DRAFT

First Aqueduct Treated Water Tunnels Rehabilitation Initial Study/Mitigated Negative Declaration

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly bill
ALUCP	Airport Land Use Compatibility Plan
BMP	Best Management Practice
BSRA	Biologically Significant Resource Areas
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	methane
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO2e	carbon dioxide equivalent
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
dBA	A-weighted decibels
DDW	Division of Drinking Water
DOC	California Department of Conservation
DPM	diesel particulate matter
DWR	Department of Water Resources
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
First Aqueduct	First San Diego Aqueduct
GHG	greenhouse gas
HMA	Habitat Management Area
ips	inches per second
IS/MND	Initial Study/Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
kg	kilogram
L_{eq}	equivalent continuous sound level (time-averaged sound level)
L_{max}	maximum sound level during the measurement interval
LOS	Level of Service
LSAA	Lake and Streambed Alteration Agreement
MMA	Managed Mitigation Area
MSCP	Multiple Species Conservation Plan
MT	metric tons
MWD	The Metropolitan Water District of Southern California

Acronym/Abbreviation	Definition
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native America Heritage Commission
NCCP Act	Natural Communities Conservation Planning Act of 1991
NCCP/HCP	Natural Community Conservation Plan/Habitat Conservation Plan
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OPR	Governor's Office of Planning and Research
PAMA	Pre-Approved Mitigation Areas
PIZ	Probable Impact Zone
PM_{10}	respirable particulate matter with a diameter equal to or less than 10 microns
$PM_{2.5}$	fine particulate matter with a diameter equal to or less than 2.5 microns
PMPP	Programmatic Master Plan Permit
PPV	peak particle velocity
project or proposed project	First Aqueduct Treated Water Tunnels Rehabilitation Project
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
RAQS	Regional Air Quality Strategy
RCP	reinforced concrete pipe
ROW	right-of-way
RTP	Regional Transportation Plan () and
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB	Senate bill
SCS	Sustainable Communities Strategy (
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SIP	California State Implementation Plan
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_x	sulfur oxides
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicle Miles Traveled
VOC	Volatile organic compound
Water Authority	San Diego County Water Authority
Wildlife Agencies	CDFW and USFWS, referred to collectively

1 Introduction

1.1 Project Background and Overview

The San Diego County Water Authority (Water Authority) was established in 1944 as the wholesale water provider for western San Diego County, and currently serves 24 member agencies that consist of six cities, 17 special districts, and Marine Corps Base Camp Pendleton. Between 75% and 90% of the total supply for the three million San Diego County residents comes from imported water supplied by the Water Authority. The two main sources of this imported water are the Sacramento/San Joaquin rivers in the San Francisco Bay-Delta system to the north (State Water Project water) traveling south via the California Aqueduct, and from the Colorado River coming from the east via the Colorado River Aqueduct. Imported water is conveyed via the First and Second San Diego Aqueducts, each of which consist of a series of parallel pipelines that extend from the Water Authority's northern service area boundary near the San Diego County border with Riverside County to the south throughout the Water Authority's service area. The First and Second San Diego Aqueducts and the Water Authority's service area are shown on Figure 1.

The First San Diego Aqueduct (First Aqueduct) consists of Pipeline 1 and Pipeline 2, 48-inch diameter pipes constructed and placed into service by 1947 and 1954, respectively. Both pipelines were originally built to convey chlorinated Colorado River water from the Metropolitan Water District of Southern California (MWD) to Water Authority member agencies. In the 1970's, the northern portion of the aqueduct was reconfigured to deliver treated water from MWD's Water Treatment Plant at Lake Skinner, in Riverside County. Pipeline 1 was mostly constructed by trench installation, but tunnels were constructed at several locations to convey water by gravity through steep terrain and avoid the need for pumping. When Pipeline 2 was constructed, the two pipelines were connected at the pre-existing tunnels, effectively creating a single pipeline from an operational standpoint. The pipelines converge on the northern (upstream) end and diverge on the southern (downstream) end at what are referred to as bifurcation structures, which feature mechanical equipment for aqueduct operations, enable personnel and equipment access to the tunnels and their adjoining pipeline segments, and ventilate the pipelines.

The Water Authority is planning to implement the First Aqueduct Treated Water Tunnels Rehabilitation Project (project or proposed project), which would repair and/or replace existing aqueduct infrastructure on the northern portion of the First Aqueduct located in unincorporated San Diego County communities of Lilac and Valley Center and north of the City of Escondido. The First Aqueduct, which is made up of Pipeline 1 and Pipeline 2, features three treated water pipeline tunnels, referred to, from north to south, as the Lilac Tunnel, Red Mountain Tunnel, and Oat Hills Tunnel. These tunnels were built in 1947 during construction of Pipeline 1 and now convey treated water to Water Authority member agencies in the northern portion of the Water Authority service area.

Inspections of the tunnel pipelines conducted in 2019 and 2020 identified degraded conditions in certain locations that are allowing groundwater infiltration and leading to structural concerns. The project would repair these facilities to prevent impacts on the quality of treated water conveyed by the tunnels, maintain the tunnels' structural integrity, and extend the tunnels' service life.

Each of the three tunnels feature bifurcation structures at the northern and southern end where Pipeline 1 and Pipeline 2 converge into a single tunnel pipeline in the north and then diverge to parallel pipes in the south. Each structure consists of an approximately 14-feet-long by 6-feet-wide buried chamber with removable concrete covers, and an aboveground cylindrical vent structure. Access to the interior of the tunnels to

construct the proposed project improvements may require demolition of these bifurcation structures and replacement after completion of the tunnel improvements.

1.2 Purpose and Need

The Water Authority identified a need to perform maintenance on its water conveyance infrastructure, which will protect the quality of treated water it delivers to its member agencies and extend the service life of its facilities. The following outlines the Water Authority's purpose in implementing the project to meet this need:

- Prevent groundwater infiltration into the First Aqueduct treated water tunnels
- Repair and prevent future deterioration in the First Aqueduct treated water tunnels
- Extend the service life of the First Aqueduct treated water tunnels

1.3 California Environmental Quality Act Compliance

Approval by the Water Authority Board of Directors to award a construction contract to design and build the project constitutes a discretionary action that triggers environmental review requirements pursuant to the California Environmental Quality Act (CEQA), with the Water Authority serving as lead agency under CEQA. The Water Authority prepared a CEQA Initial Study (IS) to analyze and consider the environmental impacts of implementing the project, which is presented herein. Based on the results of the IS, the Water Authority has made the determination that a Mitigated Negative Declaration (MND) is the appropriate environmental document for compliance with CEQA (California Public Resources Code, Section 21000 et seq.). As stated in CEQA Section 21064, an MND may be prepared for a project subject to CEQA when an IS has identified no potentially significant effects on the environment when mitigation is identified that can reduce impacts to less than significant levels.

This IS/MND has been prepared by the Water Authority as lead agency and is in conformance with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of the MND and the IS Checklist is to disclose to the public and project decision-makers any potentially significant impacts associated with the proposed project, and to identify mitigation measures that will be incorporated into the project design, as necessary, to reduce or eliminate potentially significant impacts of the project. The IS/MND will be released for public review pursuant to CEQA requirements as described below in Section 1.4 of this IS/MND.

The project is currently in the preliminary design phase, and the Water Authority has developed engineering assumptions for purposes of defining the project and conducting environmental impact review pursuant to CEQA. These assumptions are based on Water Authority engineers' knowledge of the infrastructure condition, project planning performed to date, and an informed understanding of likely construction approaches that would be employed on the project. As design progresses and further project details are realized, the Water Authority will review this detail against the project description assumptions presented in this IS/MND to verify the adequacy of the environmental impact review and compliance with CEQA. If necessary, the Water Authority may issue addenda to the IS/MND to document minor changes in the project and the associated environmental analysis. If subsequent changes in the project are substantial to the extent that they "require major revisions of the previous…negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects," then the Water Authority would be required by Section 15162 of the State CEQA guidelines to prepare a subsequent IS/MND subject to an additional public review process.

1.4 Public Review Process

The IS/MND is being made available for public review and comment pursuant to Section 15073 of the State CEQA Guidelines. A copy of the draft IS/MND and related documents are available for review on the Water Authority's website (https://www.sdcwa.org/projects-programs/programs/environmental/). The Water Authority has identified a 30-day review and comment period for the draft IS/MND commencing October 18, 2021, and terminating November 18, 2021.

Comments on the IS/MND may be made in writing before the end of the public review period. In reviewing and commenting on the IS/MND, affected public agencies and interested members of the public should focus on the adequacy of the document in identifying and analyzing the project's possible impacts on the environment. Following the close of the public comment period, the Water Authority will consider this IS/MND and comments thereto in determining whether to approve the proposed project.

Written comments on the IS/MND will be accepted in hard copy or email format, and should be received at the following street address or email address by 5:00 p.m., November 18, 2021:

San Diego County Water Authority
4677 Overland Avenue
San Diego, California 92123
Contact: Sean Paver
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2 Project Description

2.1 Introduction

The treated water section of the First Aqueduct includes three tunnels, the Lilac, Red Mountain, and Oat Hills Tunnels, as shown in Figure 1. These three tunnels and associated bifurcation structures and facilities are the focus of the proposed project addressed in this IS/MND. The Lilac Tunnel is approximately 3,450 feet long and spans a mostly agricultural area in the community of Pala. The Red Mountain Tunnel is approximately 6,000 feet long and traverses rural residential land and undeveloped open space west of Valley Center. The Oat Hills Tunnel is approximately 3,600 feet long and spans a rural residential and agricultural area north of Escondido, and west of Turner Lake. Together, the three tunnels extend along an approximately 7-mile stretch of the First Aqueduct. Figures 2A, 2B, and 2C show aerial views of the three project-related tunnel alignments.

Construction of the First Aqueduct tunnels occurred via two methods. The Lilac and Red Mountain Tunnels were constructed via open-cut trench installation of reinforced concrete pipe (RCP) from each bifurcation structure to a location where steep slopes made open-cut infeasible; at these locations, construction consisted of tunneling through the mountain. The full length of the Oat Hills Tunnel was constructed via tunneling. Figures 3A, 3B, and 3C show the trenched and tunneled segments as well as an elevation profile of the three tunnels. For the Oat Hills Tunnel and the tunneled portions of the Lilac and Red Mountain Tunnels, tunneling was completed by blasting rock with explosives and mechanical removal of spoil material. The pipe installed for the open-cut sections is a round 72-inch RCP. For the tunneled portion, a concrete bottom was poured, followed by the installation of horseshoe-shaped steel forms used to create the cast-in-place concrete lined tunnel. Table 2-1 provides a summary of the tunnel lengths and construction methods.

Table 2-1. Tunnel Construction Method and Lengths

Tunnel	Length (feet)	
	Open-Cut Reinforced Concrete Pipe	*Concrete Lined Horseshoe Tunnel*
Lilac	2,950	500
Red Mountain	2,900	3,100
Oat Hills	0	3,600

Source: Water Authority 2021.

The Water Authority has determined that rehabilitation of the three tunnels is required to prevent additional structure deterioration and ensure system reliability for continued delivery of drinking water to its member agencies.

2.2 Project Location and Environmental Setting

The proposed project is located in a rural area in unincorporated northern San Diego County, approximately 3 miles east of Interstate 15, as shown on Figure 1.

The Lilac Tunnel, the northernmost tunnel, is located within the unincorporated County of San Diego community planning area of Valley Center, just west of Couser Canyon Road, and shown on Figure 2A. The Lilac Tunnel upstream bifurcation structure is located approximately 1,000 feet southwest of the intersection of Camino

del Venado and Couser Canyon Road. The Lilac Tunnel downstream bifurcation structure is located approximately 1,400 feet southwest of the intersection of San Gabriel Way and Couser Canyon Road. The Lilac Tunnel spans a length of approximately 3,450 feet.

The Red Mountain Tunnel is located near the southern boundary of the Valley Center community planning area, from approximately 570 feet north of the intersection of Mystery Mountain Road and Coulter Creek Road to approximately 1,500 feet north of the intersection of Wilkes Road and Turner Lane, as shown on Figure 2B. The Red Mountain Tunnel alignment follows portions of Coulter Creek Road and Wilkes Road. The Red Mountain Tunnel spans a length of approximately 6,000 feet.

The Oat Hills Tunnel is located near the northern boundary of the County's unincorporated North County Metropolitan Subregion, north of the City of Escondido and east of Valley Center, as shown on Figure 2C. The northern tunnel entrance is located approximately 3,400 feet south of the southern end of the Red Mountain Tunnel, along Cougar Pass Road. The southern end of the Oat Hills Tunnel is located just north of North Broadway, approximately 1,500 feet north of the intersection of Reidy Canyon Road and North Broadway. The Oat Hills Tunnel is approximately 3,600 feet long.

The tunnel alignments span mostly hilly terrain, traversing a variety of land including active agricultural uses, rural residences, roadways, and heavily vegetated undeveloped areas. Surrounding land uses are dominated by open space, orchards and other agricultural operations, and scattered rural residential development. The Oat Hills Tunnel is proximate to denser development, just east of the single-family residences of Hidden Meadows and the Boulder Oaks Golf Course. Additional details regarding the environmental setting of each primary work area are discussed below in Section 2.3.3 of this IS/MND.

2.3 Project Characteristics

The project entails maintenance, improvement, and replacement of existing First Aqueduct infrastructure, including segments of three tunnel pipelines and the bifurcation structures positioned at the upstream and downstream ends of each tunnel. This section describes the characteristics of project construction, proposed permanent and temporary features of the project, and work areas that would result in temporary and permanent impacts related to project implementation. These characteristics form the basis of analyzing the potential environmental impacts pursuant to CEQA.

The Water Authority was progressing through the project design process at the time of this IS/MND's preparation. Because final design is pending, the project description incorporates assumptions for potential pipeline rehabilitation methods and prospective work areas that would be used by the contractor to implement the project. These assumptions are based on the current understanding of Water Authority engineers as gained through preliminary planning work and experience with similar infrastructure improvement projects, and are appropriate to inform environmental impact analysis pursuant to CEQA. Rehabilitation methods are treated as options throughout this IS/MND, with impacts related to all options analyzed for each of the three tunnels. Tunnel rehabilitation methods may vary between the three tunnels and a combination of methods may be used depending on variables such as existing tunnel conditions and access constraints.

As the project design progresses, the Water Authority will continue to review details against the assumptions presented in this IS/MND to ensure the project that is ultimately constructed remains in compliance with CEQA. Should the ultimate design diverge from that analyzed in this IS/MND, the Water Authority will determine necessary steps for the project's CEQA compliance, including additional environmental impact analysis, if needed, and preparation of either an addendum or a subsequent IS/MND, whichever is appropriate.

2.3.1 Tunnel Rehabilitation

Condition assessment of the three tunnel pipelines and preliminary project planning conducted by the Water Authority identified two rehabilitation options that are most likely to be employed on this project—Slip Lining and Spray-On Polymer application options, as described below in greater detail. While all options are addressed in the analysis contained in Section 3 of this IS/MND, the Slip Lining option represents the more conservative scenario in terms of environmental impacts because it would require a more substantial construction mobilization, larger work areas, more heavy equipment and personnel involvement, and longer duration. Refer to Figures 4A through 4E, which identify the anticipated temporary construction and permanent operational impact areas used for the basis of analysis. All work is to occur within the Water Authority right-of-way (ROW), access easements, and existing Water Authority access roads to the extent feasible; use and/or improvement of other existing roads may be needed.

Slip Lining Option

The Slip Lining option would essentially construct a new pipeline inside the existing tunnel by inserting sections of liner inside the interior of the pipe, moving them to the appropriate position, joining them together, and grouting the annular space between the liner and the existing concrete. The Water Authority employs this method to reline their pre-stressed concrete cylinder pipe. Slip lining is anticipated to use either welded steel pipe, which would entail joining sections by welding them together, or fiber-reinforced polymer pipe, which employ rubber gasketed bell and spigot joints.

Personnel and equipment access to the tunnel interior for installation of liner sections would be obtained by excavating and removing the existing bifurcation structures and surrounding area to establish what are referred to as portals. The sides of the portal pits would either be vertically shored to minimize the width of excavation or, if adequate space is available, the pit walls would be laid back with 1:1 slopes. The depth of each pit would vary depending on the depth of the tunnel at the respective location, with the deepest being approximately 25 feet below ground surface. The length and width of the excavation would also vary depending on the depth, but would typically be approximately 60 feet long by 20 feet wide. Portals would be developed at each tunnel's bifurcation structures, which would entail demolition of these structures and reconstruction at the end of the project, as further discussed below in Section 2.3.2. For purposes of conservative analysis, this IS/MND assumes additional portals would be developed between the bifurcation structures to provide additional access for rehabilitation work. The additional portals would be developed on the Lilac Tunnel and the Red Mountain Tunnel, at the interface between the tunnels and upstream and downstream RCP. Two of these additional portals would be developed on the Lilac Tunnel, which features one tunnel segment. The Red Mountain Tunnel features two tunnel segments, so three additional portals would be developed, one upstream of the northern tunnel segment, one in between the two tunnel segments, and one downstream of the southern tunnel segment. Following rehabilitation work, the Water Authority would construct new permanent manways for access to the interior of the tunnels at these portal locations, which is needed for improved inspection and maintenance capabilities. The Oat Hills Tunnel is not anticipated to entail additional portals beyond the two bifurcation structure locations, so no new manways would be constructed.

Once access to each tunnel is established at the portals, the slip lining process would begin. Pipe liner sections would be delivered to each portal site on long flat-bed trailers. Relining work would consist of lowering pipe liner sections into the access portals using a crane or excavator, transporting the liners to the installation point inside the existing tunnel using a diesel-powered cart or electric winches, and connecting the liner sections together. Once all liner sections are in place, crews would pump grout into the space between the exterior wall of the new liner and the interior wall of the existing tunnel using a concrete mixer and pump. Grouting would be followed by the mortar

lining process if welded steel liners are used, which consists of placing concrete mortar on the inside of the new liner. This process would begin with the insertion of a spin line mortar machine into the pipe at each portal site. A grout mix would then be fed to the machine and the mortar would be applied onto the inside of the pipeline. During all work inside the pipeline, ventilation will be provided by operating large blower fans at the open portals.

Spray-On Polymer Application Option

The Spray-On Polymer application option involves installing a coating onto the interior surface of the existing tunnel to add structural support and infiltration control. This option is not capable of withstanding high-pressure water infiltration, so it may not be a feasible solution for all tunnels. Liquid polymer material would be delivered to the project work areas in tanks, pumped into the portal, and applied by handheld powered sprayers similar to paint sprayers. This option assumes workers and application equipment would access the tunnels via the existing bifurcation structures or new access manways, which would be smaller than the portals created for the slip-lining option. The access manways are anticipated to be installed at the interface between the tunnels and upstream and downstream RCP. During all work inside the pipeline, ventilation will be provided by operating large blower fans at the open bifurcation structures and access manways. Refer to Section 2.4 for a description of anticipated construction equipment, workers, and phasing.

2.3.2 Bifurcation Structure Replacement

Depending on the access method for tunnel rehabilitation, the bifurcation structures may require demolition. Removal of a bifurcation structure would require replacement to preserve access to the tunnels for inspection and maintenance personnel and aqueduct operations. The environmental impact analysis presented in this IS/MND assumes that all six bifurcation structures would be removed and replaced . Under this scenario, bifurcation structure replacement would entail deep excavations to fully expose the structure's underground components at the horizontal connection to the tunnel pipeline and aqueduct pipes, allowing demolition, removal, and replacement of the concrete vaults. Excavation areas are anticipated as 70 feet wide by 105 feet long pits centered on and including the existing structures. Pits may be vertically shored or sloped depending on surrounding terrain and topography.

Once the existing bifurcation structures are removed and access needs for tunnel pipe improvements have been satisfied, replacement structures would be constructed, including new concrete vaults, mechanical equipment, and access equipment such as stairs and ladders. These structures would be constructed to the standards of the most recent California Building Code, including seismic structural requirements. Structure reconstruction would also include replacement of existing chain-link perimeter fencing. All work would be completed within the Water Authority ROW in and around the bifurcation structures. The operational characteristics of the bifurcation structures would remain unchanged.

2.3.3 New Access Manways

On the Lilac and Red Mountain Tunnels, the project would construct new permanent access manways at the portal sites established between the bifurcation structures, including two on the Lilac Tunnel and three on the Red Mountain Tunnel. These manways would improve access into the tunnels for inspection and maintenance personnel and equipment. They would be constructed as rectangular vaults featuring partially aboveground concrete boxes, approximately 10 feet wide by 8 feet long, with metal hatches and ladders. Maintenance aprons would be established around the perimeter of each structure, with gravel surfaces that would be approximately 20 foot diameter circles. Where needed, existing Water Authority access roads would be extended to reach the maintenance aprons.

2.3.4 Project Work Areas

The work areas assumed for project-related construction impacts in this IS/MND are shown in Figures 4A through 4H. These work areas and their respective boundaries were identified by Water Authority project engineers as likely sites needed to implement the Slip Lining or Spray-On Polymer options. Boundaries of potential project work areas were drawn to enable conservative environmental impact analysis. Potential portal work areas have been numbered sequentially from Portal 1 in the north to Portal 10 in the south for convenient identification and description in this IS/MND; portals may be renamed or renumbered further along in the planning process. Construction staging area for materials laydown, equipment storage, and personnel parking is anticipated to be located at one or more of the work areas described below. Construction activities are anticipated to be confined to Water Authority ROW. Work areas would be surrounded by temporary chain-link fence for security purposes, which would be removed at the completion of work at individual sites.

Lilac Tunnel

Portal 1 is the Lilac Tunnel upstream bifurcation structure work area, which is located in an active avocado grove. It would be accessed from an existing Water Authority access road connecting to Camino del Venado toward the north.

Portal 2A and 2B is the Lilac Tunnel mid-tunnel work area, which straddles San Gabriel Way, a private road that connects to Couser Canyon Road in the east. It is also accessed from the north by the same Water Authority access road leading to Portal 1. As analyzed in this IS/MND, a single work area is anticipated to feature two portals for tunnel access on either side of San Gabriel Way. The portal sites are the locations of the original tunnel pits used to build the pipeline, where the brief tunneled segment joins with RCP installed by trench. Portal 2A and 2B include dense native vegetation north of San Gabriel Way and active grove operations south of that road.

Portal 3 is the Lilac Tunnel downstream bifurcation structure work area, which is accessed by a Water Authority access road that extends north from Calle Oro Verde, a private road connecting to Couser Canyon Road in the east. This portal work area is in an area disturbed by past grove operations, with an existing residence located just beyond the western boundary.

In addition to these three portal work areas, the IS/MND also assumes establishing a temporary staging and laydown area along the Lilac Tunnel ROW south of Portal 2B and north of Portal 3. An access road leading through an active orchard to Portal 2, Portal 3, and the planned staging yard are also part of the work areas assumed in this IS/MND, as shown in Figure 2A. This linear feature is likely a remnant of a road used for original tunnel construction and installation of the pipeline. The Water Authority does not use this road for routine access, but they still have underlying access rights. Minor improvements of the road such as regrading and laying down gravel may be necessary to stabilize the road for construction access, so this has been assumed as a project impact area.

Red Mountain Tunnel

Portal 4 is the Red Mountain Tunnel upstream bifurcation structure work area, which is located in a developed area featuring agricultural uses and rural residences. It is accessed from Coulter Creek Road, a private road extending north from Mystery Mountain Road.

Portal 5 is the northernmost of three Red Mountain Tunnel mid-tunnel portals. It is accessed via a Water Authority access road extending south from Mystery Mountain Road, which dead-ends before approaching a drainage

featuring dense riparian vegetation. The Red Mountain Tunnel features two tunnel spans (see Figure 2B). Portal 5 is the upstream end of the northern of these two tunneled segments, and has been identified as a portal site because the pipeline is shallow enough in this location to allow excavation to the pipeline depth.

Portal 6 is the central of the three Red Mountain Tunnel mid-tunnel portals. It represents the location of a short segment of original open-cut trench installation between the two tunneled segments (see Figure 2B), where the pipeline is shallow enough to allow excavation for access. A drainage with riparian vegetation runs through the northern portion of the work area and native uplands vegetation is located in the southern portion. Portal 6 is accessed by an unpaved road north from Wilkes Road; this access road extends beyond the Water Authority aqueduct ROW. Minor improvements of the road such as regrading and laying down gravel may be necessary to stabilize the road for construction access, so this has been assumed as a project impact area. Establishing a permanent manway at this location would require constructing a short extension of the access road into the Water Authority ROW. Potential rockfall hazard at this work area exists due to a combination of steep cut slopes created during initial installation of the respective tunnels and fractured rock observed at these locations during field investigations. Standard construction and design practices at this location may include removal of fractured rocks to eliminate hazards or installing reinforcement such as gunite, netting, and/or walls to prevent falling rocks from harming workers or others who may be present down-slope of the affected area. These practices will be limited to hard rock/steep slopes where vegetation does not exist.

