



**FENNER VALLEY
WATER AUTHORITY**

September 25, 2025 Items 5.1 - Attachment #3

MEETING ATTACHMENT #2

Special Board of Directors Meeting - August 8, 2025

Addendum #2 to the 2012 Environmental Impact Report for the Cadiz Valley Water Conservation, Recovery and Storage Project is provided in the board meeting packet and attached.

CADIZ VALLEY WATER CONSERVATION, RECOVERY, AND STORAGE PROJECT

Addendum No. 2 to the 2012 Environmental Impact Report

Prepared for
Fenner Valley Water Authority

July 2025



CADIZ VALLEY WATER CONSERVATION, RECOVERY, AND STORAGE PROJECT

Addendum No. 2 to the 2012 Environmental Impact Report

Prepared for
Fenner Valley Water Authority

July 2025

633 West 5th Street
Suite 830
Los Angeles, CA 90071
213.599.4300
esassoc.com



Atlanta	Orlando	San Diego
Bend	Palm Beach County	San Francisco
Camarillo	Pasadena	San Jose
Irvine	Pensacola	Sarasota
Los Angeles	Petaluma	Seattle
Mobile	Portland	Tampa
Oakland	Sacramento	

TABLE OF CONTENTS

Addendum No. 2 to the 2012 Environmental Impact Report: SCH# 2011031002

	<u>Page</u>
Introduction	1
Cadiz Project Overview	3
Purpose and Need.....	4
Objectives of the Cadiz Valley Water Conservation, Recovery, and Storage Project	5
Northern Pipeline Background	6
Description of the Conversion and Use of Northern Pipeline	6
Initial Pipeline Inspection.....	6
Conversion of Northern Pipeline	7
Pipeline Flushing.....	10
Operation and Maintenance.....	11
Impact Avoidance and Minimization Measures	11
CEQA Guidelines for Preparation of an Addendum.....	11
Lead Agency.....	13
Responsible and Trustee Agencies.....	13
Approvals Required	14
Environmental Checklist	18
Aesthetics	18
Agriculture and Forestry Resources.....	22
Air Quality	24
Biological Resources	31
Cultural Resources	43
Energy.....	47
Geology and Soils.....	51
Greenhouse Gas Emissions	56
Hazards and Hazardous Materials	61
Hydrology and Water Quality	64
Land Use and Planning.....	68
Mineral Resources	70
Noise71	
Population and Housing	74
Public Services	76
Recreation.....	78
Transportation.....	79

Utilities and Service Systems	83
Wildfire	85

Appendices

A	Final EIR Mitigation and Monitoring and Reporting Plan (MMRP)
B	Air Quality Model Results
C	Biological Resources Technical Memorandum
D	Greenhouse Gases Model Results

List of Figures

Figure 1	Northern Pipeline Overview	2
Figure 2	Preliminary Rendering for a Typical Pump Station Site Layout	9
Figure 3	Typical Air Release/Air Vacuum Valve at Grade	10

List of Tables

Table III-1	Estimated Maximum Mitigated Regional Construction Emissions – Northern Pipeline (pounds per day)	28
Table III-2	Estimated Maximum Mitigated Regional Operational Emissions – Northern Pipeline (pounds per day)	29
Table VIII-1	Northern Pipeline Construction greenhouse gas emissions	57
Table VIII-2	Northern Pipeline Operational greenhouse gas emissions	58

PROJECT DESCRIPTION

Introduction

This document is the second Addendum to the Final Environmental Impact Report (Final EIR) for the Cadiz Valley Water Conservation, Recovery and Storage Project (Cadiz Project) as certified on July 31, 2012 (SCH No. 2011031002) pursuant to the California Environmental Quality Act (CEQA). The Cadiz Project, as described in the Final EIR, involves a long-term groundwater management program for the closed groundwater basin underlying Cadiz Real Estate LLC (Cadiz Real Estate) property that would allow for both the beneficial use of some of the groundwater (Phase 1) and storage of imported surface water in the groundwater basin (Phase 2). The Cadiz Project, including Phase 1 and a programmatic overview of Phase 2, was approved by the Santa Margarita Water District (SMWD) acting as lead agency on July 31, 2012.

The first Addendum to the Final EIR (Addendum No. 1), adopted by Fenner Valley Water Authority (FVWA) acting as lead agency in 2019, assessed the construction of a water treatment system on Cadiz property and minor modifications to the Southern Pipeline route. FVWA—a joint powers authority (JPA) comprised of San Bernardino County, the Fenner Gap Mutual Water Company (FGMWC), and SMWD (managing member of FVWA)—has prepared this Addendum No. 2 to evaluate the construction of facilities necessary to convert the Northern Pipeline, an existing underground natural gas pipeline, into a water conveyance pipeline (Northern Pipeline Project, or NPP). The use of the existing Northern Pipeline for water conveyance, between the Fenner Valley and the Antelope Valley in California, was previously assessed in the Final EIR as a Project Facility Alternative. The existing 217-mile underground pipeline traverses the Mojave Desert as shown in **Figure 1** to Wheeler Ridge, California in western Kern County crossing lands managed by the Bureau of Land Management (BLM), other federal agencies, private owners, as well as the state of California. The use of this Northern Pipeline would serve as an additional component of the Cadiz Project as part of Phase 1. FVWA, FGMWC and Cadiz intend to enter into a Memorandum of Understanding for Lease and Operation of Cadiz Northern Pipeline Water Delivery Facilities in order to set forth the terms and conditions upon which Cadiz, FGMWC and FVWA will cooperate in the development of the Northern Pipeline and necessary capital improvements.

The Cadiz Project has been proposed to actively manage the groundwater basin underlying a portion of the Cadiz and Fenner Valleys located in the eastern Mojave Desert portion of San Bernardino County, California, to conserve water that would otherwise evaporate from the Bristol and Cadiz Dry Lakes, providing a new water source for participating entities. Cadiz Real Estate LLC, a wholly owned subsidiary of Cadiz Inc., owns approximately 35,000 acres of mostly contiguous land in the Cadiz and Fenner Valleys. The Cadiz Project would construct an array of groundwater extraction wells and pumps, a wellfield manifold piping system, monitoring features, and other appurtenances on Cadiz property. FGMWC would carry-out operation of the wellfield as well and manage the groundwater basin. FVWA would carry out and supervise the Northern and Southern Pipeline facilities.



SOURCE: ESRI; BLM; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 1
Fenner Valley Water Authority Project Pipeline Overview

The Final EIR addressed the potentially significant adverse environmental impacts of implementing Phase 1, including constructing the Project facilities and operating the wellfield to deliver an average of 50,000 acre-feet per year (AFY) over 50 years to the Colorado River Aqueduct (CRA) via the Southern Pipeline.

The FVWA was the Lead Agency for Addendum No.1 and was identified as the Lead Agency for further actions related to the implementation of the Project. The Final EIR evaluated use of the Northern Pipeline to convey water as a Project Facility Alternative for Phase 1 called the “Existing Natural Gas Pipeline Alternative Route” as excerpted below from page 7-14 of the 2012 Draft EIR.

Project Facilities Alternatives

- 2. Existing Natural Gas Pipeline Alternative Route.** This alternative involves use of an existing, unused natural gas pipeline that runs past the Cadiz Property to Barstow (and on to Wheeler Ridge). This pipeline has capacity for approximately 30,000 AFY of water. The pipeline extends approximately 100 miles between the Project site and Barstow. The pipeline would require rehabilitation and upgrades including construction of up to 5 pump stations between the Cadiz Property and Barstow, installation of air valves at approximately half mile intervals along the pipeline route, and eventual pipeline lining.

Since the certification of the Final EIR, FVWA has continued to evaluate the potential to utilize the Northern Pipeline as a means of conveying water in either direction between the Antelope Valley and the Fenner Valley, including points in between such as the Barstow area. Use of the Northern Pipeline allows water providers in the Barstow area and in the Antelope Valley to participate in the Cadiz Project and also diversifies the potential of the Cadiz Project to deliver water supply to State Water Project recipient communities throughout Southern California by exchange. This Addendum No. 2 provides a description of the construction and operational requirements associated with use of the Northern Pipeline facility (proposed project) to meet the objectives of the Cadiz Project, provides a detailed assessment of potential environmental impacts associated with preparation and use of the Northern Pipeline to support the Cadiz Project, and compares the analysis with the conclusions of the Final EIR as well as Addendum No. 1 to determine the appropriate CEQA compliance documentation. The Northern Pipeline would provide an additional route for water conveyance but not alter the total supply capacity of the Cadiz Project, which would remain an average of 50,000 AFY over 50 years. FVWA would not construct the Northern and Southern Pipeline simultaneously. Thus, the analysis in this Addendum is focused on the environmental impacts associated with a separate construction period for the Northern Pipeline and potential joint operation with the Southern Pipeline.

Cadiz Project Overview

Underlying the Cadiz and Fenner Valleys and the adjacent Bristol Valley is a vast groundwater basin that holds an estimated 17 to 34 million acre-feet (MAF) of high groundwater. Within this closed basin system, groundwater percolates and migrates downward from the higher elevations in the watersheds surrounding the Project area and eventually flows to Bristol and Cadiz Dry Lakes. The surrounding watersheds, Fenner, Orange Blossom Wash, Bristol, and Cadiz, span over 2,700 square miles. The Dry Lakes represent the low point in the closed watershed basin, meaning that all surface and groundwater within the watersheds eventually flows down gradient to these Dry Lake areas and not beyond. Once the groundwater reaches the Dry Lake areas, it mixes with the highly saline groundwater zone under the lake beds and is trapped in the salt sink, and thus becomes no longer suitable, or available to support municipal

beneficial uses. A portion of this water evaporates through the dry lakebed and is lost from the groundwater basin and is therefore also unable to support beneficial uses.

The Cadiz Project allows the development and export of an annual average of 50,000 AFY for 50 years (2,500,000 AF cumulatively) of water from the groundwater aquifer in the Cadiz Valley area of the Mojave Desert. The Final EIR provided that additional project participants may join the Project at any time subject to the established Project capacity. In any given year, groundwater extractions could be as much as 75,000 AF or as little as 25,000 AF, but extractions will never exceed an annual average of 50,000 AFY. The Final EIR addressed the impacts of constructing the Project facilities and operating the planned groundwater pumping and supply delivery of an average of 50,000 AFY over 50 years, including a single year maximum of 75,000 AF. The conveyance of water through the Northern Pipeline now contemplated would not preclude the development of the 43-mile Southern Pipeline as well. However, the total supply capacity of the Cadiz Project would remain the same, averaging 50,000 AFY total over a 50-year period, with a maximum single-year delivery of 25,000 AFY through the Northern Pipeline and 25,000 AFY through the Southern Pipeline. To convey the full 50,000 AFY through the Southern Pipeline while simultaneously pumping 25,000 AFY through the Northern Pipeline (matching the single year maximum), a portion of the power demand would be supplied with cleaner energy technologies such as linear generators or fuel cells sufficient to limit total project operational emissions below daily significance thresholds established by the Mojave Desert Air Quality Management District (MDAQMD).

The Final EIR also evaluated a second phase of the Cadiz Project, the Imported Water Storage Component, that would make available up to 1 MAF of groundwater storage space in the basin to be used as part of a conjunctive use project, which is consistent with State policy favoring and supporting conjunctive use projects (California Water Code § 79170 et. seq.). Under the Imported Water Storage Component, water would be conveyed to recharge basins in the Fenner Valley to percolate into the ground for storage and future withdrawal as a dry-year supply. The Imported Water Storage Component was evaluated in the Final EIR at a programmatic level in accordance with CEQA Guidelines Section 15168, because the potential quantity and schedule for spreading, storage, and extraction is still under conceptual development, the participants have not yet been identified, and it would be implemented at a later date. A similar project proposed by the Metropolitan called the “Cadiz Groundwater Storage and Dry-Year Supply Program” was analyzed in detail in 2001, but is likewise not proposed or evaluated as part of the NPP.

Purpose and Need

The use of the Northern Pipeline for the transport of water is needed to increase water conveyance and storage infrastructure in this region and to enhance flexibility and resiliency of the water supply system in California. Both the State Water Project and Colorado River have been subject to mandatory, emergency conservation measures during severe and prolonged drought conditions and such conditions can limit access to alternative, reliable water particularly in many rural, underserved and disadvantaged communities.

The purpose of converting the use of the existing Northern Pipeline from oil to water conveyance is to provide state and regional water agencies a mechanism to convey and store water more flexibly throughout the region. The change of use would make alternative water supplies and storage available to

communities across California, through direct deliveries for systems connected to the Northern Pipeline, as well as through transfers and exchanges between other local agency conveyance facilities that are connected. Increased flexibility through the conveyance of water in the Northern Pipeline offers state and regional water agencies the opportunity to better meet regional water needs including the needs of low-income disadvantaged communities.

The conveyance of water through the Northern Pipeline would contribute to increased resiliency of California's water system. California's existing water conveyance system is vulnerable to a myriad of risks, including those posed by earthquakes, flooding and climate change. To help mitigate these threats, additional means of conveying water are needed. Changing the use of the Northern Pipeline to enable the transfer of water would contribute to the further diversification of California's water conveyance system and thereby enhancing the State's water conveyance resilience. Operation of the Northern Pipeline would be year-round.

Objectives of the Cadiz Valley Water Conservation, Recovery, and Storage Project

The California Constitution mandates maximizing the reasonable and beneficial use of water and the avoidance of waste. The fundamental purpose of the Project is to save substantial quantities of groundwater that are presently being wasted and lost to evaporation by natural processes. In the absence of this Project, approximately 3 MAF of groundwater presently held in storage between the proposed wellfield and the Dry Lakes will become saline and evaporate over the next 100 years. By strategically managing groundwater levels, the Project would conserve up to 2 MAF of this water, retrieving it from storage before it is lost to evaporation. The conservation opportunity is unique and garners special emphasis. The proposed conservation is not dependent upon future rainfall, snowpack or the needs and demands of others: the groundwater is already in storage. Moreover, the conservation and resulting water supply augmentation can be achieved independently from the environmental and regulatory conditions that generally constrain the importation of water to Southern California. The geographic isolation of the groundwater makes it non-tributary to the Colorado River system, and therefore eligible for distinctive treatment under federal regulations that may unlock additional complementary storage opportunities, both within the Cadiz Groundwater Basin and in Lake Mead.

The Project makes available a reliable water supply for project participants, to supplement or replace existing supplies and enhance dry-year supply reliability. This will also aid nonparticipating agencies by a like amount by increasing the available supply and reducing the overall demand on the system. Both the SWP and Colorado River water supplies are experiencing reductions from historic deliveries. As a result, Southern California water providers are looking for affordable new supplies to replace or augment current supplies and enhance dry-year supply reliability. The Project would optimize the reasonable and beneficial use of water within the aquifer system in a sustainable fashion—conserving water that would otherwise be wasted—to create a local water supply alternative for Southern California water providers.

The objectives for this Project are as follows:

- Maximize beneficial use of groundwater in the Bristol, Cadiz, and Fenner Valleys by conserving and using water that would otherwise be lost to brine and evaporation;

- Improve water supply reliability for Southern California water providers by developing a long-term source of water that is not significantly affected by drought;
- Reduce dependence on imported water by utilizing a source of water that is not dependent upon surface water resources from the Colorado River or the Sacramento-San Joaquin Delta;
- Enhance dry-year water supply reliability within the service areas of SMWD and other project participants;
- Enhance water supply opportunities and delivery flexibility for SMWD and other participating water providers through the provision of carry-over storage and, for Phase II, imported water storage;
- Support operational water needs of the Arizona and California Railroad in the Project area;
- Create additional water storage capacity in Southern California to enhance water supply reliability;
- Locate, design, and operate the Project in a manner that minimizes significant environmental effects and provides for long-term sustainable operations.

