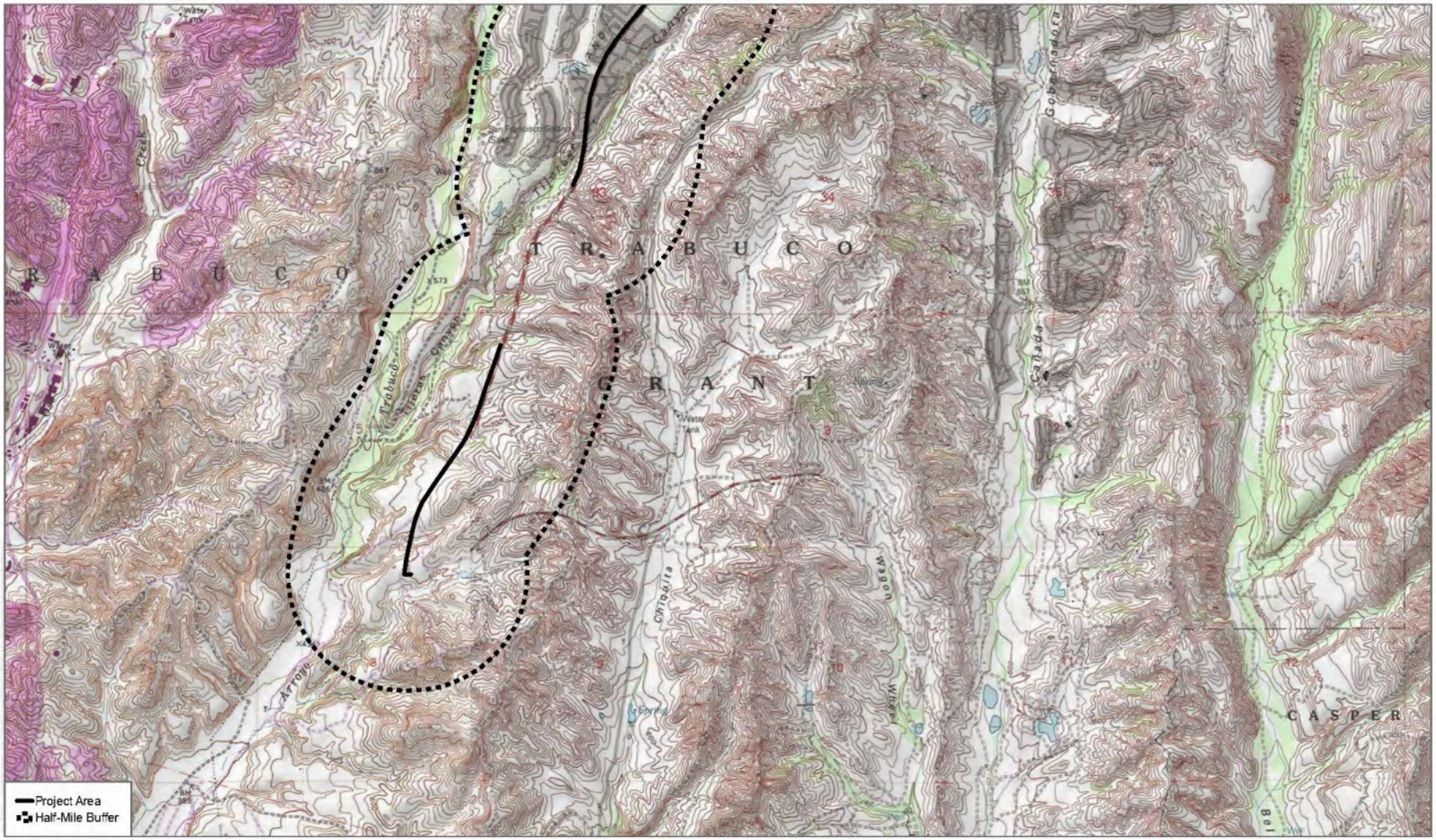
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July 7, 2023 12711

Mr. Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Morales,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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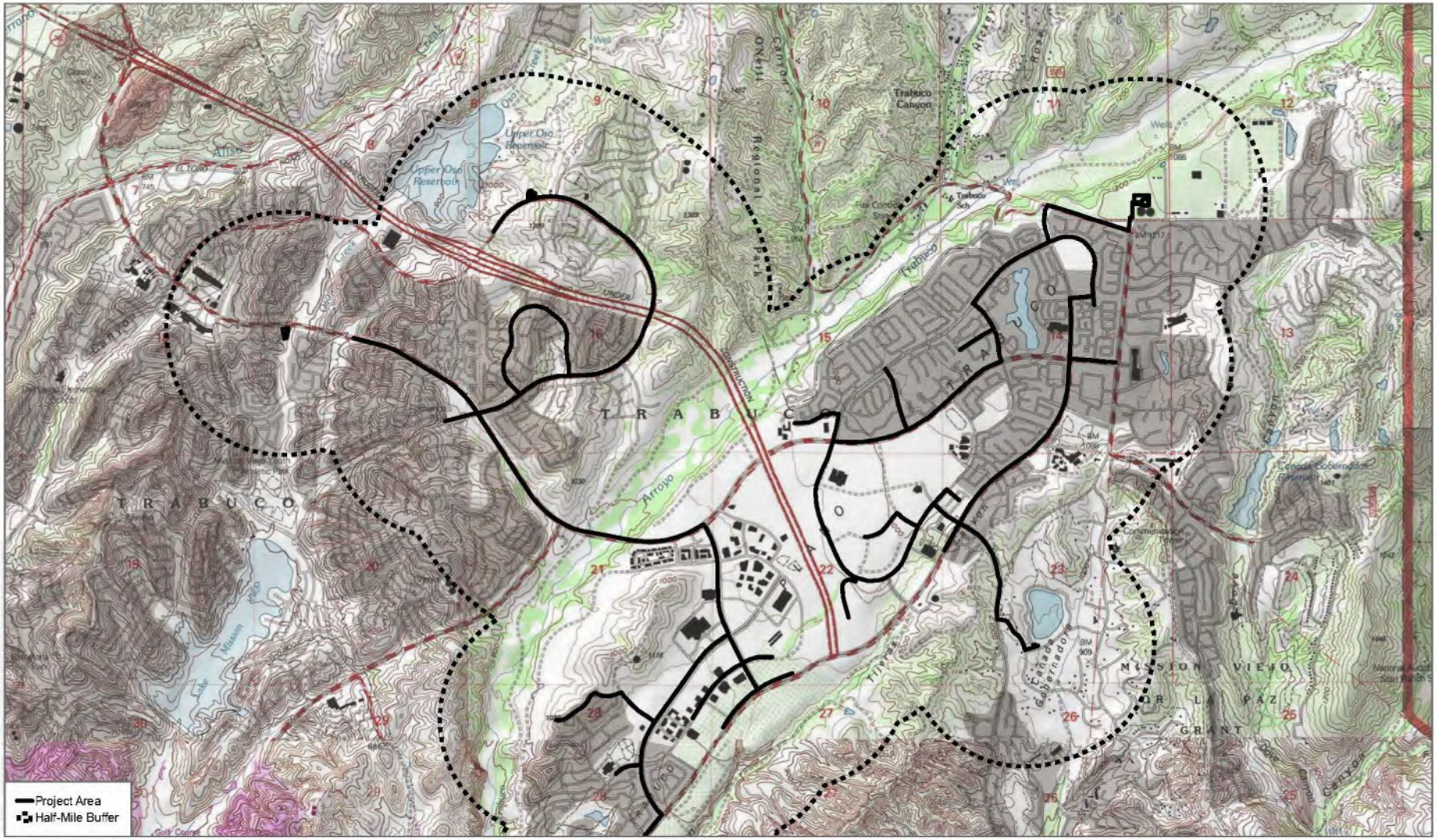
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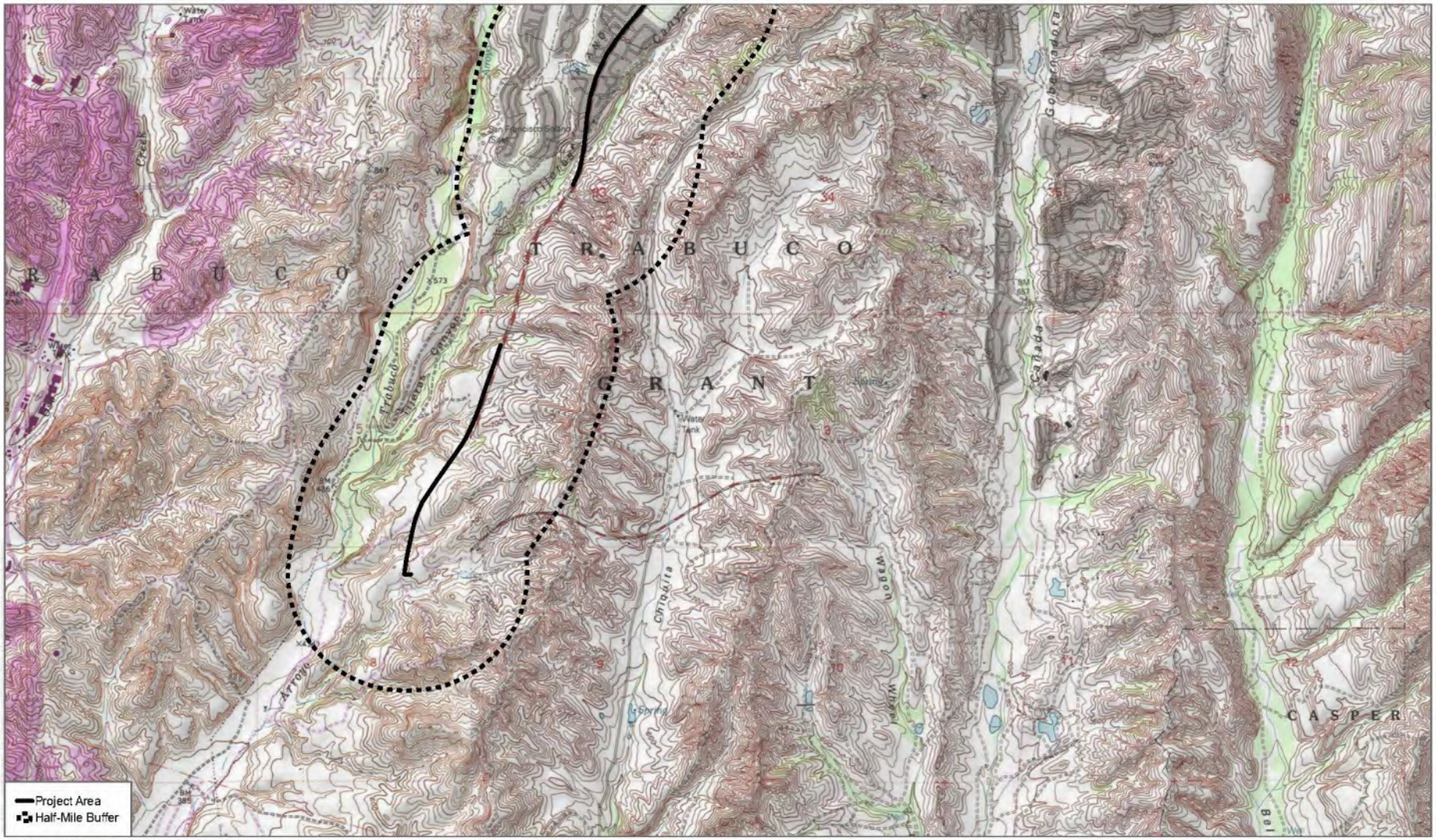
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T 800.450.1818 F 760.632.0164