Portal 7 is the southernmost of the three Red Mountain Tunnel mid-tunnel portals, accessed from Wilkes Road and by a Water Authority access road extending north from Portal 8, described below. This portal represents the southern/downstream end of the Red Mountain Tunnel's southern tunneled segment. Active orchard uses occur in the eastern side of the work area, with native uplands vegetation on the western side.

Portal 8 is the Red Mountain Tunnel downstream bifurcation structure work area, which is positioned along a windy portion of Wilkes Road. The work area features steep slopes covered in native uplands vegetation, and a small drainage cuts across the northern edge of the work area boundary. This portion of Wilkes Road is maintained by the Water Authority for facility access and patrol. Potential for rockfall hazard exists at this location and standard design practices would be implemented, as described for Portal 6, above.

Oat Hills Tunnel

Portal 9 is the Oat Hills Tunnel upstream bifurcation structure work area, which is accessed from the north by a partially paved and partially unpaved Water Authority access road extending from Betsworth Road. The work area features mature oak woodland with a drainage running along the northwestern corner.. This bifurcation structure is also accessed by a windy section of Cougar Pass Road that extends outside the aqueduct ROW but is maintained by the Water Authority. Potential for rockfall hazard exists at this location and standard design practices would be implemented, as described for Portal 6, above.

Portal 10 is the Oat Hills Tunnel downstream bifurcation structure work area, located at the northern terminus of North Broadway, which is a private road in this location. The site is also accessed from the east via a Water Authority-maintained road extending from Cougar Pass Road. The Portal 10 work area is mostly disturbed and features trailers and vehicle parking, with scattered oaks and non-native trees and patches of native uplands habitat present. Potential for rockfall hazard exists at this location and standard design practices would be implemented, as described for Portal 6, above.

The Oat Hills Tunnel is the only project-related tunnel lacking a mid-tunnel portal work area. This is because the tunnel features one long tunnel segment (see Figure 2C) and lacks locations between the bifurcation structures where the pipeline is shallow enough for feasible access by surface excavation.

Table 2-2 below provides an overview listing the portals and the sizes of their respective work areas.

Table 2-2. Portal Descriptions and Acreages

Portal Number	Description	Acreage
Portal 1	Lilac Tunnel Upstream Bifurcation Structure	2.05
Portal 2A	Lilac Tunnel Northern Mid-Tunnel Access	1.33
Portal 2B	Lilac Tunnel Southern Mid-Tunnel Access	1.59
Portal 3	Lilac Tunnel Downstream Bifurcation Structure	0.81
Portal 4	Red Mountain Tunnel Upstream Bifurcation Structure	0.87
Portal 5	Red Mountain Northern Mid-Tunnel Access	3.09
Portal 6	Red Mountain Central Mid-Tunnel Access	0.28
Portal 7	Red Mountain Southern Mid-Tunnel Access	1.05
Portal 8	Red Mountain Downstream Bifurcation Structure	0.55
Portal 9	Oat Hills Tunnel Upstream Bifurcation Structure	0.67
Portal 10	Oat Hills Tunnel Downstream Bifurcation Structure	2.50

The total area of all 11 portal work areas is approximately 14.79 acres.

2.3.5 Project Staging and Access

Construction staging, including equipment storage, material laydown, and worker parking would occur at individual portal work areas described above. A single larger temporary staging yard, approximately 2.54 acres would also be established for the project within the Lilac Tunnel ROW south of Portal 2B. This staging yard would house field office trailers, additional storage for equipment and materials, and equipment fueling areas. Establishing the main staging site would entail vegetation clearing, minor grading, and laying gravel to create a flat and stable surface, and it would be surrounded by a chain-link fence for security purposes.

Access to the various work areas would be provided by a combination of existing public roads, Water Authority maintenance roads, and private roads to which the Water Authority has access rights as part of their regular operations. The Water Authority maintains their access roads in good condition for truck travel and occasional delivery of maintenance equipment and materials. Most existing access routes are not anticipated to require improvements for the purposes of constructing this project. Aside from this routine maintenance, this IS/MND includes in the project description potential improvements of two roads—an orchard road extending from San Gabriel Way to Portal 2B and Portal 3, and an existing road leading from Wilkes Road to Portal 6. Improvements would include regrading to fill ruts, placing gravel to stabilize driving surfaces, and minor widening to allow equipment access. Minor improvements to other access roads may be needed during construction and could include activities such as filling ruts and/or stabilizing driving surfaces.

2.4 Construction Phasing and Schedule

For the purposes of the analysis, Table 2-3 presents the construction phasing and anticipated equipment assumed for each tunnel rehabilitation option, with project construction activities anticipated to extend over an approximate

7-month period. This is a conservative assumption for conservative environmental analysis, and it is more likely each tunnel would be rehabilitated as part of its own construction phase. The duration is approximate and may vary due to differing site conditions and/or contractor scheduling. Typical construction work hours would be Monday through Friday, 7 a.m. to 7 p.m. The project would also require several 24-hour work periods over 10-day spans referred to as "shutdowns," when water is cleared from the pipes to safely allow access and construction activities. These shutdowns are limited in duration to prevent extended water service interruptions for Water Authority member agencies.

Table 2-3. Anticipated Construction Phasing and Equipment

Construction Phase	Anticipated Equipment (per work area)	Estimated Duration
Site mobilization, clearing, grubbing, and vegetation removal	Dozer (1) Loader (1) Dump truck (1)	5 days (per work area)
Structure Demolition (bifurcation structure locations only)	Concrete saw (1) Breaker (1) Loader (1) Excavator (1) Wheeled crane (1)	5 days (per work area)
Excavation and portal development	Excavator (1) Loader (1) Heavy truck (1) Wheeled crane (1)	5 days (per work area)
Tunnel slip lining	Loader (1) Excavator (1) Blower/fan (1) Heavy truck (1) Wheeled crane (1) Concrete pump/mixer truck (1) Welder (2) Generator (2)	50 days[1]
Bifurcation structure replacement	Loader (1) Excavator (1) Heavy truck (1) Wheeled crane (1) Concrete pump/mixer truck (1)	20 days (per work area)
Manway construction	Excavator (1) Loader (1) Heavy truck (1) Wheeled crane (1)	3 days (per work area)
Tunnel spray-on polymer application[2]	Blower/fan (1) Generator (1)	40 days[1]
Site finishing and architectural coatings	Blower/fan (1) Generator (1)	10 days (per work area)
Habitat and site restoration	Heavy truck (2) Dozer (1)	3 days (per work area)
Demobilization	Heavy truck (2)	2 days (per work area)

[1] Assumes concurrent lining of all three tunnels
[2] This activity would occur in place of the tunnel slip lining, if this option is selected

2.5 Post-Construction Habitat Restoration

All temporary work areas used for project construction would be restored to pre-project conditions once activity is complete, as required by the Water Authority's Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Section 6.5.1.4.2 of the NCCP/HCP requires mitigation for all one-time temporary impacts to sensitive vegetation communities by revegetation of the temporary impact area. Section 6.6.1 of the NCCP/HCP states that, under Water Authority supervision, a qualified restoration specialist would prepare and submit to the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS; collectively referred to as the Wildlife Agencies) for their review and concurrence a restoration plan for each restoration site exceeding 0.25 acre. All work areas identified for the project are anticipated to exceed 0.25 acre, so they would be subject to this requirement. If work areas are refined during final design to be less than 0.25 acre, they would still require habitat restoration but they would not need to be incorporated into the restoration plan subject to the Wildlife Agencies review.

The restoration plan would establish measures to restore a site's previous biological resources and minimize establishment of invasive nonnative plant species. Habitat restoration activities would occur under the supervision and direction of an environmental surveyor who has experience developing and implementing native restoration plans in Southern California. The restoration plan would define success criteria appropriate to each affected habitat type, and the Water Authority would monitor and maintain the sites on a quarterly basis for a 5-year period. If a site meets the designated criteria after that period, mitigation is deemed successful and the Water Authority may terminate maintenance and monitoring. If a site is not meeting the designated criteria, the Water Authority may elect to continue maintenance and monitoring to improve the conditions at the site, or they may deem the mitigation unsuccessful and consider the site as a permanent impact subject to off-site mitigation obligations of the NCCP/HCP. The Water Authority must receive concurrence from the Wildlife Agencies that each restoration effort is successful, as discussed in Section 6.6 of the NCCP/HCP.

For portions of temporary impact areas that are devoid of native habitat, restoration would entail revegetation with an erosion-control seed mix to stabilize the site after construction. Access roads and paved areas would be restored to their pre-project condition.

2.6 Project Operation

The proposed project would not entail changes in routine aqueduct operation. However, this IS/MND assumes the project would construct new permanent pipeline access structures at the sites of the mid-tunnel portals along the Lilac Tunnel (Portal 2a and 2b) and the Red Mountain Tunnel (Portals 5, 6, and 7), allowing maintenance access points to the tunnels in addition to the bifurcation structures. Addition of these structures would lead to a slight change in routine Water Authority ROW patrol and inspection/maintenance of the new structures, but this would not be a substantial change from existing conditions. No additional staff is anticipated to be required for continued operation of the proposed project.

2.7 Permits and Approvals

The Water Authority is lead agency pursuant to CEQA, and issuance of a construction contract by the Water Authority Board of Directors is the discretionary action that triggers the need for CEQA compliance. Table 2-4 lists permits and approvals by other agencies aside from the Water Authority that would be required to implement the project. The agencies issuing these approvals would serve as CEQA responsible agencies, relying on this IS/MND to verify that appropriate environmental impact review was performed pursuant to CEQA prior to issuing a decision. The project entails excavation and fill in jurisdictional waters, which would require obtaining a Lake or Streambed

Alteration Agreement from CDFW and a Letter of Permission from the U.S. Army Corps of Engineers (USACE) pursuant to the Water Authority's Programmatic Master Plan Permit (PMPP) pursuant to Section 404 of the federal Clean Water Act. For storm water pollution protection, the project will be subject to compliance with the State Water Resources Control Board (SWRCB) Construction General Permit (2009-0009-DWQ, amended by 2010-0014-DWQ & 2012-0006-DWQ, and as subject to future amendment).

Table 2-4. Anticipated Permits and Approvals

Agency	Permit/Approval
U.S. Army Corps of Engineers	Letter of Permission under PMPP (SPL-2012-00106-PJB)
California Department of Fish and Wildlife	Lake or Streambed Alteration Agreement or Authorization under Programmatic Agreement 1600-2019-0153-R5
State Water Resources Control Board	National Pollutant Discharge Elimination System Permit (Storm Water Pollution Prevention Plan)

2.8 Natural Community Conservation Plan/ Habitat Conservation Plan Compliance

The Water Authority conducts operations and maintenance work and implements capital improvement program projects pursuant to its Subregional NCCP/HCP, which was prepared pursuant to Section 2800 et seq. of the California Fish and Game Code (Natural Communities Conservation Planning Act of 1991 [NCCP Act]) and Section 10(a) of the federal Endangered Species Act (ESA) of 1973, as amended. Adopted by the Water Authority in December 2010, the NCCP/HCP is a comprehensive program designed in conjunction with CDFW and USFWS to (1) facilitate conservation and management of Covered Species and habitats associated with Water Authority activities; and (2) contribute to ongoing regional conservation efforts. Sixty-three Covered Species are listed in the Plan, including 26 plant species and 37 wildlife species. The Water Authority's Covered Activities addressed in the plan include the ongoing installation, use, maintenance, and modification of its aqueduct system and associated water treatment, conveyance, and storage systems.

The "Plan Area" addressed in the NCCP/HCP covers 992,000 acres where the Water Authority Covered Activities, including the maintenance and relining of pipelines (NCCP/HCP Section 5.1.13) and replacement/repair of pipeline structures (NCCP/HCP Section 5.2.2.1) described herein, would take place. Approximately 373 acres of Covered Species habitat is expected to be permanently impacted by the Covered Activities identified in the plan over a 55 year period. Adoption of the Water Authority's NCCP/HCP resulted in issuance of an incidental take permit under Section 10 of the federal ESA and incidental take authorization under Section 2835 of the California Fish and Game Code (i.e., the NCCP Act).

As directed in the NCCP/HCP, a verification process ensuring the project's conformance with the NCCP/HCP commitments was completed as a part of the biological resources impact analysis in this document. Temporary and permanent impacts to habitat would be mitigated in accordance with the NCCP/HCP, including on-site restoration of temporary impact areas (see Section 2.5 above) and debit of mitigation acreage from one of the Water Authority's Habitat Management Areas (HMAs) or other USFWS and CDFW approved areas for permanent impacts, at ratios stated in the NCCP/HCP. The NCCP/HCP also requires implementation of General Conditions for Coverage (for Covered Species), which are listed in Section 2.1 of Appendix B of the NCCP/HCP, and applicable minimization

measures listed in Section 6.4 of the NCCP/HCP. The applicable measures from the NCCP/HCP that will be incorporated into this project as design features are listed in Appendix A of this IS/MND.

2.9 Water Authority General Conditions/ Project Design Features

The Water Authority requires contractors to follow several standard conditions contained in the construction project specifications that avoid or minimize significant environmental impacts. In addition, design features specific to the proposed project that could minimize or avoid environmental effects would be incorporated into the project, as appropriate. Applicable design features for this action are listed below by issue area. The design features presented herein are not exhaustive, and other specification requirements or design features may be developed during the proposed project that are as effective as those listed.

Aesthetics

1. All areas cleared of vegetation for construction and staging will be revegetated at the completion of the project.
2. Any lighting used during project construction will be of the lowest illumination necessary to ensure safety of all construction personnel and security of the site, and will be shielded and directed away from adjacent habitat areas.

Air Quality

1. All clearing and grading will be carried out with dust control measures adequate to prevent creation of a nuisance to persons or property.
2. Points of public street access to construction work areas will be regularly cleared of dirt or rock material tracked out of the site by construction vehicles.
3. All unpaved access roads, parking areas, and staging areas at construction sites will be watered three times daily or treated with non-toxic soil stabilizers.
4. Dirt stockpiles will be stabilized by soil binders, tarps, fencing, or other erosion-control measures.
5. Soil stabilizers will be applied to inactive construction areas (disturbed areas inactive for 14 days or more).
6. Traffic speeds on unpaved roads will be limited to 20 miles per hour.
7. All trucks hauling soil, sand, and other loose materials will be covered or required to maintain at least 2 feet of freeboard.

Biological Resources

See Appendix A.

Cultural Resources

1. The Water Authority developed and will implement a cultural resources monitoring plan for project excavation occurring in the vicinity of cultural resources known to occur adjacent to the work area boundaries. The monitoring plan was developed in coordination with the Native American tribe that expressed interest in the project during the consultation process pursuant to Assembly Bill 52. The

cultural resources monitoring plan specifies the roles of Native American monitors and qualified archaeological monitors, and identifies procedures for addressing the potential discovery of artifacts and other tribal cultural resources.

2. In the event of an unexpected discovery of human remains during any phase of construction, project activities in the vicinity of the discovery will be temporarily halted and the San Diego County Coroner contacted, in accordance with Section 7050.5 of the California Health and Safety Code. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, will be contacted to determine proper treatment and disposition of the remains.

Geology and Soils

1. Project construction activities will comply with existing regulatory requirements related to geology and soils, including applicable NPDES requirements. The Water Authority will implement either a Water Pollution Control Plan (WPCP) or a Storm Water Pollution Prevention Plan (SWPPP) (including associated sedimentation best management practices [BMPs]) for the construction activities that are specific for project type, location, and characteristics. Typical control measures that may be implemented as part of the project WPCP or SWPPP include:
   a. Preparation and implementation of a "weather triggered" action plan during the rainy season to provide enhanced erosion or sediment control measures prior to predicted storm events (i.e., 40% or greater chance of rain).
   b. Use of erosion control/stabilizing measures in appropriate areas (including disturbed areas and graded slopes with grades of 3:1 [horizontal to vertical] or steeper), such as geotextiles, mats, fiber rolls, soil binders, or temporary hydroseeding established prior to October 1.
   c. Use of sediment controls to protect the site perimeter and prevent off-site sediment transport, including measures such as filtration devices (e.g., temporary inlet filters), silt fences, fiber rolls, gravel bags, temporary sediment basins, check dams, street sweeping, energy dissipaters, stabilizing construction access points (e.g., with temporary gravel or pavement)and sediment stockpiles (e.g., with silt fences and tarps), and use of properly fitted covers for sediment transport vehicles.
   d. Storage of BMP materials in applicable on-site areas to provide "standby" capacity adequate to provide complete protection of exposed areas and prevent off-site sediment transport.
   e. Provision of training by certified personnel (i.e., either a Qualified SWPPP Developer [QSD] or Qualified SWPPP Practitioner [QSP]) for the personnel responsible for BMP installation and maintenance.
   f. Installation of permanent native vegetation as soon as feasible after grading or construction.
   g. Implementation of appropriate monitoring and maintenance efforts (e.g., prior to and after storm events) to ensure proper BMP function and efficiency.
   h. Implementation of sampling/analysis, monitoring/reporting, and post-construction management programs per NPDES requirements.
   i. Implementation of additional BMPs as necessary (and required by appropriate regulatory agencies) to ensure adequate erosion and sediment control.
3. Actual BMPs for the proposed project will be determined during the WPCP or SWPPP development process, with such measures taking priority over the typical industry standard measures listed above.

Hazards and Hazardous Materials/Wildfire

1. Standard BMPs will be implemented to prevent impacts to the public through the transport, use, or disposal of any hazardous materials. Standard industry measures include, but are not limited to:
   a. Hazardous materials used or stored on-site will be restricted to areas at least 50 feet from storm drains and watercourses.
   b. All hazardous materials will be covered or kept in enclosed facilities.
   c. A written inventory will be kept of all hazardous materials used or stored on-site.
   d. To prevent discharge in the event of a spill, berms, ditches, and/or impervious liners (or other applicable methods) will be provided in material storage and vehicle/equipment storage areas to provide a containment volume of 1.5 times the volume of the stored/used materials.
   e. Agency telephone numbers and a summary guide of cleanup procedures will be posted in a conspicuous location at or near the job site trailer.
2. Prior to authorization to proceed, the Water Authority will require their construction contractor to prepare a Fire Prevention and Response Plan. All construction crewmembers will be trained in the requirements of the plan. Fire safety information will be disseminated to construction crews during regular project safety meetings. Fire management techniques will be applied during project construction as deemed necessary, and depending on the on-site vegetation and the vegetation of surrounding areas.

Hydrology and Water Quality

1. A SWPPP will be implemented to reduce or eliminate pollutants during construction of the proposed project. The SWPPP will identify all pollutant sources, including sources of sediment, that may affect the quality of stormwater discharges associated with construction activity (storm water discharges from the construction site); identify non-storm water discharges; identify structural and/or treatment control BMPs that are to be implemented in accordance with a time schedule to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction; and develop a maintenance schedule for permanent or post-construction BMPs that will "to the maximum extent possible" reduce or eliminate pollutants after construction is completed. Detailed BMPs to prevent impacts to water quality will be included in the SWPPP.

Noise and Vibration

1. Contractor will comply with the noise thresholds the Water Authority has established for this project. Noise levels associated with construction activities are not to exceed an average sound level of 75 decibels over an eight-hour period, between 7:00 a.m. and 7:00 p.m., and 50 decibels over a one-hour period between 7p.m. to 7 a.m. at or beyond the property lines on any occupied property where the noise is being received.
2. All noise-producing project equipment and vehicles using internal combustion engines will be equipped with mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or 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) will be equipped with shrouds and noise control features that are readily available for that type of equipment.
3. All mobile or fixed noise-producing equipment used on the project that is regulated for noise output by a local, state, or federal agency will comply with such regulation while in the course of project activity.

4. Electrically powered equipment will be used instead of pneumatic or internal combustion-powered equipment, where feasible.
5. Construction site and access road speed limits will be established and enforced during the construction period; speeds on unpaved roads will not exceed 20 miles per hour.
6. The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.
7. No project-related public address or music system will be audible at any adjacent noise-sensitive receptor.

Transportation

1. The project will not unreasonably restrict access to any private property.

Utilities and Service Systems

1. The Water Authority will notify and coordinate with all other utility providers that own easements, ROWs, or facilities within or adjacent to the area affected by the proposed project. Any need to connect with or relocate utilities will be presented to the appropriate utility provider prior to commencement of construction.

3 Initial Study Checklist

1. **Project title:**

   First Aqueduct Treated Water Tunnels Rehabilitation

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

   San Diego County Water Authority, 4677 Overland Avenue, San Diego, CA 92123

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

   Sean Paver, Senior Water Resources Specialist, (858) 522-6753

4. **Project location:**

   The project is located at multiple sites in northwestern San Diego County, east of Interstate 15 and along the alignment of the Water Authority's First San Diego Aqueduct. Refer to Section 2.2 for additional project location detail.

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

   Same as lead agency.

6. **General plan designation:**

   Rural Lands (RL-20) and Semi-Rural Residential (SR-4)

7. **Zoning:**

   Agriculture (A70)

8. **Description of project:**

   The project entails rehabilitation of three existing tunnel pipelines. Refer to Section 2.3 for additional project description detail.

9. **Surrounding land uses and setting:**

   The project is located in a rural area featuring sparse residential development, orchards and other agricultural uses, and undeveloped areas. Refer to Section 2.2 for additional detail on surrounding land uses and setting.

10. **Other public agencies whose approval is required:**

    U.S. Army Corps of Engineers; California Department of Fish and Wildlife; State Water Resources Control Board. Refer to Section 2.7 for additional detail on other responsible agencies.

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.?

In compliance with Assembly Bill (AB) 52, on July 7, 2021, the Water Authority sent notification letters to local Tribal representatives to inform them of the project and to offer any interested Tribes the opportunity to consult on the project. On July 12, 2021, the Rincon Band of Luiseno Indians (Rincon Band) requested formal consultation under AB 52. The Water Authority has responded to the Rincon Band, and consultation is underway. To date, no other tribal representatives have responded to the Water Authority's notification. Refer to Section 3.18 for additional details.

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.

Kelley Gage

Signature

10/14/2021

Date

3.0 Environmental Impact Analysis

As described in Section 2, Project Description, condition assessment of the three tunnel pipelines and preliminary project planning conducted by the Water Authority identified two rehabilitation options that are most likely to be employed on this project—Slip Lining and Spray-On Polymer application. Because the Slip Lining option for tunnel rehabilitation may require demolition of the existing bifurcation structures to establish portals for lining installation and creation of larger work areas, the environmental impact analysis presented in this IS/MND assumes that all six bifurcation structures would be completely replaced. If the Spray-On Polymer application option is implemented, smaller excavations would be required. To present a conservative construction scenario, this IS/MND assumes all three tunnels would undergo Slip Lining rehabilitation work at every identified portal and all six bifurcation structures would be redeveloped at the same time. As the Slip Lining option represents the worst-case scenario of the two options for potential impacts, it is the basis of the analysis contained in this IS/MND.

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. Scenic vistas generally refer to views of expansive open space areas or other natural features, such as mountains, undeveloped hillsides, large natural water bodies, or coastlines. Certain urban settings or features, such as a striking or renowned skyline, may also represent a scenic vista. Scenic vistas generally refer to views that are accessible from public vantage points, such as public roadways and parks.

The County's General Plan Conservation and Open Space Element does not specifically list or identify any designated scenic vistas; however, the General Plan does discuss the County's three distinctive geographic regions including the low-lying coastal plain, mountainous peninsular range, and Desert Salton Basin which provide an array of natural vistas and scenic environments. Additionally, many public trails that may provide scenic views are located throughout the County (County of San Diego 2011).

The project is not located in an area known to contain a designated scenic vista from which project construction activity or permanent facilities would be visible. Portal 10 is located near the City of Escondido's Daley Ranch conservation area, which features public trails, including trails with elevated views from Burnt Mountain. Portal 10 would not be visible from any public trails due to intervening topography. All proposed work areas may be visible within scenic views experienced by a limited number of residents, workers, and road users, but the varied topography surrounding and including the project work areas mean that none of the small, individual work areas are likely to be focal points to the extent that private scenic views would be substantially disrupted. Furthermore, these types of impacts on limited individuals and not within the context of a designated scenic vista or publicly accessible view would not be considered significant pursuant to CEQA. Potential views of project construction would be temporary and upon completion of construction, all views of construction equipment and personnel would end.