Northern Pipeline Background

The 217-mile Northern Pipeline is a 30” idle, steel underground pipeline that extends from Cadiz to Wheeler Ridge, California. The Northern Pipeline was constructed by All American Pipeline Company in 1985 as part of an approximately 1,200-mile crude oil pipeline extending from Texas to the California Coast. In 2001, the entire pipeline was sold to El Paso Natural Gas for the purpose of converting the pipeline from oil to natural gas conveyance and left idle. During the environmental review and permitting process for the change of use from oil to natural gas, EPNG determined the 217-mile segment, the Northern Pipeline, was unnecessary for its natural gas conversion project and left the segment idle. In 2011, Cadiz through its subsidiary Cadiz Real Estate LLC entered into an Option Agreement to purchase the Northern Pipeline from EPNG. In 2021, following the completion by EPNG of conditions precedent, Cadiz completed the purchase of the Northern Pipeline from EPNG and assumed responsibility for the internal and external integrity of the 217-mile pipeline, including maintenance of a nitrogen blanket and cathodic protection to prevent corrosion.

The Northern Pipeline is the subject of a BLM right-of-way (ROW) granted under Section 28 of the Mineral Leasing Act of 1920 (“MLA ROW Grant”). The Northern Pipeline is a steel pipeline, 30-inches in diameter and is buried at an average depth of 5 to 6 feet. The pipeline traverses portions of the Mojave Desert and Antelope Valley and is generally close to an active railroad easement and existing travel routes, including ungraded native surface, dirt roads and paved highways. The Northern Pipeline would provide conveyance capacity for up to 25,000 AFY of water.

Of the 217-mile Northern Pipeline, only the approximately 155 miles spanning from Cadiz, California to Mojave, California would be converted to convey water in support of the Cadiz Project. These 155 miles of pipeline span across BLM lands, other federal lands, state lands and private lands. The remaining 57 miles of the pipeline that continues to Wheeler Ridge, California are not part of the NPP.

Description of the Conversion and Use of Northern Pipeline

The NPP would proceed in the following phases:

Initial Pipeline Inspection and Maintenance

The first phase of the NPP is to complete an updated inspection and repair or replace sections of the pipeline as needed. The inspection process includes accessing the pipeline approximately every 3-5 miles from the surface with an excavator. The inspectors will cut into the pipe and install cameras and other inspection equipment inside the pipeline to assess the pipeline's condition and integrity. If damage is identified, rehabilitation may consist of lining the pipeline, repairing sections of the pipeline, or replacing sections of the pipeline. Each temporary access point would include an area of disturbance approximately 6 feet by 15 feet along the pipeline alignment, within the existing easement.

It is anticipated that up to 16 miles of pipeline may require replacement within the existing alignment or replacement parallel to the existing pipe. Any pipe that is replaced would either be removed from public lands upon replacement or abandoned in place (adjacent to replacement pipe). If the damaged pipeline is removed, those segments that are found to need replacement would be uncovered, cut into pieces, and removed by truck. Excavated material would be stockpiled on site. New pipeline segments would be delivered to the sites via the existing access road and installed within the open trench. The pipe trench would be backfilled with the stockpiled material and graded to match the surrounding topography. If the damaged pipeline is to be abandoned in place, a new trench would be created within 10 feet of the outside of the existing pipeline. Excavated material would be stockpiled on site. New pipeline segments would be delivered to the sites via the existing access road and installed within the open trench. The pipe trench would be backfilled with the stockpiled material and graded to match the surrounding topography. The damaged pipe would be filled with soil and/or sand cement and abandoned in place. All the work, including equipment staging, would be conducted within the 50-foot-wide right-of-way currently held by Cadiz on land previously disturbed by the original pipeline installation.

Cathodic Protection Repair

The existing cathodic protection system may need to be repaired or replaced along the entire length of the existing pipeline. Where it is necessary to replace and install anodes connected to the existing pipeline, a 12- to 18-inch temporary trench may be needed to access the pipeline. The trench would be backfilled once the repair is complete. Old and defective cathodic protection equipment currently mounted above grade near the pipeline may be replaced as necessary. These repair activities will occur concurrently with other construction activities and could last throughout the construction phase. Repairs will be conducted by approximately 3 to 5 people and 2 to 3 trucks at each repair location. All of the repair work would be conducted within the 50-foot-wide right-of-way, currently held by Cadiz.

Conversion of Northern Pipeline

Construction of Pump Stations

In order to convey water through the existing pipeline, seven pump stations would be constructed between the Cadiz property and western Antelope Valley. Figure 1 identifies the approximate locations of each pump station, PS1 through PS7. Each of the pump stations would require approximately two acres of land to accommodate construction and operation. Laydown areas for construction equipment would take place within these two-acre pump station areas. These pump stations would be located adjacent to the pipeline and would extend approximately 325 feet from the pipeline centerline. The pump stations would be located either on private parcels or property managed by the Bureau of Land Management (BLM).

Approval from BLM would be required to construct on BLM property. Construction of pump stations on privately owned parcels would not be subject to County building approvals or Conditional Use Permits, as it would fall under FVWA jurisdiction. **Figure 2** provides a typical layout for the pump stations. The pump stations will consist of the following typical main components:

- Forebay Tank(s)
- Surge Tanks
- Vertical Turbine Pumps or Horizontal Pumps (5 Duty Pumps + 1 Standby Pump)
- Natural Gas Generators
- Electrical Transformers
- An airconditioned masonry block wall building, housing motor control centers, control and monitoring panels, and instrumentation equipment. The building will include roof mounted solar panels to provide power for lighting, ventilation, and AC systems.

The pump stations would be powered by natural gas-driven electric generators to energize the pumps' electrical motors. The pump stations would require a combined generation capacity of 50,000 horsepower incorporating either internal combustion engines, linear generators, or other technologies with reduced emissions that comply with applicable air emissions limits from the MDAQMD. The generators would be installed at each pump station site. Permits from the MDAQMD would be needed to operate the engines.

For each pump station, natural gas would be supplied from an existing natural gas pipeline that parallels the Northern Pipeline. To access the natural gas, a pipeline would be extended from the new pump station to the parallel gas pipeline, generally a distance less than 100 feet. The gas pipeline would be accessed through excavation and a tap installed on the natural gas pipeline, in coordination and with approval from the owner/operator of the adjacent gas pipeline. The gas pipeline tap and connection would be constructed within the parcel and would potentially require crossing federal land. No natural gas connections would cross state lands.

Construction of the pump stations would require up to 20 worker trips, 10 vendor trips, and 24 haul truck trips per day. Construction of each pump station is anticipated to take approximately 9 months to one year depending on the availability and procurement time of pumps and major equipment. Construction will include site preparation, mechanical, structural and electrical facilities, installation of underground pipelines to connect to the existing buried pipeline, and installation of reinforced concrete support pads for pumps, valves, tanks, and other infrastructure. Each pump station site will be paved with concrete surface and a fence or wall will be constructed around the perimeter with access gates. The natural gas-powered generators would be installed on pads within the pump station fence-line. During construction 3 to 5 trucks could be present at the site at one time. Additional construction equipment such as excavators, cranes and pavers will also be used for some construction elements. Approximately 7 to 10 people could be simultaneously involved with the construction of each pump station at any given time.

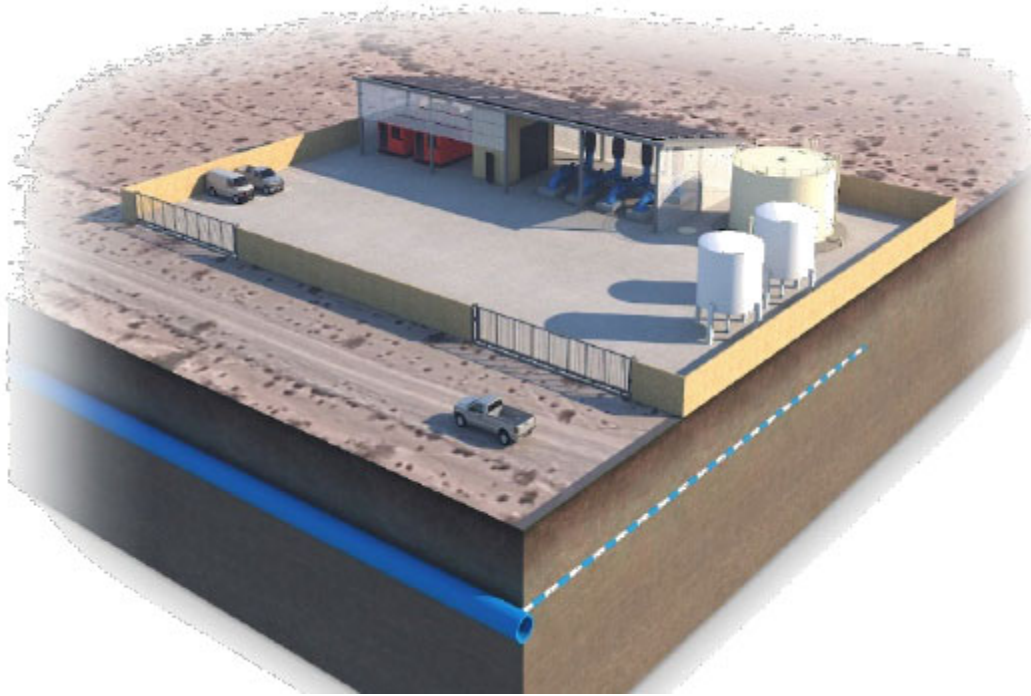


Figure 2. Preliminary Rendering for a Typical Pump Station Site Layout

Installation of Air Release/Air Vacuum Valves and Blow Off Valves

As described in the Final EIR, the water conveyance pipeline would require pipeline appurtenances visible on the surface, including air and vacuum relief valves, blow-off facilities, and access manholes. The exact location of these appurtenances would be determined during final design. The Air Release / Air Vacuum valves (AR/AV) would be installed to allow for air release and to manage vacuum conditions in the pipeline and blow-offs (BO) to allow for filling and draining the pipeline as needed for maintenance. The existing pipeline includes several existing valves; these existing valves would be maintained and approximately 140 new AR/AVs, and 140 new BOs would be installed. **Figure 3** provides an example of a typical AR/AV above grade.

To install these appurtenances, excavation would be required to access the existing buried pipeline. All of the work would be conducted within the 50-foot-wide right-of-way currently held by Cadiz. The area of excavation is estimated to be 20 feet long by 10 feet wide at each location. The surface area typically needed for an AR/AV assembly is approximately 36 to 50 square feet, and 16 to 25 square feet for a BO unit. The AR/AV assembly would be mounted at grade in a 24-inch diameter enclosure that is approximately 4 feet tall. AR/AVs can also be installed belowground in precast vaults with a 3 to 4-inch vent pipe extending approximately 36 inches above grade, which can be painted to blend with surrounding environment. The BO unit can be an aboveground riser pipe with a cap, or an underground camouflaged unit. To access the BOs, construction crews would use existing maintenance roads along the pipeline alignment.

Installation of each AR/AV and BO would take approximately 1 week per location. AR/AVs and BOs may be constructed concurrently along the pipeline with other construction activities before the pipeline is put into service. It is assumed that two to three trucks would be required at each location along with excavators, using the existing access road to transport equipment near to each site, and traversing across the ground to the installation point within the easement. Approximately 3 to 5 workers would be needed at each location for excavation, installation, and backfill operation.

Use of the BOs would occur rarely, only when the pump stations were turned off due to maintenance or malfunction. Water within the pipeline would need to be released to prevent inundating the pump stations. Each BO would be equipped with a leach field or holding pond area sufficient to contain the pipeline volume that could be released from the valve. The holding ponds would be approximately 250 feet by 24 feet in size and unlined. The BO water would be contained on site and either percolate and/or evaporate.



Figure 3. Typical Air Release/Air Vacuum Valve at Grade

Pipeline Flushing

During and at the end of construction once the pump stations are operational, the pipeline would be flushed with water as part of condition assessment surveys as well as startup and commissioning in order to clean the interior of the pipeline. Water may be flushed through the pipeline several times over approximately 1 to 2 months. A total of approximately 15 acre feet of water would be conveyed through the pipeline for flushing over the course of a few hours to determine the water quality at the delivery point. Additionally, hydrostatic testing would be conducted along the pipeline using the same water used for flushing.

As part of the Project, a holding pond for the retention of flushed and hydrostatic testing water would be constructed on privately held lands intersecting the pipeline alignment near the City of Barstow. Flushed water and water used for hydrostatic testing would be collected and stored in portable water tanks in the vicinity of Mojave west of Edwards Air Force Base in order to be sampled and then would be treated as

appropriate and discharged to a leach field or a holding pond in compliance with applicable discharge requirements.

Operation and Maintenance

Once the pump station and appurtenant facilities are installed, water would be conveyed through the pipeline in either direction. Operation would be managed from Pump Station 1 located on Cadiz property. The pumps would be controlled and monitored remotely using a SCADA system located near Pump Station 1 to coordinate each of the pump stations operation. The pump stations would be unmanned at most times, but regular site inspections of the mechanical and electrical equipment would occur once or twice per day. Use or operation of the Northern Pipeline would be year-round.

Routine maintenance of the pipeline would be conducted similar to existing maintenance activities. The facility operators would be subject to safety procedures and impact minimization standard practices for all work in remote desert areas including when using access roads. As part of the proposed project, FVWA and/or FGMWC would be responsible for preparing and implementing Standard Operating Procedures (SOPs) for maintenance and repair activities that outline required actions to avoid impacts to natural resources within the existing pipeline easement.

Termination & Rehabilitation

Following the effective life of the project, the pipeline would be abandoned in place to avoid impacts of removing it from the ground, and the pump stations would be dismantled and equipment recycled or disposed of off-site. The pump station sites would be returned to an undeveloped condition, and all building materials and perimeter fencing would be removed.

Impact Avoidance and Minimization Measures

The Final EIR provides a detailed environmental impact analysis of the construction and implementation of the Cadiz Project. The Final EIR identified mitigation measures to avoid or minimize potential impacts where feasible. These same mitigation measures would apply to the conversion and use of the Northern Pipeline as well.

CEQA Guidelines for Preparation of an Addendum

This Addendum has been prepared to determine whether the proposed changes to the Project (use of the Northern Pipeline for delivery of water through the system) would result in any new significant impact or a substantial increase in the severity of any previously identified significant environmental impact compared with the impacts disclosed in the certified EIR. CEQA Guidelines Sections 15162 and 15164 set forth the criteria for determining the appropriate additional environmental documentation, if any, to be completed when there is a previously certified EIR covering a project for which a subsequent discretionary action is required.

Section 15162 of the CEQA Guidelines states that preparation of a subsequent EIR is not required unless one or more of the following conditions occur:

- Substantial changes are proposed in the project which would require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes have occurred with respect to the circumstances under which the Project is undertaken which would require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time of the previous EIR was certified as complete and adopted, shows any of the following:
 - The project would have one or more significant effects not discussed in the previous EIR;
 - Significant effects previously examined would be substantially more severe than shown in the previous EIR;
 - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR or negative declaration would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternative.

Section 15164 of the CEQA Guidelines states that:

- The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
- An addendum may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR have occurred.
- An addendum need not be circulated for public review but can be included in or attached to the Final EIR.
- The decision making body shall consider the addendum with the Final EIR prior to making a decision on the project.
- A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the Project, or elsewhere in the record. The explanation must be supported by substantial evidence.