July 7, 2023 12711

Mr. Joseph Ontiveros, Cultural Resource Department
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Ontiveros,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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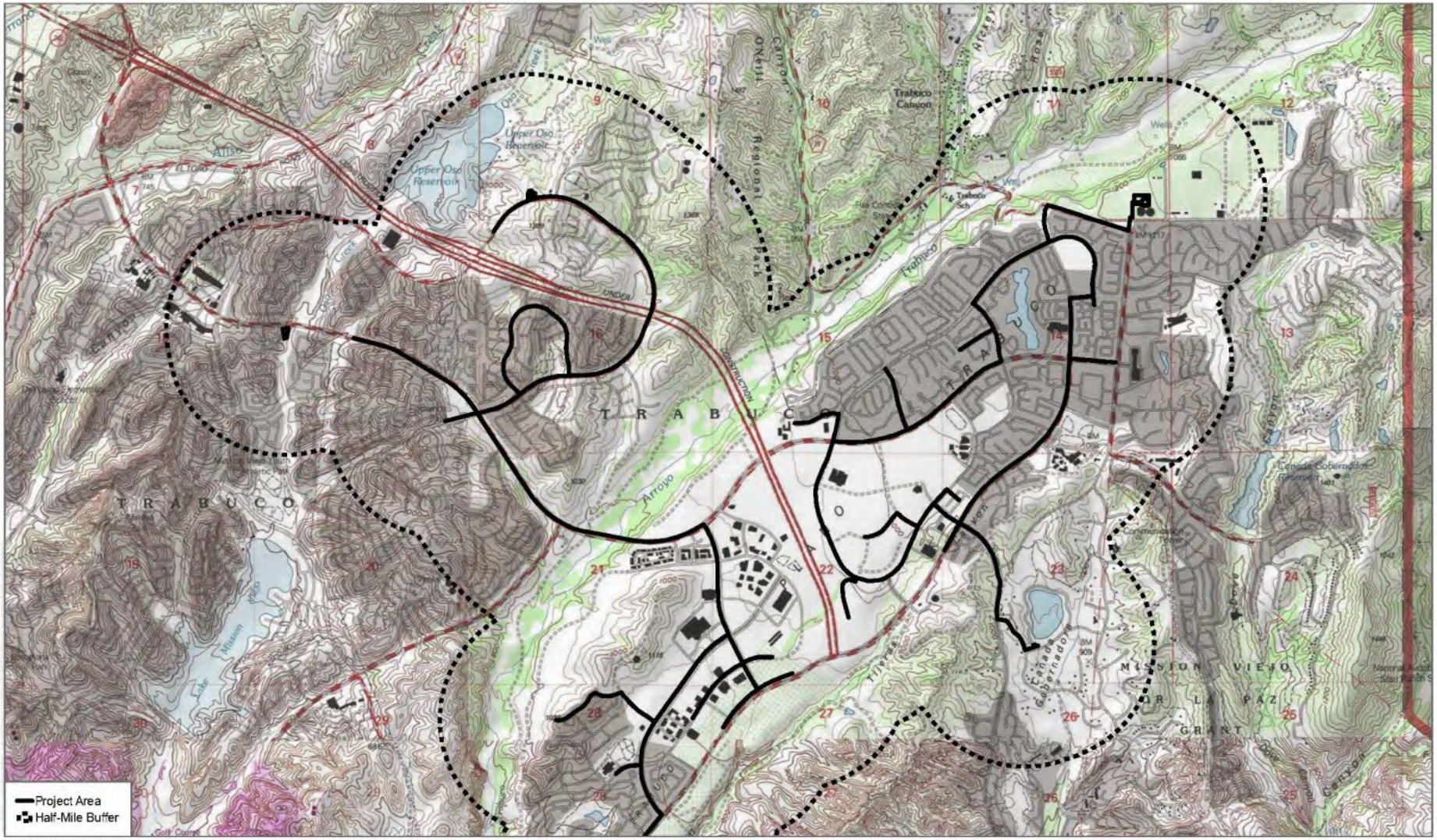
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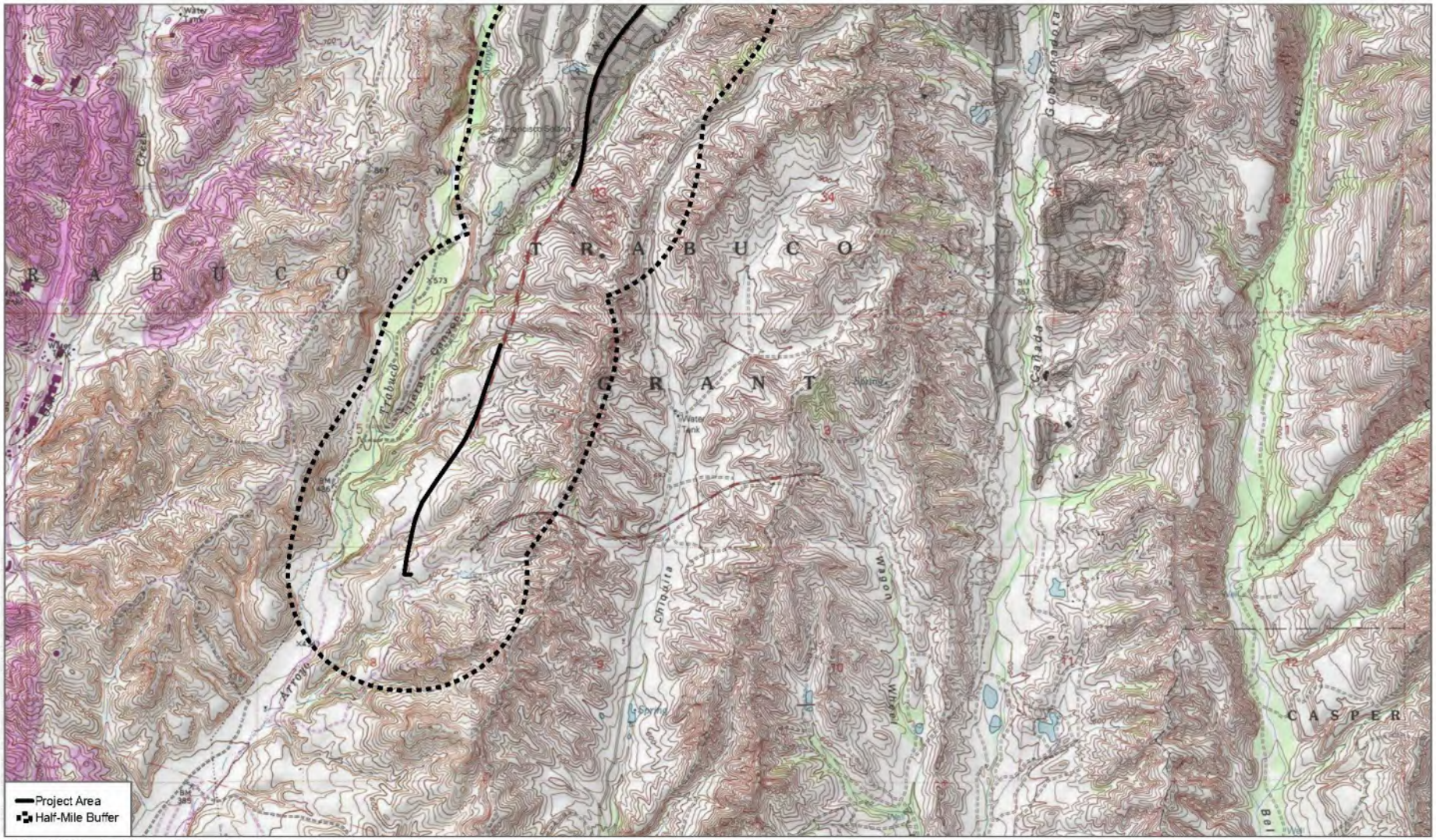
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July 7, 2023 12711

Ms. Joyce Perry, Tribal Manager
Juaneno Band of Mission Indians Acjachemen Nation
4955 Paseo Segovia
Irvine, CA 92603

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Perry,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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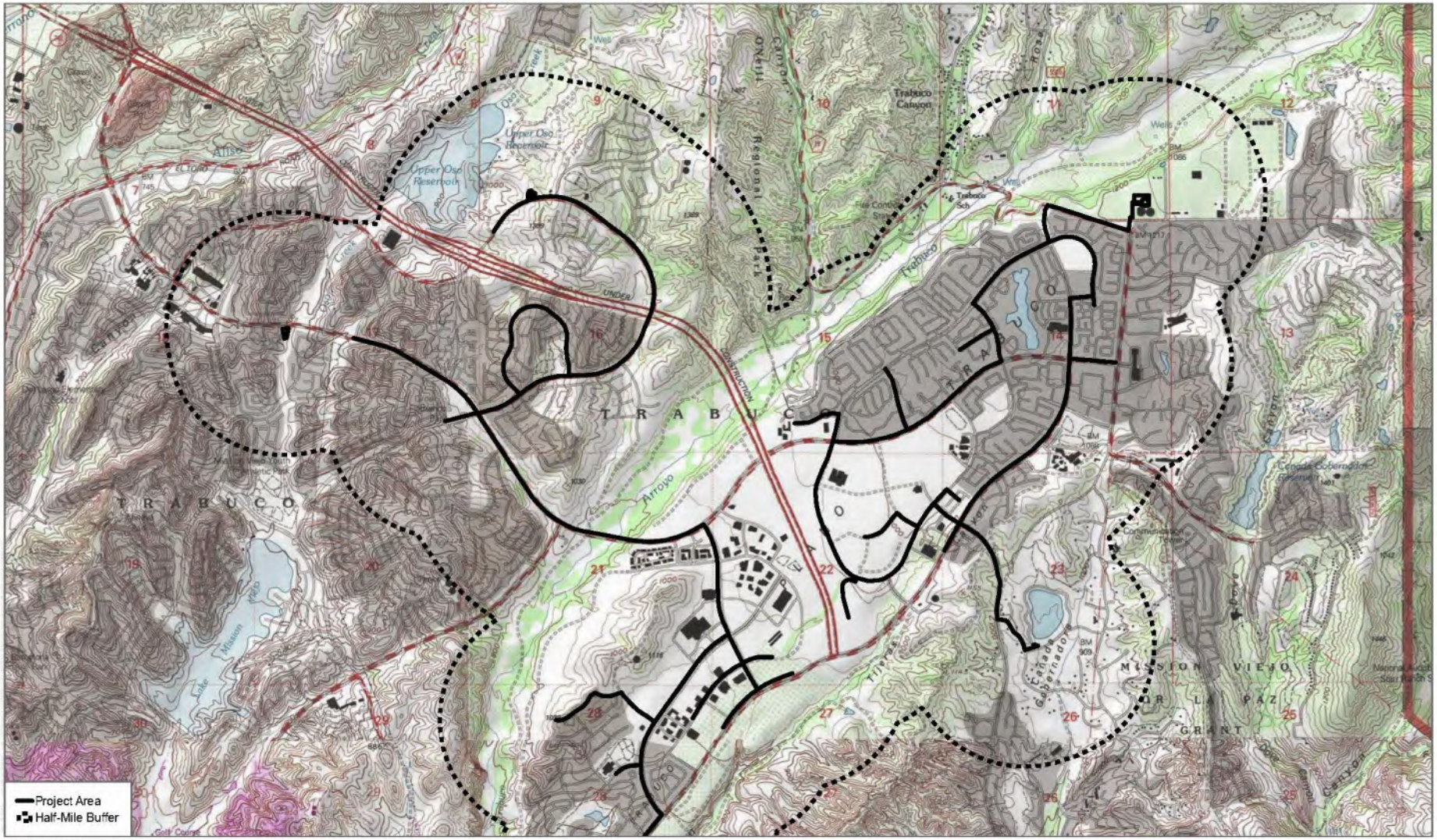
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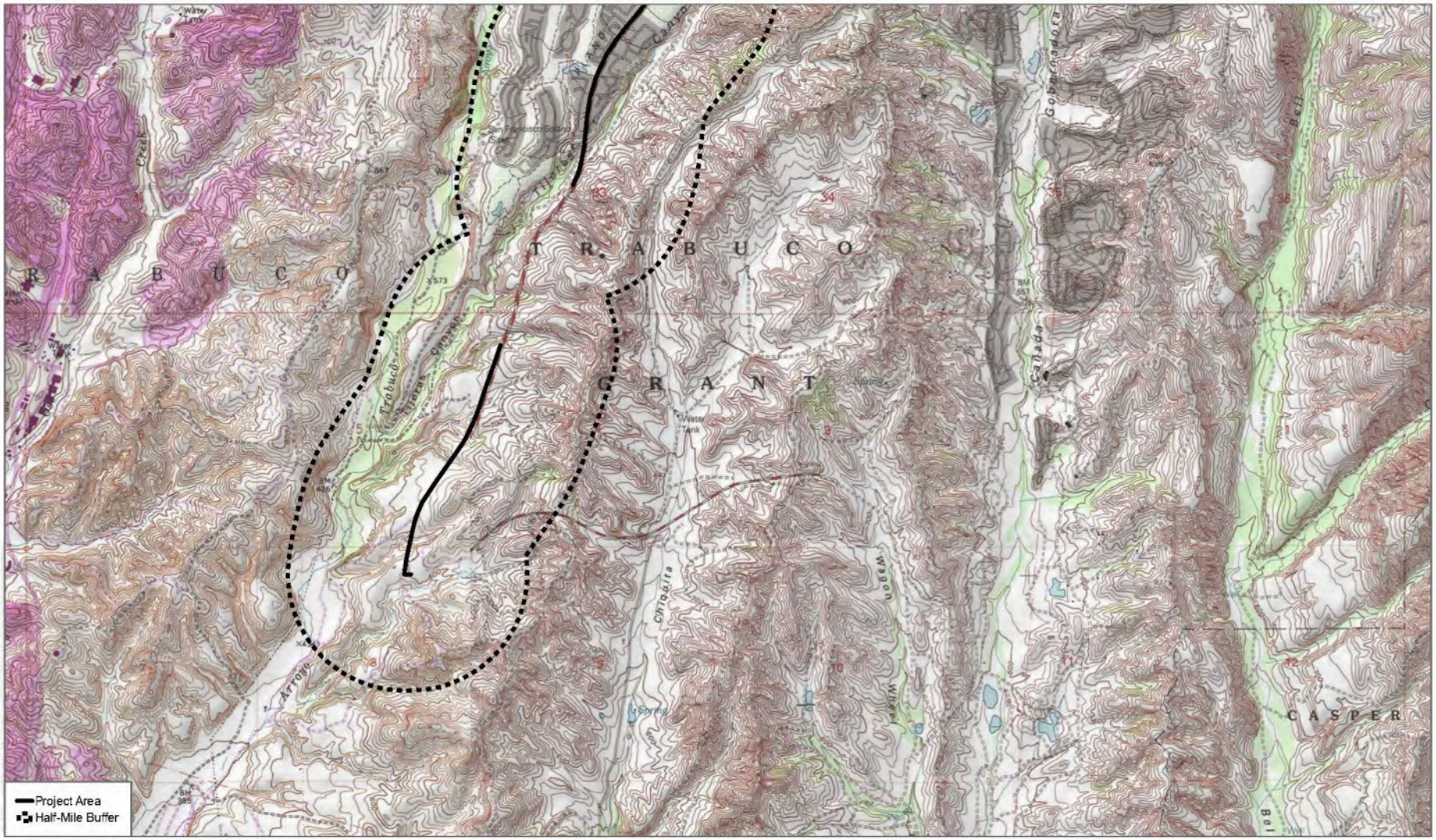
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July 7, 2023 12711

Ms. Lovina Redner, Tribal Chair
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Redner,