The project includes replacing existing aboveground bifurcation structures associated with the tunnels. These replacement structures would be similar in size to the existing structures being replaced. Additionally, the project would include new manway vaults featuring partially aboveground concrete boxes. These aboveground structures would be small in size and would be located within Water Authority ROW with limited views from public areas due to varied topography. As with the construction work areas discussed above, the new structures would not be located in areas visible from designated scenic vistas. As such, views of these new features would be the same or similar to existing conditions. Additionally, the project spans a long distance; thus, aboveground structures would be spread out and would not be grouped together in a way that increases visibility from a distance. Therefore, impacts 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. According to the California State Scenic Highway Mapping System (Caltrans 2021b), there are no officially designated state scenic highways in the project area. The nearest eligible state scenic highway is Route 76, located approximately 2.3 miles north of Portal 1. Portal 1 would not be visible from the highway due to distance and the intervening hilly terrain . Therefore, the project would not substantially damage resources within a state scenic highway and no impact would occur.

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. Per Public Resources Code Section 21071, an "urbanized area" is defined 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." The project is located in a rural area within the unincorporated County of San Diego. Thus, the project would

be considered non-urbanized and an analysis regarding the project's effect on visual character is addressed below.

As discussed in Section 3.I(a) above, the project work areas are not visible from any prominent public viewpoints. Visibility of the work areas, replacement bifurcation structures, and new manways would be limited to a very small number of private residences, workers, and road users. Temporary visible elements associated with the project include construction equipment, staging activities, and fencing associated with the creation of portal pits and demolition and replacement of bifurcation structures. This is anticipated to be located within the portal work areas and staging yard described in Section 2.3. Construction activities mostly would be confined to Water Authority ROW and occur in areas disturbed by prior construction of the aqueduct. Visual impacts resulting from construction activities would be temporary, ceasing upon completion of construction. The new permanent pipeline access structures at Portals 2A, 2B, 5, 6, and 7 would not be prominently visible from any public areas.

Thus, the project would result in no permanent aesthetic change and minimal temporary aesthetic change viewed from public areas, and would not substantially degrade the existing visual character of the surrounding project area. Therefore, 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. As discussed above in impact I.a and I.c, visibility of the project work areas is extremely limited. Night lighting would be required during construction activities that occur after dark, including for the 24-hour work periods during pipeline shutdowns and evening winter evening work. Temporary lighting would be used to appropriately illuminate the immediate work area and for safety and/or security purposes during project construction. Pursuant to standard Water Authority construction specifications, nighttime lighting would be of the lowest illumination necessary to ensure safety of all construction personnel and security of the project area and would be shielded and directed away from adjacent habitat areas and residential areas. The impacts caused by this temporary lighting would be less than significant due to their short duration and limited nature of potential affected viewers.

Under existing conditions, there is no exterior or interior lighting associated with the bifurcation structures. Similar to existing conditions, the project would not propose permanent exterior lighting for the replacement structures or the new manways. As such, the project would not introduce a new source of light to the project area. New and replacement structures would be made of concrete that would not serve as a new source of glare. Therefore, any impact related to light or 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?

Less-than-Significant Impact. According to the California Department of Conservation Important Farmland Finder, Portal 2b and Portals 4 through 10 are located in areas designated Farmland of Local Importance (DOC 2016). Farmland of Local Importance refers to land of importance to the local economy while Unique Farmland refers to farmland of lesser quality soils used for the production of the state's leading agricultural crops. Portals 1, 2a, and 3 are located in areas designated Unique Farmland (DOC 2016). Unique Farmland

is usually irrigated but may include non-irrigated orchards or vineyards. Active orchard uses occur in Portal 1, 2b, 3, and 7, and row crop production occurs adjacent to Portal 4 on the west. Although the project traverses mapped Farmland, the project is located within the actively maintained Water Authority ROW that is underlain by existing infrastructure. Construction activities and improvements in these agricultural areas would be confined to Water Authority ROW, except potential improvements to a few existing access roads extending outside the ROW that are travelled and maintained by the Water Authority as part of their routine operations. Upon completion of construction, most project work areas would return to similar pre-construction conditions including existing agricultural sites that would be made available again for these uses by the property owner. Very small areas featuring new access manways would be constructed within agricultural uses in the Water Authority ROW at Portal 2b and Portal 7. This minimal permanent impact on Farmland in active agricultural use would not preclude or impede ongoing agricultural operations on the property. Therefore, impacts would be less than significant.

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

Less-than-Significant Impact. The project traverses land zoned by the County as Agriculture (A70) and contains no Williamson Act contracts. The project would be located within Water Authority ROW, which is used for aqueduct operations and is exempt from County zoning requirements. Portals 1, 2B, 3, and 7 are in Water Authority ROW that overlaps with existing orchard operations, and an active row crop operation occurs adjacent to Water Authority ROW at Portal 4. Existing orchard trees and crops may be removed for project construction, but the land would be returned to the owner or operator for continued agricultural use once construction is complete, so the project would not conflict with long-term agricultural uses of adjacent properties consistent with County zoning. As such, implementation of the project would not conflict with existing zoning for agricultural use or land under a Williamson Act contract. Therefore, impacts would be less than significant.

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. No forest land, timberland, or Timberland Production lands, as defined in the code sections listed above, occur within the project area. Therefore, no impact would occur.

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). Because no forestland exists in the project area, no impact would occur.

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?

Less-than-Significant Impact. Refer to Section 3.2(a) through (d). Impacts would be less than significant.

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?	☐	☐	☒	☐

Neither the Water Authority nor the San Diego Air Pollution Control District (SDAPCD) have developed CEQA thresholds of significance for air quality; however, the County of San Diego has established CEQA screening-level thresholds for air quality impact analyses based on the SDAPCD Air Quality Impact Assessments trigger levels, which are based on emissions levels identified under the New Source Review program. As part of its air quality permitting process, SDAPCD has established thresholds in Rule 20.2 and Rule 20.3 requiring the preparation of Air Quality Impact Assessments for permitted stationary sources (non-major and major stationary sources, respectively) (SDAPCD 2020a, 2020b). SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Because SDAPCD Rules 20.2 and 20.3 do not identify a volatile organic compound (VOC) threshold, the County of San Diego established a VOC threshold based on the South Coast Air Quality Management District's VOC threshold.

For CEQA purposes, the Water Authority has elected to employ the screening-level thresholds established by the County of San Diego as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality for the project. Accordingly, the thresholds listed in Table 3.3-1 are used to evaluate whether project-related emissions could cause a significant impact on air quality. For nonattainment pollutants, if emissions exceed the thresholds shown in Table 3.3-1, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus, could have a significant impact on the ambient air quality; conversely, emissions below the screening-level thresholds would not cause a significant impact. A project that involves a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

Table 3.3-1. Air Quality Significance Thresholds

Construction and Operational Emissions			
	Total Emissions		
Pollutant	*Pounds per Hour*	*Pounds per Day*	*Tons per Year*
Respirable particulate matter (PM_{10})	—	100	15
Fine particulate matter ($PM_{2.5}$)	—	55	10
Oxides of nitrogen (NO_x)	25	250	40
Sulfur oxides (SO_x)	25	250	40
Carbon monoxide (CO)	100	550	100
Lead and lead compounds	—	3.2	0.6
Volatile organic compounds (VOC)	—	75[a]	13.7

Source: SDAPCD Rules 20.2(d)(2) and 20.3(d)(2).

[a] VOC threshold based on South Coast Air Quality Management District (SCAQMD) levels per the SCAQMD for Coachella Valley, which have similar federal and state attainment status to San Diego.

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

Less-than-Significant Impact. The SDAPCD is responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the basin—specifically, the California State Implementation Plan (SIP) and Regional Air Quality Strategy (RAQS).[1] San Diego Association of Governments (SANDAG) is responsible for developing forecasts and data that are used by SDAPCD in preparing the SIP and RAQS. The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2012. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the basin based on the National Ambient Air Quality Standards (NAAQS). The RAQS, most recently updated in 2016, outlines SDAPCD's plans and control measures designed to attain the state air quality standards for ozone (O_3). The SIP and RAQS rely on information from the California Air Resources Board (CARB) and SANDAG, including mobile and area source emissions as well as information regarding projected growth in the County as a whole and the cities in the County, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their general plans.

While the SDAPCD does not provide guidance regarding the analysis of impacts associated with air quality plan conformance, the County's *Guidelines for Determining Significance and Report and Format and Content Requirements – Air Quality* does discuss conformance with the RAQS (County of San Diego 2007). The guidance indicates that, if the project, in conjunction with other projects, contributes to growth projections that would not exceed SANDAG's growth projections for the area, the project would not be in conflict with the RAQS (County of San Diego 2007). If a project includes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality.

[1] For the purpose of this discussion, the relevant federal air quality plan is the Ozone Maintenance Plan (SDAPCD 2012). The RAQS is the applicable plan for purposes of State air quality planning. Both plans reflect growth projections in the basin.

The proposed program area traverses multiple jurisdictions with distinct general plan land use designations and zoning designations. The project would repair and or replace existing aqueduct infrastructure located in unincorporated San Diego County communities of Lilac and Valley Center and north of the City of Escondido. The project does not include changing existing land uses, land use designations, or applicable policies as designated in the general plans of the affected jurisdictions. Additionally, the project would not induce population growth to the area. Per CEQA Guideline Section 15206(b), the project would not be considered regionally significant because it would not have the potential to substantially affect housing, employment, or population projections within the San Diego region, which are the basis of the RAQS projections. As such, the project would not conflict with or obstruct implementation of the RAQS. The project also would not result in substantial construction or operational emissions that would conflict with the local Air Quality plan.

Implementation of the project would not conflict with the RAQS or SIP and proposed development would be consistent with the growth in the region. Impacts 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. Past, present, and future development projects may contribute to the San Diego Air Basin (SDAB) adverse air quality impacts on a cumulative basis. By its nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SDAPCD 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 in the determination of whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the applied significance thresholds, it would have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

Construction of the project would result in emissions of criteria air pollutants, which may result in a cumulatively considerable net increase in emissions of criteria air pollutants for which the SDAB is designated as nonattainment under the NAAQS or California Ambient Air Quality Standards (CAAQS). The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$). The following discussion quantitatively evaluates potential short-term construction impacts that would result from implementation of the project.

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing from architectural coatings application) and off-site sources (i.e., on-road haul trucks, delivery trucks, and worker vehicle trips). 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. Therefore, such emissions levels can only be estimated, with a corresponding uncertainty in precise ambient air quality impacts.

Oxides of nitrogen (NO_x) and carbon monoxide (CO) emissions would primarily result from the use of construction equipment and motor vehicles. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. The project would be required to comply with SDAPCD Rule 55,

Fugitive Dust Control. This rule requires that the project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit fugitive dust (PM_{10} and $PM_{2.5}$) generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the project would ensure that active sites be watered at least two times daily.

Criteria air pollutant emissions associated with temporary construction activity were quantified using California Emissions Estimator Model (CalEEMod) Version 2020.4.0. CalEEMod is a is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2022 and 2023). Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the Water Authority and is intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available.

Table 3.3-2 presents the estimated maximum daily construction emissions generated during construction of the project. Details of the emission calculations are provided in Appendix B.

Table 3.3-2. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per day					
2022	14.15	124.61	125.09	0.33	35.22	20.00
2023	17.16	142.78	108.20	0.36	35.94	20.66
Maximum daily emissions	**17.16**	**142.78**	**125.09**	**0.36**	**35.94**	**20.66**
Emission threshold	75	250	550	250	100	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with an aerodynamic diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns.
See Appendix B for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod and provided in Appendix B. The maximum emissions assumes compliance with SDAPCD Rule 55, Fugitive Dust Control, which assumes the watering of active sites two times daily.

As shown in Table 3.3-2, maximum daily construction emissions would not exceed the significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction in either 2022 or 2023.

The SDAB has been designated as a federal nonattainment area for O_3 and a state 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 SDAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the proposed project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. However, as indicated in Table 3.3-1, project-generated construction emissions and net operational emissions would not exceed the emission-based significance thresholds for VOC, NO_x, PM_{10}, or $PM_{2.5}$.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project area are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative. However, future cumulative projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed applied thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SDAPCD. For example, cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SDAPCD Rule 55 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SDAB. In addition, cumulative VOC emissions would be subject to SDAPCD Rule 67.0.1 (Architectural Coatings).

Based on the project-generated construction and operational emissions of VOC, NO_x, PM_{10}, and $PM_{2.5}$ the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Therefore, the project's cumulative air quality impact would be less than significant.

Health Effects

Project construction activities would not exceed significance thresholds for VOC, NO_x, CO, SO_x, $PM_{10,}$ or $PM_{2.5}$. VOCs and NO_x are precursors to O_3, for which the SDAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SDAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 CAAQS/NAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Operation of the Project would not exceed the significance threshold for NO_x; therefore, implementation of the Project would contribute minimally to regional O_3 concentrations and the associated health effects.

The project would not contribute to exceedances of the NAAQS and CAAQS for nitrogen dioxide (NO_2). Health effects that result from NO_2 and NO_x include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. Construction activities would be relatively short term and temporary. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards (CARB 2020, EPA 2020). Because project generated NO_x emissions would not exceed the significance threshold, the project would not result in potential health effects associated with NO_2 and NO_x.

CO tends to be a localized impact associated with congested traffic intersections. The associated potential for CO hotspots were discussed previously and are determined to be a less-than-significant impact. Furthermore, the existing CO concentrations in the area are well below the NAAQS and CAAQS standards (CARB 2020, EPA 2020). Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant.

Construction and operation of the project would also not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or would obstruct the SDAB from coming into attainment for these pollutants. The project would also not result in substantial diesel

particulate matter (DPM) emissions during construction and therefore, would not result in significant health effects related to DPM exposure. Additionally, the project would implement dust control strategies and be required to comply with SDAPCD Rule 55, Fugitive Dust Control, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, the project is not anticipated to result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, because the project would not result in exceedances of the significance thresholds for any criteria air pollutant during construction and operation, the potential health effects associated with criteria air pollutants are considered less than significant. Furthermore, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days, and there are currently no modeling tools that could provide reliable and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects.

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

Less-than-Significant Impact. Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed "sensitive receptors" are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. Sensitive receptors include residences, schools, playgrounds, child-care centers, athletic facilities, long-term health-care facilities, rehabilitation centers, convalescent centers, and retirement homes.

Health Impacts of Carbon Monoxide

Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local airshed and the SDAB. Locally, project generated traffic would be added to the County's roadway system near each work area. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. 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 SDAB is steadily decreasing.

CO transport is extremely limited and CO 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 such as residents, school children, hospital patients, and the elderly. Typically, high CO concentrations are associated with urban roadways or intersections operating at an unacceptable level of service (LOS). Projects contributing to adverse traffic impacts may result in the formation of CO hotspots.

Project activities would be temporary and would not be a source of daily, long-term mobile-source emissions. Accordingly, proposed activities would not generate traffic that would contribute to potential adverse traffic impacts that may result in the formation of CO hotspots. In addition, due to 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 SDAB is steadily decreasing. Based on these considerations, the project would result in a less than significant impact to air quality with regard to potential CO hotspots.

Health Impacts of Toxic Air Contaminants

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or hazardous air pollutants. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs. The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks and the associated health impacts to sensitive receptors. The following measures are required by state law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-use Off-road Diesel Vehicles (13 CCR 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in a million (SDAPCD 2015b). "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 Office of Environmental Health Hazard Assessment risk-assessment methodology. As shown in Table 3.3-1, maximum daily particulate matter (i.e., PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation and haul-truck trips during construction (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the significance thresholds. Moreover, total construction of the project would last less than a year, after which project-related TAC emissions would cease. Thus, the project would not result in a long-term source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Therefore, the exposure of project-related TAC emission impacts to sensitive receptors would be less than significant. Furthermore, the project would not result in a long-term (i.e., 30-year) source of TAC emissions. As such, impacts related to exposure of sensitive receptors to proposed program-related TAC emission impacts during construction 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. The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be generated from vehicles and/or equipment exhaust emissions during construction of the project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Project work areas are generally located in remote areas with very few receptors that could be affected by construction odors. Such odors would disperse rapidly from the work areas and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be considered 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?	☐	☐	☐	☒
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?	☐	☐	☒	☐

This section summarizes the findings of the Biological Resources Report for the First Aqueduct Treated Water Tunnels Rehabilitation Project, prepared by Dudek (biological report). This biological report is included as Appendix C to this IS/MND.

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. For purposes of CEQA analysis, this section identifies plant and wildlife species as "sensitive species" if they are listed as endangered, threatened, candidate, rare, protected, or species of special concern according to USFWS and CDFW; California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) list 1A, 1B, 2A and 2B; or are Covered Species of the Water Authority NCCP/HCP. Field surveys were conducted by qualified biologists in accordance with the requirements of the NCCP/HCP. In assessing potential presence for species that were not observed during surveys, Dudek biologists considered CDFW's California Natural Diversity Database (CNDDB) and USFWS data, field observations of on-site habitat, and professional expertise related to species distribution in the region. Potential presence was ranked as low, moderate, or high/present pursuant to a methodology discussed in Section 3.4 of Appendix C. Observation of a species during biological resources surveys conducted for this project or a determination of moderate or high potential for presence in the project work area triggers implementation of species-specific Conditions of Coverage that are set forth in NCCP/HCP Appendix B. The Conditions of Coverage require specific measures be incorporated into the project to ensure impacts to species are avoided and minimized. The results of this assessment are summarized below. As required by NCCP/HCP Section 6.4.1.2, the project would be subject to a pre-activity survey prior to beginning construction to verify existing conditions and ensure applicable NCCP/HCP measures have been incorporated.

Sensitive Plant Species

No special-status plant species were observed during the reconnaissance surveys conducted for the biological report. Surveys were conducted in spring of 2021, within the bloom period for many plant species. Dudek's habitat assessment of the project impact areas concluded there is moderate potential for one sensitive plant species, delicate clarkia (*Clarkia delicata*), to occur at Portal 5 and Portal 9, but this species was not observed during the surveys. Delicate clarkia is a CRPR 1B.2 species but is not an NCCP/HCP Covered Species. Because this species was not observed during reconnaissance surveys and was not determined to have high potential to occur in any project work area, the project would not have a significant impact on this species pursuant to CEQA. Post-construction habitat restoration at Portal 5 and Portal 9, as required by the NCCP/HCP, would return on-site vegetation to its pre-project conditions and continue to support moderate potential for occurrence of delicate clarkia. The project's impact on sensitive plant species would be less than significant.

Sensitive Wildlife Species

Three wildlife Covered Species were observed within the project study area during reconnaissance surveys, none of which are listed as endangered or threatened by USFWS or CDFW. These are the reptile species Belding's orange-throated whiptail (*Aspidoscelis hyperythra*), and the avian species southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) and yellow warbler (*Setophaga petechia*). While not observed during reconnaissance surveys, seven additional sensitive species (all NCCP/HCP Covered Species) were determined to have high potential to occur within project work areas based on documented historical occurrences and/or knowledge of suitable habitat and the species' regional distribution. These

include two reptile species, the coastal (western)/San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*) and the northern red diamond rattlesnake (*Crotalus ruber*); the avian species coastal California gnatcatcher (*Polioptila californica californica*); three small mammal species species, Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*); and one large mammal species, mountain lion (*Felis concolor*). These wildlife species are discussed below. Additional detail can be found in Appendix C.

Belding's orange-throated whiptail (*Aspidoscelis hyperythra*), a reptile California Species of Special Concern (SSC), was observed within the Portal 5 and Portal 7 work areas. This species was also determined to have high potential to occur at Portals 2A, 6, 8, 9, and 10.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), an avian CDFW Watch List species was observed in survey buffer areas south of the Portal 8 work area and east of the Portal 10 work area. This species was also determined to have high potential to occur at Portals 2A, 5, 6 and 7.

Yellow warbler (*Setophaga petechia*), an avian USFWS Bird of Conservation Concern and California SSC, was observed within the Portal 6 work area. This species was also determined to have high potential to occur at Portals 5 and 9.

The avian species coastal California gnatcatcher (*Polioptila californica californica*) is listed as threatened pursuant to the federal Endangered Species Act and is a California SSC. It was not observed or detected during project surveys, but was determined to have high potential for occurrence in coastal sage scrub (Diegan) habitat at Portal 2A, Portal 7, Portal 8, and Portal 10, the latter of which falls within designated USFWS critical habitat for this species. For purposes of NCCP/HCP compliance, this species is deemed to occupy the work areas at these four work areas, so project construction at these locations will be subject to the appropriate species-specific NCCP/HCP Conditions of Coverage, as discussed below.

Two reptile Covered Species, the coastal (western)/San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*) and the northern red diamond rattlesnake (*Crotalus ruber*), both California SSC, were deemed to have high potential to occur at Portals 2A, and 5 through 10.

One large mammal species, the mountain lion (*Felis concolor*), an SSC and NCCP/HCP Covered Species, was determined to have a high potential to occur at Portals 5, 6, 9, and 10.

Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*), are all California SSC and NCCP/HCP Covered Species. were determined to have high potential to occur at Portals 2A and 6 through 10, with the San Diego desert woodrat also having high potential to occur at Portal 5.

The project's impacts on all these species entail temporary direct impacts through habitat removal, as well as temporary indirect impacts due to noise and human presence adjacent to habitat during project construction. At Portals 2A, 5, 6, and 7, a very limited amount of permanent impacts on these species habitat would result from constructing permanent manway structures, maintenance aprons, and, at Portal 6, a new access road to the proposed manway structure. The NCCP/HCP anticipates these types of temporary and permanent impacts on wildlife species and establishes the avoidance and minimization measures the Water Authority is committed to implement in order to prevent significant impacts on Covered Species. Appendix A lists all NCCP/HCP conditions that are required for the project, including the general

Conditions of Coverage and all species-specific measures. With implementation of these conditions of the NCCP/HCP, the project's impacts on sensitive wildlife would be less than significant.

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 with Mitigation Incorporated. Project-related construction will entail permanent and temporary impacts on sensitive habitat that is anticipated by and governed by the Water Authority's NCCP/HCP for Covered Activities such as this project. Vegetation communities with project-related impacts are discussed in greater detail in the biological report (Appendix C), and include both riparian habitat and uplands habitat.

Riparian communities occurring in planned work areas include southern cottonwood-willow riparian forest and southern coast live oak riparian forest, both of which are NCCP/HCP Tier I wetland communities as defined in Section 6.5.1.3 of the NCCP/HCP. These Tier I wetland communities occur within parts of the work areas of Portal 5, 6, and 10. One Tier I upland community, coast live oak forest, occurs in parts of the Portal 9 and Portal 10 work areas. One Tier II upland community, coastal sage scrub (Diegan) occurs in parts of the work areas for Portals 2A, 5, 7, 8, and 10, as well as the access road improvements leading to Portal 5. Two Tier III upland communities, non-native grassland and southern mixed chaparral, occur in the work areas for Portals 2A and 3 through 7, Various non-sensitive land cover types, including bare ground, urban/developed, non-native woodland, disturbed habitat, intensive agriculture, and orchards and vineyards, are found in all portal work areas, the Lilac Tunnel staging area, and the Lilac Tunnel and Portal 5 access road improvements. There are no sensitive vegetation community impacts associated with Portal 1 and the Lilac Tunnel access road improvements.

Temporary impacts, as defined by the NCCP/HCP, would occur in areas where vegetation would be removed as part of project construction, but where similar habitat or land cover can be restored after construction because no permanent project features would be constructed. The majority of project impacts are temporary, and are located at the portal work areas. All temporary impacts on this project are considered one-time temporary impacts pursuant to the NCCP/HCP because the Water Authority does not foresee the need to repeatedly return and disturb the restored habitat.

Permanent impacts occur where new permanent structures will replace habitat. On this project, permanent impacts result from constructing the new manways and maintenance aprons proposed at Portals 2A, 2B, 5, 6, and 7, and at the new access road that will be built within the Portal 6 work area.

Impact acreage estimates are presented below in Table 3.4-1 and Table 3.4-2 for permanent and temporary impacts, respectively. Temporary and permanent impacts on vegetation communities and land cover types are shown in Figure 2.1 through 2.7 of Appendix C.[2]

[2] The permanent impacts in the biological report are estimates based on current engineering assumptions and were developed for purposes of environmental impact analysis. The locations of the permanent impacts are subject to change as project design progresses.