This Addendum relies on the significance criteria established in Appendix G of the 2024 CEQA Guidelines and the resource analysis methodology, described in the Final EIR to assess the potential impacts related to the Project modifications. Each resource section presents a summary of the impacts and mitigation conclusions from the analysis in the Final EIR, as well as a determination as to whether the Project modifications would result in new significant impacts, or a substantial increase in the severity of the previously identified significant impacts. Resource impacts evaluated are presented in the same order as in the Final EIR.

In compliance with CEQA Guidelines §15150, this Addendum No. 2 has incorporated by reference the EIR certified by SMWD in 2012 and all technical studies, analyses, and technical reports that were prepared as part of the Draft and Final EIR and Addendum No. 1. In addition, this Addendum No. 2 incorporates biological and air quality technical studies conducted to assess the use of the Northern Pipeline.

Lead Agency

The FVWA is acting as Lead Agency for actions related to the implementation of the Cadiz Project, including the implementation of the Northern Pipeline as a project component. The key JPA provisions that articulate FVWA's role in carrying out the Project are:

- Section 2.2.1 states that the purpose of the JPA is to accomplish "Project Objectives," including "to undertake the review and approval of the design, permitting and construction of the Project Facilities by Cadiz..." (JPA Article I defines "Project Facilities" as "any and all facilities deemed necessary, advisable or appropriate to extract convey or deliver Project water...")
- Section 3.1 (including subsections 3.1.1, 3.1.3 and 3.1.12) provides that FVWA "shall possess the power in its own name to" and "take all acts as are necessary and appropriate to carry out the Project Objectives," to "obtain rights, permits and other authorizations for, or pertaining to, the Project and Project Facilities..." and to "apply for... state...permits...from the State...necessary for the Authority's full exercise of its powers."

Public Resources Code section 21067 defines a "Lead Agency" as "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." Given Sections 2.2 and 3.1 of the JPA, the decision to submit any permit applications is one that must be made by FVWA, making it the Lead Agency as it is the public agency responsible for carrying out the Project.

Responsible and Trustee Agencies

Responsible Agencies are public agencies other than the Lead Agency which have discretionary approval power over a project (*CEQA Guidelines* §§ 15096 and 15381). Trustee Agencies are defined in *CEQA Guidelines* Section 15386 as state agencies having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. The California Department of Fish and Wildlife (CDFW), which is responsible for fish and wildlife, is a Trustee Agency as defined in *CEQA Guidelines* Section 15386, with jurisdiction over the Project pursuant to the permitting authority under the California Fish and Game Code Sections 2081 and 1602. The California State Lands Commission has jurisdiction and management control over California's sovereign and state lands, including approximately one mile of the Northern Pipeline that crosses state lands. The MDAQMD is a Responsible Agency with authority pursuant to the Clean Air Act to regulate point source combustion equipment. The Colorado Regional Water Quality Control Board (CRWQCB) would be a Responsible Agency pursuant to their authority to regulate waters of the State under the Porter Cologne Act. The County of San Bernardino is a Responsible Agency pursuant to its Groundwater Management Ordinance as well as for encroachment permits and building permits if needed. The County of Kern is a Responsible Agency for encroachment permits and building permits if needed. Metropolitan Water District of Southern California is a Responsible Agency for use of the Colorado River Aqueduct by the Southern Pipeline. Finally, each of

the project participants also serve as Responsible Agencies pursuant to their discretionary action to off-take and use water delivered by the Project Facilities.

Approvals Required

The following agreements, permits, and approvals may be necessary to implement the Project.

Agency	Agreement/ Permit/Approval	Description
Fenner Valley Water Authority	Project Approval/ CEQA	<p>Needed to modify the Water Project to convert and operate the NPL for water transportation.</p> <p>As CEQA Lead Agency, FVWA evaluates potential environmental impacts of the project.</p>
US Bureau of Land Management	Federal Land Policy and Management Act (FLPMA) Right of Way for facilities over federal lands / NEPA	<p>Needed to convert and operate the NPL for water transportation over public lands.</p> <p>As NEPA Lead Agency, BLM evaluates potential environmental impacts of the project.</p>
US Air Force	Outgrant Easement (or other applicable authorization) for NPL over Edwards Air Force Base / NEPA	Needed to convert and operate the NPL for transportation of water over military lands. NEPA Cooperating Agency.
US Fish & Wildlife Service	Endangered Species Act Section 7 Consultation	Needed to evaluate potential impacts to desert tortoise
California State Historic Preservation Office (SHPO)	National Historic Preservation Act Section 106 Consultation	Needed to evaluate and resolve potential effects to historic properties
US Army Corps of Engineers	Clean Water Act Section 404 permit	Needed if any facilities will impact waters of the US (if any)
California State Lands Commission (CSLC)	Lease for NPL over state owned lands	Needed for the change to transportation of water through the existing pipeline over state-owned lands

California Department of Fish and Wildlife (CDFW)	California Fish and Game Code Section 2081 incidental take permit	Needed if impacts to desert tortoise cannot be avoided
	California Fish and Game Code Section 1602 LSA agreement	Needed if facilities will impact CDFW-jurisdictional streambeds
California Public Utilities Commission	CPUC Approval	Needed for public utility off-takers from the NPL if their water supply contracts will affect rates.
Lahontan Regional Water Quality Control Board	Waste Discharge permits	Needed for discharge from blow off valves along pipeline, if they impact waters of the state
	Waste Discharge permits	Needed for placing any fill in waters of the state, if any
	Clean Water Act Section 401 Certification	Needed for any impacts to waters of the US (if any)
Mojave Desert Air Quality Management District	Emissions permits	Needed for natural gas powered linear generators at Pump Stations

ENVIRONMENTAL CHECKLIST

Cadiz Valley Water Conservation, Recovery, and Storage Project EIR Addendum No. 2

1. **Project Title:** Cadiz Valley Water Conservation, Recovery, and Storage Project EIR Addendum No. 2
2. **Lead Agency Name and Address:** Fenner Valley Water Authority
26111 Antonio Pkwy
Rancho Santa Margarita, CA 92688
3. **Contact Person and Phone Number:** Robert Grantham
4. **Project Location:** San Bernardino County and Kern County, California
5. **Project Sponsor's Name and Address:** Cadiz Real Estate LLC
550 South Hope Street, Suite 2850
Los Angeles, CA 90071
6. **General Plan Designation(s):** Various
7. **Zoning:** Various

8. Description of Project:

The Project Description is provided above. The Final EIR evaluated use of the Northern Pipeline to convey water as a Project Facility Alternative for Phase 1 called the “Existing Natural Gas Pipeline Alternative Route” as excerpted below from page 7-14 of the Draft EIR. Since the certification of the Final EIR in 2012, FVWA has continued to pursue the potential to utilize the Northern Pipeline as a means of conveying water in either direction between the Antelope Valley and the Fenner Valley, including points in between such as the Barstow area. The pipeline traverses portions of the Mojave Desert and Antelope Valley, often close to an active railroad easement and existing travel routes, including ungraded native surface, dirt roads and paved highways. The Northern Pipeline, in addition to the Southern Pipeline, would provide conveyance capacity for up to 25,000 AFY of water. Use of the Northern Pipeline would allow for project participants in the Barstow area and in the Antelope Valley to be added to the Cadiz Project, and to enable exchanges with State Water Project recipient communities in the Inland Empire and Orange County. Of the 217-mile Northern Pipeline, only the approximately 155 miles spanning from Cadiz, California to Mojave, California would be converted to convey water in this NPP.

In order to convey water through the existing pipeline, seven pump stations would be constructed between the Cadiz property and western Antelope Valley. As described in the Final EIR, the water conveyance pipeline would require pipeline appurtenances visible on the surface, including air and vacuum relief valves, blow-off facilities, and access manholes. The Air Release / Air Vacuum valves (AR/AV) would be installed to allow for air release and to manage vacuum conditions in the pipeline and blow-offs (BO) to allow for filling and draining the pipeline as needed for maintenance. The existing pipeline includes several existing valves; these existing valves would be maintained and approximately 140 new AR/AVs and 140 new BOs would be installed.

Environmental Checklist

Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
I. AESTHETICS — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) Scenic vistas are areas identified or known for high scenic quality. Scenic vistas may be designated by a federal, State, or local agency. Scenic vistas can also include an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. The existing buried pipeline traverses open space areas managed by the Bureau of Land Management (BLM). These desert areas exhibit long range scenic views made up of open desert framed by distant mountain ranges. However, the Northern Pipeline does not traverse any county, state or federally designated scenic vistas. The San Bernardino County Natural Resources Element includes policies to preserve regionally significant scenic vistas that may include prominent hillsides, ridgelines, and dominant landforms. The proposed project would construct small facilities within an existing utility easement set back from public roadways. The new facilities would not block views and would be obscured by the local topography and vegetation. The project modifications would utilize an existing pipeline to convey water, and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. Up to 16 miles of the existing pipeline may require replacement, either within or parallel to the existing alignment. The construction phase of the Project would be short-term and temporary and would occur separately from the construction of the Southern Pipeline. The replaced pipe would be backfilled with the stockpiled material and graded to match the surrounding topography. The proposed pump stations would include one-story structures surrounded by either chain-link fencing or concrete block walls. The pump stations would be visible from short stretches of the highways that traverse the pipeline route including Route 66 near Amboy, Interstate 40 near Ludlow, Interstate 15 near Barstow, and Route 58 near Hinkley. Scenic vistas from these highways encompass long range views of distant desert mountain ranges, contrasted with sparsely vegetated foregrounds of varying quality. Scenic resources visible to passing vehicles traveling at high speeds are dominated by the long-range, open desert vistas that include existing developments of all types,

ranging from small rural homesteads to large scale utility and municipal developments. Small structures are common within the long-range views from each of these travel corridors. The proposed pump stations may be visible to passing vehicles but would not obstruct or modify the views substantially. The AR/AV and BO components would be low to the ground, rising to less than three feet and as a result would be difficult to see from the highways. Some of the pump station locations are adjacent to existing utility, commercial or residential structures that are visible within the foreground of long-range views. In these areas, the new structures would not contrast with the surrounding developments. Within the more open desert areas, the pump stations would appear as small structures in the distance but would not obstruct or contrast with existing vistas.

While implementation of the project modifications would add new manmade elements to areas along the Northern Pipeline, these minor additions would be consistent with other utility uses along the existing pipeline and roadways and would not significantly alter or block scenic vistas along the Northern Pipeline corridor. The Northern Pipeline vista effects would not compound with those on the Southern Pipeline, as they are in different geographic locations.

The Final EIR evaluated potential effects to scenic vistas and concluded that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required in relation to modification of the Project during construction and operation. These impacts are consistent with those described in Section 4.1 of the Final EIR. Therefore, Project impacts, as modified, would remain less than significant.

- b) The Northern Pipeline is located along portions of the I-40, Route 66 Byway, and Route 58, which are all eligible state scenic highways (Caltrans 2018). Pump Station 2 would be visible from Route 66 Byway, Pump Station 6 would be visible from Route 58, and Pump Stations 4 and 5 would be visible from I-40. The installation and use of AR/AVs and BOs along the pipeline would be visible on the surface and visible from these eligible state scenic highways. The proposed pump stations, AR/AVs, and BOs may be visible to passing vehicles, but would not obstruct or modify the views substantially. Nor would the new structures contrast significantly with the surrounding areas, since long-range views from the highways currently encompass all the small developments within the viewshed without obstructing or diminishing the vast desert landscapes. As the pipeline area is currently equipped with the existing pipeline, the construction of new pump stations, AR/AVs, and BOs along the pipeline would be minor changes to the views from these eligible state scenic highways. The anticipated replacement of up to 16 miles of pipeline either within or parallel to the existing alignment would involve temporary construction similar to the AR/AVs and BOs. Once completed, the pipeline would be returned to matching conditions with the surrounding topography.

The Final EIR evaluated potential effects to state scenic highways and concluded that no significant impacts would occur, since the new structures would be small, within long-range viewsheds and would not block views. Impacts related to modification of the Project during construction and operation are consistent with those described in Section 4.1 of the Final EIR and no new mitigation would be required. Therefore, Project impacts, as modified, would remain less than significant.

- c) BLM has developed visual resource management policies and procedures for determining visual resource values. The assessment method is used to develop land management actions on BLM land. Three of the proposed pump stations would be constructed on BLM land. AR/AVs and BOs would be constructed within the right-of-way of the existing pipeline. Consistent with design features that would be implemented for Project facilities as part of the Final EIR, the pump stations, AR/AVs, and BOs would be designed to visually blend into the long-range views from surrounding areas. Although the facilities may be visible within long-range viewsheds, the facilities would not block views or substantially alter viewsheds of the surrounding open desert. Furthermore, the facilities would be located within an existing utility corridor. Facilities would be low profile made with non-glare materials and painted to blend into the surrounding environment. These design features would minimize degradation of visual character and the quality of public views. The Final EIR evaluated potential effects to visual character and quality presented by introduction of new facilities within the open desert and concluded that impacts would be less than significant. The proposed modifications would result in similar minor effects to the visual resources of the area and would not significantly affect the character of the surrounding vast desert open space. No new significant impacts will occur, and no new mitigation measures are required.
- d) Night lighting would be required during construction which would, in some cases, occur 24 hours a day. Worker housing areas and nighttime security lighting within staging areas would increase light temporarily in the area during the construction period. Once in operation, the pump stations may be equipped with permanent lighting used during infrequent nighttime maintenance activities. The area surrounding the Project site consists of uninhabited open space and night lighting would be noticeable considering there are few light sources in this area.

The pump stations may provide a source of glare to visitors in the distant mountains, but considering the small scale of the facilities, glare from distant mountain vistas would be minimal.

As described in the Final EIR, Mitigation Measure **AES-1** and **AES-2** would be implemented to reduce potential impacts from light and glare. Impacts related to modification of the Project during construction and operation are consistent with those described in Section 4.1 of the Final EIR and no new mitigation would be required. Therefore, Project impacts, as modified, would remain less than significant with mitigation incorporated.

Mitigation Measures from Final EIR

AES-1: Construction lighting shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way, and towards the construction site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the construction site to the maximum extent feasible.

AES-2: Outdoor lighting shall be minimized and installed for safety and security purposes only. Outdoor lighting of Project facilities and access roads shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way and towards the Project site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the Project site to the maximum extent feasible.

Summary of Potential Effects on Aesthetics

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to aesthetics, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

Caltrans (California Department of Transportation). 2018. California State Scenic Highway System Map. Accessed May 23, 2024.
<https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca>.

Agriculture and Forestry Resources

Issues (and Supporting Information Sources):

Yes

No

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 Dept. 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 project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:

- | | | |
|--|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

- a, b) According to the California Department of Conservation's Farmland Mapping and Monitoring Program, the Pump Station 6 site is designated as Grazing Land (CDOC 2016). Grazing land is described as land on which the existing vegetation is suited to the grazing of livestock. Grazing land does not include land designated or previously designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively "Important Farmland") (CDOC 2024). The remainder of the Pump Station sites are designated as Other Land (CDOC 2016). "Other Land" is the designation of vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres (CDOC 2024). Therefore, the proposed modifications would not convert Important Farmland. Additionally, none of the Pump Stations, AR/AVs or BOs sites would be located on land under a Williamson Act contract (CDOC 2023). The Final EIR determined no impacts to farmland would occur and impacts to a Williamson Act contract would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- c, d) Conversion of the Northern Pipeline and development of the Pump Stations, AR/AVs and BOs would not conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned for timberland production. The Final EIR determined that no impacts to

forestland would occur. No new significant impacts will occur, and no new mitigation measures are required.