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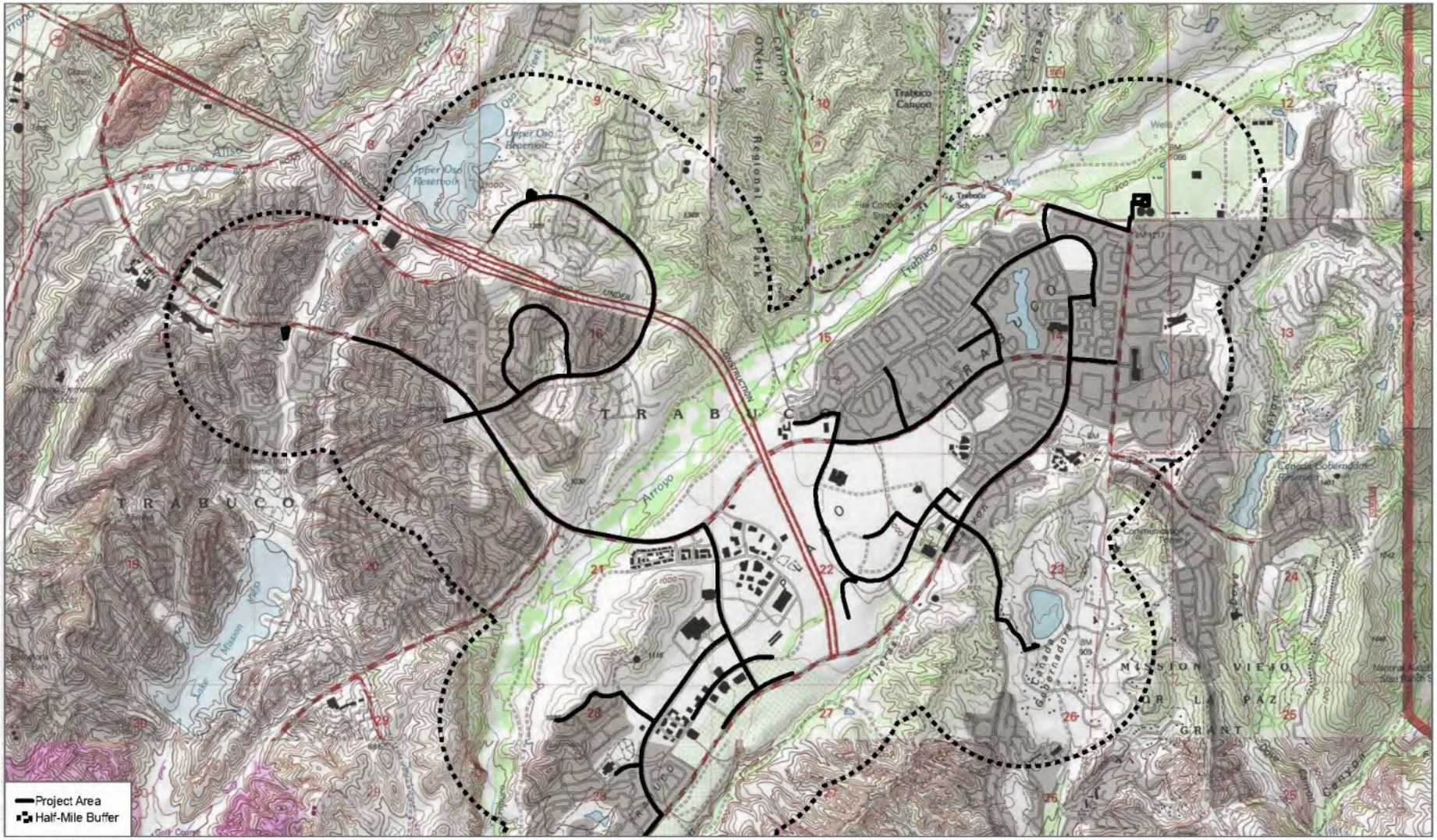
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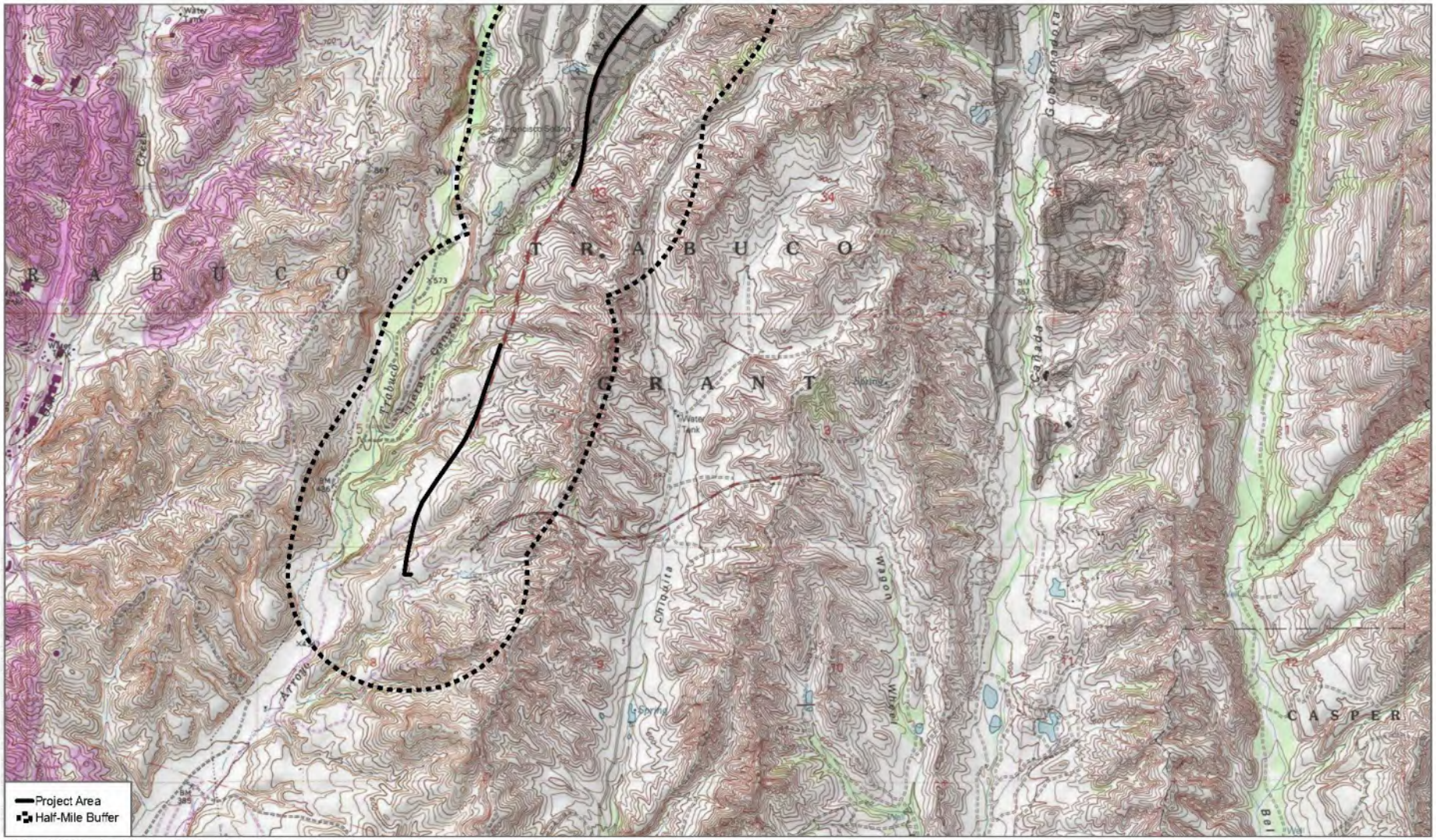
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T 800.450.1818 F 760.632.0164

July 7, 2023 12711

Mr. Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Salas,

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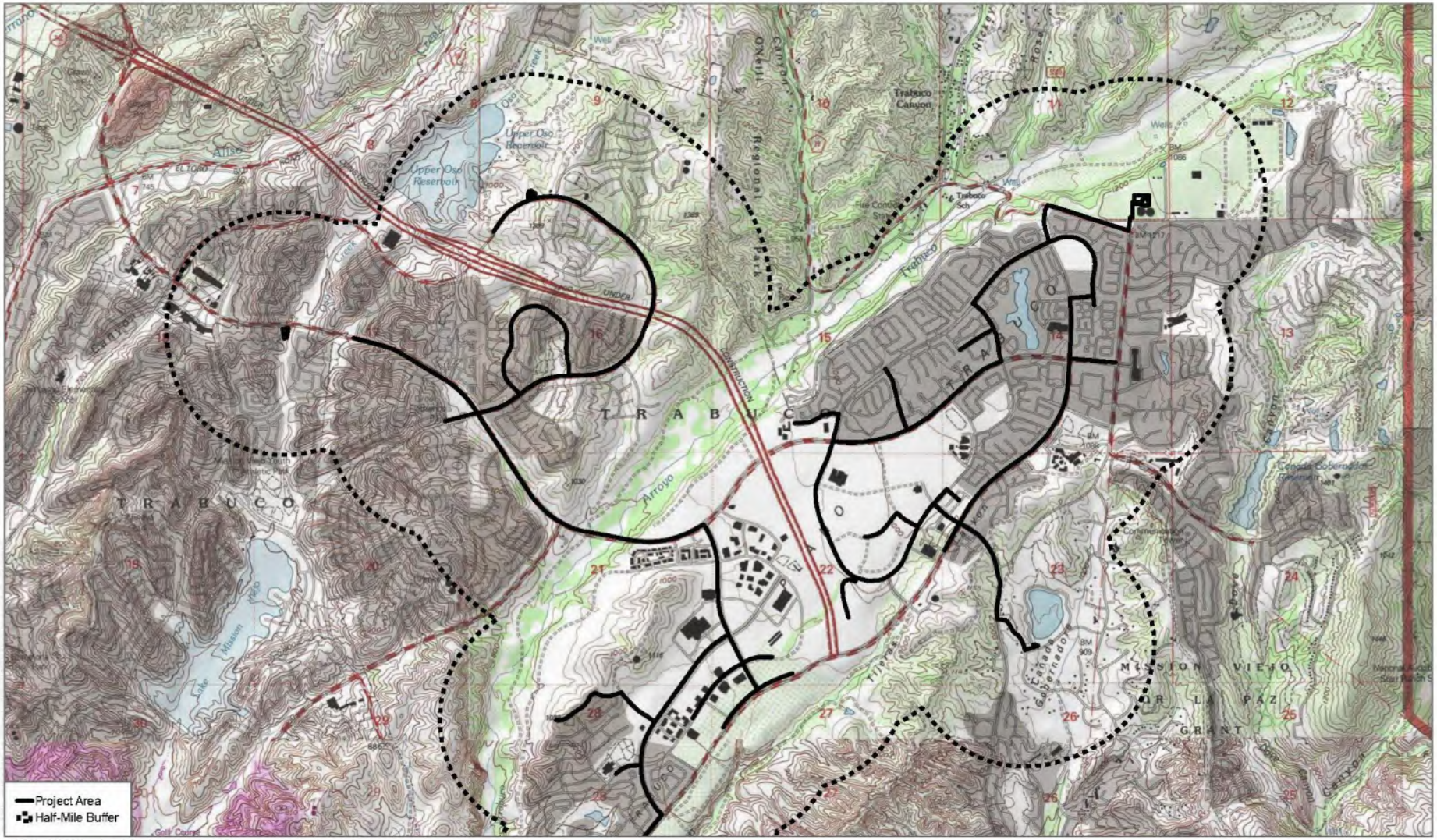
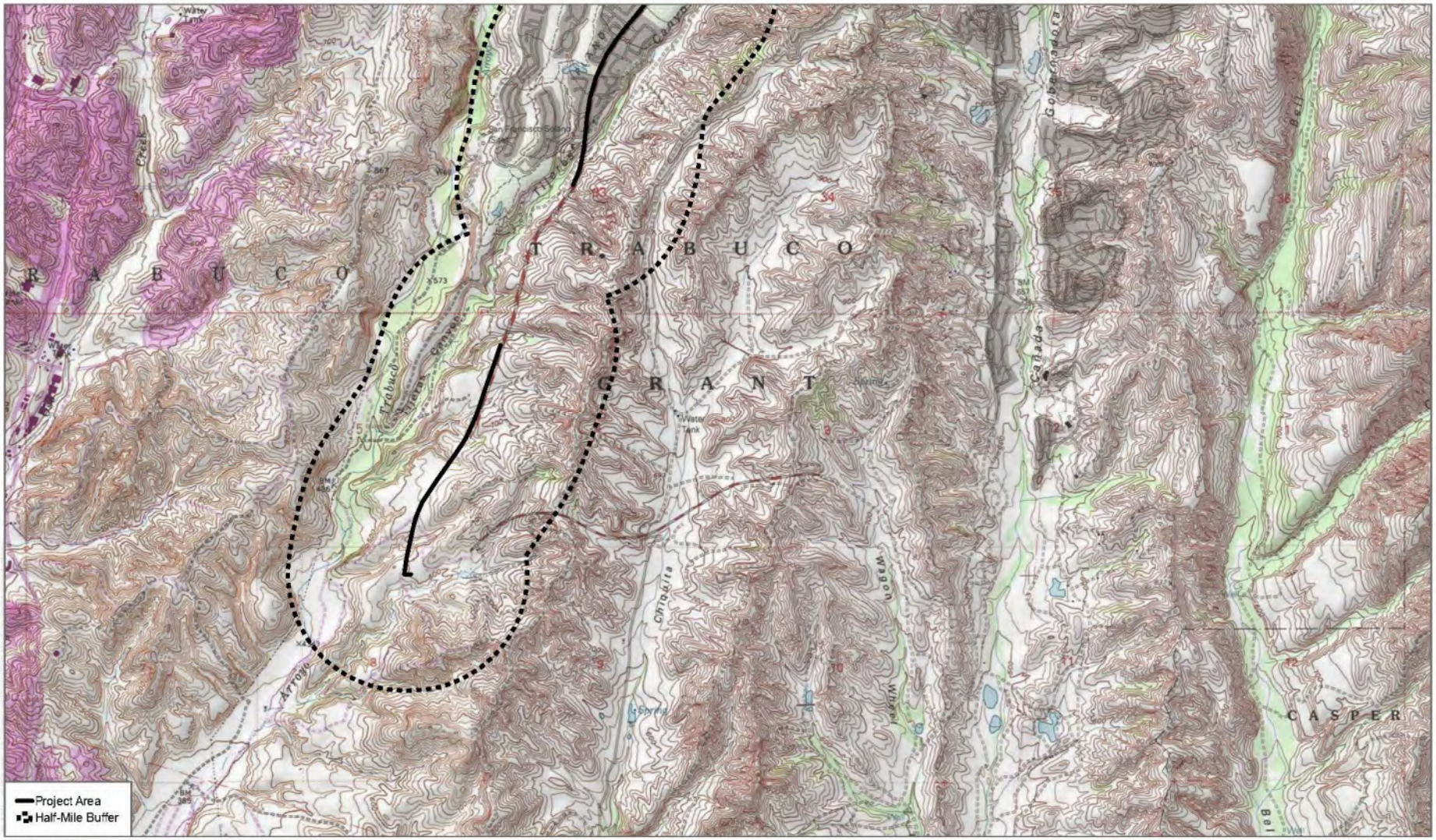
Phone: 760-846-5874
Email: mmurillo@dudek.com


Project Area
Half-Mile Buffer
T R A B U C O
Trabuco Canyon
Upper Oso Reservoir
Arroyo
Mission Viejo
La Paz
Grant
SOURCE: USGS 7.5-Minute Series El Toro, Santiago Peak, Canada Gobernadora, and San Juan Capistrano Quadrangles
Township 6S / Range 7W / Sections 9, 11, 14-17, 21-23, 27, 28, 33 and Township 7S / Range 7W / Sections 4, 5, 8
DUDEK
Records Search Map
Dudek Project 12711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DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

July 7, 2023 12711

Mr. Isaiah Vivanco, Chairperson
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Mr. Vivanco,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

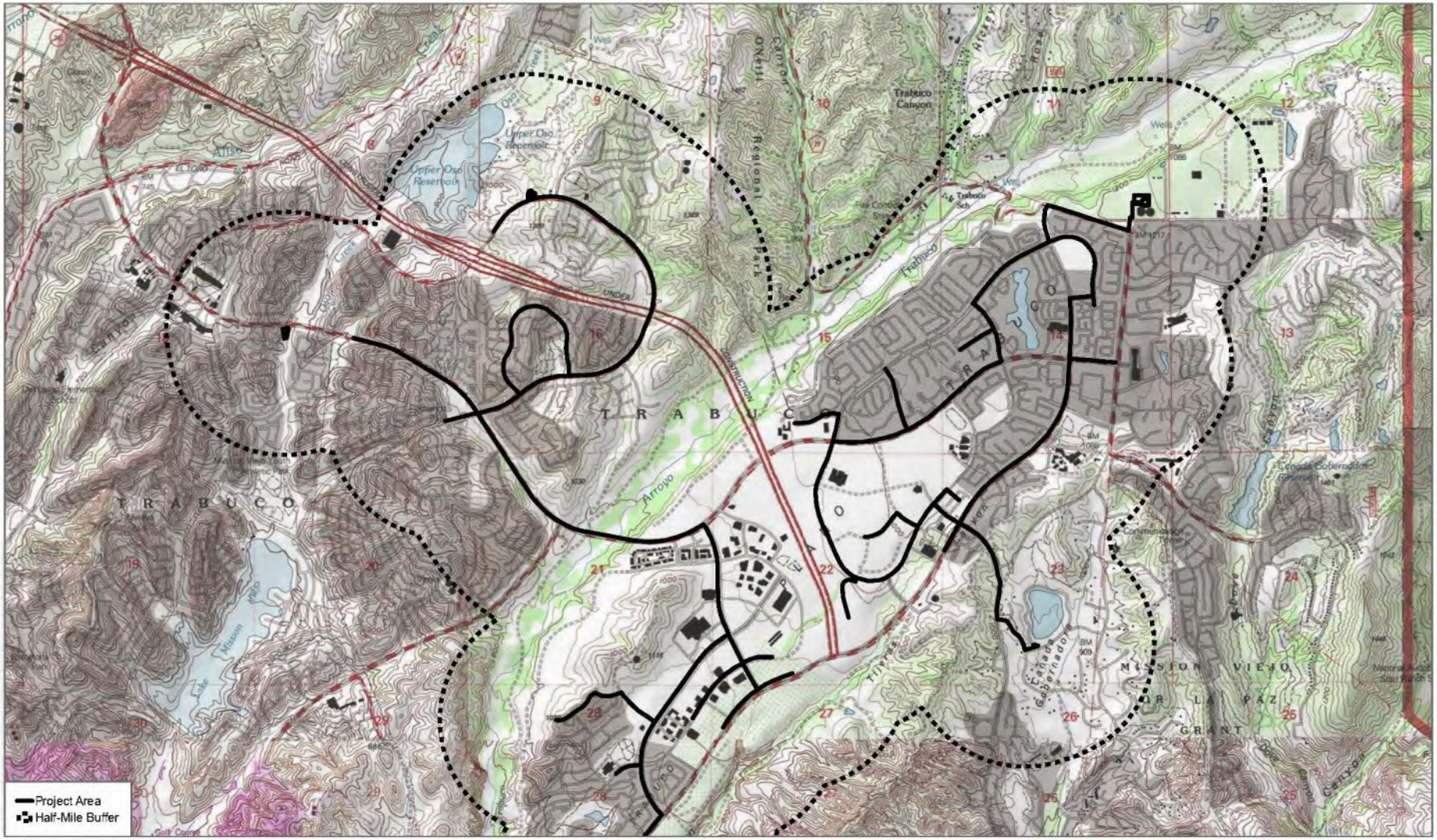
As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on June 27, 2023, which stated that the SLF search did identify the presence of Native American cultural resources within a half-mile of the Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. Tribes that wish to be notified of projects for the purposes of consultation must contact the lead agency, Santa Margarita Water District, in writing (pursuant to Public Resources Code Section 21080.3.1 (b)).