Table 3.4-1. Estimated Permanent Impacts on Vegetation Communities and Land Cover Types

Vegetation Communities and Land Cover Type	NCCP/HCP Tier	Impacts (Acres)
Uplands Communities		
Coastal Sage Scrub (Diegan)	II	0.01
Southern Mixed Chaparral	III	0.05
Bare Ground	IV	0.01
Orchards and Vineyards	IV	0.01
Disturbed Habitat	IV	0.01
Total Acres	–	**0.09[1]**

[1] Totals may not sum due to GIS-based rounding.

Table 3.4-2. Estimated Temporary Impacts on Vegetation Communities and Land Cover Types

Vegetation Communities and Land Cover Type	NCCP/HCP Tier	Impacts (Acres)
Riparian Communities		
Southern Coast Live Oak Riparian Forest	I	1.72
Southern Cottonwood-Willow Riparian Forest	I	0.07
Total Riparian Acres	–	**1.79**
Uplands Communities		
Coast Live Oak Forest	I	0.70
Coastal Sage Scrub (Diegan)	II	2.21
Southern Mixed Chaparral	III	1.90
Non-Native Grassland	III	0.90
Non-Native Woodland	IV	2.57
Orchards and Vineyards	IV	3.44
Intensive Agriculture	IV	0.16
Disturbed Habitat	IV	1.84
Urban/Developed	IV	1.06
Bare Ground	IV	1.99
Total Uplands Acres	–	**16.77[1]**
Total Project Acres	–	**18.56[1]**

[1] Totals may not sum due to GIS-based rounding.

Permanent and temporary impacts resulting from Covered Activities are subject to requirements of the NCCP/HCP. The project's permanent impacts on Tier II and III vegetation communities are considered less than significant pursuant to CEQA on a project level due to the limited scale of the impact. However, these project impacts contribute to reginal habitat impacts that are significant pursuant to CEQA, and the NCCP/HCP was established in part to address the Water Authority's contribution to these cumulative impacts. The NCCP/HCP requires off-site mitigation for a project's permanent impacts on Tier I, II, and III vegetation communities at ratios that are defined in NCCP/HCP Section 6.5.1. The project's anticipated off-site mitigation obligation is shown below in Table 3.4-3 and described in Mitigation Measure BIO-1. Mitigation would be debited from the Water Authority's available credits at the San Miguel Mitigation Bank. Pursuant to NCCP/HCP procedures, mitigation for these impacts considers that the impacts occur

outside of a Biologically Significant Resource Areas (BSRA) and that mitigation would occur inside of a BSRA.[3] Off-site mitigation is not required for impacts on non-sensitive Tier IV land cover types.

Table 3.4-3. Mitigation for Permanent Impacts on Sensitive Vegetation Communities

Vegetation Communities and Land Cover Type	NCCP/HCP Tier	Impacts	Mitigation Ratio	Mitigation Requirement (Acres)
Coastal Sage Scrub (Diegan)	II	0.01	1:1	0.01
Southern Mixed Chaparral	III	0.05	0.5:1	0.03
Total Riparian Acres	–	–	–	**0.04**

MM BIO-1 The Water Authority shall debit the appropriate types and amounts of off-site mitigation credits from available banking credits at Water Authority Habitat Management Areas. Based on impacts and mitigation assumptions available for this IS/MND, off-site mitigation will include 0.01 acre of coastal sage scrub (Diegan) and 0.03 acre of southern mixed chaparral.

The mitigation totals stated in MM BIO-1 are based on current design assumptions. These acreages may change slightly and may entail similarly small amounts of off-site mitigation acreage of other Tier I, II, or III vegetation communities as final project design confirms the locations of proposed manways.

Pursuant to Section 6.5.1.4.2 of the NCCP/HCP (SDCWA 2010), the project would mitigate all one-time temporary impacts to sensitive vegetation communities (Tier I, Tier II, and Tier III) by on-site restoration and revegetation of the impacted area. Temporary impacts on non-sensitive Tier IV land cover types would not require on-site habitat restoration. Developed areas that are currently paved would be repaved; disturbed areas would be stabilized with a native seed mix for erosion-control purposes after construction is complete. Existing orchards and agricultural sites would be stabilized and made available again for similar uses by the property owner.

Section 6.6.1 of the NCCP/HCP states that, under Water Authority supervision, a qualified restoration specialist would prepare and submit to the Wildlife Agencies for their review and concurrence a restoration plan for each native habitat restoration site exceeding 0.25 acres. All portal work areas and the Lilac Tunnel staging yard exceed 0.25 acres, but Portal 1 would not be subject to this provision because it lacks native habitat. Restoration measures would be developed to restore a site's previous biological resources and minimize establishment of invasive nonnative plant species. Habitat restoration activities would occur under the supervision and direction of an environmental surveyor who has experience developing and implementing native restoration plans in Southern California. The restoration plan would define success criteria appropriate to each affected habitat type, and the Water Authority would monitor and maintain the sites on a quarterly basis for a 5-year period. If a site meets the designated criteria after that period, mitigation is deemed successful and the Water Authority may terminate maintenance and monitoring. If a site is not meeting the designated criteria, the Water Authority may elect to continue maintenance and monitoring to improve the conditions at the site, or they may deem the mitigation

[3] The NCCP/HCP differentiates between impacts that occur in Biologically Significant Resource Areas (BSRA), which include lands outside the Water Authority ROW that occur in preserves such as the County of San Diego Multiple Species Conservation Plan Pre-Approved Mitigation Areas (PAMA) or Water Authority NCCP/HCP Preserve Area. The work areas for Portal 6 and 7 overlap with mapped County PAMA lands, but all permanent impacts at these locations are located inside Water Authority ROW, which is exempt from the BSRA designation pursuant to the NCCP/HCP. Therefore, all mitigation would be applied with the impacts occurring outside BSRA. The Water Authority's San Miguel Mitigation Bank qualifies as a BSRA, so mitigation ratios would be applied at that rate.

unsuccessful and consider the site as a permanent impact subject to off-site mitigation obligations of the NCCP/HCP. The Water Authority must receive concurrence from the Wildlife Agencies that each restoration effort is successful, as discussed in Section 6.6 of the NCCP/HCP. Post-construction restoration of temporary habitat impacts is an obligation of the NCCP/HCP to minimize impacts; implementing this requirement would keep the project's temporary impacts on habitat less than significant. Therefore, with incorporation of mitigation, 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. A jurisdictional wetland delineation of the project study area was conducted in May 2021 by Dudek, the results of which are summarized in the biological report. Additional detail on the wetland delineation conducted for the project can be found in Appendix C. Based on project work areas assumed for this IS/MND, the project would result in temporary impacts on non-wetland waters of the U.S. and non-wetland waters of the State that are subject to the jurisdiction of the USACE, Regional Water Quality Control Board (RWQCB), and CDFW. This would require obtaining permits to authorize construction in the jurisdictional areas. Impacts on jurisdictional features occur at Portal 5, Portal 6, and Portal 10. Permanent impacts on jurisdictional waters are not anticipated. Additional jurisdictional waters were delineated within the study area at other work locations, but the project design is anticipated to avoid these features.

The project's anticipated temporary impacts on jurisdictional waters features are shown below in Table 3.4-4.

Table 3.4-4. Potential Direct Impacts to Jurisdictional Aquatic Resources

Portal Work Area	Aquatic Resource	Jurisdiction	Temporary Impacts (Acres)[a]
5	NWW-08	USACE, CDFW, and RWQCB	0.30
	CDFW Riparian Vegetation	CDFW	1.35
6	NWW-06	USACE, CDFW, and RWQCB	0.03
	CDFW Riparian Vegetation	CDFW	0.04
10	NWW-01	USACE, CDFW, and RWQCB	0.07
	CDFW Riparian Vegetation	CDFW	0.08
		Total	**1.86**

The Water Authority obtained the Programmatic Master Plan Permit (Permit No. SPL-2012-00106-PJB, referred to as the "PMPP") from the USACE in May 2015. The PMPP authorizes impacts in waters of the U.S. in association with the Capital Improvements Projects and Operations and Maintenance projects described in the Water Authority's 2012 Regional Water Facilities Optimization and Master Plan Update. The proposed project is an eligible activity under the PMPP, qualifying as a category 2 project (Repairs of Pipelines and Minor Support Facilities), a category 3/4 project (Access Road Maintenance and Repair, Access Road Grading and Re-establishment) and a category 6 project (Protection of Underground

Facilities in Waterways). Pursuant to PMPP protocol, the Water Authority will submit a package of pre-qualifying documents to the USACE and seek to obtain a Letter of Permission to implement the project.[4]

CDFW jurisdiction in the project impact area totals 1.99 acre, including 0.40 acre under the combined jurisdiction of the USACE, CDFW, and RWQCB and an additional 1.59 acre exclusively under CDFW jurisdiction, which is the area beneath the extent of the riparian canopy. These impacts on state-jurisdictional waters make the project subject to authorization under Sections 1600–1603 of the California Fish and Game Code. The Water Authority will consult with CDFW to determine the appropriate permitting method. The project may qualify for coverage under the Water Authority's programmatic authorization of routine operations and maintenance projects, which was approved by CDFW in November of 2019, or the Water Authority would apply for a Lake and Streambed Alteration Agreement (LSAA). If an LSAA is required, the project, as a covered activity under the NCCP/HCP, qualifies for a streamlined permitting process with CDFW, as set forth in Section 6.7.2 of the NCCP/HCP. These streamlining provisions state that implementing NCCP/HCP minimization measures are sufficient to serve as permit conditions for a project's LSAA, and that no additional mitigation would be required as part of the CDFW authorization.

According to the PMPP and NCCP/HCP, for projects or portions of projects with onetime temporary impacts, restoration and revegetation of the impacted area will be implemented on-site at a 1:1 ratio. There are no permanent impacts on jurisdictional waters, so no additional mitigation is needed. Implementation of this on-site mitigation in accordance with the PMPP and NCCP/HCP conditions will reduce this impact to 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?

Less-than-Significant Impact. Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability by (1) ensuring the continual exchange of genes between populations, which helps maintain genetic diversity; (2) providing access to adjacent habitat areas, representing additional territory for foraging and mating; (3) allowing for greater carrying capacity; and (4) providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires). The project work areas are situated in a larger setting in which patches of undeveloped native habitat occur amidst parcels that have been developed for agricultural and residential uses. Most work areas that feature native habitat are themselves divided between developed uses and habitat. There are no major rivers or other contiguous open space that would serve as a migratory corridor. The waters features running through Portals 5, 6, and 10 are not known to support fish, so there would be no impact on fish migration at these locations. Given the study area setting, it is likely that birds would be the primary wildlife group that could use native habitat in the various project work areas as a steppingstone-type linkage to other territories. The project's temporary impact on small pieces of native habitat would not significantly disrupt this potential migratory use by birds, and post-construction

[4] PMPP-eligible projects do not require an individual Water Quality Certification (401 Certification) from the RWQCB because the USACE determined that the certification for the PMPP has been waived. The Regional Board deemed complete the Water Authority's 401 Certification Application 12C-087 for the PMPP on December 14, 2012. Because the RWQCB did not act to approve or disapprove the project for 2 years after receipt of that valid request for water quality certification, the timeframe for issuance of a 401 Certification lapsed, and the USACE issued the PMPP without a 401 Certification. As part of the first five-year review of the PMPP, the USACE sent a letter to the Water Authority on June 30, 2020, acknowledging that no 401 Certification is needed for impacts on waters of the U.S. when projects are authorized under the PMPP.

restoration of native habitat would ensure continued use in the future. No wildlife nursery sites were observed or are known to exist within or immediately adjacent to project work areas. Therefore, the project's impact on migration, wildlife corridors, and wildlife nursery sites would be less than significant.

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 project is not subject to any local policies or ordinances protecting biological resources. Therefore, no impact would occur. Discussion of the project's consistency with the Water Authority's NCCP/HCP is discussed below in 3.4(f).

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. The Water Authority's NCCP/HCP describes how the Water Authority would implement its long-term agreement with the Wildlife Agencies wherein the Wildlife Agencies would issue incidental take authorization under the NCCP Act and Section 10 of the federal ESA. Under the Plan, take authorization applies to identified Covered Activities and the potential impacts to sensitive resources associated with implementation of such activities. In doing so, the Plan implements streamlined project permitting and environmental compliance for Covered Activities, resulting in a long-term NCCP/HCP that takes a comprehensive approach to conservation of Covered Species and their habitat.

The Water Authority's 992,000-acre NCCP/HCP Plan Area covers the western third of San Diego County and a portion of southwestern Riverside County. The Plan Area comprises the area within which all Water Authority incidental take will occur and will be permitted under the Plan. The Plan Area includes habitat in and around Water Authority facilities, undeveloped parts of the Water Authority ROW, and the Preserve Area, which is made up of HMAs and Managed Mitigation Areas (MMAs). The 1,920-acre managed Preserve Area is a system composed of six existing and proposed upland and wetland HMAs, from which mitigation credits will be deducted by the Water Authority to compensate for impacts from Covered Activities to sensitive vegetation communities. The 1,147 acres of MMAs represents previously conserved, regionally important habitat lands that have been acquired by the Water Authority to mitigate for impacts associated with other projects. The MMAs would not provide mitigation credits for future projects; however, similar to the HMAs, they represent important habitat linkages and connectivity in areas where little natural habitat remains. The Plan Area comprising the Probable Impact Zone (PIZ) is where the Water Authority's Planned and Future Projects and nearly all Covered Activities will occur over the 55-year term of the Plan. The PIZ is identified as 1,000 feet on either side of the pipelines or facilities, or approximately 64,600 acres along the existing pipeline ROWs and surrounding other appurtenant water conveyance, storage, and treatment facilities. Covered activities occurring in the remainder of the Plan Area would require a minor or major Plan amendment prior to impacts to Covered Species or their habitats.

The study area is entirely within the NCCP/HCP's PIZ and is a Covered Activity under the NCCP/HCP as a Capital Improvement Program project, pursuant to NCCP/HCP Section 5.1.1.3 (relining of existing pipelines) and Section 5.1.7 (access road construction, re-establishment, and improvements); and as an operations and maintenance activity pursuant to Section 5.2.2 of the NCCP/HCP (replacement of pipelines and minor support facilities/appurtenances).

The NCCP/HCP provides the Water Authority a mechanism for take authority under the federal ESA and consistent with the NCCP Act. Therefore, the NCCP/HCP addresses direct and indirect impacts to listed species discussed in Section 3.4(a). Applicable avoidance, minimization, and mitigation measures to address direct and indirect impacts to sensitive species would be implemented, as described in IV. a). As discussed in IV. b), the project would mitigate direct impacts to habitat through off-site mitigation and on-site restoration in accordance with the requirements of the NCCP/HCP. The Wildlife Agencies will review this IS/MND as part of the public review process to verify conformance with the adopted Plan.

Based on the forgoing discussion, there is no impact pursuant to CEQA related to conflicts with the Water Authority's NCCP/HCP.

Other Regional Habitat Conservation Plans

The NCCP/HCP is designed to provide strategic contributions to regional conservation efforts and avoid and/or minimize impacts to existing preserve lands to the extent feasible. This approach to preserve planning and conservation efforts enables the Plan to provide support to and be compatible with other regional conservation plans with which the Plan Area overlaps (numerous existing and in-process NCCP/HCPs in San Diego County and several NCCP/HCPs in western Riverside County). Areas outside of the Water Authority's ROW that are identified as preserves in these NCCP/HCPs are considered BSRAs under the Water Authority's NCCP/HCP.

As discussed in Section 3.4(b), Portals 6 and 7 occur within the County of San Diego Multiple Species Conservation Plan (MSCP) Pre-Approved Mitigation Areas (PAMA), which meet the definition of a BSRA as stated in Section 6.5.1.4.1 of the Water Authority's NCCP/HCP. The NCCP/HCP also clarifies that existing Water Authority ROWs are excluded from the BSRA designation because they have been, and will continue to be, impacted by operations and maintenance activities. The project's impact outside the ROW in these areas is limited to an extension of an existing access road connecting to Portal 6, which is not anticipated to affect sensitive habitat outside the ROW. One-time temporary impacts in this BSRA will be mitigated by on-site restoration pursuant to Section 6.5.1.4.2 of the NCCP/HCP, as with impacts inside the ROW. No off-site mitigation is required for these one-time temporary impacts. The project would result in no permanent impacts outside the ROW. Implementation of the required NCCP/HCP measures listed in Appendix A would ensure the project would not result in a significant conflict with the MSCP. Therefore, impacts 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?	☐	☐	☒	☐

This section is based on the Cultural Resources Extended Phase I Survey Report (cultural report) prepared for the project by Dudek. The cultural report is included as Appendix D to this IS/MND. Appendix D is confidential and is not available for public review.

Records Search

A cultural resources records search of the project work areas and a 1-mile radius around the project was requested from the South Coastal Information Center in May 2021.[5] The records search identified 98 studies that have been performed within the 1-mile search radius of the project area, eleven (11) of which encompass at least a portion of the project area. The search also identified ninety-three (93) previously recorded cultural resources, six (6) of which are located within or partially within the constraints project area. Research also identified six (6) cultural resources previously recorded within project work areas. These resources include one isolate and five archaeological sites.

Resource P-37-013494 includes both historic and prehistoric habitation elements. The site was originally recorded in 1993 as a bedrock milling station with two milling element loci featuring mortars, slicks, and basins. Historic features included a rock wall and reservoir. In 2003, the site was updated and a third milling loci added which extended the boundaries. During a 2008 survey all the previously identified features were relocated. Also noted on site was an abandoned campsite of recent historic origin. The historic features include a tent, wooden lean-to, clothesline, and hearth. A fair amount of associated trash was also present noted at the site during the last cultural site update conducted in 2008.

Resource P-37-025394 is recorded as a prehistoric bedrock milling station originally recorded in 2003 and revisited in 2008. The bedrock milling station was recorded as a single bedrock milling feature with one slick element.

[5] The records search area incorporated conservative assumptions of potential road improvements that have since been removed from the proposed project, as well as slightly larger anticipated work areas at several portal locations that have since been reduced in size to remove inaccessible steep slopes.

Resource P-37-025397 is recorded as an isolated prehistoric lithic core artifact. The isolate was originally recorded in 2003 and revisited in 2008. No additional cultural materials, features or artifacts were identified associated with this isolated prehistoric core artifact.

Native American Heritage Commission Sacred Lands File Search

Dudek requested a Native America Heritage Commission (NAHC) search of their Sacred Lands File (SLF) on June 24, 2021 for the project area. The NAHC provided results on July 16, 2021. This search did not indicate the presence of known Native American traditional cultural places within this area. Pursuant to common practice, the NAHC response included a list of Native American tribes and individuals/organizations that might have knowledge of cultural resources in or near the project area.

Assembly Bill 52 Tribal Outreach

In accordance with AB 52, the Water Authority on July 7, 2021, sent notification letters to the tribal representatives traditionally or culturally affiliated with the geographic area of the project. On July 12, 2021, the Rincon Band requested formal consultation under AB 52. The Water Authority has responded to the Rincon Band and consultation is ongoing. No other tribal representatives responded to the Water Authority's notification.

Survey

Dudek archaeologists conducted a Phase I cultural resources pedestrian survey of accessible areas within the project boundaries in June 2021. No new cultural resources were identified within the project area during the pedestrian survey. The cultural resource previously recorded within the project area, CA-SDI-013494, was positively located within the previously recorded location as determined from the record search data. Because this resource had never been tested for archaeological significance, the survey recommended follow-up testing, the results of which are discussed below.

The prehistoric lithic isolate, P-37-025397, previously identified as being in the Water Authority ROW immediately adjacent to one of the Red Mountain Tunnel work areas was not located during the pedestrian survey. The single artifact may have been inadvertently moved, inaccurately mapped during prior recordation, or simply obscured from view during the survey. The previously recordation of this single artifact predated standardization of global positioning system (GPS) for recording resource locations, and as such the mapped location shows a vastly larger location than physical space the actual artifact occupies. Regardless, as an isolate, this resource is considered not eligible for the National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) register listings, and no further archaeological investigation was deemed necessary for this resource.

The third previously recorded cultural resource, CA-SDI-16845, located in the Water Authority ROW but outside of the anticipated work area was not located during the survey due to the presence of heavy vegetation and inaccessible terrain.

Extended Phase I Investigation

Due to the presence within and adjacent to the potential work area of recorded resources that had not been evaluated for NRHP or CRHR eligibility, Dudek archaeologists performed an Extended Phase I cultural resources testing program on July 20, 2021, at the recorded resources CA-SDI-013494 and CA-SDI-16845. Testing efforts consisted of limited subsurface excavations, photo-documentation, and GPS data recordation, all of which occurred within the boundaries of the Water Authority ROW due to lack of legal access outside the ROW. In addition to the

professional archaeologists performing the testing work, this field activity was attended by a Native American monitor. The results of this testing program are presented in Appendix D (confidential).

All subsurface excavations conducted during the Extended Phase I program were negative and contained no evidence of potential subsurface cultural deposits. At multi-component resource CA-SDI-13494, archaeologists were able to identify and record GPS data on four out of the site's six previously identified features occurring within the Water Authority ROW and previously assumed work area boundary. These include three bedrock milling features and the remains of an undetermined historic-era rock and mortar wall. Testing confirmed site CA-SDI-16845 as occurring outside the project's work area boundary. No additional prehistoric artifacts were identified on the ground surface associated with either CA-SDI-13494, or CA-SDI-16844.

In response to the recording and detailed mapping of resource CA-SDI-13494, the Water Authority confirmed this area could be avoided by project construction and revised the project work area boundaries that will be available for final design and construction of the project.

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

No Impact. The cultural resources records search and survey did not identify historic sites (refer to the discussion below regarding prehistoric sites). Extended Phase I testing of resource CA-SDI-13494 included accurate locational recording of a historic rock and mortar wall. The Water Authority adjusted the boundaries of the associated project work area to avoid this feature and all other prehistoric features observed during the testing program. Therefore, the project will have no impact on this historic resource.

The project would result in rehabilitation and modification of existing First Aqueduct infrastructure, including aboveground features (i.e., bifurcation structures) and the underground tunnels themselves, which were originally constructed in the 1940s. The goal of the project is to repair and prevent future deterioration of the First Aqueduct's functioning system and allow for its continued operation as an important component of water delivery in San Diego County. Therefore, the project would not cause a substantial adverse change in the significance of a historical resources 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. See the discussion above regarding results of the cultural resources pedestrian survey and Extended Phase I testing program. The previously recorded multi-component site CA-SDI-013494 was observed during the pedestrian survey and then subject to additional testing to verify its boundaries.

Site CA-SDI-013494 is located on a large granite outcrop that straddles the edge of the Water Authority ROW and the originally assumed boundary of the respective project work area at this location, which is coterminous with the ROW boundary. There is a significant change in elevation separating the surface of this outcrop and the ground surface below, which lies atop the tunnel alignment. Steep and rocky terrain is positioned between the outcrop surface and the rest of the ROW below. Investigation of the portion of the ROW beneath this rock ledge did not reveal any archaeological resources, and concluded that the area below the ledge was likely the work area for the original tunnel installation, which was subject to extensive disturbance, including rock blasting. Discussions with the Water Authority engineers confirmed that project construction would not require access to or use of the large outcrop area at the edge of the ROW, and they

revised the work area boundaries at the respective project location to avoid the feature. Therefore, the project has been modified to avoid this documented archaeological resource.

The testing program and detailed location mapping concluded that previously recorded resource P-37-025394 is outside the project work area. Resource P-37-025397, an isolate feature, was not observed during the pedestrian survey but was deemed ineligible for listing in the NRHP and CRHR, meaning it is not significant with respect to CEQA.

Resource P-37-025397, an archaeological isolate, is not NRHP/CRHR eligible, meaning it is not significant with respect to CEQA.

Project construction will not have an impact on any known, previously recorded archaeological resources. Because additional subsurface resources may be present in the vicinity of previously recorded resources at Portal 5, the Water Authority has developed and will implement a cultural resources monitoring plan for work at Portal 5 in consultation with interested Native American parties, as stated above in Section 2.9. This monitoring plan will specify the roles of Native American monitors and archaeological monitors, and identify procedures for addressing the potential discovery of artifacts and other tribal cultural resources that may be inadvertently uncovered during project excavation. With incorporation of this project design feature, the project's impact on archaeological resources would be less than significant.

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

Less-than-Significant Impact. The project work areas are not located within a known cemetery or other areas where human remains have a higher potential to be discovered. In the unlikely event that the project inadvertently uncovers human remains interred outside of dedicated cemeteries, the project would be subject to compliance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours 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 County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant (MLD) from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains. Compliance with these applicable regulations would ensure that impacts to human remains 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. The project would result in temporary energy consumption during construction as discussed below.

Electricity

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be required for project construction. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be less than significant.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection "Petroleum," below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect; therefore, impacts would be less than significant.