- e) As discussed above, the project site is not located on land designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, timberland, or forest land. Therefore, implementation of the proposed project would not convert farmland or forest land, and no impact would occur. As similarly determined in the Final EIR, the operation of the Northern Pipeline would not result in a change in land use and impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Agricultural and Forestry Resources

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to agriculture and forestry resources, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

- CDOC (California Department of Conservation). 2016. California Important Farmland Finder. Accessed June 5, 2024. <https://maps.conservation.ca.gov/DLRP/CIFF/>.
- CDOC. 2023. California Williamson Act Enrollment Finder. Accessed June 5, 2024. <https://maps.conservation.ca.gov/dlrp/WilliamsonAct/App/index.html>
- CDOC. 2024. Important Farmland Categories. Accessed June 5, 2024. <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx>.

Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
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 project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The 2020 Mojave Desert Air Quality Management District (MDAQMD) CEQA Guidelines states that a project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable MDAQMD rules and regulations, complies with all proposed control measures of the applicable plan, and is consistent with the growth forecasts in the applicable plan. The MDAQMD has approved attainment plans for PM10 and ozone. The PM10 attainment plan identifies dust control measures to be included in MDAQMD Rules that would reduce construction dust emissions. Both Attainment Plans conclude that compliance with the MDAQMD adopted Rules and Regulations will achieve the desired air quality results.

To evaluate whether a project is consistent with the Air Quality Management Plan (AQMP) growth projections, the project may evaluate consistency with land use designations in the applicable general plans and regional population, housing, and employment forecasts identified by the Southern California Association of Governments (SCAG), as these forecasts serve as the basis for the land use and transportation control portions of the AQMP. As similarly determined in the Final EIR, the Northern Pipeline would result in an increase in short-term employment compared to existing conditions from construction. However, construction jobs would be temporary and as such would not conflict with the long-term employment projections upon which the AQMP is based. The operation of the Northern Pipeline would not result in a change in land use, nor would it result in population, housing, or employment growth for the region.

The AQMP also includes control strategies applicable to short-term emissions from construction activities. As similarly determined in the Final EIR, the Northern Pipeline would be required to comply with the California Air Resources Board (CARB) Air Toxic Control Measure (ATCM) that limits heavy duty diesel motor vehicle idling to no more than five minutes at any given location

with certain limited exceptions defined in the regulation for equipment in which idling is integral to the function of the equipment or activity (such as concrete trucks and concrete pouring). Contractors would be required to comply with the CARB In-Use Off-Road Diesel Vehicle Regulation to use lower emitting equipment in accordance with the phased-in compliance schedule for equipment fleet operators. Further, fleet equipment would be compliant with more fuel-efficient engines from the 2008 CARB Truck and Bus regulation and 2021 CARB Heavy-Duty Engine and Vehicle Omnibus Regulation, which aims to significantly increase emission standards for heavy-duty vehicles. Finally, the 2020 CARB Advanced Clean Trucks regulations require that manufacturers sell zero-emissions or near-zero-emissions trucks as an increasing percentage of their annual California sales beginning in 2024, resulting in less energy fuel consumption from equipment fleet operators. The proposed project including the Northern Pipeline component is also required to comply with MDAQMD rules and regulations, including:

- *Rule 401: Visible Emissions:* A Person shall not discharge into the Atmosphere from any emission source whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour, which is as observed using the appropriate test method: (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or (b) Of such Opacity as to obscure an Observer's view to a degree equal to or greater than 20% Opacity.
- *Rule 402 Nuisance:* A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- *Rule 403 Fugitive Dust:* A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction, or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. (Does not apply to emissions emanating from unpaved roadways open to public travel or farm roads. This exclusion shall not apply to industrial or commercial facilities).
- *Rule 1103 Cutback and Emulsified Asphalt:* A person shall not manufacture for sale nor use for paving, road construction, or road maintenance any a) rapid cure cutback asphalt; b) medium cure cutback asphalt; or c) slow cure cutback asphalt containing more than 0.5 percent by volume of VOC which evaporates at 260 degrees Celsius. A person shall also not manufacture for sale nor use for paving, road construction, or road maintenance any emulsified asphalt containing more than three (3) percent by volume of VOC which evaporates at 260 degrees Celsius.

Compliance with these requirements would be consistent with and would not conflict with AQMP control strategies intended to reduce emissions from construction equipment and activities.

The Northern Pipeline would consist of several construction components, including initial pipeline inspection, conversion of northern pipeline, and pipeline flushing. These components would not exceed thresholds of significance for criteria pollutants. As discussed in the Final EIR, the Project would exceed thresholds of significance for NO_x during construction. However, these temporary emissions would not conflict with the local air quality plan to control long-term ambient ozone levels. The Northern Pipeline would not exceed any significant thresholds for any criteria pollutant

and would not alter the conclusions of the Final EIR. Since the Northern Pipeline would comply with all control measures identified in the Final EIR for construction activities, it would be consistent with the attainment plan (see **AQ-1 through AQ-5** below). As a result, the Northern Pipeline would be consistent with the local AQMP, would not result in a significant impact, and would not alter the conclusions of the Final EIR.

Mitigation Measures Final EIR

AQ-1: Construction and operation of the proposed Project shall be conducted in compliance with applicable rules and regulations set forth by the Mojave Desert Air Quality Management District.

AQ-2: The following dust control measures shall be implemented during construction:

- All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas.
- Watering shall take place a minimum of twice daily on unpaved/untreated roads in areas with active operations.
- Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method such as non-toxic soil binders to prevent wind-blown fugitive dust.
- On-site vehicle speed on unimproved roads shall be limited to 15 miles per hour.
- Streets adjacent to the Project site shall be kept clean and Project-related accumulated silt shall be removed.

AQ-3: The following measures shall be implemented during construction of the proposed Project:

- All equipment shall be maintained as recommended by manufacturer's manuals.
- Idling engines shall be shut down when not in use for over 15 minutes.
- Electric equipment shall be used where available from existing power lines in lieu of diesel or gasoline powered equipment.

AQ-4: All trucks hauling dirt, sand, soil, or other loose materials are to be covered.

AQ-5: The Project Design Feature in Chapter 6.8 of the GMMMP attached in its Updated form (Updated GMMMP) to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to verify air quality.

- b) The Final EIR identified that the Project lies entirely within the Mojave Desert Air Quality Management District MDAQMD, which includes the desert valleys in eastern San Bernardino County and the eastern portion of Riverside County. As indicated in the Final EIR, construction-related daily emissions were found to exceed the MDAQMD threshold of significance for NO_x. For all other criteria pollutants, emission levels would be below the applicable thresholds of significance. As the Project maximum regional emissions from construction analyzed in the Final EIR would exceed the regional threshold of significance for NO_x, regional construction emissions

impacts were found to be significant and unavoidable in the Final EIR. Even with the implementation of Mitigation Measure AQ-1 through AQ-5 (listed above), the Final EIR concluded that construction-related daily emissions would exceed the MDAQMD threshold of significance for NOx and remain significant and unavoidable.

The construction of the Northern Pipeline requires several components as described in the *Project Description*. Construction of the Northern Pipeline would not occur simultaneously with the construction activities evaluated in the Final EIR and include pipeline inspection and rehabilitation with potential replacement of up to 16 miles, AR/AV and BO installation, cathodic protection repair, and pump station construction. The maximum daily construction emissions for the Northern Pipeline were estimated for each construction phase. The Northern Pipeline would require the use of heavy-duty construction equipment, haul trucks, and worker vehicles. Construction equipment required would include a crane, grader, excavators, concrete saw, welders, plate compactor, paver, loader, and backhoes. Up to 20 worker trips, 10 vendor trips, and 24 haul truck trips per day would be required over the construction period. Construction equipment and trucks would be required to comply with applicable provisions of regulations to improve fuel efficiency. Furthermore, trucks would need to comply with the CARB ATCM to limit heavy-duty diesel motor vehicle idling to 15 minutes or less at any given location.

Emissions from the construction of the Northern Pipeline were estimated using the CalEEMod Version 2022.1 for off-road equipment and on-road vehicle travel. **Table III-1** shows the maximum daily emissions from the Northern Pipeline and the Final EIR. As shown, the maximum daily emissions for construction of the Northern Pipeline facilities on their own would not exceed the MDAQMD significance thresholds, although the installation of the Southern Pipeline would exceed those thresholds as noted in the Final EIR. Since the Northern Pipeline construction would not exceed significance thresholds on its own and would not be constructed simultaneously with any other component of the proposed project evaluated in the Final EIR, it would not exceed established significance thresholds that would result in a new significant impact, result in substantially more severe significant impacts, or alter the conclusions of the Final EIR.

TABLE III-1
ESTIMATED MAXIMUM MITIGATED REGIONAL CONSTRUCTION EMISSIONS – NORTHERN PIPELINE (POUNDS PER DAY)

Construction Phases	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Pipeline Inspection & Rehabilitation	1.40	11.20	14.83	0.03	1.47	0.60
AR/AV & BO Installation (1 Unit)	0.92	7.65	9.71	0.02	0.98	0.40
Cathodic Protection Repair	0.66	5.37	7.23	0.01	0.47	0.26
Pump Station (7 Stations)	10.37	9.48	11.70	0.02	1.54	0.47
Northern Pipeline Maximum Daily Emissions	13.35	33.70	43.47	0.09	3.89	1.67
MDAQMD Thresholds of Significance	137	137	548	137	82	65
Exceeds Thresholds?	No	No	No	No	No	No
Mitigated Daily Emissions from the Final EIR (see EIR Table 4.3-5)	59	433	482	N/A	38	18

NOTES:

Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided **Appendix B: Air Quality** of this Addendum.

SOURCE: ESA 2024.

Operation of the Northern Pipeline would be managed from Pump Station 1 located on Cadiz property. The pumps would be operated with a SCADA system located near Pump Station 1 to coordinate each of the pump stations simultaneously. The pump stations would be unmanned at most times. Operation of the Northern Pipeline Project would not generate substantial numbers of vehicle trips from routine maintenance; thus, the Project would be consistent with and included within the determined emissions calculated in the Final EIR. Use or operation of the Northern Pipeline would be year-round. The pump stations would be powered by natural gas-driven electric generators to energize the pumps' electrical motors. The pump stations would require a combined generation capacity of 50,000 horsepower incorporating either internal combustion engines, linear generators, or other technologies with reduced emissions. The generators would be installed at each pump station site. Thus, the Northern Pipeline operational-related daily emissions, combined with other operational emissions calculated in the Final EIR for other project components, would not exceed the MDAQMD thresholds of significance for any criteria pollutants, would not result in a significant impact, and would not alter the conclusions of the Final EIR.

Table III-2 shows the maximum daily operational emissions from the Northern Pipeline and other project components identified in the Final EIR. The calculations assume that when the Northern Pipeline is conveying 25,000 AFY, the Southern Pipeline would be limited to 25,000 AFY as well. As a result, the energy demands and emissions for the southern pump station (SPS1) would be approximately half of the estimated values in the FEIR, which calculated the full 50,000 AFY to the south. As shown in Table III-2, daily operational emissions of the Northern Pipeline in combination with the wellfield and Southern Pipeline emissions would be below the significance thresholds for all criteria pollutants. To convey the full 50,000 AFY through the Southern Pipeline while simultaneously pumping 25,000 AFY through the Northern Pipeline, a portion of the power demand would need to be supplied with cleaner energy technologies such as linear generators or fuel cells to remain below emissions significance thresholds. The emissions estimates used in this

assessment assume the use of internal combustion engines, providing a conservative estimate of emissions and assuming a maximum of 25,000 AFY would be conveyed through the Southern Pipeline. If linear generators or other clean energy technologies are used, emissions would be reduced, which would allow for use of the additional capacity in the Southern Pipeline up to 50,000 AFY. Additionally, operational emissions would not conflict with or obstruct implementation of applicable long-term air quality management plans. Therefore, no further conformity analysis is required for any of the pollutants because their emissions would be less than the conformity thresholds and no significant adverse effect to air quality from the use of the Northern Pipeline would occur.

TABLE III-2
ESTIMATED MAXIMUM MITIGATED REGIONAL OPERATIONAL EMISSIONS – NORTHERN PIPELINE (POUNDS PER DAY)¹

Source	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Pump Stations	13.79	17.05	31.36	7.40	13.06	13.06
Maximum Daily Emissions	13.79	17.05	31.36	7.40	13.06	13.06
Daily Emissions from the Final EIR (see FEIR Table 4.3-6) ²	87.56	74.42	143.00	1.16	5.78	1.16
Northern Pipeline + Final EIR Operational Emissions ²	101.34	91.46	174.36	8.56	18.83	14.22
MDAQMD Thresholds of Significance	137	137	548	137	82	65
Exceeds Thresholds?	No	No	No	No	No	No

NOTES:

Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided **Appendix B: Air Quality** of this Addendum.

Emissions for 50,000 AFY are presented in Table 4.3-6 of the Final EIR for operation of the wellfield, pump stations, and vehicle trips. The values are reduced to represent 25,000 AFY conveyed to the south and assessed for the use of internal combustion engines, providing a conservative estimate of emissions. If linear generators or other clean energy technologies are used, emissions would generally be further reduced than shown for pollutants of concern.

SOURCE: ESA 2024.

The Northern Pipeline would result in less than significant impacts with respect to air pollutant emissions and no additional mitigation beyond Final EIR Mitigation Measure AQ-1 through AQ-5 would be required. As a result, construction and operation of the Northern Pipeline would not result in a significant impact and would not alter the conclusions of the Final EIR.

- c) The Final EIR identified that construction of the Project would result in maximum localized construction emissions that would exceed the significance threshold for NO_x and impacts to sensitive receptors would be potentially significant. All other criteria pollutants of local concern (CO, PM₁₀, and PM_{2.5}) would not exceed the localized significance thresholds. Construction-related emissions would be reduced to below the MDAQMD significance threshold for NO_x with the implementation of Mitigation Measure AQ-1 through AQ-5. As the Final EIR maximum emissions from construction were found to be reduced to below the localized significance threshold, localized construction emissions impacts would be less than significant with the incorporation of Mitigation Measure AQ-1 through AQ-5.

The Final EIR identified that construction of the Project would not result in a significant impact for lifetime cancer risk in excess of the MDAQMD significance threshold for toxic air contaminant

(TAC) emissions of an incremental cancer risk greater than 10 in one million for any receptor. Implementation of Mitigation Measure AQ-1 through AQ-5 would reduce diesel particulate matter (DPM) emissions from Northern Pipeline construction activities and TAC impacts would be less than significant. Therefore, the Final EIR found this impact to be less than significant.

The nearest air quality sensitive uses to the Project site of the Northern Pipeline is approximately 500 feet to the north of the Project site at Boron Park located in Boron, CA. Construction and operation of the Northern Pipeline would result in construction emissions that would not exceed the significance threshold for NO_x, CO, PM₁₀, and PM_{2.5}. **Table III-1** and **Table III-2** show the maximum daily emissions from the Northern Pipeline for construction and operations, respectively. As shown, maximum daily emissions would not exceed the significance threshold and would not result in adverse impacts at the same sensitive receptors. Thus, the Northern Pipeline would not result in a significant impact and would not alter the conclusions of the Final EIR.

- d) Operation of the Northern Pipeline would not include land uses associated with odor complaints, which typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Furthermore, operational emissions would not exceed the MDAQMD regional significance thresholds for attainment, maintenance, or unclassifiable criteria air pollutants. Therefore, operation of the Northern Pipeline would result in less than significant impacts with respect to other emissions, including those leading to odor, and would not alter the conclusions of the Final EIR

Summary of Potential Effects on Air Quality

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to air quality, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

Mojave Desert Air Quality Management District (MDAQMD), 2020. *California Environmental Quality Act (CEQA) And Federal Conformity Guidelines*. February.

Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
IV. BIOLOGICAL RESOURCES — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) To assess the impacts of the proposed use of the Northern Pipeline, a literature review and records search was conducted including the following: the Bureau of Land Management (BLM) Desert Renewable Energy Conservation Plan (DRECP), Biological Assessment Memorandum for the Cadiz Valley Water Conservation, Recovery, and Storage Project, Cadiz Groundwater Project Spring Survey, and the Biological Resources Assessment of Sections 22, 26, 34 and 35, California Department of Fish and Wildlife's (CDFW) California Natural Diversity Data Base (CNDDB), United States Fish and Wildlife Service (USFWS), California Native Plant Society (CNPS), and the California Invasive Plant Council (Cal-IPC). The records search targeted special-status plant and wildlife species and sensitive habitat occurrences within 5 miles of the pipeline alignment.

The records search for the Northern Pipeline alignment revealed that eighty-nine special-status plant and wildlife species have a potential to occur within the region. A focused search was performed on the species with a moderate to high potential to occur, based off previously recorded observations or presence of suitable habitat within the project area.

Thirty-one special-status plant and wildlife species have a moderate to high potential to occur within the project area, of those species eight are avian (birds), four mammals, sixteen plants, and three reptiles.

In May of 2024, biologists conducted pedestrian transect surveys within the existing pipeline alignment, which included a 500-foot buffer on each side. The survey included all the proposed pump stations, AR/AVs and BOs sites. In May of 2025, an additional survey was conducted at each of the seven pump station locations. Biologists evaluated the area for suitable habitat including any presence of special-status species including tracks, scat, bone fragments, feathers, scutes, and other indicators. The overall habitat value within the pipeline corridor was examined for its potential to support special-status species that have been historically recorded in the region of the Project, which includes those evaluated in the 2012 EIR and 2019 addendum.

The 2024 and 2025 surveys found no desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*), American badger (*Taxidea taxus*) or any other special-status animal species within the pipeline easement, but did identify suitable habitat for these species along several segments of the pipeline corridor (Appendix C; Biological Technical Letter Report). In addition, several segments of the alignment are connected geographically to larger areas which may support desert tortoise populations. As concluded in the Final EIR and verified during the 2017, 2024, and 2025 biological resource surveys, the overall habitat of the alignment within this region generally has a low potential to support special-status wildlife species, aside from some isolated areas containing suitable habitat features for certain special-status species, including desert tortoise (Appendix C). Most areas of the project are below the known elevation range for desert tortoise. However, the species can transverse the project area. No desert tortoise individuals or their sign, including any burrows capable of supporting the species, were observed within the project area. Small mammal burrows too small to support desert tortoise or larger mammals such as American badgers were present.

In 2019, the California Fish and Game Commission advanced the California Crotch's Bumble Bee (CBB) to "candidacy" status for listing under CESA. After a legal challenge was resolved, the candidacy was reinstated in 2022. As a result, the CBB is currently a candidate for State listing as Endangered. The CNDDDB reports the closest observation of CBB at approximately 21 miles south of Pump Station 6. The potential for CBB to forage or nest on the proposed project area is low based on the disturbed existing vegetation communities and the lack of diverse plant communities that would be used by CBB for pollen and nectar resources. The project area habitat is primarily Mojave creosote bush scrub, disturbed Mojave creosote bush scrub and desert dunes, which have a low floral diversity therefore, CBB has a low potential to occur within the Project Area. CBB preferred habitat consists of grassland, sage scrub, chaparral, and creosote bush scrub habitats. The conversion of the Northern Pipeline would therefore not remove CBB suitable foraging or nesting habitat.

The 2024 and 2025 surveys did not identify the presence of Joshua trees (*Yucca brevifolia*) within the Project Areas. Since the Final EIR was certified, the Joshua tree has been listed as a candidate species under the California Endangered Species Act and the Joshua Tree Conservation Act has been adopted by the state. Since the construction of the pump stations, AR/AVs, and BOs would be within an existing pipeline alignment, the potential for Joshua

trees to be located near construction areas is low. Placement of the new structures would avoid impacting Joshua trees. No Joshua trees would be removed as part of the project. Therefore, the new listing of the Joshua tree would not result in changed circumstances that could result in significant impacts not already considered in the Final EIR.

Large mammals such as the desert bighorn sheep may traverse the area, but the proposed pump stations, AR/AVs and BOs would not impede their movement. Impacts to desert bighorn sheep as a result of project activities are not expected.

There is no designated critical habitat for any special-status species within the existing pipeline segment; therefore, impacts to critical habitat are not expected.

The predominant sources of noise within the project area include railroads, roadway traffic, and equipment noise from existing agricultural operations. Military operations including explosions and low-flying aircraft also generate noise in the valley. Average noise levels in desert environments typically are in the range of 35-55 A-weighted decibels (dBA). In this naturally quiet environment, trains traversing the valley (10 to 20 per day on the BNSF and 2 or 3 on the ARZC) are the primary source of man-made noises. As described in the Draft EIR, page 4.4-40, construction noise would temporarily affect wildlife species in the near proximity. However, construction of the project would occur incrementally, in areas already experiencing maintenance, or near high-traffic areas, and noise would be localized to the area of work. Given the vast open space in the Project area, the construction noise would attenuate to moderate levels within a few hundred feet. Furthermore, the proposed project would not result in substantially increased construction noise compared to that analyzed in the Final EIR. Impacts of the proposed project would be similar to construction noise analyzed in the Final EIR.

Implementation of Mitigation Measures identified in the Final EIR will reduce the potential impacts to sensitive resources. Measures **BIO-1** through **BIO-6**, **BIO-9**, **BIO-14** and **BIO-15** would require preconstruction surveys and avoidance and minimization measures for sensitive biological resources. **BIO-2** through **BIO-4** would implement protection measures for desert tortoise through exclusion fencing and development of a Desert Tortoise Avoidance and Protection Plan. Mitigation Measure **BIO-5** would confine construction activities to the existing disturbed areas of the project, minimizing disturbance to previously undisturbed areas. Mitigation Measure **BIO-6** would require that temporarily affected areas are restored to pre- construction conditions or better. Construction of the proposed project would be subject to the same mitigation as the rest of the project. Implementation of Mitigation Measures would ensure less than significant impacts to sensitive species, consistent with the conclusions of the Final EIR.

- b) The dominant vegetation community along the existing pipeline consists of Mojave creosote bush scrub, which is designated by CDFW and the California Native Plant Society as S4, *Apparently Secure*, and at fairly low risk of extinction without significant threats and low concern (CNPS, 2024). One special-status plant species, Mojave fish-hook cactus (*Sclerocactus polyancistrus*) was observed during the 2024 surveys at four locations. Three of the four sites containing the special-status plant were dominated by Mojave creosote bush

scrub, the other site was dominated by desert saltbush scrub which is not considered a sensitive vegetation community. Construction would avoid these individual plants, and no removal of Mojave fish-hook cactus would occur.

The new pump stations would be located on parcels of approximately 2 acres, totaling 14 acres, with only 6 acres on BLM lands. The Final EIR identifies that up to 250 acres would be permanently impacted by the wellfield and installation of the Southern Pipeline. Therefore, the additional acreage impacted would equal about 5.6 percent of the total permanently impacted acreage. As a result, the use of the Northern Pipeline would not result in a substantial increase to the amount of acreage impacted by the proposed project.

The existing pipeline and access roads traverse several vegetation communities and desert wash features. Several aquatic resources were observed during the 2024 and 2025 surveys. As the aquatic resources were outside of the pump station, AR/AVs and BOs site boundaries, and associated survey buffers, they were noted as incidental and not mapped or further delineated. In areas of the project that contain or are adjacent to desert washes and aquatic resources, staying within the dirt access road footprint would minimize impacts. If impacts to waters of the state are unavoidable at any of the construction areas, a mitigation plan will be prepared for review by the Regional Water Quality Control Board and California Department of Fish and Wildlife in accordance with Mitigation Measure **BIO-15**, which requires the development of a Waters of the State Mitigation Plan. Implementation of Mitigation Measure **BIO-15** would ensure less than significant impacts to aquatic resources including desert washes, consistent with the conclusions of the Final EIR.

- c) No wetland habitats were identified during project surveys (2012, 2017, 2024). Riverine habitats (dry desert wash) were identified during project surveys (2024, 2025). Construction activities such as vegetation disturbance, grading, trenching, and placement of temporary or permanent structures are regulated within the washes pursuant to Section 1602 of the California Fish and Game Code and Porter Cologne Water Quality Control Act. Therefore, permits would be required from CDFW and the Regional Water Quality Control Board prior to disturbance. Mitigation Measure **BIO-7** would require preparation and implementation of a habitat compensation plan for mitigation of permanent and temporary habitat loss. Site restoration required by Mitigation Measure **BIO-15** would require, in part, that any desert washes are returned to pre-construction contours. Implementation of Mitigation Measures **BIO-7** and **BIO-15** would ensure less than significant impacts to wetlands, consistent with the conclusions of the Final EIR.
- d) Although special-status species have a potential to occur within the project vicinity, the project is not anticipated to significantly impact wildlife movement throughout the area. As described in the original Final EIR, BLM has designated several regional wildlife movement corridors connecting occupied bighorn sheep habitat in the Project vicinity. The existing pipeline is not located within a bighorn sheep movement corridor, nor is it located within occupied bighorn sheep habitat (see Figure 4.4-4, Bighorn Sheep Range and Movement Corridor, Final EIR). And although the existing pipeline is not situated within designated critical habitat for desert tortoise there is a potential for the species to transverse through the project area. All biological

resource Mitigation Measures (BIO-1 through BIO-15) outlined previously in Section A should also apply to this section as preventative measures to protect wildlife movement through the area.

The pipeline modifications would occur along the existing pipeline alignment, and disturbance would be temporary and localized to the specific area under construction, allowing for wildlife movement around the impacted area. No permanent fencing would be installed that could create a linear barrier across the valley floor. The existing pipeline has been in place since the 1980s, wildlife movement has since adapted to the location of the pipeline. Implementation of Mitigation Measures would ensure less than significant impacts, consistent with the conclusions of the Final EIR.

- e) In accordance with San Bernardino County Desert Native Plant Protection Ordinance, certain plant species are considered locally important or “special-status”: smoke tree (*Dalea spinosa*), all mesquites (*Prosopis spp.*), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and Joshua trees (*Yucca brevifolia*). As described in the Final EIR, the following species are known to occur on or adjacent to the Project area, which are protected in accordance with the San Bernardino County Desert Native Plant Protection Ordinance: Harwood’s milk-vetch, barrel cactus, silver cholla, beavertail cactus, pencil cholla, desert holly, catclaw acacia, palo verde, Joshua tree, and smoke tree.

None of these species were observed during the rare plant surveys conducted in 2017; however, the 2024 survey identified silver cholla (*Cylindropuntia echinocarpa*) and beavertail cactus (*Opuntia basilaris*) in several locations along the pipeline and Joshua tree were identified adjacent to pipeline but not within the Project Area in the vicinity of the town of Boron. The proposed pump stations will each disturb approximately 2 acres, largely within areas previously disturbed by the installation of several pipelines within the corridor, which would result in minimal impacts to the sparse vegetation and native plant communities within the previously impacted pipeline easement and surrounding area. Furthermore, implementation of Mitigation Measures **BIO-5** through **BIO-7** would minimize impacts and disturbance to native plant communities. In addition, implementation of Mitigation Measures **BIO-16** and **BIO-17** would reduce potential impacts to plants protected in accordance with the San Bernardino County Desert Native Plant Protection Ordinance, such as silver cholla, Joshua tree, and beavertail cactus. Prior to commencement of ground disturbance activities for any component of the proposed Project, a qualified biologist/arborist shall provide an inventory of the number and size of protected species within the proposed Project’s impact areas. The qualified biologist/arborist shall mark any smoke tree (*Dalea spinosa*), mesquites (*Prosopis spp.*), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and Joshua trees within the construction zone. Removal of these plants shall be avoided, if possible, in accordance with the Desert Native Plant Protection Ordinance. If avoidance of the species listed is not possible, these species shall be moved or replanted pursuant to the methods required in the Desert Native Plant Protection Ordinance. Implementation of Mitigation Measures would ensure less than significant impacts, consistent with the conclusions of the Final EIR.

- f) With the adoption of the Northern & Eastern Colorado Desert Coordinated Management Plan

(NECO) in 2002, all lands that are outside Desert Wildlife Management Areas (DWMA) are characterized as Category 3 Habitat, which includes the Project area. Category 3 Habitat is the lowest priority management area for viable populations of the desert tortoise.

As part of the Desert Renewable Energy Conservation Plan (DRECP), the BLM has established the Cadiz Valley ACEC (Area of Critical Environmental Concern) and the South Mojave - Amboy NCL (National Conservation Lands) to protect and prevent irreparable damage to important historical, cultural, and scenic values; fish or wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards. Areas protected based on their importance for fish and wildlife resources include habitat for endangered, threatened, or sensitive species, or habitat essential for maintaining species diversity. Areas protected based on their importance for natural processes or systems may be habitat for endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features. The Cadiz Valley ACEC and South Mojave – Amboy NCL have been established to protect high quality habitat for desert tortoise.

However, similar to the proposed Project described in the Final EIR, impacts to the desert tortoise are not anticipated to occur with the implementation of **BIO-3** Desert Tortoise Avoidance and Protection Plan that would be developed and adopted in consultation with the USFWS and CDFW prior to construction to protect the desert tortoise and other sensitive species in the Project area. The Desert Tortoise Avoidance and Protection Plan would cover the proposed project modifications in the same manner as described in the Final EIR. Modifications to the existing pipeline alignment would not conflict with an adopted habitat conservation plan for San Bernardino County or the Project area.

As described in the Final EIR, Mitigation Measure **AES-1**, **AES-2**, **BIO-1** through **BIO-17** would be implemented to reduce potential impacts from sensitive biological resources. Impacts related to modification of the Project during construction and operation are consistent with those described in Section 4.4 of the Draft EIR and no new mitigation is required. Implementation of Mitigation Measures would ensure less than significant impacts, consistent with the conclusions of the Final EIR.

Mitigation Measures from Final EIR*

AES-1: Construction lighting shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way, and towards the construction site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the construction site.

AES-2: Outdoor lighting shall be minimized and installed for safety and security purposes only. Outdoor lighting of Project facilities and access roads shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way and towards the Project site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the Project site.

BIO-1: Pre-construction Surveys. Immediately prior to construction activities, pre-construction surveys that comply with USFWS protocol shall be conducted to document any and all locations of burrows and desert tortoise sightings within all proposed disturbance areas that provide potential habitat for the species. If any active burrows are located in facility construction areas, to completely avoid impact on the burrows, construction will be delayed only to be resumed after a qualified biologist has determined that the tortoise has left the area and the burrow is inactive. Following pre-construction surveys, Mitigation Measure BIO-2 shall be implemented to install exclusion fencing around construction areas. Construction areas fenced but inactive for more than 48-hours will be resurveyed to confirm the absence of tortoise prior to resumption of construction activity.

BIO-2: Exclusion Fencing and Monitoring. A chain-link or tortoise fence (one-inch by two-inch welded wire mesh attached to the chain-link fence, with approximately two feet above-ground and one foot buried below ground) shall be installed to exclude small wildlife species from entering the active work areas in areas of documented occurrences of special-status ground dwelling wildlife as determined during pre-construction surveys by a qualified biologist or as directed by USFWS. When crossing drainages, these temporary fences must be designed and maintained to allow storm water runoff to flow past the construction site. Fencing / barriers will be erected to completely surround all stationary construction sites (including staging areas) and will be monitored by an Authorized Biologist or Biological Monitor at all times. Along the pipeline construction corridor, temporary fencing may be used as needed and if any tortoises are observed in the surrounding area. Temporary tortoise-proof fencing may be used along the pipeline right-of-way if trenches or pits must be left open. If temporary fencing is used for this purpose it must be installed at the end of each working day. If pits and trenches are left open overnight, then ramps will be placed within them to allow animals, including tortoise to escape in the unlikely event of entrapment. Alternatively, trenches will be filled or covered when construction is not active.