If you have any information or concerns pertaining to such information, please contact me.

Respectfully,

Makayla Murillo
Archaeologist
DUDEK
Phone: 760-846-5874
Email: mmurillo@dudek.com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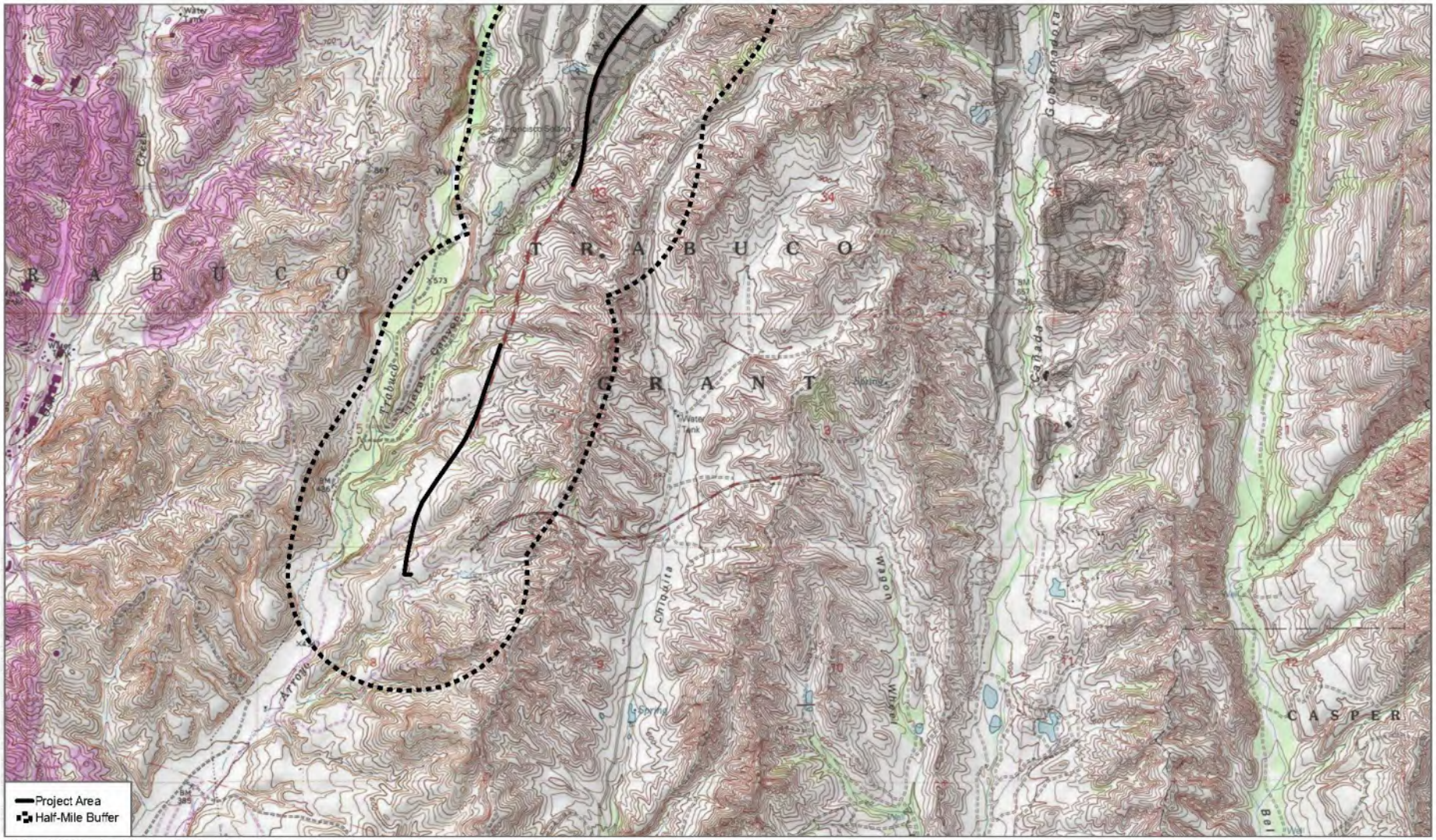
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July 7, 2023 12711

Ms. Alexis Wallick, Assistant THPO
Pala Band of Mission Indians
PMB 50, 35008 Pala Temecula Road
Pala, CA 92059

Subject: Information Request for the Santa Margarita Water District ID 4A Recycled Water System Project, Orange County, California

Dear Ms. Wallick,

The proposed Santa Margarita Water District (SMWD) Improvement District (ID) 4A Recycled Water System Project (Project) consists of the installation of approximately 13 miles of new recycled water pipelines, two booster pump stations, and two water reservoir tanks to extend the District's recycled water service to ID 4A in the City of Rancho Santa Margarita and to the northern portion of the community of Coto de Caza in central Orange County, California. The Project is located within the public land survey system (PLSS) Township 6 South, Range 7 West, within Sections 11, 14-17, 21-23, 27, 28, and 33 and Township 7 South, Range 7 West, within Sections 4, 5, and 8 of the *El Toro*, *Santiago Peak, Canada Gobernadora,* and *San Juan Capistrano* 7.5-minute USGS Quadrangles (Figure 1, Project Location).

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If you have any information or concerns pertaining to such information, please contact me.

Respectfully,

Makayla Murillo
Archaeologist
DUDEK
Phone: 760-846-5874
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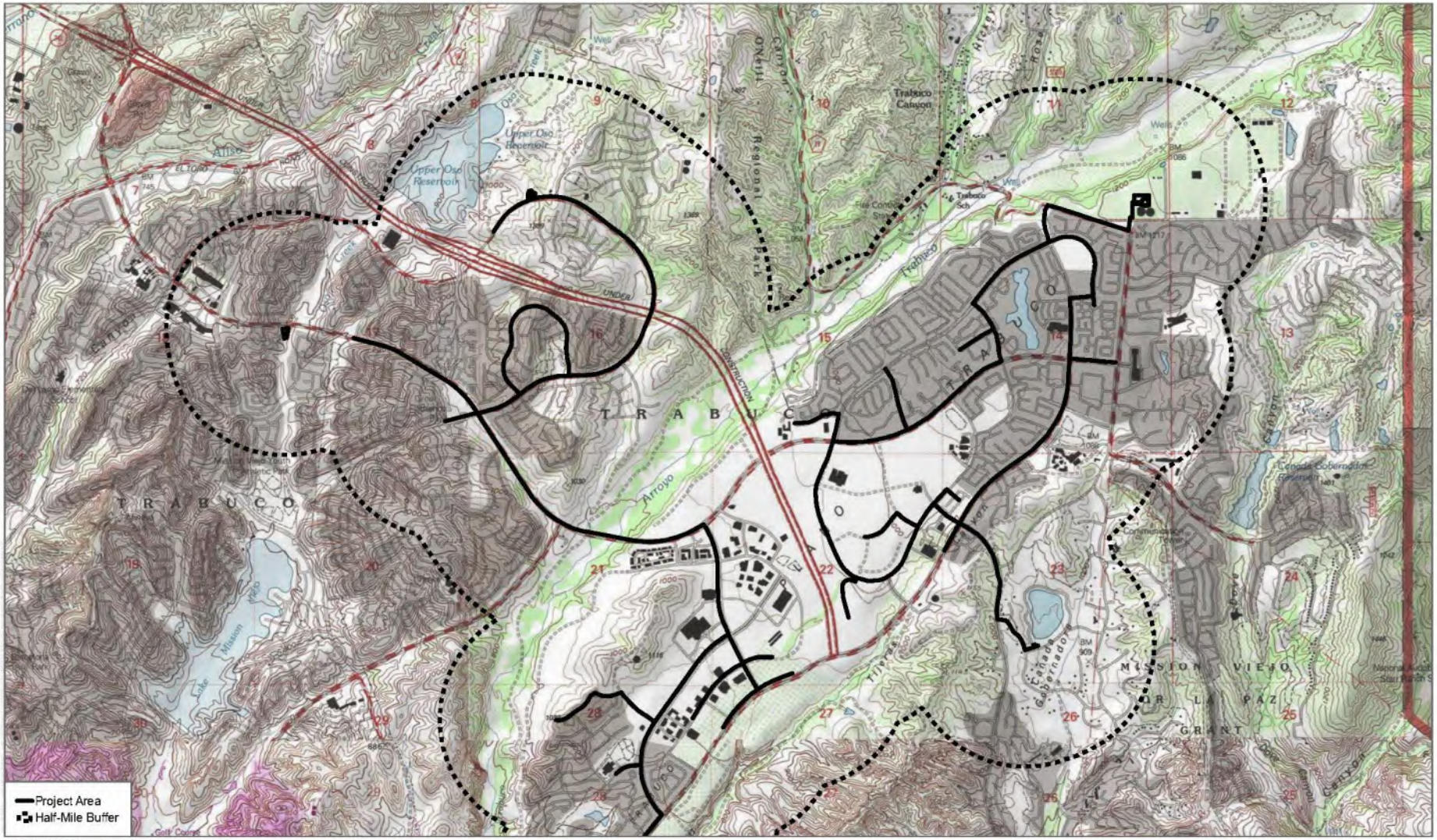
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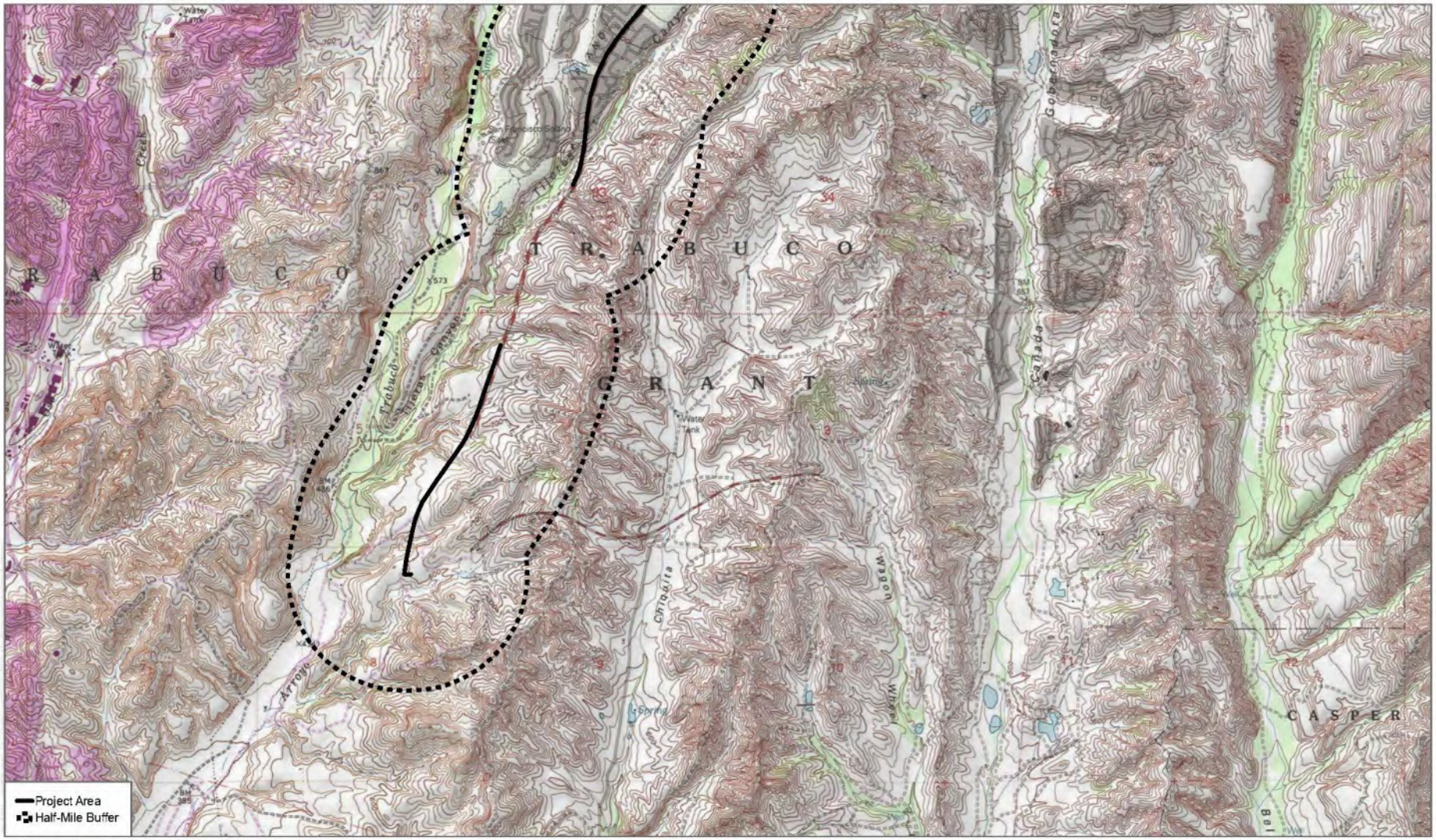
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DUDEK
Records Search Map
Dudek Project 12711

From: Joyce Perry <kaamalam@gmail.com>

Sent: Monday, August 14, 2023 1:48 PM

To: Makayla Murillo

Subject: Tribal Response- Information Request for the Santa Margarita Water District ID 4A Recycled Water Systems Project

Good Afternoon,

I am responding on behalf of the Juaneno Band of Mission Indians, Acjachemen Nation-Belardes to your letter regarding the Information Request for the Santa Margarita Water District ID 4A Recycled Water Systems Project. This project is located within our territory, and a sensitive area to our tribe. We wish to consult on this project as it moves forward.