Petroleum

Petroleum would be consumed throughout construction of the 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 would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and on-site haul trucks involved in relocating dirt around the project site would

rely on diesel fuel. Construction workers would travel to and from the project location throughout the duration of construction. It is assumed that construction workers would travel to and from the project in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix B. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 20,960 hours, as summarized in Table 3.6-1.

Table 3.6-1. Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Site mobilization, clearing, grubbing, and vegetation removal	800
Structure demolition (bifurcation structure locations only)	1,200
Excavation and portal development	1,200
Tunnel slip lining	9,600
Bifurcation structure replacement	3,840
Manway construction	960
Tunnel spray-on polymer application	1,920
Site finishing and architectural coatings	1,600
Habitat and site restoration	480
Demobilization	320
Total	**21,920**

Note: See Attachment A.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton (MT) of CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT of CO_2 per gallon (The Climate Registry 2020). The estimated diesel fuel use from construction equipment is shown in Table 3.6-2.

Table 3.6-2. Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Site mobilization, clearing, grubbing, and vegetation removal	20	25.59	10.21	2,506.25
Structure demolition (bifurcation structure locations only)	30	35.62	10.21	3,488.28
Excavation and portal development	30	30.85	10.21	3,021.18
Tunnel slip lining	24	431.87	10.21	42,298.34
Bifurcation structure replacement	24	76.80	10.21	7,522.35

Table 3.6-2. Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Manway construction	40	36.02	10.21	3,527.91
Tunnel spray-on polymer application	6	54.34	10.21	5,322.09
Site finishing and architectural coatings	10	45.28	10.21	4,435.07
Habitat and site restoration	10	46.09	10.21	4,513.86
Demobilization	20	23.22	10.21	2,274.43
			Total	78,909.75

Notes: CO_2 = carbon dioxide; MT = metric tons; kg = kilogram.
[a] Source: The Climate Registry 2020.
See Appendix B.

Fuel consumption from worker and haul trips was estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline-fueled, and haul vehicles are assumed to be diesel-fueled. Calculations for total worker and haul truck fuel consumption are provided in Table 3.6-3.

Table 3.6-3. Construction Vehicle Fuel Demand

Phase	Trips	Vehicle CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Construction Worker Vehicle Gasoline Demand				
Site mobilization, clearing, grubbing, and vegetation removal	400	1.31	8.78	149.26
Structure demolition (bifurcation structure locations only)	400	1.31	8.78	149.26
Excavation and portal development	400	1.31	8.78	149.26
Tunnel slip lining	8,000	26.21	8.78	2,985.26
Bifurcation structure replacement	1,600	5.08	8.78	578.19
Manway construction	240	0.76	8.78	86.73
Tunnel spray-on polymer application	6,400	20.31	8.78	2,312.74
Site finishing and architectural coatings	800	2.54	8.78	289.09
Habitat and site restoration	240	0.76	8.78	86.73
Demobilization	160	0.51	8.78	57.82
			Subtotal	*6,844.35*

Table 3.6-3. Construction Vehicle Fuel Demand

Phase	Trips	Vehicle CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Construction Vendor Truck Diesel Demand				
Site mobilization, clearing, grubbing, and vegetation removal	0	0.00	10.21	0.00
Structure demolition (bifurcation structure locations only)	0	0.00	10.21	0.00
Excavation and portal development	0	0.00	10.21	0.00
Tunnel slip lining	400	4.17	10.21	408.50
Bifurcation structure replacement	0	0.00	10.21	0.00
Manway construction	0	0.00	10.21	0.00
Tunnel spray-on polymer application	0	0.00	10.21	0.00
Site finishing and architectural coatings	0	0.00	10.21	0.00
Habitat and site restoration	0	0.00	10.21	0.00
Demobilization	0	0.00	10.21	0.00
			Subtotal	*408.50*
Construction Haul Truck Diesel Demand				
Site mobilization, clearing, grubbing, and vegetation removal	0	0.00	10.21	0.00
Structure demolition (bifurcation structure locations only)	1,260	39.49	10.21	3,867.70
Excavation and portal development	583	18.27	10.21	1,789.58
Tunnel slip lining	0	0.00	10.21	0.00
Bifurcation structure replacement	0	0.00	10.21	0.00
Manway construction	0	0.00	10.21	0.00
Tunnel spray-on polymer application	0	0.00	10.21	0.00
Site finishing and architectural coatings	0	0.00	10.21	0.00
Habitat and site restoration	0	0.00	10.21	0.00
Demobilization	14	0.00	10.21	0.00
			Subtotal	*5,657.28*
			Petroleum Total	**12,910.13**

Notes: CO_2 = carbon dioxide; MT = metric tons; kg = kilogram.

[a] Source: The Climate Registry 2020.

As shown in Tables 3.6-2 and 3.6-3, the project is estimated to consume 91,820 gallons of petroleum during construction. By comparison, approximately 28 billion gallons of petroleum are consumed in California annually (EIA 2020). Thus, the proposed project's petroleum consumption would constitute less than 0.00003% of the statewide annual petroleum consumption. Overall, because the proposed project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state, the project construction would not result in wasteful, inefficient, or unnecessary consumption of petroleum. Therefore, impacts would be less than significant.

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 entails the repair and or replace existing aqueduct infrastructure on the northern portion of the First Aqueduct. Thus, the project is not designed to facilitate or encourage renewable energy project development and would not impede the development of renewable energy projects. Construction of the proposed project would involve energy for use of construction equipment and transportation (e.g., worker vehicles and haul trips). These uses would involve a standard amount of energy resources similar to other construction activities. Overall, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the project 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.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
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?	☐	☐	☐	☒

This section is based in part on the Desktop Geotechnical Study (Geotechnical Study) prepared for the project by Helenschmidt Geotechnical, Inc. The Geotechnical Study is included as Appendix E to this IS/MND. The paleontological resources information presented in this section is based on a paleontological records search conducted for the project by the San Diego Natural History Museum, the results of which are included as Appendix F to this IS/MND.

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.

and

ii) Strong seismic ground shaking?

Less-than-Significant 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 associates with fault rupture. The Alquist-Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. The project locations are not located in an Alquist-Priolo Earthquake Fault Zone (DOC 2021). No known active faults cross the project work areas (Appendix E). The nearest fault zone to the project is the Pala Fault Zone, located approximately 5.66 miles to the east. Strong seismic activity along nearby faults could result in ground shaking conditions that are a common hazard in much of southern California.

The project work areas are not occupied and the project would not propose occupied structures that could result in risk of loss, injury, or death in the event of strong seismic ground shaking. Project design is subject to engineering design standards that consider the likelihood of seismic conditions. The replacement bifurcation structures and new access manways would be constructed to the standards of the most recent California Building Code, including seismic structural requirements. Compliance with these requirements would reduce the potential risk to both people and structures with respect to strong seismic ground shaking. As part of the project design process, continued geotechnical investigations would be performed to inform final design of the project relative to potential geotechnical risks. Therefore, impacts would be less than significant.

and

iii) Seismic-related ground failure, including liquefaction?

Less-than-Significant Impact. Liquefaction occurs when a buildup of pore water pressure in the affected soil layer to a point where a total loss of shear strength may occur during a seismic event, causing the soil to behave as a liquid. There are no liquefaction zones overlapping with project work areas, as mapped by the California Department of Conservation (DOC 2021). The tunnel alignments and project work areas are predominately located within bedrock or weathered granitic soils where potential liquefaction is low and not a geologic concern (Appendix E). The project would not increase the risk from seismic-related ground failure impacts, including liquefaction. Therefore, impacts would be less than significant.

and

iv) Landslides?

Less-than-Significant Impact. Landslides typically occur on moderate to steep slopes that are affected by such physical factors as slope height, slope steepness, shear strength, and orientation of weak layers in the underlying geologic units contribute to landslide susceptibility. None of the project work areas occur in a landslide zone, as mapped by the California Department of Conservation (DOC 2021). Field observations

and desktop review also indicate no evidence to suggest the presence of deep-seated landsliding on or adjacent to the tunnel alignments (Appendix E). Therefore, impacts would be less than significant.

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

Less-than-Significant Impact. Project-related ground disturbance would be subject to the Water Authority' standard construction BMPs, as stated in Section 2.9, and comply with existing regulatory requirements and standards related to geology and soils, both of which would serve to limit the potential for erosion and loss of topsoil. This includes preparation and implementation of a WPCP or SWPPP in compliance with the Construction General Permit (2009-009-DWQ) to minimize the potential of sedimentation and soil erosion. The BMPs and regulatory requirements would minimize and reduce potential for soil erosion and the loss of topsoil from the relatively small areas that would be temporarily disturbed during construction. Post-construction stabilization of all temporary work areas, as is required to close out the project's WPCP or SWPPP, would return sites to their pre-project conditions and prevent erosion in the long term. Therefore, impacts 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. The Geotechnical Study identified the potential for rockfall at work areas associated with the Red Mountain Tunnel (Portals 6 and 8) and the Oat Hills Tunnel (Portals 9 and 10) because of the combination of steep cut slopes developed during initial installation of the respective tunnels and fractured rock observed at these locations during field investigations. The project design process will entail continued geotechnical investigations to inform final design and construction of the project relative to minimization of potential geotechnical risks, including potential rockfall hazard at these locations, during both construction and operation of the project. Such standard construction and design practices may include removal of fractured rocks to eliminate hazards or installing reinforcement such as gunite, netting, and/or walls to prevent falling rocks from harming workers or others who may be present down-slope of the affected area. With implementation of these standard engineering design protocols, impacts 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. The Geotechnical Study did not identify expansive soil as a potential concern for project design. The project will be subject to additional geotechnical investigations that will inform final design of the project relative to potential geotechnical risks, including the potential to encounter expansive soils. If such conditions are encountered, design would employ standard engineering protocols to limit the potential effects on project-related infrastructure. Therefore, impacts 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 project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

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

No Impact. The paleontological research conducted by the San Diego Natural History Museum (Appendix F) determined all project work areas are underlain by Cretaceous-age intrusive igneous rocks (also referred to as plutonic igneous rocks). These formations do not preserve fossils because they crystallize at extremely high temperatures and pressures several miles below the earth's surface; thus, these rocks are not considered paleontologically sensitive. Additionally, the memorandum did not identify nearby fossil collection localities within one mile of any the project locations. Given the lack of sensitivity of the geologic units underlying the project area and the lack of nearby fossil collection localities, construction of the project is unlikely to result in impacts to paleontological resources. Therefore, no impact would occur.

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?	☐	☐	☒	☐

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gas (GHG) emissions. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated on a project-level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory, titled "Discussion Draft CEQA and Climate Change Advisory," states that

> "Neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for perming an impact analysis. This is left to lead agency

> judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. Even in the absence of clearly defined thresholds for GHG emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact." (OPR 2018a)

Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "when 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."

Amendments to Section 15064.4 of the CEQA Guidelines were adopted to assist lead agencies in determining the significance of the impacts of GHG emissions. Section 15064.4 specifies that a lead agency "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." Section 15064.4 also provides lead agencies with the discretion to determine whether to assess those emissions quantitatively or to rely on a qualitative analysis or performance-based standards. In addition, the CEQA Guidelines specify that "[w]hen adopting or using 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" (14 CCR 15064.7[c]).

In the absence of a locally adopted numeric threshold by regional experts and agencies (e.g., SDAPCD), the project is be evaluated according to CEQA Guidelines Section 15064.7(c) by considering whether a project's GHG emissions meet the CAPCOA 900 MT of carbon dioxide equivalent (CO_2e) per year screening level threshold. The screening level threshold was developed based on various land use densities and future discretionary project types to determine the size of projects that would likely have a less than cumulatively considerable contribution to climate change.

The CAPCOA threshold was developed to ensure capture of 90% or more of likely future discretionary developments. The objective was to set the emissions threshold low enough to capture a substantial fraction of future development while setting the emission threshold high enough to exclude small development projects that would contribute a relatively small fraction of cumulative statewide GHG emissions. A development capacity threshold was determined to capture approximately 90% of residential units. GHG emissions associated with 50 single-family residential units were estimated and found to be 900 MT CO_2e, establishing the basis for demonstrating that cumulative reductions are being achieved across the state for residential development.

CAPCOA's 900 MT CO_2e per year threshold was developed to meet AB 32 State target of reducing emissions to 1990 levels by year 2020. Since adoption evaluation of this threshold, SB 32 was passed to set a revised statewide reduction target to reduce emissions to 40% below 1990 levels by year 2030. Though the CAPCOA threshold does not consider the reduction targets set by SB 32, the CAPCOA threshold was developed with an aggressive project-level GHG emission capture rate of 90%.

The CAPCOA threshold of 900 MT CO_2e represents a more stringent screening level than has been approved by other air districts in compliance with 2030 statewide reduction targets.[6] Due to the aggressive GHG emission capture rate, the CAPCOA threshold would still act as a viable threshold to reduce project GHG emissions proposed after 2020 and meet SB 32 targets. Furthermore, as State legislative requirements such as Building Energy Efficiency Standards and transportation-related efficiency measures become increasingly more stringent overtime, future project GHG emissions would be reduced helping to meet State emission reduction targets. Projects that would generate emissions beyond the 900 MT CO_2e per year screening level threshold would be required to implement feasible on-site mitigation measures to reduce their impacts on climate change. Projects that meet or fall below CAPCOA's screening level threshold are expected to result in 900 MT CO_2e per year of GHG emissions or less and would not require additional analysis. Therefore, this assessment utilizes the 900 MT CO_2e per year screening threshold to evaluate whether the project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

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. Construction of the project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, haul trucks, on-road vendor trucks, and worker vehicles.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario utilized in Section 3.3, Air Quality, presented in Appendix B. Construction of the project is anticipated to commence in October 2022 and would last approximately 19 months, ending in April 2023. On-site sources of GHG emissions include off-road equipment and off-site sources including vendor trucks and worker vehicles. Table 3.8-1 presents construction emissions for the project in 2022 and 2023 from on-site and off-site emission sources.

Table 3.8-1. Estimated Annual Construction Greenhouse Gas Emissions - Unmitigated

	CO_2	CH_4	N_2O	CO_2e
Year	*Metric Tons per Year*			
2022	615.99	0.06	0.01	620.75
2023	311.70	0.06	<0.01	313.55
			Total	**934.30**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; <0.01 = reported value less than 0.01.
See Appendix B for complete results.
The values shown are the annual emissions reflect CalEEMod "mitigated" output.
Totals may not add due to rounding.

As shown in Table 3.8-1, the estimated total GHG emissions during construction would be approximately 621 MT CO_2e in 2022 and 314 MT CO_2e in 2023, for a total of approximately 934 MT CO_2e over the construction

[6] As a comparison to the CAPCOA threshold, other regional air districts such as the Sacramento Metropolitan Air Quality Management District (SMAQMD) have updated their GHG emission significance thresholds to ensure future proposed projects help meet the State's 2030 emission reduction target and do not result in a cumulative impact to climate change. In April 2020 the SMAQMD published updated project screening levels and determined that project's estimated to generate less than 1,100 MT CO_2e per year would not result in a significant cumulative impact. This threshold was developed to demonstrate compliance with the statewide reduction targets in 2030 and the screening-level threshold was determined by SMAQMD to capture 98% of total GHG emissions (SMAQMD 2020).

period. Estimated project-generated construction emissions amortized over 30 years would be approximately 31 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Amortized construction emissions would be below the screening GHG threshold of 900 MT CO_2e per year. Therefore, the project's GHG emissions 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. There are regional and statewide plans and goals that have been set forth to reduce GHG emissions at the regional and statewide scale, such as the CARB Scoping Plan and SANDAG's Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS). The project's consistency with these plans and future GHG reduction goals is described below.

Consistency with SANDAG's RTP/SCS

At the regional level, SANDAG's RTP/SCS has been adopted for the purpose of reducing GHG emissions attributable to passenger vehicles in the San Diego region. In October 2015, SANDAG adopted its Regional Plan, which meets CARB's 2020 and 2035 reduction targets for the region. The RTP/SCS does not regulate land use or supersede the exercise of land use authority by SANDAG's member jurisdictions, but it is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns and the corresponding GHG emissions. CARB has recognized that the approved RTP/SCS is consistent with SB 375 (CARB 2015b).

While the RTP/SCS does not regulate land use or supersede the exercise of land use authority by SANDAG's member jurisdictions, the RTP/SCS is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns and the corresponding GHG emissions. The RTP/SCS is not directly applicable to the project because the underlying purpose of the RTP/SCS is to provide direction and guidance on future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout San Diego County, as stipulated under SB 375. CARB has recognized that the approved RTP/SCS is consistent with SB 375 (CARB 2015). The RTP/SCS is not directly applicable to the project because the underlying purpose of the document is to provide direction and guidance by making the best transportation and land use choices for future development; still, the project would not conflict with the goals and policies of the RTP/SCS. Additionally, the project would not impact local transportation and land use during the duration of construction.

Project Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, and it is not intended to be used for project-level evaluations.[7] Under the Scoping Plan, however,

[7] 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).

there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-global warming potential GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others. To the extent that these regulations are applicable to the project, the project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Project Consistency with Senate Bill 32 and Executive Order S-3-05

The Project would not impede the attainment of the most recent state GHG reduction goals identified in SB 32 and Executive Order (EO) S-3-05 and. SB 32 establishes a statewide goal of reducing GHG emissions to 40% below 1990 levels by 2030, while EO S-3-05 establishes a statewide goal of reducing GHG emissions to 80% below 1990 levels by 2050. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014, p. 34):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states the following (CARB 2017):

> The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

As discussed previously, the project is consistent with CARB's 2017 Scoping Plan and would not conflict with the state's trajectory toward future GHG reductions. In September 2018, EO B-55-18 was signed, which commits the state to total carbon neutrality by 2045. However, since the specific path to compliance for the state in regard to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional reduction measures for the project would be speculative and cannot be identified at this time.

With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear that its legal interpretation is that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. Therefore, impacts 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?

Less-than-Significant Impact. Project-related transportation, use, and disposal of hazardous materials would be limited to common substances used to maintain and operate construction equipment (such as fuel and lubricants), and, under the Spray-On Polymer application option liquid polymer. Storage, handling, and transport of potentially hazardous materials would occur in compliance with applicable local, state, and federal regulations implemented to minimize risk of hazardous materials release. Hazardous materials would be stored in designated areas away from environmentally sensitive areas in quantities that would not pose significant hazard to the public in the event of a release. Implementation of a SWPPP in compliance with the Construction General Permit (2009-009-DWQ) and standard construction best management practices (BMPs) would prevent the use of these materials from causing a significant hazard to the public or environment. Operation of the project would not substantially alter from existing maintenance activities performed by Water Authority staff. Minor quantities of commercially available potentially hazardous materials (such as oils and lubricants) would be used to maintain ongoing operation of the bifurcation structures and proposed access manways. Use of such materials would be done in accordance with applicable local, state, and federal regulations implemented for the minimization of hazardous materials risk. Therefore, impacts associated with the use, transport, and disposal of hazardous materials would be less than significant.

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?

Less-than-Significant Impact. As discussed in Section 3.9(a), implementation of a SWPPP and standard construction BMPs would minimize potential for accidental release of hazardous materials into the environment. Similarly, operation of the project would involve continue routine maintenance similar to existing operations that would require infrequent use of small quantities of commercially available materials, such as oils or lubricants. During both construction and operation, the project would comply with applicable local, state, and federal regulations implemented for the minimization of hazardous materials risk As previously discussed, the project would prevent groundwater infiltration into the tunnels. As such, upon completion of construction, the tunnels would be subject to less infiltration of untreated water into the tunnels, ensuring continued delivery of drinking water to its member agencies. Therefore, impacts related to the accidental release of hazardous materials 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?

No Impact. The nearest school within distance of the project area is Lilac School (30109 Lilac Road) and is located approximately 1.5 miles northeast of Portal 4. Therefore, the project is not located within 0.25 miles of a school and no impact would occur.

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?

No Impact. The Hazardous Waste and Substances Sites (Cortese List) is a planning document providing information about the location of hazardous materials release sites. California Government Code Section 6596.2 requires the California Environmental Protection Agency to develop, at least annually, an updated

Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List (CalEPA 2021).

According to the DTSC's EnviroStor database, there are no clean-up sites located within or near the varying project locations (DTSC 2021). Other state and local government agencies are required to provide additional hazardous materials release information for the Cortese List. The SWRCB's GeoTracker database identifies leaking underground storage tanks, waste discharge sites, oil and gas sites, and other waste or cleanup sites. A review of GeoTracker did not identify any sites or facilities within or adjacent to the project area. The nearest identified sites include the following: Hoeptner Ranch (ID#: SLT19759179), a Cleanup Program site with an open-site assessment status, located approximately 0.8 miles north of Portal 1; Lilac Ranch (ID#: T06019759062), a Cleanup Program Site with a closed status, located approximately 0.9 miles south of Portal 3; and Meadow Lake Country Club (ID#: T0607303026), a Leaking Underground Storage Tank Cleanup Site with a closed status, located approximately 1 mile west of Portal 10 (SWRCB 2021). Neither of these hazardous materials sites are located upstream of the project's respective work areas, and they are both at adequate distances from the work areas such that they would be of no concern to present a worker hazard for construction crews. Therefore, no impact would occur.

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 with an airport land use compatibility plan is Fallbrook Community Airpark, located approximately 9.2 miles northwest of Portal 1. However, the project is not located within the compatibility plan. Additionally, there are no public airports located within 2-miles of the project area (ALUCP 2011). Furthermore, Portal 1, is located approximately 5 miles west of Lyall-Roberts Airport-37CL; however, the project would not introduce any new residential uses or employment centers which could expose people to excessive aircraft noise. Therefore, no impacts associated with public airport hazards would occur.

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

Less-than-Significant Impact. The project does not entail full or partial closures of any public roads. During construction of the project, temporary construction and staging areas would be located along Water Authority access roads, some of which overlap with private roads used for residential access. Pursuant to standard Water Authority procedures, these roads would remain open for Water Authority maintenance purposes and to allow access to residential properties. If enclosed portal work areas include blocking a through road, access around the enclosed site would be provided. All routes would also remain fully accessible for emergency vehicles and would not interfere with emergency response or evacuation plans. Additionally, access to neighboring private properties would be maintained at all times during construction. Upon completion of construction, the project work areas would return to similar pre-construction conditions. Therefore, implementation of the project would not impair an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

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 traverses areas within a Very High Fire Hazard Severity Zone (FHSZ) and a Moderate FHSZ; specifically, Portals 2A/2B and 5 through 10 are partially or entirely within a Very High FHSZ (CalFire 2021). Potential wildland fire hazards could occur if the project were to cause

a wildland fire risk, increase wildland fire risk in the area, exacerbate the severity of a wildland fire, and/or exacerbate the severity of damage or hazards during a fire.

Because the project would entail construction work in the vicinity of dry brush, construction activities could result in an increase in the potential for accidental wildfires. Project construction would be conducted in accordance with local and state regulations governing fire prevention and safety. The County Code of Regulatory Ordinances has adopted the 2019 California Fire Code with local amendments (County of San Diego 2021a). As discussed above in Section 2.9, the Water Authority would require the project contractor to prepare a Fire Prevention and Response Plan specific to the project, and all construction crewmembers would be trained in the requirements of the plan. Implementation of and adherence to the plan would reduce this potential for wildfire ignition.

Upon completion of construction, the project would return to similar pre-construction conditions, with the addition of proposed new access manways. Operation and maintenance of the project would not substantially differ from existing practices and protocol. The proposed access manways would operate passively would not introduce new sources of ignition (i.e., electrical components or machinery) to the area. Therefore, the project would not increase exposure 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;	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
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, without proper controls, could result in erosion and sedimentation affecting downstream receiving waters and violate water quality standards. Substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project locations where construction occurs and subsequently conveyed via stormwater to nearby drainages, watersheds, and ground water. The project area is larger than 1 acre, and the project is therefore subject to the requirements of the National Pollutant Discharge Elimination System Construction General Permit issued by the San Diego RWQCB. The permit requires the implementation of stormwater controls and development of a WPCP or SWPPP to minimize the amount of sediment and other pollutants from being discharged in stormwater runoff during construction, as well as various temporary BMPs designed to prevent erosion and siltation, as well as the off-site conveyance of various on-site constituents. Similar to surface water quality, ground water quality would be protected during project construction through BMPs required by the National Pollutant Discharge Elimination System permit. BMPs would include spill prevention and cleanup guidelines, dewatering operations guidelines, and stormwater run-off prevention. These BMPs would protect the ground water from contamination by construction activities. Upon completion of construction, the project work areas would return to similar conditions and the tunnels would continue conveying treated water. Implementation of the project would protect the tunnels from groundwater intrusion and ensure maintenance of water quality in the resources delivered to Water Authority member agencies. Therefore, impacts associated with surface or ground water quality would be less than significant.