BIO-3: Desert Tortoise Avoidance and Protection Plan. A Desert Tortoise Avoidance and Protection Plan shall be developed and adopted in consultation with the USFWS and CDFG¹ prior to construction. Elements of the plan shall include, but are not limited to the following:

- Designated Project personnel will implement the avoidance and protection plan. A Field Contact Representative will be designated to oversee compliance with all tortoise avoidance and protective measures during Project construction, operation and maintenance. The Field Contact Representative will have the authority to halt work if there is non-compliance with any of the plan measures and will do so as needed.
- Facility site preparation activities (specifically vegetation grubbing and clearing) and all construction activity in the northeastern area of the wellfield in Sections 17 and 18 will be prohibited during the species' annual periods of high activity (April through May and September through October).
- A step-by-step protocol to be implemented whenever a desert tortoise is observed by construction or operational personnel. See also Mitigation Measure **BIO-4** Temporary Construction Halt. USFWS and CDFG personnel contacts will be identified for Technical Assistance on take avoidance if needed during construction.
- Flagging and delineation requirements for located burrows and areas with tortoise activity.

¹ The California Department of Fish and Game was renamed to the California Department of Fish and Wildlife in January of 2013, after the 2012 EIR mitigation was adopted.

- An education program for all construction employees. Program will be conducted onsite prior to the onset of construction and will be provided repeatedly as needed to ensure that all Project contractors (firms) as well as all individuals complete the training. Participation will be recorded and verified. Tortoise protection will be emphasized during all scheduled safety meetings.
- Enforcement of speed limits and checking under vehicles for tortoise prior to leaving Project areas.
- Biological monitoring requirements for all ground disturbance activities. All construction sites and activities will be monitored by Authorized Biological Monitors. An Authorized Biologist (approved by USFWS and CDFG) will plan and oversee all construction monitoring activities in the field. The authorized biologist will identify, train, and oversee biological monitors for day-to-day monitoring and reporting activities.
- To prevent increased use of the Project areas by common ravens and coyotes, implementation of measures such as trash management, removal of unnatural sources of standing water, and other means. Drilling mud pits and water discharges will be controlled to minimize the duration of standing water at any drilling site. A clean workplace will be maintained in all areas. No trash is to be thrown on the ground or left in open containers, equipment, or truck beds. Refuse receptacles with lids will be provided for all construction personnel and are to be maintained and emptied on a regular basis and at least weekly. Trash collection will be conducted in all construction areas as needed to keep all areas clean on a daily basis. Portable toilets will be provided and used by all construction personnel.
- At the end of construction all equipment removal will be monitored by Authorized Biologists or Biological Monitors.

BIO-4: Temporary Construction Halt. If a desert tortoise is observed within 300 feet of the construction activities or is determined by the Authorized Biologist to be in harm's way, then construction activities shall be halted in the vicinity as directed by the Authorized Biologist. Work shall only continue once the Authorized Biologist determines there is no risk to the desert tortoise.

BIO-5: Pipeline Siting to Minimize Vegetation Disruption. The [Southern Pipeline] shall be installed within previously disturbed areas of the easement to the extent feasible. During construction, previously undisturbed areas within the pipeline alignment that are not needed for construction shall be staked and flagged to prevent construction equipment access or disturbance in these areas. The cordoned off areas shall be flagged and monitored by a qualified biologist during construction activities.

BIO-6: Site Restoration Plan. A special-status species and sensitive habitat restoration plan shall be prepared prior to construction for unavoidable temporary impacts on special-status plants and sensitive habitats. The plan would include, at a minimum, the following measures:

- A salvage and replacement program for the top 12 inches of surface material and topsoil. The program shall identify soil preparation requirements, including grain size specifications that shall need to be engineered or amended on site to match to the greatest extent feasible the existing surface soil conditions.
- A salvage and replanting program for perennial special-status species.

- An invasive plant species maintenance, monitoring, and removal program.
- Success criteria that establishes yearly thresholds for growth and reestablishment of habitat.
- A five-year maintenance and monitoring plan to ensure successful implementation of the restoration plan.

BIO-7: Habitat Compensation. A habitat compensation plan would be prepared and implemented that includes at a minimum the following measure:

- Purchase of compensatory mitigation lands or credits at a USFWS and CDFG approved conservation bank at a minimum 1:1 ratio for permanent habitat loss and 0.5:1 for temporary habitat loss (or that required by the USFWS and CDFG permit conditions) for preservation in perpetuity.

BIO-8: Prior to construction, surveys for Mojave fringe-toed lizard shall be conducted by a qualified biologist within the sand dunes and sand fields habitats within the ARZC ROW [of the Southern Pipeline]. If Mojave fringe-toed lizards are identified in the construction zone, the area shall be fenced during construction as described in BIO-2 to prevent lizards from entering the construction site. Once fenced, a qualified biologist shall trap the area for lizards and release captured lizards into adjacent suitable habitat as determined by the qualified biologist.

BIO-9: If construction and vegetation removal is proposed for the bird nesting period of February 1 through August 31, then pre-construction surveys for nesting bird species shall begin 30 days prior to construction disturbance with subsequent weekly surveys, the last one being no more than three days prior to work initiation. The surveys shall include habitat within 300 feet (500 feet for raptors) of the construction limits. Active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with USFWS and CDFG. This buffer zone shall be delineated in the field with flagging, stakes, or construction fencing. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

BIO-10: A burrowing owl survey shall be conducted pursuant to the Burrowing Owl Survey Protocol and Mitigation Guidelines of the California Burrowing Owl Consortium (1993) or per the Staff Report on Burrowing Owl Mitigation prepared by CDFG (1995). At a minimum, this survey shall include the following:

- A pre-construction survey conducted by a qualified biologist within 30 days of the start of construction. This survey shall include two early morning surveys and two evening surveys to ensure that all owl pairs have been located.
- If pre-construction surveys are undertaken during the breeding season (February 1st through July 31st) active nest burrows should be located within 250 feet of construction zones and an appropriate buffer around them (as determined by the Project biologist) shall remain excluded from construction activities until the breeding season is over.
- During the non-breeding season (August 15th through January 31st), resident owls may be relocated to alternative habitat. Owls shall be encouraged to relocate from the construction disturbance area to off-site habitat areas and undisturbed areas of the Project site through the use of one-way doors on burrows. If ground squirrel burrows, stand pipes, and other structures that have been documented during pre-construction

surveys as supporting either a nesting burrowing owl pair or resident owl are removed to accommodate the proposed Project, these structures and burrows shall be relocated or replaced on or adjacent to the Project site. Relocated and replacement structures and burrows shall be sited within suitable foraging habitat within one-half mile of the Project area as determined by the qualified biologist. Suitable development-free buffers shall be maintained between replacement nest burrows and the nearest building, pathway, parking lot, or landscaping. The relocation of resident owls shall be in conformance with all necessary State and federal permits.

BIO-11: A qualified biologist shall conduct focused pre-construction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential adverse effects to the American badger:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.
- If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to Project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers have stopped using active dens within the Project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.
- Construction activities shall not occur within 30 feet of active badger dens.

BIO-12: Prior to construction activities, winter and spring surveys shall be conducted to determine the nature of trestle use by pallid bats. Surveys shall follow the appropriate site-specific protocol as determined in coordination with CDFG.

BIO-13: If a special-status natal bat roost site is found within the limits of construction during pre-construction surveys, the roosts shall be staked, flagged, fenced, or otherwise clearly delineated. Roosts shall be avoided with non-disturbance buffer zones established by a qualified biologist in consultation with the USFWS and CDFG until the site is no longer in active use as a natal roost.

BIO-14: Prior to construction, construction zone limits shall be marked by a qualified biologist and shall be staked, flagged, fenced, or otherwise clearly delineated to ensure that the construction zone is limited to minimize impacts on special-status plant species. These limits shall be identified on the construction drawings. No earth-moving equipment shall be allowed outside demarcated construction zones unless pre-approval is obtained from a qualified biologist.

BIO-15: A Waters of the State Mitigation Plan shall be prepared [for installation of the Southern Pipeline] to include with RWQCB and CDFG permit applications. Conditions of the Mitigation Plan shall include at a minimum the following measures:

- measures to divert flows during construction,
- measures to minimize construction footprint within washes,
- measures to minimize erosion,

- measures to minimize discharge of contaminants through proper storage of chemicals and vehicle maintenance, and
- post-construction site restoration performance standards.

BIO-16: Prior to commencement of ground disturbance activities for any component of the proposed Project, a qualified biologist/arborist shall provide an inventory of the number and size of protected species within the proposed Project's impact areas. The qualified biologist/arborist shall mark any smoke tree (*Dalea spinosa*), mesquites (*Prosopis* spp.), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and Joshua trees within the construction zone. Removal of these plants shall be avoided if possible.

BIO-17: If avoidance of the species listed in BIO-16 is not possible, these species shall be moved or replanted pursuant to the methods required in the Desert Native Plant Protection Ordinance.

Significance Determination

Impacts to biological resources that may result from the conversion of the Northern Pipeline are consistent with those identified in the Final EIR. Conversion and operation of the Northern Pipeline would not result in any new significant environmental effects or a substantial increase in the severity of previously identified significant effects to biological resources. No new information of substantial importance indicates the Project would have one or more significant effects that were not discussed in the Final EIR nor are there any new significant effects that were not previously examined substantially or that would be more severe than described in the Final EIR. No new mitigation measures or alternatives are warranted and those already certified in the Final EIR would in fact be feasible and would substantially reduce any significant effects of the revised Project on biological resources. Moreover, there are no new mitigation measures or alternatives that are considerably different from those analyzed in the Final EIR, and the proposed mitigation measures are designed to minimize impacts to biological resources to a level of less than significant.

Summary of Potential Effects on Biological Resources

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial impacts to biological resources, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is recommended. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

Cadiz Groundwater Project. Spring Survey Memorandum. June, 2018.

Cadiz, Incorporated. Biological Resources Assessment of Sections 22, 26, 34, and 35. October, 2019.

Cadiz, Incorporated. Biological Resources Memorandum for the Cadiz Valley Water Conservation, Recovery, and Storage Project. April, 2019.

California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB). 2024. Rarefind. Accessed May 2024 at: <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>.

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants (online edition). California Native Plant Society. Sacramento, CA. Accessed in May 2024 at: <http://www.cnps.org/inventory>.

Kreamer, D. 2019. *Understanding the source of water for selected springs within Mojave Trails National Monument, California*.

Cadiz, Incorporated. Biological Resources Assessment of Sections 22, 26, 34, and 35. October, 2019.

Cadiz, Incorporated. Biological Resources Memorandum for the Cadiz Valley Water Conservation, Recovery, and Storage Project. April, 2019.

California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB). 2024. Rarefind. Accessed May 2024 at: <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>.

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants (online edition). California Native Plant Society. Sacramento, CA. Accessed in May 2024 at: <http://www.cnps.org/inventory>.

Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
V. CULTURAL RESOURCES — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The construction of AR/AVs and BOs and the replacement of pipeline segments will occur within previously excavated soils of the existing buried pipeline. The installation of the pipeline and conversion to natural gas were covered under a 1985 EIR/EIS and again under an Environmental Assessment in 2005. These previous project approvals included evaluations of historic resources within the proximity of the pipeline alignment. The seven pump stations would be constructed adjacent to the existing pipeline easement on areas that may be undisturbed. In accordance with the Final EIR mitigation requirements, impacts to historic resources will be avoided through the proactive identification of resources using site surveys prior to final designs, and placement of facilities in areas that do not pose significant impacts to existing resources. The pump stations, AR/AV and BOs will be sited within areas of low sensitivity, avoiding all potentially significant cultural resources that occur within the easement and proposed pump station locations. Prior to construction, FVWA will further refine the locations for the pump stations, AR/AVs, and BOs pursuant to Mitigation Measure **CUL-2** of the Final EIR. Ground disturbance within recorded sites will be avoided by changing the location of the facility sufficiently to avoid the known resource. In accordance with the Final EIR Mitigation Measure **CUL-2**, affected parcels will be documented, mapped, fenced, and avoided within the affected parcels. In accordance with the Final EIR Mitigation Measure **CUL-6**, affected parcels will be monitored prior to construction to clear construction areas.

As described in the Final EIR, Mitigation Measure **CUL-1**, **CUL-2**, **CUL-4**, **CUL-5**, **CUL-6**, **CUL-7**, and **CUL-11** would be implemented to reduce potential impacts to cultural resources. Impacts to cultural resources that may result from the Project's modified design are consistent with those identified in the Final EIR. Construction and operation of pump stations would not result in any new significant environmental effects or a substantial increase in the severity of previously identified significant effects to cultural resources. The Project would not result in effects beyond those discussed in the Final EIR nor are there any new significant effects not previously examined that would be more severe than described in the Final EIR. Implementation of mitigation measures included in the Final EIR would avoid or reduce significant effects of the revised Project on cultural resources to less than significant levels.

- b) In accordance with the Final EIR mitigation requirements, impacts to archaeological resources will be avoided through the proactive identification of resources using site surveys prior to final designs, and placement of facilities in areas that do not pose significant impacts to existing resources. The known and recently identified sites and resources will be mapped by qualified archaeologists during final design of the pump stations in order to ensure avoidance during construction. The pump stations will be located in areas of low potential for sensitive resources. Although known archaeological resources will be avoided, there exists the possibility that previously unidentified archaeological deposits underlie the nine parcels. Should unknown subsurface archaeological deposits be located during construction within the Project alignment, implementation of Mitigation Measures **CUL-4** and **CUL-7** would ensure that impacts would be minimized through the development and implementation of a treatment plan. In addition, implementation of Mitigation Measure **CUL-2** would ensure that prior to construction any known on-site resources would be mapped, fenced, and avoided.

The Project would not result in significant impacts not previously identified in the Final EIR, which concluded a less than significant impact with the incorporation of mitigation. Additionally, there would not be more severe impacts than described in the Final EIR. Implementation of mitigation measures included in the Final EIR would substantially reduce any significant effects of the revised Project on cultural resources. No new significant impacts will occur, and no new mitigation measures are required. Impacts to cultural resources are reduced to a level of less than significant.

- c) No human remains were identified within the modified pipeline alignment. However, this does not preclude the possibility of inadvertently uncovering human remains, including those interred outside of formal cemeteries, during Project implementation. Implementation of Mitigation Measure **CUL-11** would ensure that the appropriate notifications are conducted: "If human remains are uncovered during Project construction, all work in the vicinity of the find shall be halted and the County Coroner will be contacted to evaluate the remains and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County Coroner determines that the remains are Native American, the NAHC shall be contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c) and Public Resources Code 5097.98 (as amended by AB 2641)." No new significant impacts will occur, and no new mitigation measures are required.

Mitigation Measures from Final EIR

CUL-1: A qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology, shall be retained to carry out all mitigation measures related to archaeological resources.

CUL-2: The construction zone shall be narrowed or otherwise altered to avoid all significant historical resources, or resources treated as significant, where feasible. Significant historical resources within 100 feet of the construction zone shall be designated Environmentally Sensitive Areas and shall be marked with exclusion markers to ensure avoidance. In the case of significant historical resources dating to the historic era, the boundaries of the Environmentally Sensitive Areas shall be established around the recorded site boundaries, with the exception of resources CA-SBR-3282H and CA-SBR-3233H, where a 50-foot buffer shall be established outside of recorded site boundaries as an added protective measure to protect historic cemeteries. For significant historical resources dating to the prehistoric era, the boundaries of the ESA shall be established around the recorded site boundaries, plus an

additional 50-foot buffer as an added protective measure to protect any subsurface component. Protective fencing shall not identify the protected areas as cultural resource areas in order to discourage unauthorized disturbance or collection of artifact.