The project area and half mile buffer includes several habituation and village sites of cultural significance to the Acjachemen people.

Can you please provide the CHRIS report for the project area and any proposed mitigation measures?

Thank you and we look forward to hearing from you.

Joyce Stanfield Perry

Húu'uni 'óomaqati yáamaqati- Teach peace

Payomkawichum Kaamalam - President

kaamalam.com

Juaneño Band of Mission Indians, Acjachemen Nation

Cultural Resource Director

Appendix C2
Cultural Resources Records Search Results (CONFIDENTIAL)

Appendix D

Noise and Vibration Assessment for the Rancho Santa Margarita Recycled Water System Project

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

MEMORANDUM

To:	Santa Margarita Water District
From:	Cole Martin, INCE, Jim Cowan, INCE Bd. Cert. & Mark Storm, INCE Bd. Cert. (Dudek)
Subject:	Noise and Vibration Assessment for the Rancho Santa Margarita Recycled Water System Project
Date:	July 21, 2023
Attachments:	Figure 1, Project Location Figure 2, Trabuco Reservoir & Pump Station Project Area Figure 3, Portola Booster Pump Station Project Area Figure 4, Eastbrook Pump Station Expansion Project Area Attachment A, Conventional Construction Activity Noise Modeling Attachment B, Pump Station Operational Noise Modeling Data

This technical memorandum presents the results of a predictive noise and vibration study to determine potential environmental impacts associated with anticipated construction activities and in the vicinity of the proposed alignment and operation of the Improvement District 4A Recycled Water System Project (project). Because flows of traffic on nearby roadways will be unaffected by project operation, traffic noise impacts will not be assessed herein.

In summary, potential noise levels from anticipated project conventional construction activities may cause temporary increases to the existing outdoor sound that would not be compliant with the Federal Transit Administration's recommended 80 dBA 8-hour L_{eq} daytime standard at the exteriors of existing residences. However, with proper implementation of temporary noise barriers where and when needed, essential construction activities performed to minimize interruption of service to the community would not exceed 80 dBA and thereby comply with this guidance-based standard for assessing intensive construction equipment noise. Predicted groundborne vibration levels attributed to project activities as received by offsite occupied residential structures are less than thresholds for annoyance and building damage risk per appropriate California Department of Transportation (Caltrans) guidance.

1 Background

1.1 Project Description and Context

The Santa Margarita Water District (SMWD), established in 1964, is Orange County's second-largest water district, providing water and wastewater treatment services to more than 160,000 residents and businesses in Mission Viejo, Rancho Santa Margarita, Coto de Caza, Las Flores, Ladera Ranch, Rancho Mission Viejo, Talega, and other unincorporated areas of Orange County, California. SMWD receives its domestic water from two main sources -

(1) imported water from the Municipal Water District of Orange County, which is supplied by Metropolitan Water District of Southern California from Northern California via the State Water Project and the Colorado River via the Colorado River Aqueduct, and (2) the capture and reuse of urban runoff and recycled water.

SMWD is divided into eight improvement districts (ID). The IDs function as operating units of SWMD. These IDs also allow SMWD to meet the diverse needs of specific service areas, factoring in land use, topography, ownership lines, water supply and wastewater treatment needs.

In an effort to continue to reduce its dependence on imported water, SMWD is proposing the Rancho Santa Margarita Recycled Water System Project (proposed project or project) to extend SMWD's recycled water service to ID 4A, in the City of Rancho Santa Margarita. Implementation of the proposed project would allow for the delivery of up to 1,000 acre-feet per year (AFY) of additional tertiary-treated recycled water to dedicated irrigation customers within the City.

The proposed project involves the installation of new recycled water pipelines, pump stations, and a new aboveground recycled water reservoir in the City of Rancho Santa Margarita and unincorporated communities of Las Flores and Coto de Caza. Specifically, the project would be located within existing roads, including Antonio Parkway, Avenida de las Banderas, Avenida Empresa, Santa Margarita Parkway, Avenida de las Flores, Coto de Caza Drive, and smaller collector streets within residential and commercial developments. One short pipeline segment is planned outside existing roads, within SMWD right-of-way connecting facilities in Coto de Caza Drive to the Portola Reservoir. The new reservoir, referred to as the Trabuco Hills Recycled Water Reservoir, would be on partially undeveloped District property adjacent to an existing District reservoir north of Los Alisos Boulevard. A pump station would be constructed next to this proposed reservoir. Another small pump station would be installed on District property immediately south of the Portola Reservoir (see Figure 1, Location).

The project proposes the installation of approximately 95,000 linear feet (approximately 18 miles) of 8-inch, 12-inch, 16-inch, and 18-inch pipes in existing city roads and outside existing roads in District-right-of-way. Additionally, the project proposes installation of two booster pump stations to aid in increasing water pressure within the new pipelines. Minor components of the proposed project would include the installation of isolation valves and replacement of existing potable-water meters with recycled-water meters. Implementation of the proposed project would extend the District's recycled water service to the City's Improvement District (ID) 4A.

Upon completion, the proposed project would permanently convert an estimated total of approximately 1,000 acre-feet per year (AFY) of residential and commercial irrigation demand from potable to recycled water.

1.1.1 Project Location

The project site is located throughout the City of Rancho Santa Margarita (City) and within a small segment in the northern area of the unincorporated communities of Las Flores and Coto de Caza, in Orange County (County), California. Regionally, the City is bounded by Mission Viejo to the west and the unincorporated communities of Trabuco Canyon, Coto De Caza, and Las Flores, to the north, east, and south, respectively. Generally, the project site is east of Interstate (I-) 5 and north and east of California State Route (SR-) 74. SR-241 passes through the project area and divides the project site (see Figure 1, Project Location).

The project site is located within the right-of-way under existing paved roadways within the City of Rancho Santa Margarita, the City of Mission Viejo, and Orange County, as well as within the SMWD right-of-way. The proposed alignment would run parallel to existing SMWD pipelines.

The project site is located within a highly developed, urbanized portion of each City. The general vicinity surrounding the project site is developed with residential, commercial, and institutional uses, as well as open spaces.

1.1.2 Project Construction Methods

Project construction would consist of two different methods of trenching: (1) excavating directly into the dirt access road that is within SMWD's current easement, and (2) when the alignment is within paved roads, removing the pavement before excavating for pipe installation Both of these methods would be incorporated into the project's continuous construction activity. The sequence of activity would start with trenching and excavation, followed by pipe installation, and then backfilling the trench around the pipe and repaving the area. Pipe installation would involve partially filling the trench with sand, laying pipe, and then adding more sand or backfilling with the material that was excavated. Excavation to approximately 5.5 feet in depth would be required.

1.1.3 Project Design Features and Best Management Practices

All project components would be designed and built in accordance with the seismic design provision of the International Building Code and the California Building Code. Additionally, all facets of excavation, construction, and facility design will meet the standards established during final engineering design. Specifically, this will include measures such as the proper composition, placement, and compaction of all construction fill; the use of additional foundation design techniques as necessary; and the utilization of appropriate construction materials and methods. To reduce impacts during construction, SMWD will include the following project features as needed:

- Best available control measures shall be used during construction to reduce particulate emissions and reduce soil erosion and trackout, through the following project features:
  - Construction staff will cover or water, as needed, any on-site stockpiles of debris, dirt, or other dusty material.
  - Construction staff will use adequate water and/or other dust palliatives on all disturbed areas in order to avoid particle blow-off.
  - Construction staff will wash down or sweep paved streets as necessary to control trackout or fugitive dust.
  - Construction staff will cover or tarp all vehicles hauling dirt or spoils on public roads if sufficient freeboard is not available to prevent material blow-off during transport.
  - Construction staff will use gravel bags and catch basins during ground-disturbing operations.
  - Construction staff will maintain appropriate soil moisture, apply soil binders, and will plant stabilizing vegetation.
- During construction, equipment emissions will be reduced through the following project features:
  - Construction staff will properly tune and maintain construction equipment.
  - Construction management staff shall encourage carpooling by all construction workers.
  - Any necessary lane closures will be limited to off-peak travel periods to the maximum extent feasible.

- Construction staff will park construction vehicles off traveled roadways.
- Construction management will encourage receipt of materials during non-peak traffic hours.

1.2 Noise Characteristics

Sound is mechanical energy transmitted by pressure waves in a compressible medium, such as air. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired. The sound pressure level has become the most common descriptor used to characterize the loudness of outdoor ambient sound. The unit of measurement of sound pressure level is a decibel (dB). Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dB when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, it is widely accepted that the average healthy ear can barely perceive noise level changes of 3 dB. A change of 5 dB is readily perceptible, and a change of 10 dB is perceived as twice or half as loud (Caltrans 2013). A doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the number of daily trips along a given road) would result in a barely perceptible change in sound level.

Sound may be described in terms of level or amplitude (measured in dB), frequency or pitch (measured in hertz or cycles per second), and duration (measured in seconds or minutes). Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel (dBA) scale performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear.

Several descriptors of noise (a.k.a., noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise. These descriptors include the equivalent noise level over a given period (L_{eq}), the day–night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA.

The L_{eq} value is a decibel quantity that represents the constant or energy-averaged value equivalent to the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement of 60 dBA would represent the average amount of energy contained in all the noise that occurred in that hour. The L_{eq} value is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors, which can then be compared to an established L_{eq} standard or threshold of the same duration. Another descriptor is maximum sound level (L_{max}), which is the highest sound level measured during a designated time interval or event. The minimum sound level (L_{min}) is often called the floor of a measurement period.

Unlike the L_{eq}, L_{max}, and L_{min} metrics, L_{dn} and CNEL descriptors always represent 24-hour periods and differ from a 24-hour L_{eq} value because they apply a time-weighted factor designed to emphasize noise events that occur during the non-daytime hours (when speech and sleep disturbance are of more concern). “Time weighted” refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m. to 7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m. to 10:00 p.m.) is penalized by adding 5 dB to the actual levels, and nighttime (10:00 p.m. to 7:00 a.m.) noise is penalized by adding 10 dB to the actual levels. L_{dn} differs from CNEL in that the daytime period is longer (defined instead as 7:00 a.m. to 10:00 p.m.), thus eliminating the dB adjustment for the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics

generally differ from one another by no more than 0.5–1 dB and are often considered or defined as being essentially equivalent by many jurisdictions.

1.3 Vibration Fundamentals

Vibration is oscillatory movement of mass (typically a solid) over time. It is described in terms of frequency and amplitude and can be expressed as displacement, velocity, or acceleration. For environmental studies, vibration is often studied as a velocity that, akin to the discussion of sound pressure levels, can also be expressed in dB in order to cast a wide range of vibration levels in a more convenient scale and with respect to a reference quantity.

Vibration can also be annoying and thereby impact occupants of structures, and vibration of sufficient amplitude can disrupt sensitive equipment and processes (Caltrans 2020), such as those involving the use of electron microscopes and lithography equipment. Common sources of vibration within communities include construction activities and railroads. Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities where sudden releases of subterranean energy or powerful impacts of tools on hard materials occur. Depending on their distances to a sensitive receptor, operation of large bulldozers, graders, loaded dump trucks, or other heavy construction equipment and vehicles on a construction site also have the potential to cause high vibration amplitudes.

Several different methods are used to quantify vibration. Peak particle velocity (PPV), expressed in inches per second (ips), is defined as the maximum instantaneous peak of the vibration signal and is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to describe this RMS magnitude with respect to a reference value, which acts to compress the range of numbers required to discuss vibration in the context of impact assessment.

The calculation to determine PPV at a given distance is as follows:

$$PPV_{rcvr} = PPV_{ref}*(25/D)^{n}$$

Where:

PPV_{rcvr} = the peak particle velocity in inches per second of the equipment adjusted for distance (i.e., at the receiver)

PPV_{ref} = the reference vibration level in inches per second at 25 feet

D = the distance from the equipment to the receiver

n = an exponent, for which a value of 1.1 would be consistent with Caltrans suggestion for class III “hard soils” composed of dense compacted sand or dry consolidated clay.

The above PPV_{rcvr} value can be converted to an RMS vibration velocity level as follows, where the crest factor (CF) is assumed to be a value of 4 per FTA guidance (FTA 2018):

$$VdB_{rcvr} = 20*LOG(PPV_{rcvr}/(CF*0.000001))$$

2 Regulatory Setting and Guidelines

2.1 Federal

Federal Transit Administration

Although not a regulation applicable to this project, the FTA Transit Noise and Vibration Impact Assessment guidance document suggests that when a "detailed assessment" of construction noise is performed, such as the analysis disclosed herein where anticipated rosters of operating construction equipment and distances to nearby noise-sensitive receivers are known, an 8-hour L_{eq} daytime limit of 80 dBA should not be exceeded at the exteriors of residential land uses (FTA 2018).

2.2 State

California Department of Transportation

The project is subject to review or approval by the California Department of Transportation (Caltrans). This analysis considers Caltrans guidance with respect to analyzing vibration impacts because the Water District does not have its own established thresholds for assessing vibration impacts. In its Transportation and Construction Vibration Guidance Manual (Caltrans 2020), Caltrans recommends 0.5 ips PPV as a threshold for the avoidance of structural damage to typical newer residential buildings exposed to continuous or frequent intermittent sources of groundborne vibration. For transient vibration events, such as blasting, the damage risk threshold would be 1.0 ips PPV (Caltrans 2020) at the same type of newer residential structures. For older structures, these guidance thresholds would be more stringent 0.3 ips PPV for continuous/intermittent vibration sources, and 0.5 ips PPV for transient vibration events. With respect to human annoyance, Caltrans guidance indicates that building occupants exposed to continuous groundborne vibration in the range of 0.2 ips to 0.6 ips PPV would find it "unpleasant" or "annoying" and thus a likely significant impact. Although these Caltrans guidance thresholds are not regulatory limits and the project is not subject to Caltrans authorization, they can serve as quantified standards in the absence of such limits at the local jurisdictional level.

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", "normally unacceptable", and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 dBA CNEL and "conditionally acceptable" up to 70 dBA CNEL. Multiple-family residential uses are "normally acceptable" up to dBA 65 CNEL and "conditionally acceptable" up to dBA 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 dBA CNEL, as are office buildings and business, commercial, and professional uses.

2.3 Local

2.3.1 Orange County

Certain project work is located within unincorporated Orange County. The Water District is not bound by County noise regulations, but the Water District has elected to consider the project's impacts in the context of the County Noise Ordinance for purposes of disclosure and impact analysis pursuant to CEQA.

Orange County Noise Ordinance

Section 4-6-5 of the County's Noise Ordinance establishes the following exterior noise standards:

Noise Zone	Noise Level	Time Period
1	55 dBA	7:00 a.m. - 10:00 p.m.
	50 dBA	10:00 p.m. - 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dBA.