Excavation of Portal 6 may require temporary construction dewatering to create conditions that are dry enough for operating earthwork equipment. Dewatering would entail installing wells to extract groundwater, pumping the water into a settling tank for treatment, and discharging the water either to uplands, which is preferred, or to the stream running through the Portal 6 work area if the volume of extracted water is higher than can feasibly be applied to neighboring upland areas. Dewatering is regulated by the RWQCB, by either Order R9-2015-0013 NPDES NO. CAG919003, General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters within the San Diego Region or Order No. R9-2014-0041, Conditional Waivers

of Waste Discharge Requirements for Low Threat Discharges in the San Diego Region. The WDRs for discharges to surface waters requires the discharger to maintain compliance with effluent limitations applicable to the receiving waters in accordance with the applicable order prior to discharge. Discharges to land must comply with the waiver conditions of the Order which demonstrate that the discharges are not expected to pose a threat to the quality of waters of the State. Therefore, with compliance of the applicable existing RWQCB waste discharge requirements (WDRs), the potential impacts related to water quality from the temporary construction dewatering 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 project would not entail the use of groundwater and, thus, would not deplete groundwater within the project vicinity. While the project would include new access manways which would introduce new impervious surfaces in the project area, the amount of impervious area would be very minor and would have little effect on groundwater infiltration. Upon completion of construction, the project would return to similar pre-project conditions. As such, the large majority of the project area would remain pervious and allow for groundwater recharge. Therefore, impacts would be less than significant.

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;

and

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

and

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

and

iv) impede or redirect flood flows?

Less-than-Significant Impact. The project would not entail permanent changes to drainage patterns at any of the project work areas, and would not present a new source of stormwater runoff. Three work areas, Portals 5, 6, and 10, intersect with streams that would be subject to temporary disturbance during project construction. The Water Authority would prepare and implement a SWPPP, which would include construction BMPs to control erosion and sediment during construction activities. It would also be subject to compliance with standard PMPP conditions and NCCP/HCP conditions that will be incorporated into the project's LSAA for Portals 5, 6, and 10, including measures that prohibit or limit certain activities occurring in areas with flowing water. With adherence to the SWPPP conditions and standard permitting conditions, construction-related impacts related to soil erosion, siltation, surface water runoff, and redirected flows would remain below a level of significance. Upon completion of construction, all temporarily disturbed

surfaces would be stabilized and restored to initial condition, including recontouring the site to maintain pre-existing drainage patterns. The proposed manways would be placed outside of streams, and site design would consider maintenance of drainage patterns so as not to adversely affect the sites themselves or downstream areas. The addition of impervious surfaces at these manway locations would be negligible and would not cause a substantial change in the volume of surface runoff or cause an increase in flooding. Therefore, impacts related to would be less than significant.

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

Less-than-Significant Impact. According to Federal Emergency Management Agency (FEMA) flood maps, the project is not located within a designated high risk or special flood hazard area (FEMA 2021). Seiches are large waves generated in enclosed bodies of water in response to ground shaking. The closest body of water to the project area is Turner Lake, located approximately 0.3 miles east of Portal 9 work area. However, the hilly terrain dividing the project from Turner Lake makes potential impacts associated with seiche highly unlikely. Tsunamis are large waves generated in large bodies of water by fault displacement or major ground movement. Due to the inland location of the entire project area, tsunamis do not pose a hazard to the project. Further, the project would implement BMPs during construction to ensure flows from the project areas under construction would not release pollutants into downstream receiving waters. Therefore, impacts associated with risk of release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone would be less than significant.

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

Less-than-Significant Impact. The project is located in the San Diego Basin, which is governed by the Water Quality Control Plan for the San Diego Basin (RWQCB 1994, Water Quality Control Plan). The Water Quality Control Plan acknowledges the importance of compliance with the Construction General Permit in controlling polluted runoff and sedimentation from construction projects. None of the project work areas are located within a designated groundwater basin; as such, there are no adopted groundwater plans related to the project area (DWR 2021). The project would comply with regional and local regulations requiring preparation of an SWPPP and would not obstruct existing water quality control plans. In addition, the anticipated temporary construction dewatering that would be needed for Portal 6 excavation, as discussed above, would be in compliance with either the RWQCB General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters or the Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges that would protect water quality of any receiving surface waters or groundwater. Also, any groundwater dewatering for construction would be temporary and relatively minor such that it would not conflict with sustainable management of the basin.

As stated in Section 2.7, the project is required to comply with the Construction General Permit.. As stated in Section 2.9, the Water Authority will require preparation of and compliance with a SWPPP that specifies BMPs and other control measures to maintain compliance with these regulations. The project does not propose any other point-source pollutant discharge that would conflict with the Water Quality Control Plan. Compliance with construction storm water regulations and requirements would mean the project would not conflict with a water quality control plan or sustainable groundwater management plan, and 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?

No Impact. The physical division of an established community typically refers to the 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) that would impair mobility within an existing community or between a community and outlying area. Under the existing condition, the locations of the project are not used as a connection between established communities. Construction of the project would occur in portal work areas within Water Authority ROW. Access roads would be used for construction staging but would not impede movement along those roads. The project would rehabilitate three treated water tunnels, replace the bifurcation structures associated with the tunnels, and introduce new access manways Upon completion of construction, the project would return to similar pre-construction conditions, with the addition of proposed new access manways. Operation and maintenance of the project would not substantially differ from existing practices and protocol. The proposed access manways would operate passively and would not impede movement along access roads. Following construction, operation of the project would be similar to existing conditions. Therefore, no impacts would occur.

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?

No Impact. The project entails maintaining and improving existing infrastructure within the Water Authority ROW. The project would not result in a change to land use, therefore it would not be in conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, no impacts would occur.

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?

and

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. The State Mining and Reclamation Act of 1975 (Public Resources Code, 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. According to maps obtained through the California Department of Conservation and California Geological Survey, the project locations where construction would take place are not located within a Mineral Resource Zone (DOC 2015). Additionally, no mineral extraction activities occur on or adjacent to these areas. Therefore, no impacts to mineral resources would occur.

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?	☐	☐	☐	☒

Dudek prepared a Construction Noise Assessment (Noise Memo) for the project. The Noise Memo presents the results of a predictive noise study to determine potential environmental impacts associated with project-related construction anticipated in the vicinity of the project area. Construction-related vibration is also addressed. The Noise Memo is included as Appendix G to this IS/MND.

Existing Noise Setting

Dudek conducted sound pressure level (i.e., noise level) measurements at representative positions near the project on June 8, 2021, to quantify and characterize the existing outdoor ambient sound environment and thus establish a quantified baseline for assessment of impacts at nearby existing off-site receptors in the project area. Table 3.13-1 provides the location, date, and time period at which these pre-project or baseline noise level measurements were performed. Noise was measured in A-weighted decibels, and was recorded in terms of the equivalent continuous sound level (L_{eq}) and the maximum sound level during the measurement interval(L_{max}).

Six (6) short-term noise level measurement locations (ST1 through ST6) were selected along the Water Authority ROW to represent outdoor ambient sound environmental conditions considered comparable to those of existing off-site noise-sensitive receivers in the project vicinity. These locations are depicted as receivers ST1 through ST6 on figures provided in Appendix G and described in Table 3.13-1. The measured L_{eq} and L_{max} noise levels are provided in Table 2. The primary noise sources at these sites consisted of birdsong, the sounds of leaves rustling, and distant traffic, reflecting the rural nature of the project setting. As shown in Table 3.13-1, the measured sound pressure level ranged from approximately 35.0 dBA L_{eq} at ST5 to 44.9 dBA L_{eq} at ST2. Beyond the summarized information presented in Table 3.13-1, detailed noise measurement data is included in Appendix G.

Table 3.13-1. Measured Baseline Outdoor Ambient Noise Levels

Site	Location/Address	Date/Time	Leq (dBA)	Lmax (dBA)
ST1	Approximately 250 feet south of Oat Hills Tunnel downstream bifurcation structure, within Portal 10	2021–06-08, 09:40 AM to 09:50 AM	43.7	56.1
ST2	Western Property line of 11501 Betsworth Road, Valley Center, CA 92082, approximately 0.25 miles north of the Oat Hills Tunnel upstream bifurcation structure (Portal 9)	2021–06–08, 10:30 AM to 10:40 AM	42.6	59.3
ST3	Approximately 100 feet west of Moosa Creek Nursery and 700 feet south of the Red Mountain Tunnel downstream bifurcation structure (Portal 8)	2021–06–08, 11:20 AM to 11:30 AM	40.3	50.2
ST4	Immediately southwest of the Red Mountain Tunnel upstream bifurcation structure, within Portal 4	2021-06-08, 12:20 PM to 12:30 PM	44.9	55.6
ST5	Approximately 700 feet north of Lilac Tunnel downstream bifurcation structure, within Portal 2	2021–06-08, 01:15 PM to 01:25 PM	35.0	46.0
ST6	North of Camino del Venado, within Water Authority ROW, approximately 0.25 miles north of Portal 1	2021–06-08, 02:00 PM to 02:10 PM	36.6	45.4

Source: Appendix G.
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; L_{max} = maximum sound level during the measurement interval.

One long-term noise level measurement was taken in a similar location as ST1 within Portal 10. Due to the relatively uniform environmental setting across the project work area, which could be generally categorized as rural residential and/or agricultural in character and distant from major surface transportation noise sources, this long-term measurement location was chosen to be sufficiently representative of all sensitive receptors within the vicinity of the project and thus collect data to quantify project vicinity noise levels during evening and nighttime hours. This 24-hour unattended sound pressure level monitor recorded outdoor ambient sound levels at night that ranged from 33.9 dBA L_{eq} to as 58 dBA L_{eq}. Detailed noise measurement data is included in Appendix G.

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. The project would generate construction noise that would be received by residences scattered in the vicinity of several work areas. Most work would be performed during the day, but the project would also generate noise during 10-day shutdown periods where construction would occur 24 hours per day at the portal work areas. Dudek modeled daytime and nighttime construction noise levels as received at surrounding residences to determine whether the project would result in significant impacts. The results are presented in Appendix G and summarized below. The analysis determined that daytime construction noise would not exceed the identified significance thresholds, but that nighttime noise requires mitigation at Portals 2A/2B, 4, 5, 6, 7, and 10

The project is located within unincorporated County land. The Water Authority, as its own legal entity, is not governed by the County of San Diego Noise Ordinance (Noise Ordinance; San Diego County Ordinance 9962, which amends Title 3, Division 6, Chapter 4 of the San Diego County Code of Regulatory Ordinances), but for CEQA purposes, the Water Authority elected to analyze daytime construction noise against the standard established in the Noise Ordinance. Section 36.409 of the Noise Ordinance specifies that noise due to construction may not exceed a 75 dBA average over an 8-hour period (L_{eq8hr}) at any time. This 75 dBA L_{eq8hr} threshold applies from Monday through Saturday between the allowable hours of construction per Section 36.408 (i.e., 7:00 a.m. and 7:00 p.m.). The Noise Ordinance does not allow operation of construction equipment on Sundays or holidays. For nighttime work and work on Sundays, which would occur during the limited 10-day shutdown periods, the Water Authority applied a threshold of 50 dBA.

Analysis of daytime construction assumed simultaneous operation of excavators, cement mixers, heavy trucks, wheeled cranes, generators, welders, and occasional concrete saws. The typical maximum (L_{max}) and energy-equivalent (L_{eq}) noise levels for various pieces of construction equipment at a distance of approximately 33 feet are presented in Table 3.13-2. Note that the difference in these two metrics corresponds with exhibited equipment operation intensity and duration: usually, construction equipment operates in alternating cycles of full power and low power, producing average noise levels over time that are less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of construction activities during that time.

Table 3.13-2 presents predicted noise level exposures from project-attributed construction activity sources at the indicated receptor locations shown in Appendix G.

Table 3.13-2. Predicted Daytime Sound Levels at Modeled Receptor Locations

Modeled Receptor Locations/ Nearest Portal Work Area	Site Location	Predicted Hourly Leq (dBA)
OHS1/10	27440 Broadway Escondido, California 92026	67.1
OHS2/10	11175 Boulder Pass Escondido, California 92026	40.6
OHS3/10	27435 Cougar Pass Rd Escondido, California 92026	33.2
OHN1/9	28797 Faircrest Wy Escondido, California 92026	33.1
OHN2/9	11477 Betsworth Rd Valley Center, California 92082	37.5
RMS1/8	11401 Betsworth Rd Valley Center, California 92082	46.5
RMS2/8	11760 Betsworth Rd Valley Center, California 92082	38.8
RMS3/8	11760 Betsworth Rd Valley Center, California 92082	37.5
RMN1/4	11050 Mystery Mountain Rd Valley Center, California 92082	71.8
RMN24	11050 Mystery Mountain Rd Valley Center, California 92082	55.8
RMN3/4	11050 Mystery Mountain Rd Valley Center, California 92082	72.2

Table 3.13-2. Predicted Daytime Sound Levels at Modeled Receptor Locations

Modeled Receptor Locations/ Nearest Portal Work Area	Site Location	Predicted Hourly Leq (dBA)
RMN4/4	29660 Wilkes Rd Valley Center, California 92082	51.7
LS1/2B	0 Couser Canyon Rd[1] Valley Center, California 92082	38.5
LN1/2A	0 Couser Canyon Rd[1] Valley Center, California 92082	47.9
LN2/1	0 Camino del Venado[1] Valley Center, California 92082	46.4

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels
[1] Street address was not available for some locations.

As presented in Table 3.13-2, the estimated construction noise levels are predicted to be 72 dBA L_{eq} or less over a 1-hour period at the occupied properties nearest to the bifurcation structure portal work areas (as close as 65 feet away), and daytime construction is not anticipated to exceed the 75 dBA L_{eq} 8-hour limit at these locations. Additional predictive modeling was performed for daytime work at the non-bifurcation structure portal work areas, which determined the 75 dBA threshold was achieved at a distance of 121 feet from the noise source. Because there are no residences or other sensitive receptors within 121 feet of the non-bifurcation structure portal work areas, daytime noise would not exceed the 75 dBA threshold at these locations. Noise impacts resulting from daytime construction would be less than significant, and no mitigation is required.

For work occurring at night and on Sunday, Table 3.13-2 shows that five modeled noise locations would exceed the hourly threshold of 50 dBA L_{eq}, located near Portal 4 and Portal 10. Exceeding the 50 dBA threshold is a significant impact warranting mitigation. Mitigation measure MM-NOI-1, detailed below, identifies installation of temporary 16-foot construction noise barriers at these locations to reduce noise levels below the 50 dBA threshold. Table 3.13-3 shows the modeling results for noise levels as reduced by the presence of a 16-foot wall, demonstrating that the mitigation effectively reduces the impacts to at or below the 50 dBA threshold.

Table 3.13-3. Mitigated Predicted Sound Levels at Modeled Receptor Locations

Modeled Receptor Locations/ Nearest Portal Work Area	Site Location	Predicted Hourly Leq (dBA)
OHS1/10	27440 Broadway Escondido, California 92026	49
RMN1/4	11050 Mystery Mountain Rd. Valley Center, California 92082	50
RMN2/4	11050 Mystery Mountain Rd. Valley Center, California 92082	45
RMN3/4	11050 Mystery Mountain Rd. Valley Center, California 92082	50
RMN4	29660 Wilkes Rd Valley Center, California 92082	40

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels

Predictive modeling for the non-bifurcation structure portal work areas determined the 50 dBA threshold was met at a distance of 1,075 feet from the noise source. Residences are located within a 1,075-foot radius of Portals 2A, 2B, 5, 6, and 7, indicating a significant impact at these locations and warranting implementation of MM-NOI-1. Table 3.13-4 shows modeled construction noise levels at these portals with incorporation of temporary noise walls, along with the required wall heights for each location. As shown in Table 3.13-4, installation of temporary construction noise barriers at Portals 2A, 2B, 5, 6, and 7 would reduce the nighttime noise to less than significant levels.

Table 3.13-4 Mitigated Predicted Noise Levels at Additional Portal Locations

Portal location*	Horizontal distance (feet) to nearest sensitive receptor	Temporary barrier height needed (ft)	Resulting predicted noise level (L_{eq} dBA)
2A & 2B	260	12	49
5	790	8	46
6	670	8	47
7	590	10	46

Note: dBA = A-weighted decibels.
* Identifying number is the same as appearing in Figures 2A-2F.

Noise generated from construction during daylight hours would not result in a significant impact. However, noise generated from nighttime construction during shutdown periods would be significant. Mitigation measure MM-NOI-1, which requires installation of temporary noise barriers at several portal work areas during nighttime and Sunday work, would reduce impacts to a level below significance.

Additionally, upon completion of construction, the project work areas would return to similar conditions prior to construction and the project would not generate noise on a permanent basis. Therefore, impacts during operation would be less than significant.

MM-NOI-1 **Temporary Construction Noise Barriers.** Prior to the start of construction during nighttime hours (7:00 p.m. to 7:00 a.m.) and Sundays, the Water Authority's contractor shall install noise barriers surrounding the work areas for Portals 2A/2B, 4, 5, 6, 7, and 10. The noise barriers shall be left in place during all construction activity occurring at night and on Sunday. Each barrier shall be composed of materials with a sound transmission class value of 25. The minimum height of the noise barriers shall be as follows:

- The noise barrier installed at Portal 5 and Portal 6 shall be at least 8 feet in height.
- The noise barrier installed at Portal 7 shall be at least 10 feet in height.
- The noise barrier installed at Portal 2A and Portal 2B shall be at least 12 feet in height.
- The noise barrier installed at Portal 4 and Portal 10 shall be at least 16 feet in height.

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 or structures to excessive groundborne vibration or groundborne noise. For construction vibration impacts, guidance from Caltrans indicates that a vibration velocity level of 0.2 inches per second (ips) peak particle velocity (PPV) received at a structure would be considered annoying by occupants. As for the receiving

structure itself, Caltrans guidance recommends that a vibration level of 0.3 ips PPV would represent the threshold for potential risk of building damage.

Dudek's construction noise assessment also included consideration of vibration impacts, which concluded that the project work areas are distant enough from structures and inhabited areas such that these thresholds would not be exceeded. Therefore, the project's vibration impacts are 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?

No Impact. The closest airport with an airport land use compatibility plan is Fallbrook Community Airpark, located approximately 9.2 miles northwest of Portal 1. However, the project is not located within the compatibility plan. Additionally, there are no public airports located within 2-miles of the project area (ALUCP 2011). Furthermore, Portal 1, is located approximately 5 miles west of Lyall-Roberts Airport-37CL; however, the project would not introduce any new residential uses or employment centers which could expose people to excessive aircraft noise. Therefore, no impacts would occur.

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)?

No Impact. The project consists of rehabilitation, maintenance, and improvements of existing water infrastructure. No additional water supply or capacity would result through project implementation. The project does not include or encourage the construction of new homes or businesses. Therefore, the project would not induce any population growth and no impacts would not occur.

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

No Impact. The project is located within Water Authority ROW with no existing housing or people. As such, the project would not affect any existing housing or necessitate construction of replacement housing in the area. Therefore, no impacts would not 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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
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 project would rehabilitate existing water infrastructure, which would not present a permanent or temporary increase in demand on fire protection services, as the project would not induce population growth nor result in the addition of structures that might require fire protection. Therefore, no impacts would occur.

Police protection?

No Impact. The construction and operation of the project would not have an effect upon or result in a need for new or altered police protection services. The project would not induce population growth nor result in the addition of housing, schools, or other community facilities that might require police protection. Therefore, no impacts would occur.

Schools? Parks? and Other public facilities?

No Impact. The project would not introduce a new source of population requiring enhancements to public services such as schools, parks, and libraries. Therefore, no impacts would occur.

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 project does not construction of new homes or businesses. Therefore, the project would not induce any population growth or increase the use of existing parks and recreational facilities. Therefore, no impacts to recreational facilities would occur.

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 project would not include development of recreational facilities. In addition, the project would not induce population growth such that the expansion of existing recreational facilities is required. Therefore, no impacts associated with the construction or expansion of recreational facilities would occur.

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)?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Pursuant to Senate Bill (SB) 743, the CEQA guidelines have been updated and the focus of transportation analysis changed from level of service (LOS) or vehicle delay to vehicle miles traveled (VMT). The Governor's Office of Planning and Research (OPR) approved the addition of new Section 15064.3, "Determining the Significance of Transportation Impacts" to the State's CEQA Guidelines, compliance with which is required beginning July 1, 2020. To aid in this transition, OPR released a Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018b) (Technical Advisory). The Updated CEQA Guidelines state that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts" and define VMT as "the amount and distance of automobile travel attributable to a project." It should be noted that "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. OPR has clarified in the Technical Advisory and in informational presentations that heavy-duty truck VMT is not required to be included in the estimation of a project's VMT. Other relevant considerations may include the effects of the project on transit and non-motorized traveled.

Based on OPR's Technical Advisory, County of San Diego adopted region-specific transportation criteria and thresholds for the unincorporated areas, including VMT Efficient Area Map Viewer. Because the project is located in the unincorporated San Diego County area, the VMT analysis requirements per CEQA Guidelines Section 15064.3(b) for the proposed project were conducted based on guidance provided in OPR's Technical Advisory and supplemented with the San Diego County's VMT map viewer.

Additionally, trip generation from construction of the project has been estimated for informational purposes. The Institute of Transportation Engineers' (ITE) Trip Generation Manual does not contain trip rates for construction-related activities associated with the proposed project, therefore, it is primarily based on the number of construction employees or workers as well as the quantity of vendor and haul related truck estimate provided by the Water Authority and used in the proposed project's air quality analysis. Each worker and truck are assumed to generate two daily trips, one inbound and one outbound. The construction work shift would occur between 7:00 a.m. and 7 p.m. The majority of the workers would arrive and depart outside of the AM peak hour (generally occurs between

7:00 a.m.–9:00 a.m.) and PM peak hour (generally occurs between 4:00 p.m.–6:00 p.m.) of the adjacent street network. Vendor truck traffic and haul trips are anticipated to be evenly distributed through the 12-hour workday.

As shown in Table 3.17-1, the proposed project would generate 58 total daily trips, 4 AM peak hour trips and 4 PM peak hour trips per tunnel area during the tunnel slip lining phase and 110 total daily trips, 8 AM peak hour trips and 8 PM peak hour trips per tunnel area during the structure demolition phase per tunnel area.

Table 3.17-1. Construction-related Trip Generation

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation per Tunnel Area1								
Workers	27 workers	54	3	0	3	0	3	3
Vendor Trucks	2 trucks	4	1	0	1	0	1	1
	Total	**58**	**4**	**0**	**4**	**0**	**4**	**4**
Trip Generation per Tunnel Area2								
Workers	13 workers	26	1	0	1	0	1	1
Haul Trucks	42 trucks	84	4	3	7	3	4	7
	Total	**110**	**5**	**3**	**8**	**3**	**5**	**8**

Notes: Dates shown are illustrative of the general project construction schedule and are not considered exact.

1 Trip generation is estimated for Slip Lining phase when maximum number of workers and vendor deliveries would be required per tunnel area.

2 Trip generation is estimated for structure demolition phase when maximum number of haul trucks would be required per tunnel area.

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 project would generate temporary construction traffic, which would cease upon completion of construction. The proposed new manways would not be located in areas that would interfere with the surrounding circulation system. The project area is located in a rural area that does not feature transit, bicycle, and pedestrian facilities. As such, the project would not impede access, plans, programs, or policies related to the aforementioned facilities. Operation of the project would not require additional permanent employees; thus, the project would not result in an increase in permanent traffic. Therefore, impacts would be less than significant.

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

Less-than-Significant Impact. This section uses VMT as the basis for evaluating transportation impacts of the proposed project under CEQA. However, it should be noted that the guidelines and thresholds apply to land use and transportation projects that are subject to CEQA analysis. The proposed project is not a land use or transportation project, and therefore neither Section 15064.3(b)(1) nor Section 15064.3(b)(2) of the CEQA Guidelines apply. Instead, the proposed project would be categorized under Section 15064.3(b)(3) qualitative analysis. The updated CEQA Guidelines do not establish a significance threshold, however, recommend a threshold of significance for land use development (residential, office, and other land uses) and transportation projects. It should be noted that there is no significance threshold for construction or maintenance projects.