CUL-4: If avoidance of significant historical resources is not feasible, prior to any Project-related ground disturbing activities, a detailed treatment plan shall be prepared and implemented by a qualified archaeologist. The treatment plan shall include a research design and a scope of work for data recovery of the portion(s) of the significant resource(s) to be impacted by the Project. Treatment for most resources shall consist of (but would not be not limited to) sample excavation, surface artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, and curation of artifacts and data at an approved facility.

CUL-5: Prior to construction, a qualified archaeologist shall be retained to carry out a Phase 1 cultural resources survey in those portions of the Project area where design changes have modified the proposed Project footprint (including but not limited to: the wellfield, CRA tie-in Options 2a and 2b, and any access roads, staging areas, borrow areas, and any other proposed areas of potential ground disturbance and areas where monitoring and mitigation wells have been installed), and not previously surveyed within the past 5 years. The Phase 1 survey shall identify and evaluate the significance of any potentially eligible resources that may be directly or indirectly impacted by the proposed Project, and shall take Native American comments concerning viewshed impacts into consideration. The Phase 1 Survey effort shall be documented in a Phase 1 Cultural Resources Survey report. Resources determined eligible for listing shall be subject to Mitigation Measures **CUL-1 through CUL-4** and **CUL-6**. All significant cultural resources identified in the wellfield area during surveys shall be avoided.

CUL-6: Prior to construction, an archaeological monitor shall be retained to monitor all ground-disturbing activities, including brush clearance and grubbing, within the following areas: the proposed wellfield area; staging areas; CRA tie-in areas; and within 100 feet of all significant historical resources. The monitor shall work under the supervision of the qualified archaeologist. If ground-disturbing activities are occurring simultaneously in areas located more than 500 feet apart, additional monitors shall be retained. If so requested by the Native American community, a Native American monitor shall also monitor all ground-disturbing activities. The qualified archaeologist, in consultation with the lead agency, shall have the discretion to modify the monitoring requirements based on in-field observations of subsurface conditions. The duration and timing of monitoring shall be determined by the qualified archaeologist in consultation with the lead agency and based on the grading plans. In the event that cultural resources are unearthed during ground-disturbing activities, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated and appropriate treatment determined.

CUL-7: If archaeological resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist. If the qualified archaeologist determines that the resources may be significant, he or she would develop an appropriate treatment plan for the resources. Appropriate Native American representatives shall be consulted in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Work may proceed on other parts of the Project site while mitigation for cultural resources is being carried out.

CUL-11: If human remains are uncovered during Project construction, all work in the vicinity of the find shall be halted and the County Coroner would be contacted to evaluate the remains and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the NAHC shall be contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c) and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this Section (PRC 5097.98) with the most likely descendants taking into consideration their recommendations, and developing a treatment plan, taking into account the possibility of multiple human remains.

Summary of Potential Effects on Cultural Resources

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial impacts to cultural resources, cause new significant effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

California State Lands Commission and Bureau of Land Management, 1985. *Final Environmental Impact Statement/Environmental Impact Report, All American and Getty Pipeline Projects.*

California State Lands Commission and Bureau of Land Management, 2005. *Final Addendum/Environmental Assessment, El Paso Line 1903 Pipeline Conversion Project.*

Energy

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
VI. ENERGY — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) Conversion of the Northern Pipeline would result in energy demand from the use of construction equipment for a temporary period of time. Energy demand from the use of transportation fuels from construction activities would be generated by the operation of vehicles and equipment used for various construction activities, such as excavation and grading. Electricity would be consumed to power the construction trailers (lights, electronic equipment, and heating and cooling) and exterior uses such as lights, conveyance of water for dust control, and any electrically driven construction equipment. Construction-related energy and transportation fuel demand from construction equipment would vary depending on factors such as the type and number of equipment and the time duration that each equipment is powered on and used. Conversion of the Northern Pipeline would use electricity for necessary construction-related activities and would be limited to working hours. Construction equipment and trucks would be required to comply with applicable provisions of regulations to improve fuel efficiency. Additionally, construction of the Northern Pipeline facilities would not occur simultaneously with construction activities described in the Final EIR. Therefore, conversion of the Northern Pipeline was found to not result in the wasteful, inefficient, or unnecessary consumption of transportation fuel resources and impacts would be less than significant.

The Final EIR determined that the operational activities associated with the Project would be less than significant. Operation of the Northern Pipeline would be controlled remotely by existing employees; no additional employees would be required onsite daily for operational activities than identified in the Final EIR, though periodic inspections and maintenance trips would occur. During operation of the proposed project, natural gas would be consumed for the operation of seven pump stations through access of existing natural gas pipelines located on private or federal lands adjacent to the Northern Pipeline alignment. The pump stations would require a combined approximately 50,000 horse-power capacity and would utilize linear generator technologies to minimize emissions. In addition, the local electric grid or onsite solar power may be also used to power pump station auxiliary facilities, telemetry controls, lighting, et. Building lighting would be energy-efficient (i.e., light-emitting diode [LED]) and the pumps and other equipment installed would be new and designed to meet applicable current energy standards for such equipment. The objective of the operation of the Northern Pipeline is to support the Cadiz Project's purpose of saving substantial quantities of groundwater in the Bristol, Cadiz, and Fenner Valleys that are presently wasted and lost to evaporation by natural processes and reduce demand for surface water resources

from the Colorado River or the Sacramento-San Joaquin Delta, reducing the overall energy associated with importing water as there would be less energy needed for conveyance of these distant water supplies. Given the minimal energy consumption of the Northern Pipeline and that the project would save energy related to imported water and would be designed with energy efficient lighting and equipment, operation of the Northern Pipeline would not result in a substantial increase in energy consumption and would not result in the wasteful, inefficient, or unnecessary consumption of electricity resources; impacts were found to be less than significant.

Operation of the Northern Pipeline would require routine inspections and maintenance, checks of the water supply pipeline, landscaping, and other small-scale work. Typical equipment used for routine maintenance may include hand tools, chainsaws, backhoes, graders, dump trucks, chipper/shredder machines, dozers, cranes, reach lifts, welding trucks, and water trucks for dust control. These maintenance routines are expected to occur periodically and not generate substantial numbers of energy consumption and vehicle trips. Therefore, operation of the Northern Pipeline would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuel resources and impacts would be less than significant.

The Northern Pipeline would result in less than significant impacts with respect to wasteful, inefficient, or unnecessary consumption of energy resources during project construction and operation and no mitigation would be required. Therefore, the Northern Pipeline would not result in an increase in severity of impacts to energy compared with the conclusions in the Final EIR. As a result, construction and operation of the Northern Pipeline would not result in a significant impact and would not alter the conclusions of the Final EIR.

Mitigation Measure from Final EIR

UTIL-3: Pumps installed as part of the Project shall be rated for high efficiency to minimize energy consumption.

- b) The Final EIR described that the Project would be designed in a consistent manner with relevant energy efficiency plans, such as Integrated Energy Policy Report, and the California Building Standards, designed to encourage development that results in the efficient use of water resources. Thus, the Final EIR determined that impacts would be less than significant. The Northern Pipeline would increase water conveyance and storage infrastructure in this region and enhance flexibility and resiliency of the water supply system in California, thereby providing state and regional water agencies with a mechanism to convey and store water more flexibly and to enable the integration of water management strategies between the Colorado River and State Water Project systems. This would reduce the energy consumption needed to provide water to Southern California water consumers.

The CARB 2022 Scoping Plan for Achieving Carbon Neutrality (Scoping Plan) is the State's strategy for reducing greenhouse gas (GHG) emissions and includes various energy efficiency strategies to achieve the GHG reduction goals including recognition of the nexus between water and energy consumption. The water-energy nexus provides opportunities for reducing energy demand.

The fundamental purpose of the Project, as stated in the *Project Description* section of this Addendum, is to save substantial quantities of groundwater that are presently wasted and lost to evaporation by natural processes. By strategically managing groundwater levels, the Project would conserve up to 2 million acre-feet of this water, retrieving it from storage before it is lost to evaporation. The Project makes available a reliable water supply for project participants, to supplement or replace existing supplies and enhance dry-year supply reliability. The proposed project is not a land use project which typically would have substantial energy demand associated with a large number of mobile sources. The Project would have periodic vehicle trips that would have minimal amounts of transportation fuel demand from periodic visits from service vehicles for inspection and maintenance purposes and from the operation of the proposed pump stations. The operation of the Project itself would not increase water demand or wastewater generation. Consequently, the implementation of the proposed project would not generate substantial energy demand that would impede the future statewide energy goals. CARB has outlined a number of potential strategies for achieving the 2030 reduction target of 40 percent below 1990 levels. These potential strategies include renewable resources for half of the State's electricity by 2030, reducing petroleum use in cars and trucks, and reducing the carbon content of transportation fuels.

With respect to truck fleet operators, the United States Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration (NHTSA) have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles and are phased in for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (USEPA 2011). USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which would be phased in from model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA 2016). These regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards. In addition, CARB has adopted truck fleet regulations that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. The Northern Pipeline would be required to comply with the CARB Air Toxic Control Measure (ATCM) that limits heavy duty diesel motor vehicle idling to no more than five minutes. Contractors would be required to comply with the CARB In-Use Off-Road Diesel Vehicle Regulation to use lower emitting equipment in accordance with the phased-in compliance schedule for equipment fleet operators. Further, fleet equipment would be compliant with more fuel-efficient engines from the 2008 CARB Truck and Bus regulation and 2021 CARB Heavy-Duty Engine and Vehicle Omnibus Regulation. Finally, the 2020 CARB Advanced Clean Trucks regulations require that manufacturers sell zero-emissions or near-zero-emissions trucks as an increasing percentage of their annual California sales beginning in 2024, resulting in less energy fuel consumption from equipment fleet operators. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the emissions regulations would also result in the efficient use of construction related energy.

As discussed above, the intent of the operation of the Northern Pipeline is to save substantial quantities of groundwater in the Bristol, Cadiz, and Fenner Valleys that are presently wasted and lost to evaporation by natural processes and reduce demand for the surface water resources from the

Colorado River or the Sacramento-San Joaquin Delta, which would reduce the overall energy use associated with importing water as there would be less energy needed for conveyance of these distant water supplies. The 2022 Scoping Plan supports water strategies to support the statewide goal of achieving carbon neutrality as soon as possible, and no later than 2045, which includes strategies that aid in the protection of the state's water supply. As a result, the Project would support the strategies for the protection of the state's water supply.

Impacts associated with the addition of the Northern Pipeline combined with project components analyzed in the Final EIR for the Southern Pipeline would remain less than significant with respect to conflicts with or obstruction of a state or local plan for renewable energy or energy efficiency during project construction or operation and no mitigation would be required. Therefore, the Northern Pipeline would result in less than significant impacts to energy efficiency similar to the less than significant conclusions in the Final EIR. As a result, construction and operation of the Northern Pipeline would not result in a significant impact and would not alter the conclusions of the Final EIR.

Summary of Potential Effects on Energy

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to energy, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

- CARB, 2022. *2022 Scoping Plan for Achieving Carbon Neutrality*, November. Available at https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf.
- U.S. Environmental Protection Agency (USEPA), 2011. Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August. <https://www.eesi.org/files/420f11031.pdf>. Accessed August 25, 2022.
- USEPA, 2016. Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25. <https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf>. Accessed August 25, 2022.
-

Geology and Soils

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
VII. GEOLOGY AND SOILS — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a.i and a.ii) The Northern Pipeline alignment crosses the following Alquist-Priolo Fault Zones shown on Figure VII-1: Helendale-South Lockhart, Calico-Hidalgo, Pisgah-Bullion, and Lavic Lake. These faults are all active, meaning they have experienced movement within Holocene time (within the last 11,700 years). Consequently, the Northern Pipeline is located in a seismically active region due to the proximity of these and other faults located further away (e.g., San Andreas Fault Zone). The components of the proposed project are expected to be subjected to seismic shaking over the life of the project. As discussed in Northern Pipeline Addendum Chapter 1, *Project Description*, the proposed activities for the construction and operation of the Northern Pipeline would not include the injection of water or the extraction of crude oil or groundwater, actions that could activate movement along active faults. Therefore, with no injection or extraction of fluids, the proposed activities for the Northern Pipeline would not directly or indirectly cause rupture of an active fault or seismic shaking. The Northern Pipeline modification to the Project would not

increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Although the construction and operation of the Northern Pipeline would not directly or indirectly cause rupture of an active fault or seismic shaking, the existing Northern Pipeline, originally installed in 1985, is located across several active faults and is in a seismically active region. Rupture along or seismic shaking on active faults could damage the pipeline and interrupt the water supply. Although CEQA only requires analysis of impacts of the proposed project on the environment and not impacts of the environment on the proposed project, impacts of fault rupture and seismic shaking are provided for informational purposes.¹ Breaks in the pipeline would require a temporary and short-term shutdown of water supply operations. However, the breaks would be repaired by accessing and replacing the broken pipeline section, an effort that would not require a long-term interruption of water supply service. The Final EIR determined that impacts would be less than significant. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

- a.iii) In the event that shallow groundwater is present, strong ground shaking could enable liquefaction or lateral spreading of sediments. Liquefaction or lateral spreading in such areas could cause differential settlement or other damage to pipelines, wells, and other proposed facilities. However, as discussed in the Cadiz Project Draft EIR Section 4.9, *Hydrology and Water Quality*, the depth to groundwater along the Southern Pipeline is generally over 100 feet below the ground surface (ESA 2011). Similarly, the depth to groundwater along the existing Northern Pipeline is anticipated to be below excavation depths since the existing pipeline installed in 1985 is not located within saturated soils. As a result, liquefaction-prone conditions are not present. The Final EIR determined that impacts associated with liquefaction would be less than significant. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- a.iv) As discussed in Cadiz Project Draft EIR Section 4.6, *Geology and Soils*, the water conveyance pipeline would be located on relatively flat topography. The proposed support structures for the Northern Pipeline would be also located upon relatively flat topography. A review of geologic maps of the pipeline alignment did not reveal any existing landslides within or adjacent to the pipeline alignment (CGS 2024). In addition, the existing Northern Pipeline is underground, thus protecting the pipeline from potential landslides. The Final EIR determined that landslide impacts would be less than significant. The use of the Northern Pipeline would not increase the severity of

¹ CEQA requires analysis of a project's effects on the environment; consideration of the potential effects of a site's environment on a project are outside the scope of required CEQA review (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369). As stated in *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473: "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." The impacts discussed in this section related to increased exposure of people or structures to risks associated with seismic occurrences and location of people or structures on unstable geologic units are effects on users of the project and structures in the project of preexisting environmental hazards, and therefore "do not relate to environmental impacts under CEQA and cannot support an argument that the effects of the environment on the project must be analyzed in an EIR." (*Id.* at p. 474.) Nonetheless, an analysis of these impacts is provided for information purposes.

significant impacts identified in the previous CEQA document or result in new significant impacts.

- b) Construction of facilities for the conversion of the Northern Pipeline would include ground disturbance activities, such as site clearing, grading, or excavation that could contribute to substantial soil erosion or the loss of topsoil. Erosion of exposed soils can occur as a result of the forces of wind or water. Most of the pump stations, AR/AVs and BOs for the Northern Pipeline project are located in areas that would not affect Waters of the U.S. Nevertheless, the FGMWC would implement Cadiz Project Mitigation Measure HYDRO-1 to ensure that construction-related Best Management Practices (BMPs) are implemented to prevent soil erosion during construction, as well as to control hazardous materials used during construction from adversely affecting the environment. Once constructed, no further ground disturbance would occur. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measures HYDRO-1 and BIO-6. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Mitigation Measures from Final EIR

HYDRO-1: A construction Storm Water Pollution Prevention Plan shall be prepared and included in construction specifications for the Project. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures:

- Install temporary sediment fences or straw waddles at stream crossings or washes to prevent erosion and sedimentation during construction, including at each ARZC railroad trestle along the pipeline alignment.
- Establish designated fueling areas equipped with secondary containment,
- Require drip-pans under all idle equipment on the construction sites,
- Ensure that spill prevention kits are present at all construction sites.