> (b) It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed:
>
> (1) The noise standard for a cumulative period of more than 30 minutes in any hour; or
>
> (2) The noise standard plus five (5) dBA for a cumulative period of more than 15 minutes in any hour; or
>
> (3) The noise standard plus ten (10) dBA for a cumulative period of more than five (5) minutes in any hour; or
>
> (4) The noise standard plus fifteen (15) dBA for a cumulative period of more than one (1) minute in any hour:
>
> (5) The noise standard plus 20 dBA for any period of time.
>
> (c) In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Section 4-6-7 of the County's Noise Ordinance limits allowable construction hours from 7:00 a.m. to 8:00 p.m. on Mondays through Saturdays. On Sundays and designated holidays, construction activity is prohibited. Construction noise is exempt when taking place during the aforementioned allowable hours.

2.3.2 City of Rancho Santa Margarita

Although the Water District is not bound by City of Rancho Santa Margarita noise regulations, the Water District has elected to consider the potential noise and vibration impacts attributed to construction activity and operation of the project components (i.e., pump stations) in the context of the City of Rancho Santa Margarita Noise Ordinance for purposes of disclosure and impact analysis pursuant to CEQA.

City of Rancho Santa Margarita Noise Ordinance

Section 5.04.050 of the City of Rancho Santa Margarita Noise Ordinance establishes the same noise standards as Section 4-6-5 of the County Noise Ordinance. Section 5.04.070 of the City' of Rancho Santa Margarita Noise Ordinance establishes the same construction noise standards as Section 4-6-7 of the County Noise Ordinance.

2.3.3 City of Mission Viejo

Although the Water District is not bound by City of Mission Viejo noise regulations, the Water District has elected to consider the potential noise and vibration impacts attributed to construction activity and operation of the project components (i.e., pump stations) in the context of the City of Mission Viejo Ordinance for purposes of disclosure and impact analysis pursuant to CEQA.

City of Mission Viejo Noise Ordinance

Section 5.04.040 of the City of Mission Viejo Noise Ordinance establishes the same noise standards as Section 4-6-5 of the County Noise Ordinance. Section 5.04.060 of the City of Mission Viejo Noise Ordinance establishes the same construction noise standards as Section 4-6-7 of the County Noise Ordinance.

3 Impact Thresholds

3.1 Noise

Project construction subject to this assessment would occur within unincorporated Orange County, the City of Rancho Santa Margarita, and the City of Mission Viejo. Offsite occupied properties and noise-sensitive receivers (e.g., residences) nearest to the project are within the boundaries of Orange County jurisdiction. However, neither the County nor either City specifies a quantitative noise metric for the assessment of potential construction noise impacts. Therefore, the FTA 8-hour L_{eq} daytime limit of 80 dBA was used for this analysis. This analysis assumes that construction activities would occur during the allowable daytime hours of 7:00 a.m. to 8:00 p.m. on weekdays and Saturdays. For purposes of this assessment, noise exposure levels from construction noise activities were evaluated at the nearest project property line.

3.2 Vibration

For construction vibration impacts, guidance from Caltrans indicates that a vibration velocity level of 0.2 ips PPV received at a structure would be considered annoying by occupants within (Caltrans 2020). As for the receiving structure itself, Caltrans guidance as discussed in Section 2 recommends that a vibration level of 0.3 to 0.5 ips PPV would represent the threshold range for damage risk of older to newer residential structures, respectively.

4 Impact Discussion

Construction noise and vibration are temporary phenomena. Although construction noise, stationary operations, and vibration levels vary from hour to hour and day to day, depending on the equipment in use, the operations performed, and the distance between the source and receptor, noise exposure levels from the aggregate of concurrently operating equipment can be accurately predicted with industry-proven and standardized sound propagation modeling techniques. Hence, the following subsections evaluate conventional construction equipment noise emission along the project pipeline alignment and from each of the proposed pump station construction areas, as well as the stationary operation noise levels from the proposed pump stations.

4.1 Conventional Construction Noise Prediction and Impact Assessment

4.1.1 Methodology

To reasonably estimate aggregate project-attributed construction noise exposure at the nearest offsite noise-sensitive receptor (NSR) closest to the individual pump station construction area over the course of project progress (and from potentially concurrent scheduled activities), the following methodology and assumptions were adopted. Detailed information on the reference source sound levels and the prediction results is presented in Attachment A.

Summarized Approach

The predictive analysis herein locates one or multiple sound-emitting sources (i.e., stationary and mobile equipment) associated with a distinct construction activity or phase as a collective single point at an approximate geographic position of the activity considered closest to the studied NSR. While the exact positions of these equipment are unknown at any moment, they would not stray beyond the defined zone or area on which they are expected to work; hence, the collective equipment sound source single-point approximation is assumed to be located along the pipeline alignment for the trenching activities. For the pump station areas, concurrent pipeline installation trenching (the loudest of the two pipeline construction phases) and pump station construction noise were calculated if the project schedule provided by the client indicated overlapping work on relevant phases.

As shown in Attachment A that details output from usage of a Microsoft Excel workbook that emulates the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM), predicted noise from each distinct phase or activity—using the above approach—populates a matrix that depicts the project schedule at a monthly level of granularity. The assumed schedule of listed activities is based on estimated time periods provided in the current

Project Description (PD). The total concurrent noise exposure level, expressed as an energy equivalent sound level (L_{eq}), is predicted for each successive month at an indicated NSR position as the project progresses.

Modeled Sources

Table 1 lists the modeled construction activities and their associated noise-producing equipment. The reference sound emission levels for the listed equipment used as model input parameters are based on maximum sound levels (L_{max}) and acoustical usage factor (AUF) values appearing in Table 1 of the aforementioned RCNM User's Guide. For example, usage of the RCNM guide indicates 85 dBA L_{max} at a distance of 50 feet for an "excavator" (FHWA 2006).

Table 1. Modeled Project Construction Activities and Equipment Types

Project Phase Description	Operating Equipment Types*
Site Prep/Grading at Trabuco Reservoir	Front End Loader, Excavator, Roller
Portola Booster Pump Station Building Earthwork (Grading)	Front End Loader, Excavator, Roller
Grading for Eastbrook Pump Station	Front End Loader, Excavator, Roller
Pipeline Installation Trenching	Excavator, Backhoe, Front End Loader, Roller
Paving for Pipelines	Paver, Roller, Front End Loader
Portola Booster Pump Station Building Mechanical/Electrical (Building Construction)	Crane, Man Lift
Architectural Coating for Portola Booster Pump Station	Compressor (air)
Expansion of Existing Pump Station (Eastbrook Pump Station)	Crane, Man Lift
Architectural Coating for Eastbrook Pump Station	Compressor (air)
Construction of Reservoir (Trabuco Hills) (Building Construction)	Crane, Man Lift
Architectural Coating for Trabuco Hills Reservoir	Compressor (air)
Construction of Reservoir (Plano)	Crane, Man Lift

Notes: *per Federal Highway administration (FHWA) Roadway Construction Noise Model (RCNM) equipment type designations.

Modeled Noise-Sensitive Receptors

Figure 2 presents the studied NSR position for the Trabuco Reservoir and Pump Station area of the project; Figure 3 presents the studied NSR position for the Portola Booster Pump Station area of the project; and Figure 4 presents the studied NSR position for the Eastbrook Pump Station Expansion area of the project.

Additionally, the associated pump station location and description for each of the studied NSR positions are described in Table 2 below.

Table 2. Description of Studied NSRs Near Proposed Project Locations

Studied NSR	Associated Project Area	Description
NSR1	Trabuco Reservoir / Pump Station	Multi-Family Residences at 22648 Los Alisos Boulevard
NSR2	Portola Booster Pump Station	Single-Family Residence at 31361 Trigo Trail

Table 2. Description of Studied NSRs Near Proposed Project Locations

Studied NSR	Associated Project Area	Description
NSR3	Eastbrook Pump Station	Multi-Family Residences at 21622 Marguerite Parkway

Each NSR position assumes a listener elevation of five feet (5') above local grade elevation.

4.1.2 Prediction Results

Representing application of the sound prediction methodology described in the preceding paragraphs, Table 3 presents predicted noise level exposures from project-attributed conventional construction activity sources during daytime hours at the indicated receptor locations, which appear in Figures 2 through 4.

Table 3. Predicted Conventional Construction Noise at Modeled Receptor Locations

Modeled Receptor Location	Predicted Construction Noise Level Range (8-hour dBA L_{eq})
NSR1	65- 80
NSR2	70 - 90
NSR3	70 - 80

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; N/A = not applicable

As presented in Table 3, the estimated hourly construction noise levels are predicted to exceed the FTA's 80 dBA 8-hour L_{eq} at the nearest studied noise-sensitive properties for the Portola booster pump station project area. Under these conditions, predicted operation of daytime construction equipment and processes would exceed the FTA-based threshold limit (i.e., 80 dBA L_{eq} over an 8-hour period) identified for this assessment.

The aforementioned worksheets for each NSR featured in Attachment A highlight predicted levels that exceed the 80 dBA 8-hour L_{eq} limit and thus help inform when construction BMPs may be needed.

Pipeline Construction Noise

Distances to the FTA's 80 dBA 8-hour L_{eq} contour line were calculated using the worksheets found in Attachment A. Table 4 contains the distance from the pipeline up to which a predicted impact could be expected based on the pipeline construction phase, as well as a worst-case distance calculated by combining the two pipeline construction phases.

Table 4. Distance to 80 dBA Noise Contour by Construction Phase

Phase	Distance to the FTA 80 dBA 8-hour L_{eq} Contour From Pipeline Centerline (feet)
Pipeline Installation Trenching	95
Paving for Pipelines	45

Although nearby off-site residences would be exposed to elevated construction noise levels, the exposure would be short term and would cease upon completion of project construction. It is anticipated that active construction associated with the proposed project would take place within the allowable hours per Section 4.6-7 of the County of Orange Codified Code of Ordinances (7:00 a.m. through 8:00 p.m. Monday through Saturday, and would not occur outside of those hours, or on Sundays or national holidays). In the event that construction is required to extend beyond these times, extended hours permits would be required. As such, construction would not violate County of Orange standards for construction noise.

MM-NOI-1 and **MM-NOI-2** would be required to reduce construction noise associated with the proposed project and to ensure that nearby receptors are informed of construction activities. The effectiveness of the measures listed in MM-NOI-1 would vary from several decibels (which in general is a relatively small change) to ten or more decibels (which would be perceived as a substantial change). The range of effectiveness would vary based on the equipment in use, the original condition of the equipment, the specific location of the noise source and receiver, etc. The noise reduction achieved by equipment silencers, for example, would range from several decibels to well over 10 decibels. Limiting equipment idling could reduce overall noise levels up to several decibels. However, the measures listed in MM-NOI-1, in combination, would result in a substantial decrease in construction noise. While MM-NOI-2 would not reduce construction noise levels, it would ensure that receptors in the project area are prepared for any nuisances that may occur and would allow them to plan accordingly. Upon implementation of MM-NOI-1 and MM-NOI-2, impacts would be **less than significant with mitigation** incorporated.

MM-NOI-1: Construction Noise Reduction. The Santa Margarita Water District and/or its construction contractor shall comply with the following measures during construction:

1. Construction activities shall not occur between the hours of 8:00 p.m. and 7:00 a.m. Monday through Saturday, or on Sundays or national holidays. In the event that construction is required to extend beyond these times, extended hours permits shall be required.
2. Pumps and associated equipment (e.g., portable generators) shall be situated and configured to minimize noise at nearby noise-sensitive receivers.
3. Where possible, staging of construction equipment shall be situated at least 45 feet from noise- or vibration-sensitive land uses.
4. All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
5. All mobile or fixed noise-producing equipment used for the project that are regulated for noise output by a local, state, or federal agency shall be in compliance with regulations.
6. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses.
7. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.

8. Mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
9. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be used for safety warning purposes only.

MM-NOI-2: Notification. Effective communication with local residents shall be maintained prior to and during construction. Specifically, Santa Margarita Water District or its designee shall inform local residents of the schedule, duration, and progress of the construction. Additionally, residents shall be provided contact information for noise- or vibration-related complaints.

Although this assessment utilizes the FTA 80 dBA 8-hour L_{eq} as the threshold for construction noise impacts, the aforementioned threshold is not a regulation, but merely a recommendation and provides informative context on what may be considered a reasonably acceptable limit for construction noise exposure over such a time period. Should the Water District choose to adopt the 80 dBA 8-hour L_{eq} value as an appropriate construction noise limit for the limited purposes of the project and this predictive assessment of potential environmental noise impact, the BMPs outlined in this section may be implemented where recommended herein.

4.2 Pump Station Stationary Noise Prediction and Impact Assessment

Prediction Methodology

The completion of the buildings on the proposed project site will add a variety of noise-producing mechanical equipment that include those presented and discussed in the following paragraphs. Most of these noise-producing equipment or sound sources would be considered stationary or limited in mobility to a defined area.

The aggregate noise emission from these outdoor-exposed sound sources has been predicted with the Datakustik CadnaA sound propagation program. CadnaA is a commercially available software program for the calculation, presentation, assessment, and prediction of environmental noise based on algorithms and reference data per International Organization of Standardization (ISO) Standard 9613-2, "Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation" (ISO 1996). The CadnaA computer software allows one to position sources of sound emission in a simulated three-dimensional (3-D) space having heights and footprints consistent with project architectural plans and elevations. In addition to the above-mentioned sound source inputs and building-block structures that define the three-dimensional sound propagation model space, the following assumptions and parameters are included in this CadnaA-supported stationary noise source assessment:

- Ground effect acoustical absorption coefficient equal to 0.5, which intends to represent an average or blending of ground covers that are characterized largely by hard reflective pavements and existing building surfaces across the project site and the surroundings;
- Reflection order of 1, which allows for a single reflection of sound paths on encountered structural surfaces such as the modeled building masses;
- Calm meteorological conditions (i.e., no wind) with 68 degrees Fahrenheit and 50% relative humidity; and
- All of the modeled noise sources are operating concurrently and continuously for a minimum period of 1 hour.

Based on the available plans and other design information, the proposed project buildings would contain booster pumps rated at up to 600 horsepower (HP). Table 5 contains the modeled sound power level data for a sample pump unit. Reference sound levels for the pumps were calculated for use in the CadnaA model from a combination of inputs that include the revolutions per minute (rpm) and motor power. For the analysis of noise from pump operation, the assumed rpm was set to 1,800 and the 600 HP value was converted to kilowatts for use in the calculation.

Table 5. Modeled Sound Power Levels (PWL) for Stationary Sources

Building	Sound Source	Overall L_{eq} (dB)	Unweighted dB at Octave Band Center Frequency (OBCF, Hz)								
			32.5	63	125	250	500	1000	2000	4000	8000
Pump Station	Pump	104.5	92.0	93.0	94.0	96.0	96.0	99.0	96.0	92.0	86.0

Other Stationary Noise Sources

The proposed project buildings may feature other noise emitters, but their contributions would tend to be sporadic or otherwise occur infrequently and thus be expected to have no greater acoustic contribution to an hourly L_{eq} than the continuous-type pump noise studied herein.

Prediction Results

Table 6 presents the predicted pump station operational noise exposure level at the NSRs for each of the pump stations within the project area.