The project would involve construction that would generate temporary construction-related traffic for approximately 140 days over a period of 7 months and nominal operations traffic; thus, would be categorized under Section 15064.3(b)(3), qualitative analysis. Section 15064.3(b)(3) recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. For many projects, a qualitative analysis of construction traffic may be appropriate. This is because construction related trips are temporary and would not generate permanent trips. Per OPR, heavy vehicle traffic is not required to be included in the estimation of a project's VMT. Even though worker and vendor trips would generate VMT, but once construction is completed, the construction-related traffic would cease and would return to pre-construction conditions. Measures to reduce the VMT generated by workers and trucks are limited, and there are no thresholds or significance criteria for temporary, construction-related VMT. Therefore, construction related VMT would be temporary and short term.

Based on the VMT Efficient Area Map Viewer (County of San Diego 2021b), the average VMT per employee for the County's unincorporated areas is 37.55. The average VMT per employee near each of the three tunnels varied between 29.96 to 55.20. This is generally higher than the average daily VMT (37.55 VMT per employee) for the unincorporated County. However, it is consistent with the average VMT for the rural neighborhoods of the Valley Center area, as few services are available to residents and most visitors or temporary workers must travel from other parts of the San Diego County. The project construction would be generally consistent with construction activities in terms of the temporary nature of activities, trip generation characteristics, and the types of vehicles and equipment required. Even though it is anticipated that some of the workers would carpool to the project work areas, managing worker and vendor trip lengths for the construction projects is not feasible because of the location and duration of individual activities including requirement for 12-hour work shifts. Accessibility to alternative modes of transportation is also not available for workers.

The increase in VMT associated with project construction is expected to be temporary and would therefore not cause a significant impact. Once completed, the operation of the proposed project can be considered "small project" per the OPR technical advisory given that it would not generate greater than 110 daily trips[8] and would therefore be presumed to have a less than significant impact.

Therefore, the proposed project would not conflict or be inconsistent with CEQA Guidelines Sections 15064.3(b)(1) and 15064.3(b)(3), and impacts would be less than significant.

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. Workers and trucks would access various project work areas via existing public and private roadways. The Lilac Tunnel work areas would likely be accessed via State Route (SR)-76, Couser Canyon Road, San Gabriel Way and Calle Oro Verde. The Red Mountain Tunnel work areas would likely be accessed via Old Castle Road, Wilkes Road, Mystery Mountain Road and Coulter Creek Road. The Oat Hills Tunnel work areas would likely be accessed via Mountain Meadow Road, Wilkes Road, Cougar

[8] This threshold ties directly to the OPR technical advisory and notes that CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

Pass Road and North Broadway. Most of these roadways are two-lane roads in rolling or hilly terrain and reflect the rural character of the area. There are no striped Class II bicycle lanes or sidewalks along these roadways. Roadways such as San Gabriel Way, Coulter Creek Road and Cougar Pass Road do not have a travel lane separation and some portions are unpaved. During construction, all truck drivers would adhere to California Vehicle Code regulations pertaining to licensing, size, weight, and load of vehicles operated on highways and local roads; safe operation of vehicles; and the transport of any hazardous materials. Traffic on public roadways due to project construction would be of the same vehicle types (passenger cars and trucks) that occur and are allowed under existing conditions. Therefore, project-related construction traffic would not increase hazards due to incompatible uses.

The project may entail minor improvements to existing access roads, including regrading and laying down gravel to stabilize surfaces for construction access. The project does not entail constructing new roads or realigning existing roads, so the project would not increase traffic hazards due to geometric design features. Therefore, the project's impact due to increase in traffic hazards would be less than significant during construction.

Average daily operational trips associated with the project would be same as those required for existing maintenance activities, with the majority being passenger cars or light duty trucks. The nominal amount of operational daily trips would not increase hazards due to geometric design feature or incompatible use and impacts would be less than significant.

d) Would the project result in inadequate emergency access?

Less-than-Significant Impact. The project would generate temporary construction traffic, which would cease upon completion of construction. Project construction would obey all traffic laws and maintain access to private property. Operation of the project would not require additional permanent employees; thus, the project would not result in an increase in permanent traffic. While the project is located in Water Authority ROW, first responders would be able to travel to the different project locations via access roads in the event of an emergency. As discussed in Section 3.17(c), existing Water Authority access roads would be extended at Portal 4 and Portal 5 to reach the new pipeline access structures. As such, the project would improve accessibility for first responders in the event of an emergency. Thus, implementation of the project would not result in inadequate emergency access and 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 Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☐	☒	☐

The project is subject to compliance with AB 52 (Public Resources Code Section 21074) which requires consideration of impacts to "tribal cultural resources" as part of the CEQA process. AB 52 requires the Water Authority, lead agency responsible for CEQA compliance for the project, to notify any groups (who have requested notification) of the project who are traditionally or culturally affiliated with the geographic area of the project. Because AB 52 is a government-to-government process, all records of correspondence related to AB 52 notification and any subsequent consultation are on file with the Water Authority.

In accordance with AB 52, the Water Authority on July 7, 2021, sent notification letters to the tribal representatives traditionally or culturally affiliated with the geographic area of the project. On July 12, 2021, the Rincon Band requested formal consultation under AB 52. The Water Authority has responded to the Rincon Band and consultation is ongoing. No other tribal representatives responded to the Water Authority's notification.

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)?

and

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. Consultation conducted in accordance with AB 52 on this project did not identify any tribal cultural resources that would be affected by the project. See Section 3.5 for a discussion of the project's impacts on archaeological impacts, which were determined to be less than significant. The project will implement a cultural resources monitoring plan during earthwork activity at Portal 5, which will ensure any unanticipated tribal resource that is uncovered during excavation is appropriately handled.

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 project consists of rehabilitation, maintenance, and improvements of existing water infrastructure. These improvements to water infrastructure are included within the project analyzed herein. As such, any potential environmental impacts related to these components of the project are already accounted for in this IS/MND as part of the impact assessment conducted for the entirety of the project.

The project would not result in a development that would substantially increase the demand for water or wastewater services such as new commercial or residential land uses. During construction, water usage would be temporary and minimal for watering the site and other needs. During operation, the project would not employ additional personnel other than the existing maintenance personnel serving the site. Operation of the project would be similar to existing operation and maintenance of the tunnels and bifurcation structure systems; no new or altered wastewater treatment, electric power, natural gas, or telecommunication facilities would be required. Therefore, impacts associated with the relocation or construction of new water, wastewater treatment, electric power, natural gas, or telecommunication 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?

Less-than-Significant Impact. During construction, water usage would be temporary and minimal for watering the site and other needs. During operation of the project, the project would have no effect on water supplies, beyond its existing purpose to protect existing delivery infrastructure. Therefore, impacts would be less than significant.

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 project would not result in an increased demand on wastewater services. Therefore, no impacts 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. Implementation of the project would generate solid waste in the form of construction and demolition debris that will need to be hauled off site and recycled or disposed of in a landfill. The closest active landfill to the project area is Republic Services Sycamore Landfill (8514 Mast Boulevard), located approximately 25-miles south of Portal 10. Sycamore Landfill has a maximum permitted throughput of 5,000 tons per day and a remaining capacity of 113,972,637 cubic yards. It is anticipated that Sycamore Landfill will cease operation in 2042 (CalRecycle 2019). Additionally, the closest recycling facility to the project area, which accepts construction and demolition debris, is Escondido Resource Recovery, located approximately 5.7-miles south of Portal 10. Diversion of construction and demolition debris via recycling at a local recycling facility would reduce the amount of waste sent to a

landfill. Additionally, waste generated from construction would be temporary and would be nominal compared to the daily capacity accepted at Sycamore Landfill.

The project would not result in the need for new solid waste disposal systems and would not require substantial alterations to existing solid waste disposal systems or landfill capacity. Once operational, the project would resume transporting treated water through the tunnels. The project would not create additional solid waste that would need to be serviced by a landfill. Therefore, impacts 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?

No Impact. Demolition debris would be disposed of and/or recycled at an appropriate facility. Any solid material removed during construction would be disposed of in compliance with applicable federal, state, and local statutes and regulations related to solid waste. Under AB 939, the Integrated Waste Management Act of 1989, local jurisdictions are required to develop source reduction, reuse, recycling, and composting programs to reduce the amount of solid waste entering landfills. Local jurisdictions are mandated to divert at least 50% of their solid waste generation into recycling. Operation of the project would not generate waste. Therefore, impacts would not occur.

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?	☐	☐	☒	☐

The project traverses areas within a Very High Fire FHSZ; specifically, Portals 2A/2B and 5 through 10 are partially or entirely within a Very High FHSZ (CalFire 2021). The entire project is located within a State Responsibility Area (CalFire 2021).

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact. During construction of the project, temporary construction and staging areas would be located within Water Authority ROW, except potential improvements to a few existing access roads extending outside Water Authority ROW that are traveled and maintained by the Water Authority as part of their routine operations. However, these routes would remain fully accessible for emergency vehicles and would not interfere with emergency response or evacuation plans. Additionally, access to neighboring private properties would be maintained at all times during construction. Upon completion of construction, the project area would return to similar pre-construction conditions, with the exception of proposed new access manways within the Water Authority ROW. Access for emergency vehicles would remain open at all times. Therefore, implementation of the project would not impair an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

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. Construction of the project would not substantially alter on-site slopes or influence prevailing winds or other factors that could exacerbate wildfire risk. However, project construction would introduce potential ignition sources to the project area, including the use of vehicles and heavy machinery, accidental human-caused ignitions, and the potential for sparks during welding activities or other hot work. Because the project would entail construction work in the vicinity of dry brush, construction activities could result in an increase in the potential for accidental wildfires. Project construction would be conducted in accordance with local and state regulations governing fire prevention and safety. The County Code of Regulatory Ordinances has adopted the 2019 California Fire Code with local amendments (County of San Diego 2021a). In addition, as identified in Section 2.9, the Water Authority would require the project contractor to prepare a Fire Prevention and Response Plan specific to the project, and all construction crewmembers would be trained in the requirements of the plan. Implementation of and adherence to the plan would reduce this potential for wildfire ignition during construction.

Upon completion of construction, the project would return to similar pre-construction conditions, with the addition of proposed new access manways. Operation and maintenance of the project would not substantially differ from existing practices and protocol. The proposed access manways would operate passively would not introduce new sources of ignition (i.e., electrical components or machinery) to the area. Therefore, the project would not increase or exacerbate wildfire risks. Therefore, 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 project would construct new permanent pipeline access structures at the sites of the mid-tunnel portals along the Lilac Tunnel (Portal 2) and the Red Mountain Tunnel (Portals 5, 6, and 7), allowing additional maintenance access to the tunnels beyond the bifurcation structures. At Portal

4 and Portal 5, existing Water Authority access roads would be extended to reach the new structures. Thus, the project would provide improved access for maintenance personnel as well as fire apparatus and emergency vehicles.

Construction and operation of the project would not directly require new or expanded infrastructure other than that which is planned as part of the project. As discussed in Section 3.19, Utilities and Service Systems, no new utility connections, water/wastewater facilities, or other service utilities would be required for the project. Given that the activities involved with installation or maintenance of associated infrastructure would require ground disturbance and the use of heavy machinery associated with trenching, grading, site work, and other construction and maintenance activities, the installation of related infrastructure could potentially result in temporary or ongoing impacts to the environment. However, the installation and maintenance of associated infrastructure have been analyzed herein. As such, any potential temporary or ongoing environmental impacts related to these components of the project have been accounted for and analyzed as part of the impact assessment conducted for the entirety of the project. Additionally, the project would be required to comply with all regulatory requirements and mitigation measures outlined within this IS/MND for the purposes of mitigating impacts associated with trenching, grading, site work, and the use of heavy machinery. No adverse physical effects beyond those already disclosed and mitigated would occur as a result of implementation of the project's associated infrastructure. Therefore, with implementation standard measures to reduce fire risk and compliance with regulatory requirements, the installation and maintenance of associated infrastructure would not exacerbate wildfire risk or result in impacts to the environment beyond those already disclosed throughout this document, and impacts 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. Construction activities could result in changes to drainage patterns and slope stabilization. Soils would be stabilized during project construction with adherence to the project SWPPP and associated construction BMPs related to erosion and sediment control. Upon completion of construction, all disturbed surfaces would be stabilized and restored to initial condition or developed as new access manways and roads. Furthermore, the project is not located within a designated high risk or special flood hazard area. As discussed in Section 3.7, Geology and Soils, Field observations and desktop review also indicate no evidence to suggest the presence of deep-seated land sliding on or adjacent to the tunnel alignments. Rockfall potential exists at Portals 6 and 8 through 10. However, as part of the design-build process, continued standard geotechnical investigations would be performed to inform final design and construction of the project relative to minimization of potential instability. Therefore, the project would not expose people or structures to substantial risks related to post-fire instability 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. Potential impacts related to sensitive and special-status habitat, wildlife species, and plant species are discussed in Section 3.4, Biological Resources. As discussed in Section 3.4, all potentially significant impacts to biological resources would be reduced to a level below significance with incorporation of mitigation measures. The proposed project would not substantially degrade the quality of the environment, impact fish or wildlife species, or plant communities. As discussed in Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources, potential impacts to cultural resources and tribal cultural resources would be reduced to a level below significance with incorporation of mitigation measures. The proposed project would not eliminate important examples of the major periods of California history or prehistory. Overall, Impacts would be less than significant with incorporation of mitigation measures.

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. Given the nature of the project, potential cumulative impacts could occur during the temporary construction work if other cumulative projects occur in the same timeframe. The project is located in a rural area with sparse residential uses, active agriculture, open space. Due to the project's location, the potential for construction to overlap with construction of other projects would be reduced. Additionally, the proposed project, as with potential cumulative projects, would incorporate mitigation measures to reduce impacts, including those from construction noise. The proposed project and potential cumulative projects would each comply with applicable traffic regulations, and cumulative projects would implement traffic control plans, as necessary, for construction trips such that circulation and access are not significantly impacted. Upon completion of construction, the proposed project would have no potential to contribute to a cumulative impact. Impacts would be less than significant with incorporation of mitigation measures.

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

Less-than-Significant Impact with Mitigation Incorporated. The potential for adverse direct or indirect impacts to human beings was considered throughout Chapter 3 of this IS/MND which would result in less than significant impact with and without mitigation measures, including air quality (Section 3.3), hazards and hazardous materials (Section 3.9), and noise (Section 3.13). Based on this evaluation, there is no substantial evidence that construction or operation of the proposed project with the proposed mitigation measures incorporated would result in a substantial adverse effect on human beings. Impacts would be less than significant with incorporation of mitigation measures.

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4 References and Preparers

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4.2 List of Preparers

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Carrie Kubacki, GIS Specialist
Scott Graff, Technical Editor and Publications Specialist

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SOURCE: ESRI 2019; SDCWA 2011, 2021

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FIGURE 1

Regional Map

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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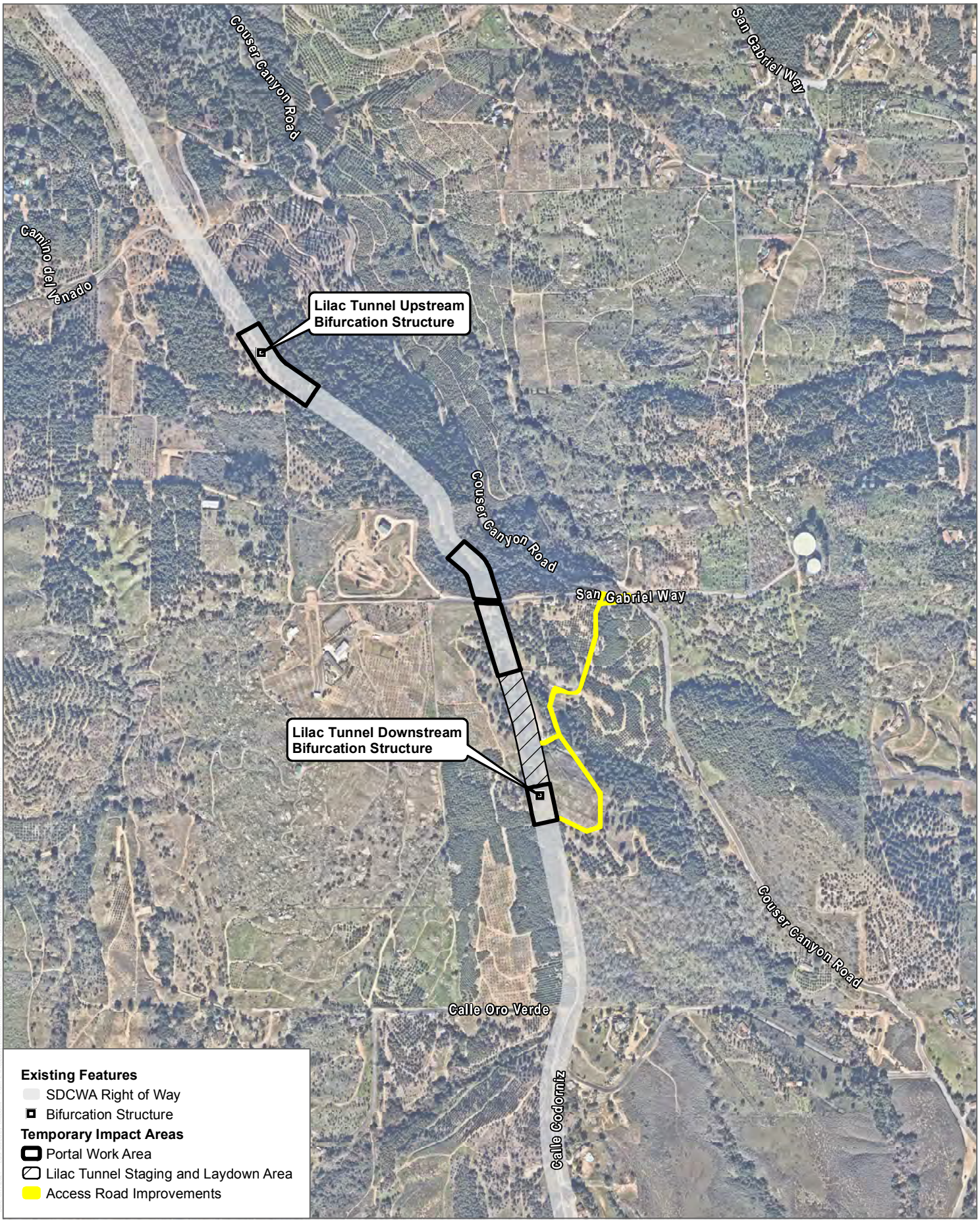

SOURCE: SanGIS 2019

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FIGURE 2A

Project Vicinity - Lilac Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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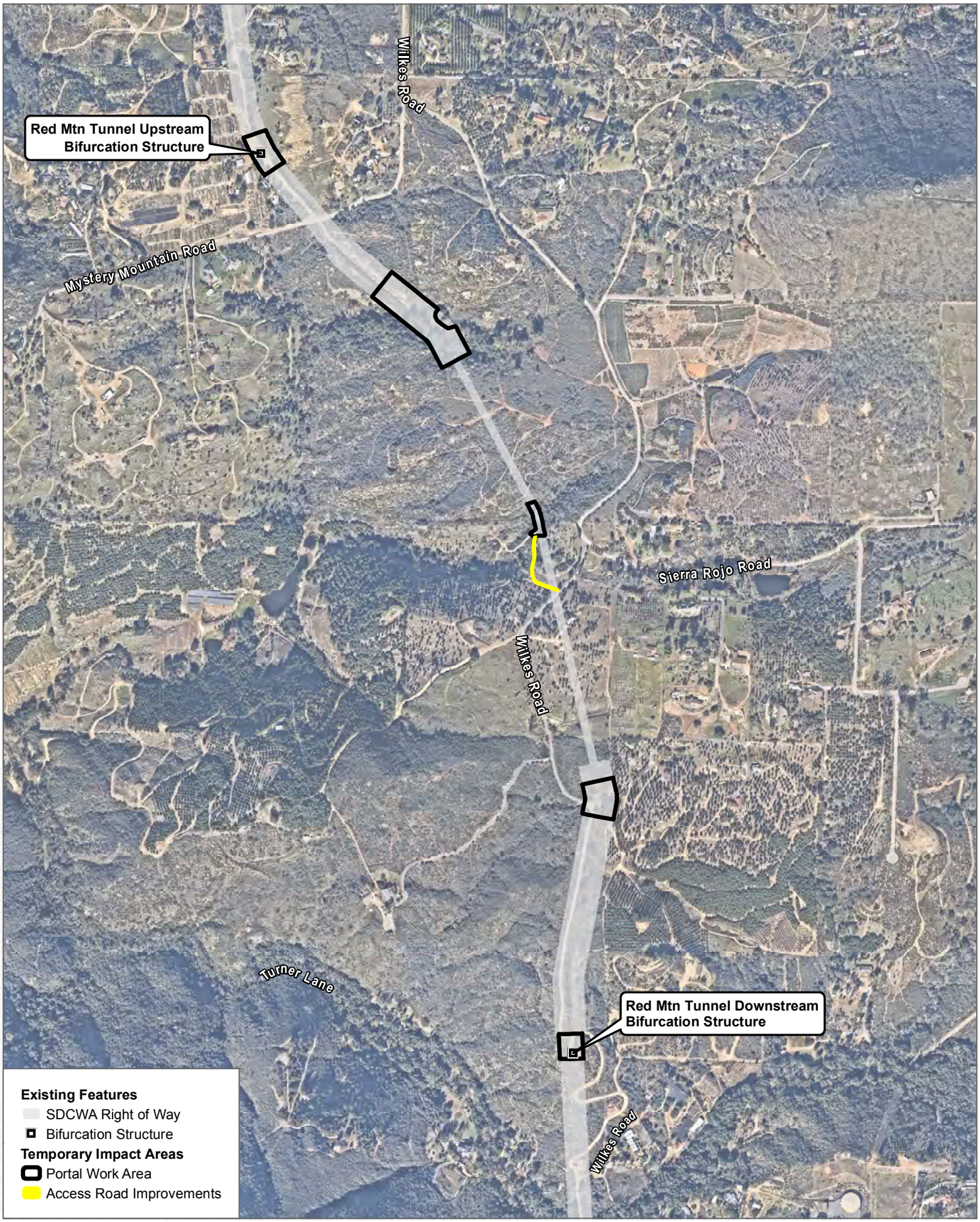

SOURCE: SanGIS 2019

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FIGURE 2B

Project Vicinity - Red Mountain Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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SOURCE: SanGIS 2019

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FIGURE 2C

Project Vicinity - Oat Hills Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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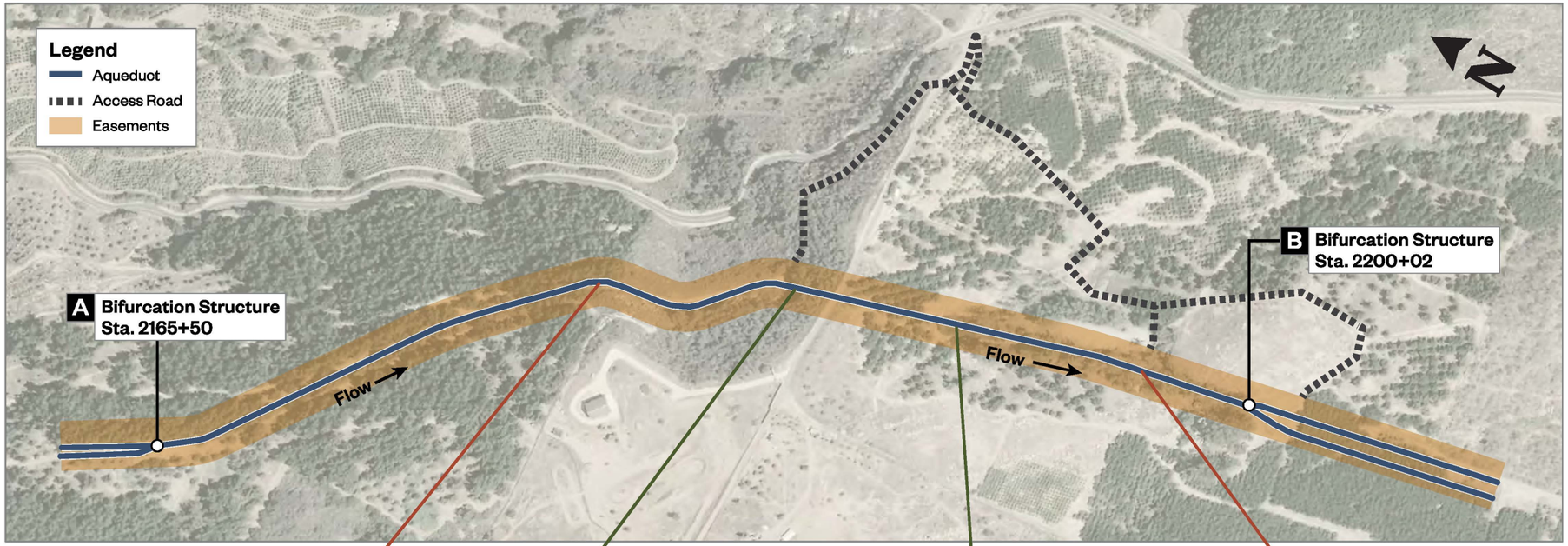
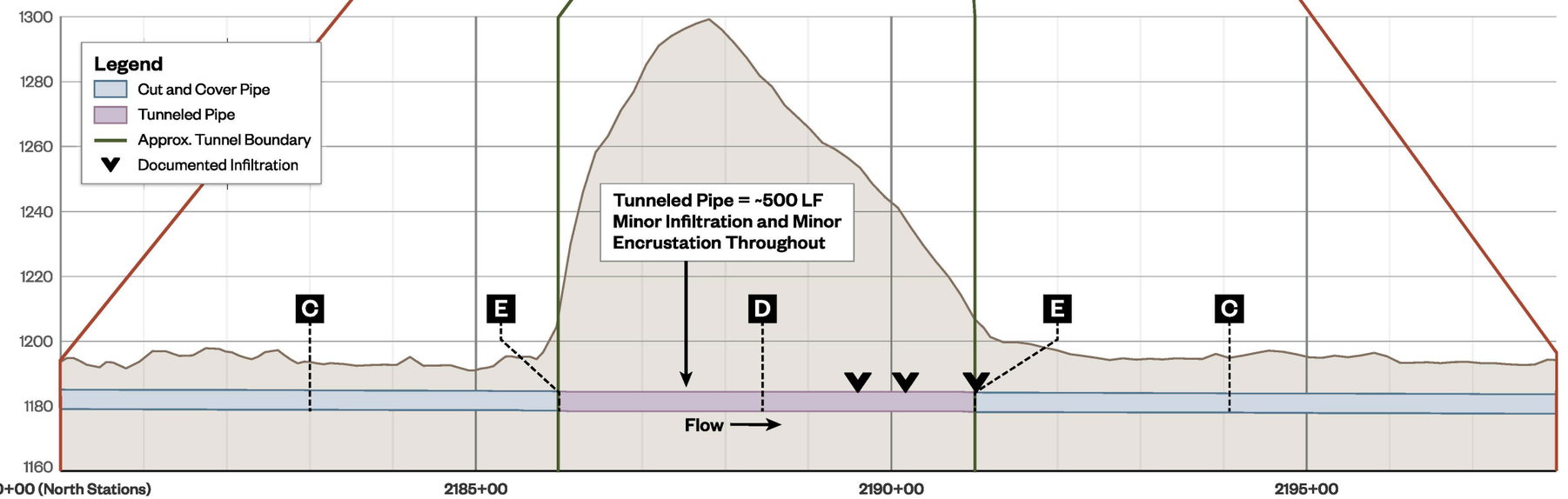
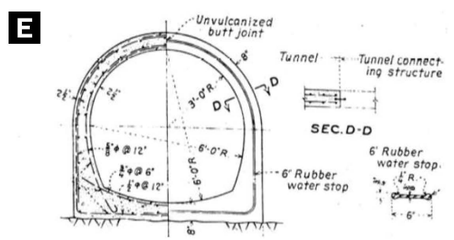




Note: Stations and elevations are approximate and for graphical purposes only. Sources used include record plans, GIS, Google Earth, interior inspections, and USGS groundwater sites (when available).