Table 6. Predicted Pump Station Operational Noise Levels

Pump Station ID	Nearest Noise-Sensitive Receptor (NSR)	Predicted Noise Level (dBA, L_{eq})
Trabuco	NSR1 (22648 Los Alisos Blvd.)	43.3
Portola	NSR2 (31361 Trigo Trail)	49.0
Eastbrook	NSR3 (21622 Marguerite Pkwy.)	48.0

Notes: dBA = A-weighted decibels.

All predicted pump station area noise levels appearing in Table 6 are less than 50 dBA L_{eq}, which means that as modeled onsite pump station noise would not require further noise control or sound abatement to be compliant with the County exterior nighttime noise level limit. Details of the prediction results appear in Attachment B, along with figures showing noise level contours for each of the pump station areas.

4.3 Vibration

4.3.1 Conventional Construction Activities

Under certain conditions, construction activities may expose persons to excessive groundborne vibration or groundborne noise, causing a potentially significant impact. Caltrans has collected groundborne vibration information related to construction activities (Caltrans 2020) and indicates that continuous vibrations with a PPV of approximately 0.2 ips is considered annoying. For context, heavier pieces of construction equipment, such as a bulldozer, which may be expected on the project site, have reference PPV values of approximately 0.089 ips or less at a reference distance of 25 feet (FTA 2018).

Groundborne vibration attenuates rapidly, even over short distances. The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. By way of example, for the same aforementioned bulldozer operating on site, the estimated vibration velocity level at a source-to-receptor distance of just 15 feet would be 0.19 ips PPV per the equation that follows (FTA 2018):

$$PPV_{rcvr} = PPV_{ref} * (25/D)^{1.5} = 0.19 = 0.089 * (25/15)^{1.5}$$

where PPV_{rcvr} is the predicted vibration velocity at the receiver position, PPV_{ref} is the reference value at 25 feet from the vibration source (the bulldozer), and variable "D" is the actual horizontal distance (in feet) to the receiver.

Therefore, at this predicted PPV for such a very close receptor distance that is not foreseen for the majority of project activities, the potential impact of vibration-induced annoyance to occupants of nearby existing homes would not exceed the 0.2 ips PPV and 0.3 ips PPV thresholds identified herein for building occupant annoyance and façade damage risk to older residential structures.

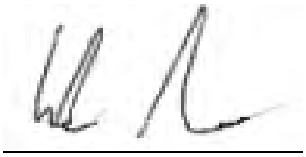
5 Conclusions

This technical memorandum was conducted to predictively quantify potential construction noise and vibration adverse effects attributed to the proposed project at the nearest existing occupied properties along the studied pipeline alignment and in proximity to pump station construction and expansion sites. The results indicate that potential noise levels from anticipated project conventional construction activities may cause temporary and substantial increases to the existing outdoor sound environment, but could be compliant with the 80 dBA 8-hour L_{eq} standard per FTA guidance when construction occurs during daytime hours of 7:00 a.m. to 8:00 p.m. with best management practices included.

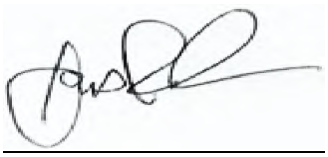
With respect to groundborne vibration received by occupied residential structures at these aforementioned studied nearest occupied properties, predicted PPV values are less than thresholds for annoyance and building damage risk per appropriate Caltrans guidance.

We trust that this technical memorandum meets your project needs at this time. Should you have any questions or require additional information, please do not hesitate to contact Cole Martin at 760.479.4168 or cmartin@dudek.com.

Sincerely,



Cole Martin, INCE
Environmental Acoustician



Jim Cowan, INCE Bd. Cert.
Lead Acoustician

Mark Storm, INCE Bd. Cert.
Acoustic Services Manager

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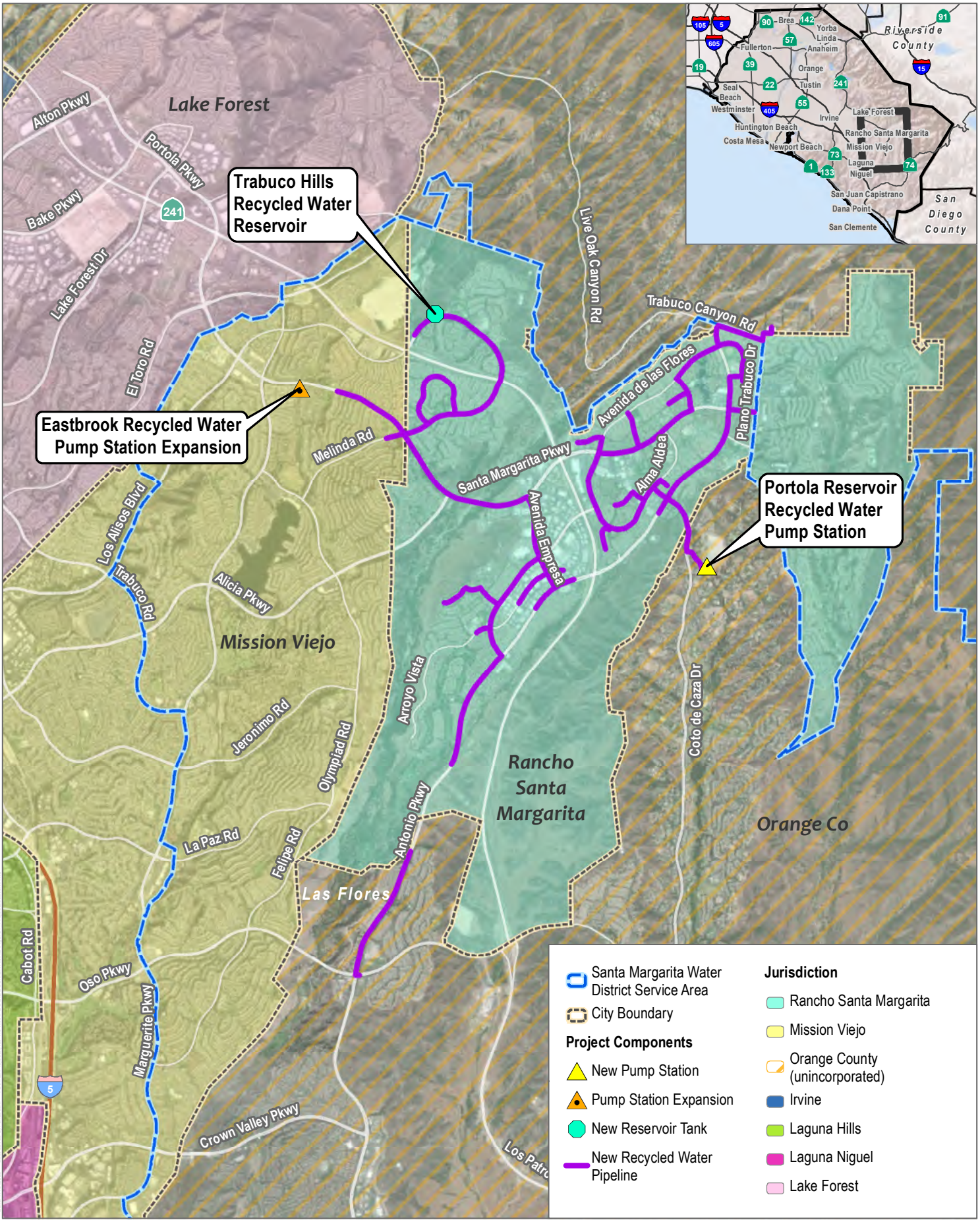


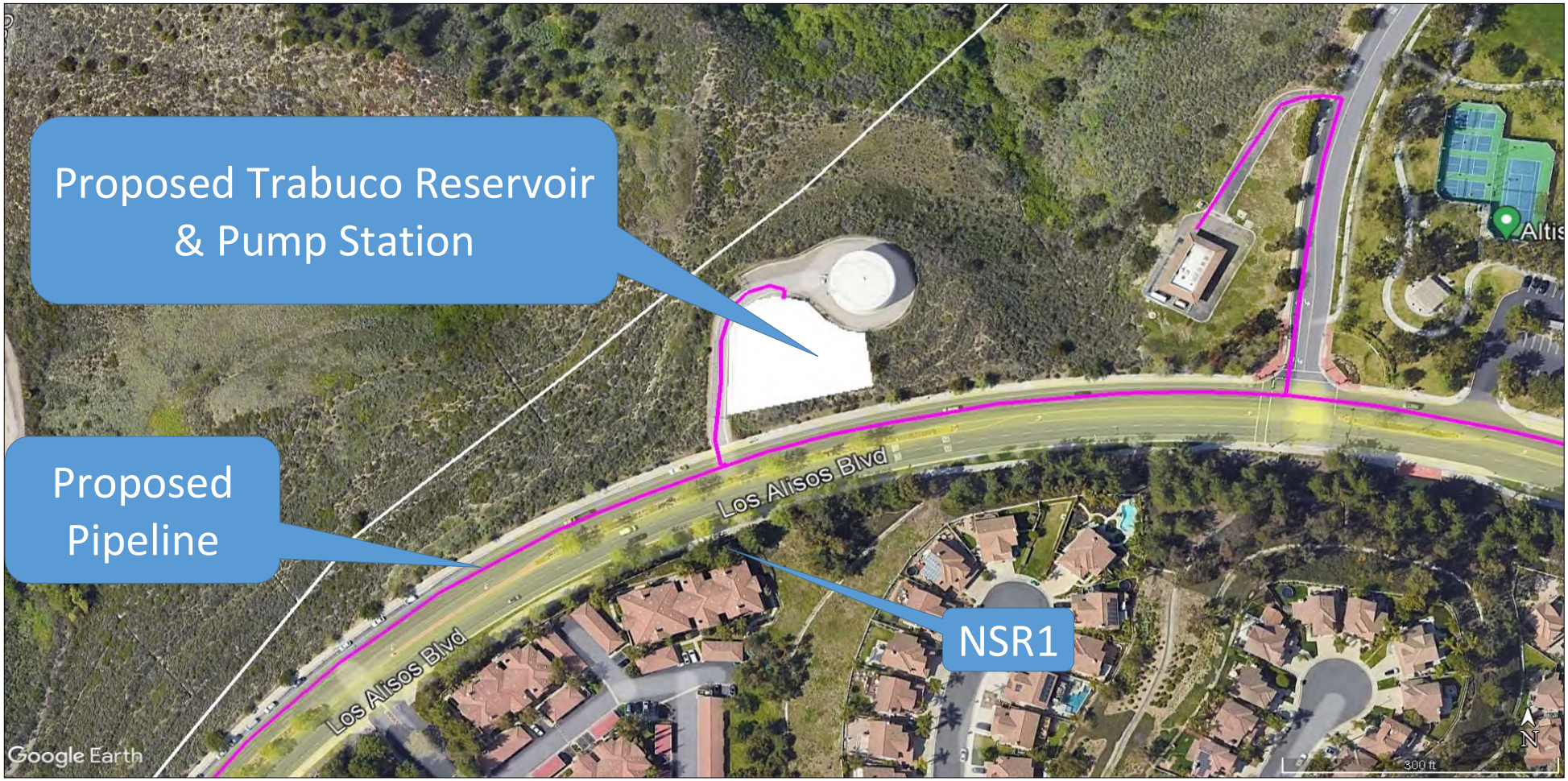
SOURCE: Maxar 2022; Open Street Map 2019

FIGURE 1

Project Location

Rancho Santa Margarita Recycled Water System Project MND

DUDEK



SOURCE: Google 2023; Dudek 2023

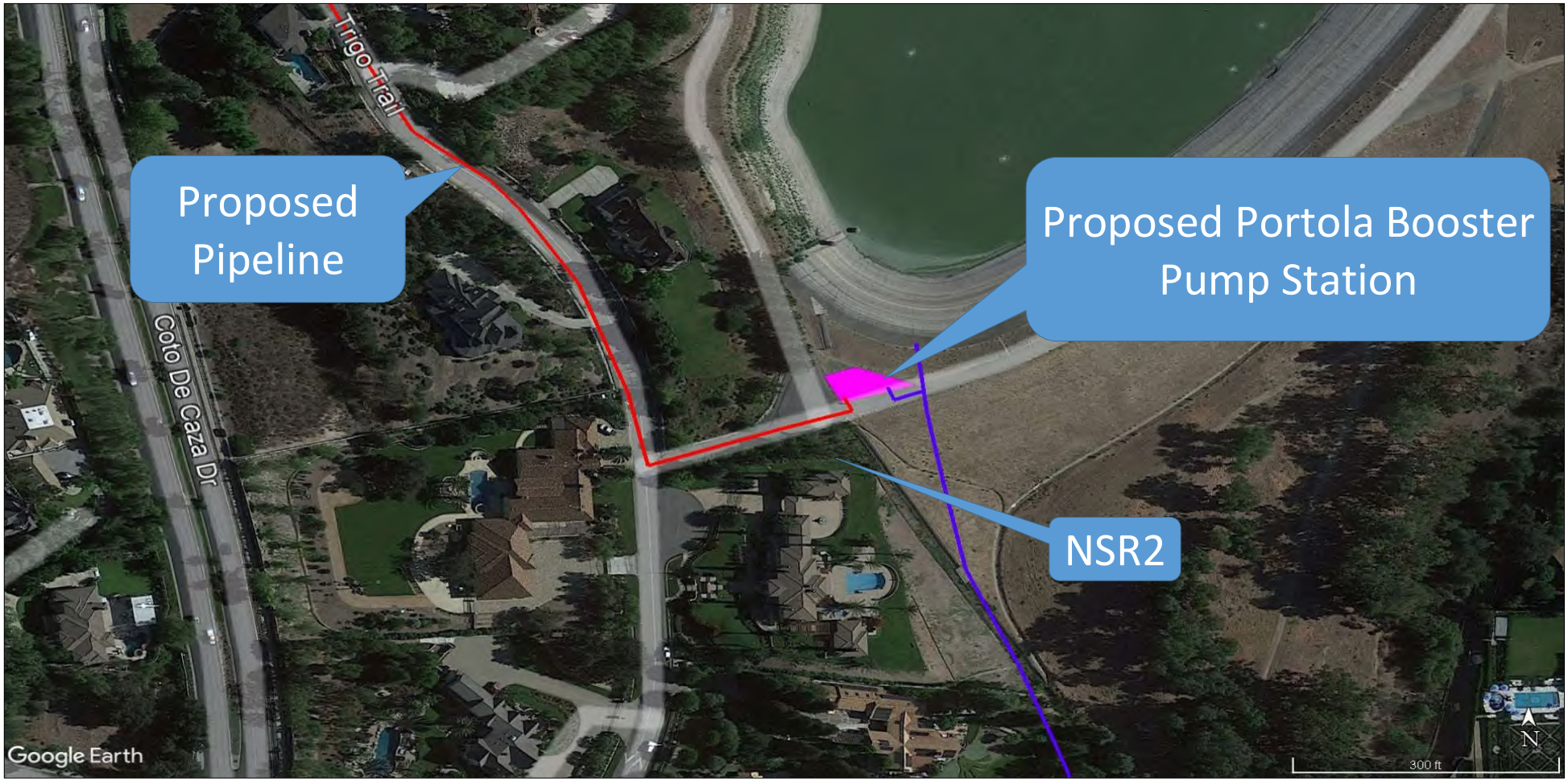
DUDEK

0 75 150 Feet

FIGURE 2

Trabuco Reservoir & Pump Station Project Area

Santa Margarita Water District - Improvement District 4A Recycled Water System Project



SOURCE: Google 2023; Dudek 2023

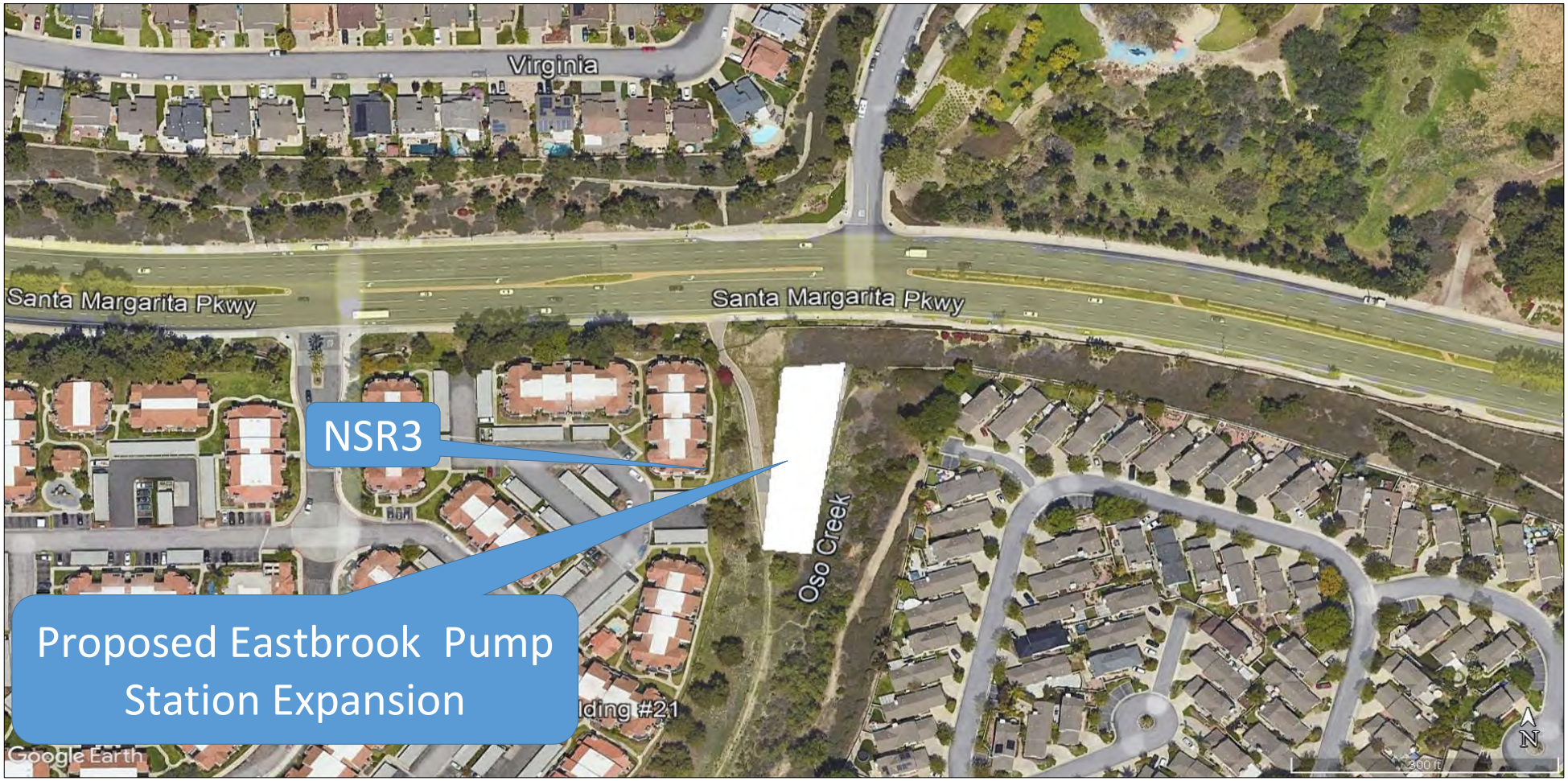
DUDEK

0 77.5 155 Feet

FIGURE 3

Portola Booster Pump Station Project Area

Santa Margarita Water District - Improvement District 4A Recycled Water System Project



SOURCE: Google 2023; Dudek 2023

DUDEK

0 77.5 155 Feet

FIGURE 4

Eastbrook Pump Station Expansion Project Area

Santa Margarita Water District - Improvement District 4A Recycled Water System Project

Attachment A

Conventional Construction Activity Noise Modeling

To User: bordered cells are inputs, unbordered cells have formulae
enter "0" to turn off air or grnd absorption terms, "1" to turn on

air abs? 0
grnd abs? 0

magnitude of threshold (dBA) = 80
allowable hours over which Leq is to be averaged = 8

Source, receptor, and barrier all share same reference grade elevation; unless otherwise noted)
= Barrier of input height inserted between source and receptor

Project Phase No.	Project Phase Description	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
5	Pipeline Installation Trenching	Excavator	3	40	81	95	0		75.4	8	480	76	5	5	0	90	5	95	90.1	7.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Backhoe	3	40	78	95	0		72.4	8	480	73	5	5	0	90	5	95	90.1	7.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Front End Loader	3	40	79	95	0		73.4	8	480	74	5	5	0	90	5	95	90.1	7.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	3	20	80	95	0		74.4	8	480	72	5	5	0	90	5	95	90.1	7.1	95.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Pipeline Installation Trenching Phase				**80.2**																
6	Paving for Pipelines	Paver	1	50	77	45	0		77.9	8	480	75	5	5	0	40	5	45	40.3	7.1	45.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	1	20	80	45	0		80.9	8	480	74	5	5	0	40	5	45	40.3	7.1	45.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Front End Loader	1	40	79	45	0		79.9	8	480	76	5	5	0	40	5	45	40.3	7.1	45.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Paving for Pipelines Phase				**79.7**																

To User: bordered cells are inputs, unbordered cells have formulae
enter "0" to turn off air or grnd absorption terms, "1" to turn on

air abs? 0
grnd abs? 0

magnitude of threshold (dBA) = 80
allowable hours over which Leq is to be averaged = 8

Source, receptor, and barrier all share same reference grade elevation; unless otherwise noted)
= Barrier of input height inserted between source and receptor

Project Phase No.	Project Phase Description	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
2	Site Prep/Grading at Trabuco Reservoir	Front End Loader	1	40	79	150	0		69.4	8	480	65	5	5	0	5	145	150	7.1	145.1	150.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Excavator	1	40	81	150	0		71.4	8	480	67	5	5	0	5	145	150	7.1	145.1	150.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	1	45	74	150	0		64.4	8	480	61	5	5	0	5	145	150	7.1	145.1	150.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Site Prep/Grading at Trabuco Reservoir Phase				**70.1**																
5	Pipeline Installation Trenching	Excavator	3	40	81	100	0		74.9	8	480	76	5	5	0	65	35	100	65.2	35.4	100.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Backhoe	3	40	78	100	0		71.9	8	480	73	5	5	0	65	35	100	65.2	35.4	100.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Front End Loader	3	40	79	100	0		72.9	8	480	74	5	5	0	65	35	100	65.2	35.4	100.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	3	20	80	100	0		73.9	8	480	72	5	5	0	65	35	100	65.2	35.4	100.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Pipeline Installation Trenching Phase				**79.7**																
11	Construction of Reservoir (Trabuco Hills) (Building Construction)	Crane	1	16	81	150	0		71.4	8	480	63	5	5	0	5	145	150	7.1	145.1	150.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Man Lift	1	20	75	150	0		65.4	8	480	58	5	5	0	5	145	150	7.1	145.1	150.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Construction of Reservoir (Trabuco Hills) (Building Construction) Phase				**64.6**															
12	Architectural Coating for Trabuco Hills Reservoir	Compressor (air)	2	40	78	150	0		68.4	8	480	67	5	5	0	5	145	150	7.1	145.1	150.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Architectural Coating for Trabuco Hills Reservoir Phase				**67.4**															

Construction Schedule

Year	2025												2026											
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Construction Phase																								
Site Prep/Grading at Trabuco Reservoir	✔	✔	✔																					
Pipeline Installation Trenching	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔													
Construction of Reservoir (Trabuco Hills) (Building Construction)				✔	✔	✔	✔	✔	✔	✔	✔	✔												
Architectural Coating for Trabuco Hills Reservoir													✔											
Combined Construction Noise at Nearest Offsite Receptor:																								
Site Prep/Grading at Trabuco Reservoir	70.1	70.1	70.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pipeline Installation Trenching	79.7	79.7	79.7	79.7	79.7	79.7	79.7	79.7	79.7	79.7	79.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction of Reservoir (Trabuco Hills) (Building Construction)	0.0	0.0	0.0	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating for Trabuco Hills Reservoir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concurrent Total (dBA)	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**65**	**67**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

To User: bordered cells are inputs, unbordered cells have formulae
enter "0" to turn off air or grnd absorption terms, "1" to turn on

air abs? 0
grnd abs? 0

magnitude of threshold (dBA) = 80
allowable hours over which Leq is to be averaged = 8

Source, receptor, and barrier all share same reference grade elevation; unless otherwise noted)
= Barrier of input height inserted between source and receptor

Project Phase No.	Project Phase Description	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
3	Portola Booster Pump Station Building Earthwork (Grading)	Front End Loader	1	45	74	75	0		70.4	8	480	67	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Excavator	1	45	74	75	0		70.4	8	480	67	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	1	20	80	75	0		76.4	8	480	69	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Portola Booster Pump Station Building Earthwork (Grading) Phase				**72.7**															
5	Pipeline Installation Trenching	Excavator	3	40	81	30	0		85.4	8	480	86	5	5	0	15	15	30	15.8	15.8	30.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Backhoe	3	40	78	30	0		82.4	8	480	83	5	5	0	15	15	30	15.8	15.8	30.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Front End Loader	3	40	79	30	0		83.4	8	480	84	5	5	0	15	15	30	15.8	15.8	30.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	3	20	80	30	0		84.4	8	480	82	5	5	0	15	15	30	15.8	15.8	30.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Pipeline Installation Trenching Phase				**90.2**															
7	Portola Booster Pump Station Building Mechanical/Electrical (Building Construction)	Crane	1	16	81	75	0		77.4	8	480	69	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Man Lift	1	20	75	75	0		71.4	8	480	64	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Portola Booster Pump Station Building Mechanical/Electrical (Building Construction) Phase				**70.6**															
8	Architectural Coating for Portala Booster Pump Station	Compressor (air)	1	40	78	75	0		74.4	8	480	70	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Architectural Coating for Portala Booster Pump Station Phase				**70.4**															

Construction Schedule

Year	2025												2026											
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Construction Phase																								
Portola Booster Pump Station Building Earthwork (Grading)	✔	✔																						
Pipeline Installation Trenching	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔													
Portola Booster Pump Station Building Mechanical/Electrical (Building Construction)			✔	✔	✔	✔	✔	✔	✔	✔	✔													
Architectural Coating for Portala Booster Pump Station												✔												

Combined Construction Noise at Nearest Offsite Receptor:																								
Portola Booster Pump Station Building Earthwork (Grading)	72.7	72.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pipeline Installation Trenching	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	90.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Portola Booster Pump Station Building Mechanical/Electrical (Building Construction)	0.0	0.0	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating for Portala Booster Pump Station	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concurrent Total (dBA)	**90**	**90**	**90**	**90**	**90**	**90**	**90**	**90**	**90**	**90**	**90**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

To User: bordered cells are inputs, unbordered cells have formulae
enter "0" to turn off air or grnd absorption terms, "1" to turn on

air abs? 0
grnd abs? 0

magnitude of threshold (dBA) = 80
allowable hours over which Leq is to be averaged = 8

Source, receptor, and barrier all share same reference grade elevation; unless otherwise noted)
= Barrier of input height inserted between source and receptor

Project Phase No.	Project Phase Description	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
4	Grading for Eastbrook Pump Station	Front End Loader	1	40	79	75	0		75.4	8	480	71	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Excavator	1	40	81	75	0		77.4	8	480	73	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	1	20	80	75	0		76.4	8	480	69	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Grading for Eastbrook Pump Station Phase				**76.5**																	
5	Pipeline Installation Trenching	Excavator	3	40	81	130	0		72.6	8	480	73	5	5	0	5	125	130	7.1	125.1	130.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Backhoe	3	40	78	130	0		69.6	8	480	70	5	5	0	5	125	130	7.1	125.1	130.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Front End Loader	3	40	79	130	0		70.6	8	480	71	5	5	0	5	125	130	7.1	125.1	130.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Roller	3	20	80	130	0		71.6	8	480	69	5	5	0	5	125	130	7.1	125.1	130.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Pipeline Installation Trenching Phase				**77.5**																	
9	Expansion of Existing Pump Station (Eastbrook Pump Station)	Crane	1	16	81	75	0		77.4	8	480	69	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
		Man Lift	1	20	75	75	0		71.4	8	480	64	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Expansion of Existing Pump Station (Eastbrook Pump Station) Phase				**70.6**																	
10	Architectural Coating for Eastbrook Pump Station	Compressor (air)	1	40	78	75	0		74.4	8	480	70	5	5	0	5	70	75	7.1	70.2	75.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
								Total Aggregate Noise Exposure from Architectural Coating for Eastbrook Pump Station Phase				**70.4**																	

Construction Schedule

Year	2025												2026											
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Construction Phase

Grading for Eastbrook Pump Station	✔																							
Pipeline Installation Trenching	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔													
Expansion of Existing Pump Station (Eastbrook Pump Station)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔													
Architectural Coating for Eastbrook Pump Station												✔												

Combined Construction Noise at Nearest Offsite Receptor:

Grading for Eastbrook Pump Station	76.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pipeline Installation Trenching	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Expansion of Existing Pump Station (Eastbrook Pump Station)	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating for Eastbrook Pump Station	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concurrent Total (dBA)	**80**	**78**	**78**	**78**	**78**	**78**	**78**	**78**	**78**	**78**	**78**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Attachment B

Pump Station Operational Noise Modeling Data

below from Bies & Hansen, *Engineering Noise Control* , 2nd ed. (1996), Section 11.6 and Table 11.0

Unweighted OBCF PWL (dB)

OBCF (Hz)	kW	rpm	31.5	63	125	250	500	1000	2000	4000	8000	Notes
			13	12	11	9	9	6	9	13	19	
	< 75kW	3000-3600										
		1600-1800										
		1000-1500										
		450-900										
	> 75kW	3000-3600										
		1600-1800	92	93	94	96	96	99	96	92	86	
		1000-1500										
		450-900										
			92	93	94	96	96	99	96	92	86	values for other worksheets

input for your pump:

rpm	kW
1800	448

72	10	3000	3600
75	10	1600	1800
70	10	1000	1500
68	10	450	900
86	3	3000	3600
89	3	1600	1800
84	3	1000	1500
82	3	450	900

Appendix E

Native American Heritage Commission & Tribal Correspondence (CONFIDENTIAL)