72-inch Concrete Pipe (Non-Cylinder)
16-ft Lay Lengths; Cross-Sectional Area = 28.3 SF

Tunneled, Cast-in-Place Pipe (Hoseshoe Shaped)
20-ft Sections; Cross-Sectional Area = 29.9 SF



Tunneled and Cut and Cover Pipe Interface
(Note: 6-in Rubber Water Stop)

Lilac Tunnel – March, 2020

SOURCE: Hazen 2020

FIGURE 3A

Existing Tunnel Cross Sections and Elevations - Lilac Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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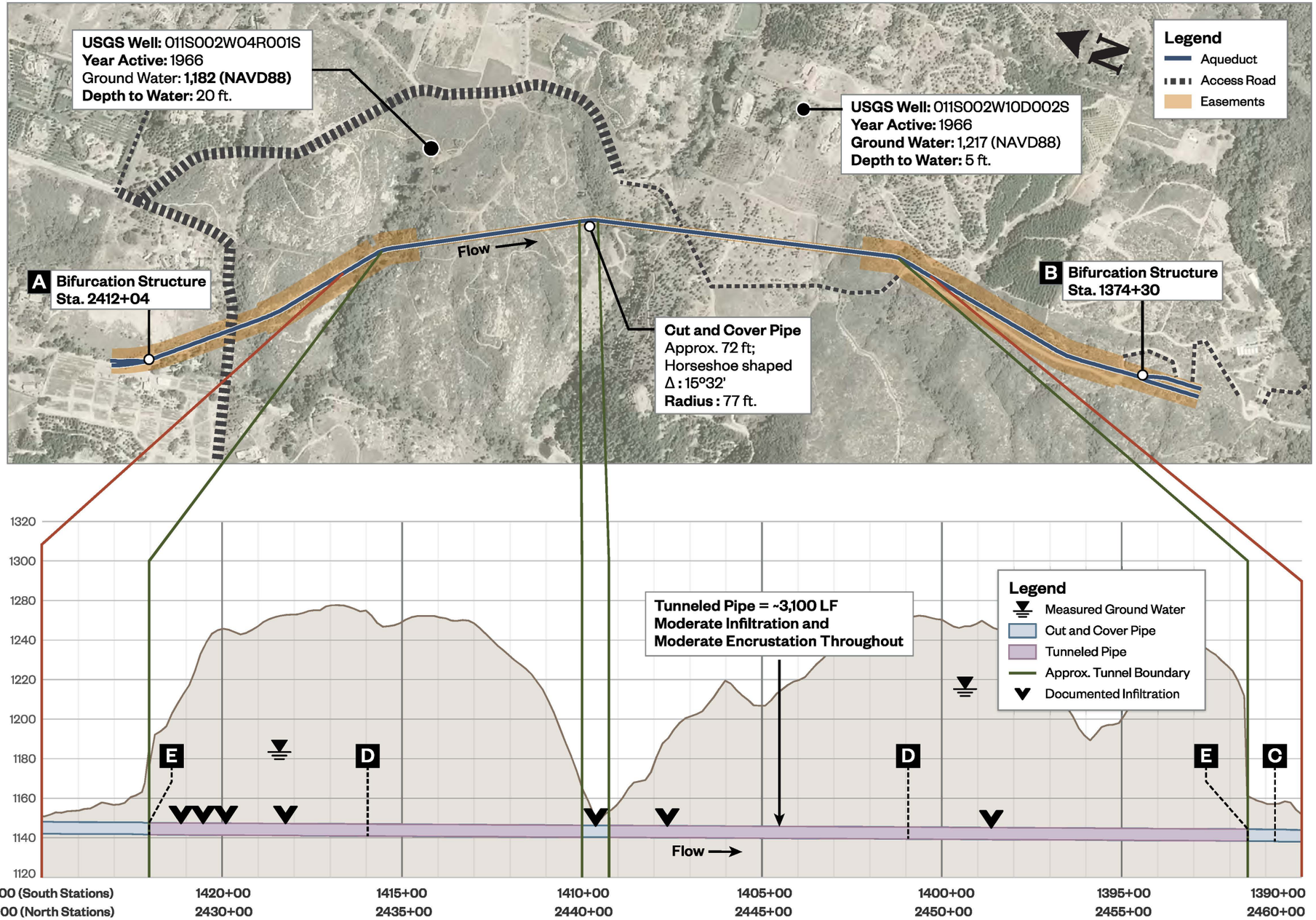
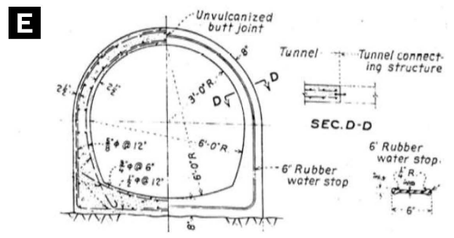


Note: Stations and elevations are approximate and for graphical purposes only. Sources used include record plans, GIS, Google Earth, interior inspections, and USGS groundwater sites (when available).

Red Mountain – March, 2020

72-inch Concrete Pipe (Non-Cylinder)
16-ft Lay Lengths; Cross-Sectional Area = 28.3 SF

Tunneled, Cast-in-Place Pipe (Hoseshoe Shaped)
20-ft Sections; Cross-Sectional Area = 29.9 SF



Tunneled and Cut and Cover Pipe Interface
(Note: 6-in Rubber Water Stop)

SOURCE: Hazen 2020

FIGURE 3B

Existing Tunnel Cross Sections and Elevations - Red Mountain Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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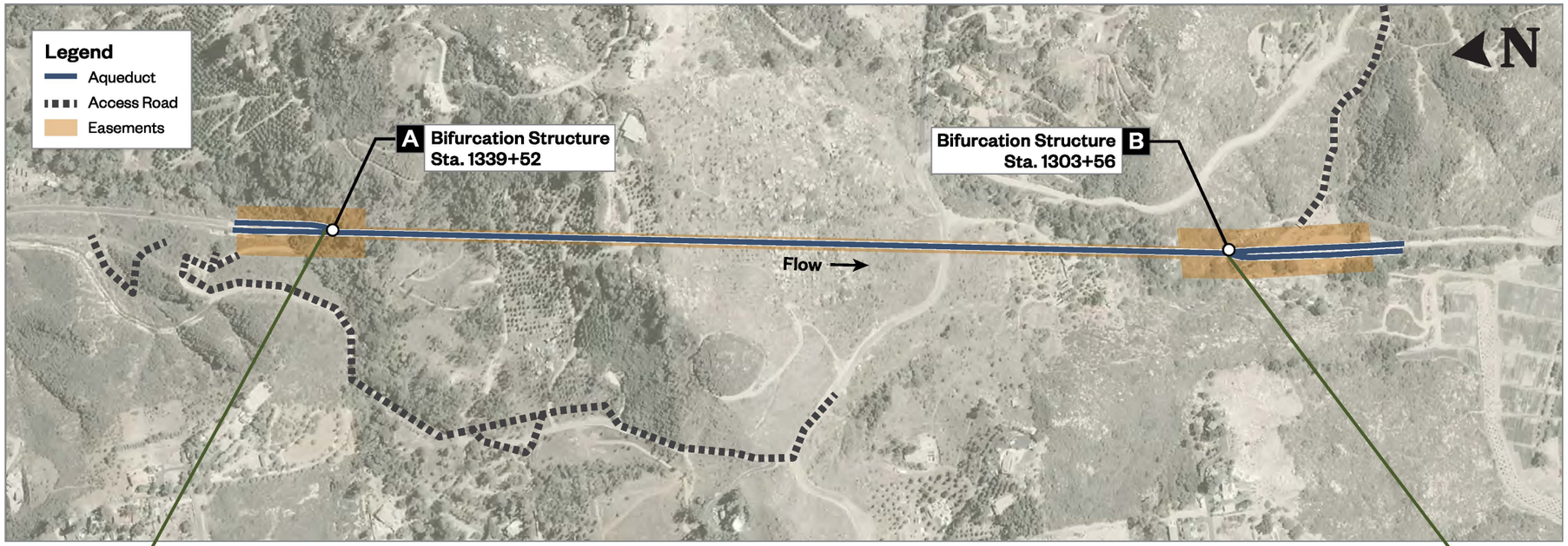
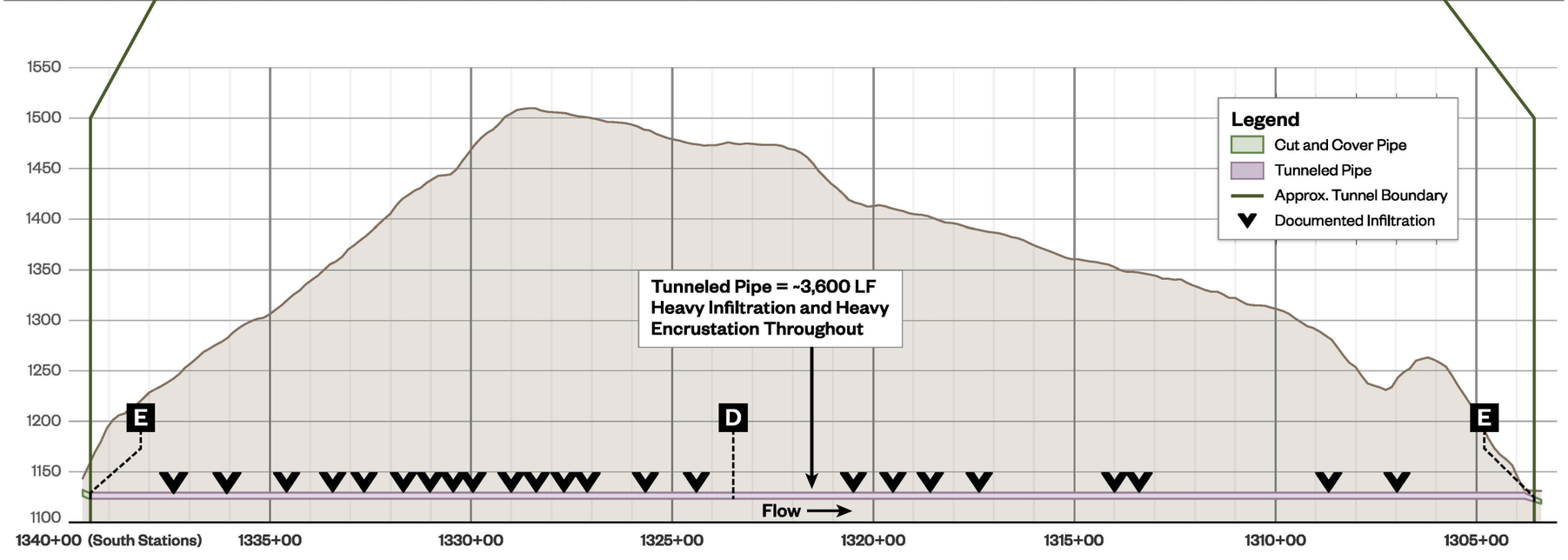
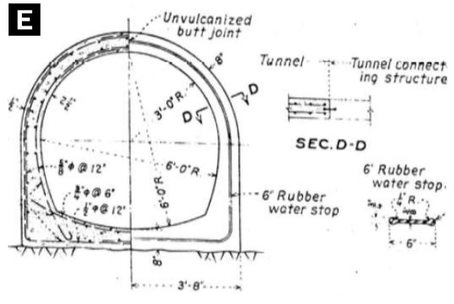




Note: Stations and elevations are approximate and for graphical purposes only. Sources used include record plans, GIS, Google Earth, interior inspections, and USGS groundwater sites (when available).

Tunneled, Cast-in-Place Pipe (Hoseshoe Shaped)
20-ft Sections; Cross-Sectional Area = 29.9 SF



Tunneled and Cylinder Pipe Interface
(Note: 6-in Rubber Waterstop)

Oat Hill – March, 2020

SOURCE: Hazen 2020

FIGURE 3C

Existing Tunnel Cross Sections and Elevations - Oat Hills Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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SOURCE: SanGIS 2019; SDCWA 2020

DUDEK

0 200 400 Feet

FIGURE 4A

Project Work Areas - Lilac Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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SOURCE: SanGIS 2019; SDCWA 2020

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FIGURE 4B

Project Work Areas - Red Mountain Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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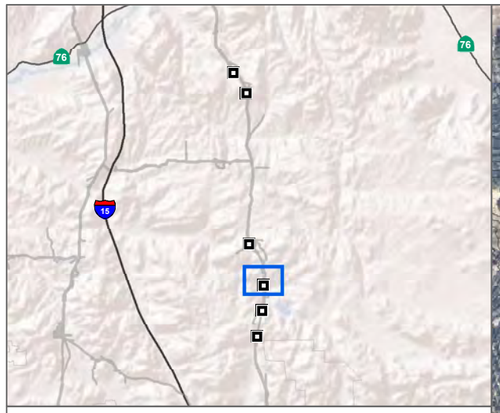
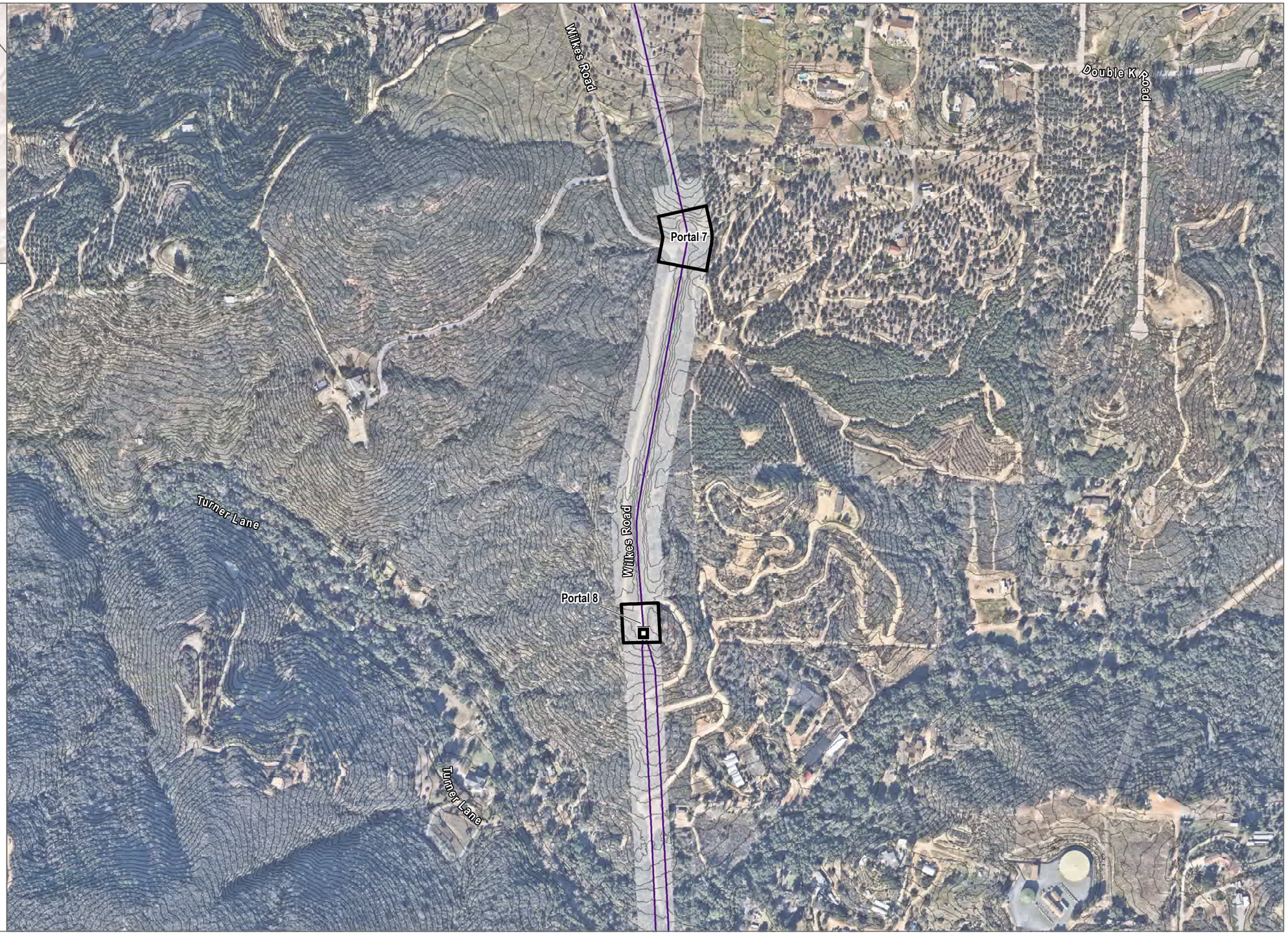


Existing Features

- SDCWA Right of Way
- SDCWA Pipeline
- Bifurcation Structure

Temporary Impact Areas

- Portal Work Area



SOURCE: SanGIS 2019; SDCWA 2020

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FIGURE 4C

Project Work Areas - Red Mountain Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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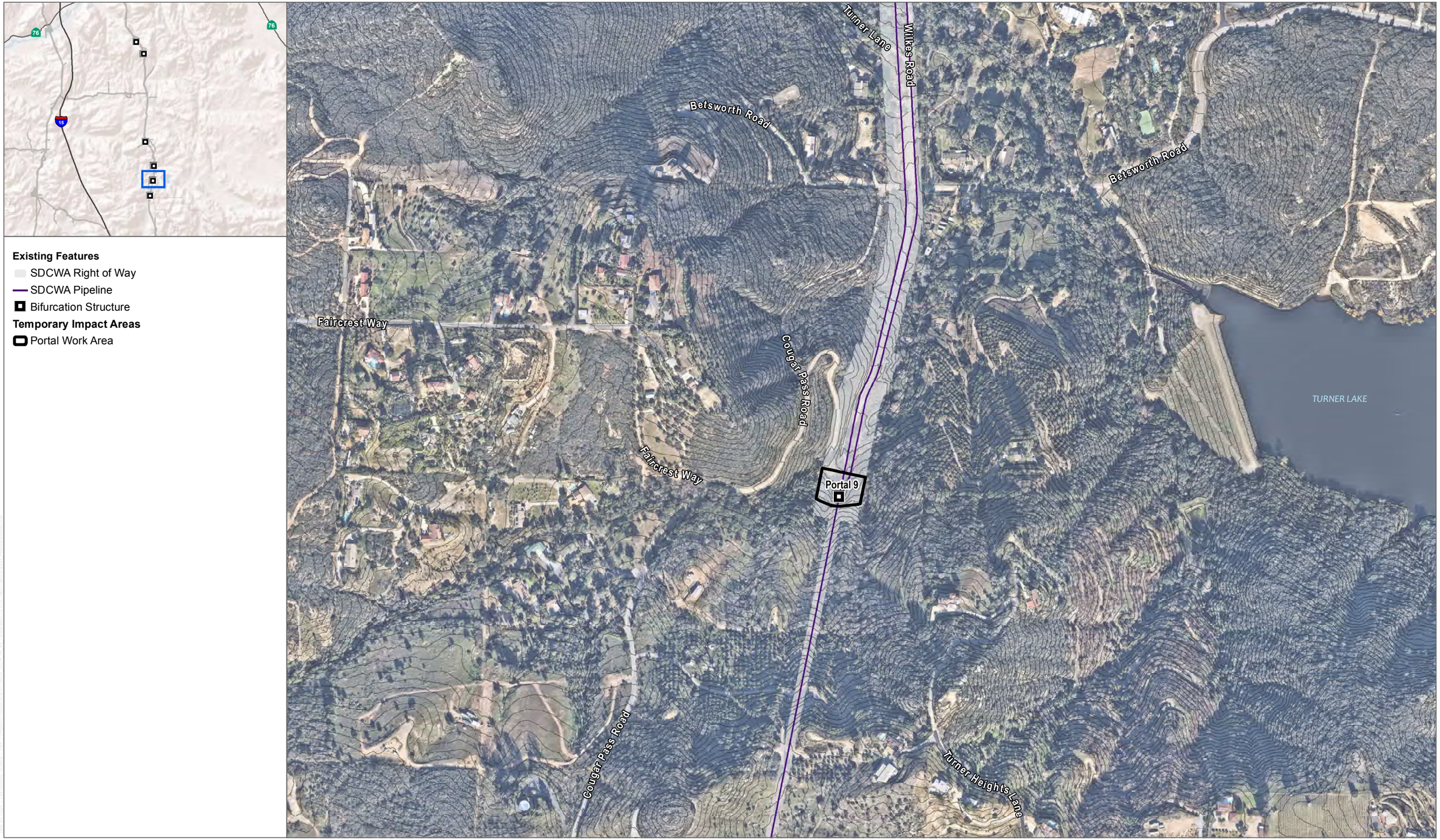

Existing Features

- SDCWA Right of Way
- SDCWA Pipeline
- Bifurcation Structure

Temporary Impact Areas

- Portal Work Area

SOURCE: SanGIS 2019; SDCWA 2020

DUDEK

0 200 400 Feet

FIGURE 4D

Project Work Areas - Oat Hills Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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SOURCE: SanGIS 2019; SDCWA 2020

DUDEK

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FIGURE 4E

Project Work Areas - Oat Hills Tunnel

First Aqueduct Treated Water Tunnels Rehabilitation Mitigated Negative Declaration

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