BIO-6: A special-status species and sensitive habitat restoration plan shall be prepared prior to construction for unavoidable temporary impacts on special-status plants and sensitive habitats. The plan would include, at a minimum, the following measures:

- A salvage and replacement program for the top 12 inches of surface material and topsoil. The program shall identify soil preparation requirements, including grain size specifications that shall need to be engineered or amended on site to match to the greatest extent feasible the existing surface soil conditions.
- A salvage and replanting program for perennial special-status species.
- An invasive plant species maintenance, monitoring, and removal program.
- Success criteria that establishes yearly thresholds for growth and reestablishment of habitat.
- A five-year maintenance and monitoring plan to ensure successful implementation of the restoration plan.

- c) Impacts relative to liquefaction, lateral spreading, and landslides are analyzed above in Impacts VII aiii and aiv, which concluded there would be no increase in the severity of significant

impacts. Subsidence and collapse are associated with the withdrawal of shallow groundwater or deep excavations. The proposed Northern Pipeline does not include either of these activities. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure GEO-1. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Mitigation Measure from Final EIR

GEO-1: The project design features in Chapter 6.3 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for land subsidence.

- d) As discussed in Cadiz Project Draft EIR Section 4.6, *Geology and Soils*, geologic and soils maps have not identified expansive soils within the area of the proposed Project. Expansive soils generally occur in regions with moderate to high clay content. Mapped soil associations within the Project area contain very low to negligible amounts of clay material. Given the similar geologic and soil conditions along the Northern Pipeline alignment, expansive soils are not anticipated to be present. The Northern Pipeline already exists; shallow soils would have been removed during construction of the pipeline, thus removing expansive soils, if any had been present. The design and construction of the proposed pump stations would be required to comply with the California building code, which would require addressing the site-specific soils, if any. The Final EIR determined that impacts would be less than significant. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- e) The proposed Northern Pipeline project would not include the addition, removal, or use of septic tanks or alternative wastewater disposal systems. Pump stations would be supplied with chemical toilets that would be routinely maintained. The Final EIR determined that no impacts would occur. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- f) The Northern Pipeline is an existing pipeline where all soil along the route was originally disturbed during the original construction of the pipeline. All of the proposed pump stations, AR/AVs and BOs would also be located within and adjacent to this existing alignment. Consequently, the potential to encounter paleontological resources is low. However, some excavation would be done in previously undisturbed areas. The Final EIR identified that excavation in previously undisturbed areas may encounter paleontological resources, but determined that impacts would be less than significant with incorporation of mitigation measures CUL-8 through CUL-10. The use of the Northern Pipeline would be subject to the same mitigation measures and would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Summary of Potential Effects on Geology and Soils

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to geology and soils, cause new significant environmental effects, or result in

a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

California Geological Survey (CGS), 2024. *CGS Landslide Zones, Earthquake Zones of Required Investigation*.

Environmental Science Associates (ESA), 2011. *Draft Environmental Impact Report, Cadiz Valley Water Conservation, Recovery, and Storage Project*.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):

Yes

No

VIII. GREENHOUSE GAS EMISSIONS — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:

- 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?

☐☒☐☒

Discussion

- a) The Final EIR identified that the Cadiz Project would generate greenhouse gas (GHG) emissions from vehicle trips generated by construction workers, vendor trucks, and haul trucks traveling to and from the Project site and the use of construction equipment. The Project was found to result in the additional electricity demand to power equipment, which would result in electricity-related GHG emissions. The Final EIR determined that the Cadiz Project's annual GHG emissions would result in a cumulatively considerable increase in GHG emissions such that the Cadiz Project could indirectly and remotely impair the State's ability to implement AB 32. The impact would be reduced to less than significant with mitigation through the purchase of carbon offset credits (see GHG-1 below) consistent with the policies and guidelines of AB 32. Therefore, GHG emission impacts with respect to the generation of GHGs were found to be less than significant with mitigation.

The Northern Pipeline would result in additional electricity, and employee on-road vehicle trips. GHG emissions were quantified based on guidance from State and regional agencies with scientific expertise in quantifying GHG emissions, including the CARB and the MDAQMD. Similar to air pollutant emissions, GHG emissions were estimated using the CalEEMod for on-road and off-road. Because potential impacts resulting from GHG emissions would be long-term rather than acute, GHG emissions were calculated on an annual basis. In accordance with MDAQMD CEQA guidelines, GHG emissions from construction have been amortized (i.e., averaged annually) over the lifetime of the proposed project defined as 50 years. Therefore, the Northern Pipeline total construction GHG emissions are divided by 50 to determine annual construction emissions estimate comparable to operational emissions.

The construction of the Northern Pipeline for water conveyance requires several components as described in the *Project Description*. Construction of the necessary Northern Pipeline facilities would not occur simultaneously with the construction activities identified in the Final EIR. Construction activities would include pipeline inspection & rehabilitation with potential replacement of up to 16 miles of pipeline, AR/AV & BO installation, cathodic protection repair, and pump station construction. The total construction GHG emissions for the Northern Pipeline were estimated for each construction phase. The Northern Pipeline would require the use of heavy-duty construction equipment, haul trucks, and worker vehicles. Construction equipment

required would include a crane, grader, excavators, concrete saw, welders, plate compactor, paver, loader, and backhoes. Up to 20 worker trips, 10 vendor trips, and 24 haul truck trips per day would be required over the construction period. Construction equipment and trucks would be required to comply with applicable provisions of regulations to improve fuel efficiency. Furthermore, trucks would need to comply with the CARB ATCM to limit heavy-duty diesel motor vehicle idling to 15 minutes or less at any given location.

GHG emissions from construction and operation of the Northern Pipeline were estimated using the CalEEMod Version 2022.1 for off-road equipment and on-road vehicles. Consistent with the methodology in the Final EIR, total construction GHG emissions are divided by 30 and added to the annual operational emissions. Annual GHG emissions from the Northern Pipeline are added to the annual GHG emissions in the Final EIR. **Table VIII-1** shows the GHG emissions from the construction of the Northern Pipeline combined with construction emissions estimated in the Final EIR.

**TABLE VIII-1
NORTHERN PIPELINE CONSTRUCTION GREENHOUSE GAS EMISSIONS**

Construction Phases	Total MTCO₂e¹
Pipeline Inspection & Rehabilitation	179
AR/AV & BO (up to 150 units)	397
Cathodic Protection Repair (along pipeline length)	61
Pump Stations (7 stations)	1,222
Total GHG Emissions	1,859
50 years amortized	37
Final EIR Amortized GHG Emissions (see FEIR Table 4.7-4)	448
Northern Pipeline + Final EIR Construction GHG	485
NOTES:	
1 Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D of this Addendum.	
SOURCE: ESA 2025.	

Operation of the Northern Pipeline would be managed from Pump Station 1 located on Cadiz property. The pumps would be operated with a SCADA system located near Pump Station 1 to coordinate each of the pump stations simultaneously. The pump stations would be unmanned at most times. Operation of the Northern Pipeline Project would not generate substantial numbers of vehicle trips from routine maintenance, similar to operational trips assumptions in the Final EIR. Use or operation of the Northern Pipeline would be year-round. **Table VIII-2** shows the estimated annual GHG emissions of the operation of the Northern Pipeline combined with the operational emissions of the wellfield and Southern Pump Station (SPS1) when assuming 25,000 AFY would be conveyed north and 25,000 AFY south.

**TABLE VIII-2
NORTHERN PIPELINE OPERATIONAL GREENHOUSE GAS EMISSIONS**

Source	Total MTCO₂e per year ¹
Pump Stations	42,638
Total GHG Emissions	42,638
Construction 50 years amortized	37
Final EIR Total GHG Emissions ²	23,910
Northern Pipeline + Final EIR Operation GHG	66,585
MDAQMD Threshold of Significance	100,000
NOTES:	
1 Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D of this Addendum.	
2 Total GHG emissions (with Natural Gas) for 50,000 AFY are presented in Table 4.7-4 of the Final EIR for construction and operation of the wellfield, pump stations, and vehicle trips. The values are reduced by approximately half to represent 25,000 AFY conveyed to the south.	
SOURCE: ESA 2025.	

The Final EIR applied a GHG significance threshold used by the South Coast Air Quality Management District (SCAQMD), which is an air quality management district located adjacent to the Northern Pipeline. The Final EIR determined that impacts would be less than significant with implementation of Mitigation Measure GHG-1. Since the time of the Final EIR, the MDAQMD has adopted a 100,000 MTCO₂e CEQA significance threshold for GHG emissions. The addition of the Northern Pipeline GHG emissions would not exceed the MDAQMD threshold of significance for GHG emissions. However, when using the thresholds assumed in the Final EIR, emissions would be significant, requiring implementation of Mitigation Measure GHG-1 to remain less than significant. As a result, in order to remain consistent with the significance thresholds in the Final EIR, the use of the Northern Pipeline would be subject to Mitigation Measure GHG-1, requiring emissions to be offset to below 10,000 MTCO₂e. With implementation of Mitigation Measure GHG-1, the proposed project would be less than significant and would not alter the conclusions of the Final EIR.

Mitigation Measure from Final EIR

GHG-1: Within 90 days of completion of construction of the Groundwater Conservation and Recovery Component of the Project, carbon offset credits shall be purchased from the Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emissions credits under a GHG reduction plan or similar program, in sufficient quantity to reduce the Project's first year total (direct plus indirect) GHG emissions below 10,000 MTCO₂e per year. The first year offsets identified in the binding agreement shall be purchased and retired no later than 12 calendar months from completion of the first full year of operation. The estimated amount of offsets required is 18,153 MTCO₂e per year (i.e., 28,153 – 10,000 MTCO₂e per year) if the wellfield and intermediate pump station are powered by natural gas. This volume may be reduced if less power is needed, solar power is provided, or diesel powered wells are retired at the Cadiz Ranch that would count as an offset.

If electricity from the grid is used, the required offsets are estimated to be 5,810 MTCO₂e per year (i.e., 15,810 – 10,000 MTCO₂e per year). Since offsets for off-site electricity generation is the responsibility of the energy generators, the Project may obtain verification of these offsets or purchase additional offsets as needed.

A GHG inventory shall be completed which will be verified by an accredited third-party verification body and reported to the Climate Registry. The Applicant shall purchase and retire such additional carbon offset credits (due to a net increase in emissions from the first full year of operations) as may be needed each year to ensure that the Project's total (direct plus indirect) GHG emissions are offset below the benchmark of 10,000 MTCO₂e above existing 2011 conditions.

- b) The County of San Bernardino prepared a Greenhouse Gas Emissions Reduction Plan that was updated with the County of San Bernardino Greenhouse Gas Reduction Plan Update in June 2011, setting a 2030 target of 40 percent below 2020 BAU levels. The Project modifications would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. The objective of the Northern Pipeline is to support the Cadiz project's purpose of saving substantial quantities of groundwater presently wasted and lost to evaporation by natural processes and reduce demand on the surface water resources from the Colorado River or the Sacramento-San Joaquin Delta. Maximizing beneficial use of groundwater in the Bristol, Cadiz, and Fenner Valleys by conserving and using water that would otherwise be lost to brine and evaporation provides the various users with reliable water supply opportunities and reduces dependence on imported water, thus reducing district-wide GHG emissions.

The CARB 2022 Scoping Plan for Achieving Carbon Neutrality (Scoping Plan) is the State's strategy for reducing GHG emissions and includes various energy efficiency strategies to achieve the GHG reduction goals including recognition of the nexus between water and energy consumption. The water-energy nexus provides opportunities for reducing energy demand and reducing emissions of GHGs. The fundamental purpose of the Project, as stated in the *Project Description* section of this Addendum, is to save substantial quantities of groundwater that are presently wasted and lost to evaporation by natural processes. By strategically managing groundwater levels, the Project would conserve up to 2 million acre-feet of this water, retrieving it from storage before it is lost to evaporation. The Project makes available a reliable water supply for project participants, to supplement or replace existing supplies and enhance dry-year supply reliability. Thus, the Project would be consistent with and not conflict with the Scoping Plan's strategy to reduce water-related GHG emissions. The Project would also not result in employment growth in excess of regional projections by SCAG. Thus, the Project would not conflict with the vehicle miles traveled (VMT) reduction strategies and targets in Senate Bill 375 nor the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). In April 2024, SCAG adopted Connect SoCal 2024 (2024-2050 RTP/SCS), which is a regional plan to continue emissions reductions within the southern California area, largely focused on transportation emissions reductions. However, CARB has not approved Connect SoCal 2024 as of the date of this Addendum. Nonetheless, as Connect SoCal 2024 incorporates and builds upon VMT reduction strategies from the 2020-2045 RTP/SCS, the Northern Pipeline would not conflict with SCAG's adopted Connect SoCal 2024 since the operational trips associated with project operation would not be substantial and would be similar to the volumes already envisioned in the

Final EIR. Further, the Project would not conflict with applicable regulations to reduce GHG emissions such as the CARB Airborne Toxics Control Measure (ATCM) that limits heavy-duty diesel motor vehicle idling to five minutes at a location and the CARB In-Use Off-Road Diesel Vehicle Regulation to use lower emitting equipment in accordance with the phased-in compliance schedule for equipment fleet operators. Finally, the Project would be compliant with standards of the CARB Truck and Bus regulation, CARB Heavy-Duty Engine and Vehicle Omnibus Regulation, and CARB Advanced Clean Trucks that would reduce GHG emissions as a result of more fuel-efficient engines.

The Project would result in less than significant impacts with respect to conflicts with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs during project construction or operation and no mitigation would be required. As a result, construction and operation of the Project analyzed in the Final EIR and the Northern Pipeline modifications would not result in a significant impact and would not alter the conclusions of the Final EIR.

Summary of Potential Effects on Greenhouse Gas Emissions

The proposed modifications in combination with the components evaluated in the Final EIR will not result in a significant increase of greenhouse gas emissions, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.).

References

CARB, 2022. *2022 Scoping Plan for Achieving Carbon Neutrality*. November 16, 2022. Available at https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf.

Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
IX. HAZARDS AND HAZARDOUS MATERIALS — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) and b): During the construction needed to use the Northern Pipeline, construction equipment and materials would include fuels, oils and lubricants, solvents and cleaners, cements and adhesives, paints and thinners, degreasers, cement and concrete, and asphalt mixtures, which are all commonly used in construction. The routine use or an accidental spill of hazardous materials could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment.

Construction activities for the pump stations would be required to comply with numerous hazardous materials regulations described in Cadiz Project Draft EIR Section 4.8, *Hazards and Hazardous Materials*, designed to ensure that hazardous materials would be transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies. Contractors would be required to prepare and implement Hazardous Materials Business Plans (HMBPs) that would require that hazardous materials used for construction would be used properly and stored in appropriate containers with

secondary containment to contain a potential release. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

Construction contractors would be required to implement Mitigation Measure HYDRO-1 for construction activities that would list the hazardous materials proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; protocols for responding immediately to spills; and describe BMPs for controlling site runoff.

In addition, the transportation of hazardous materials would be regulated by the USDOT, Caltrans, and the California Highway Patrol. Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the risk of accidental release.

Finally, in the event of an accidental spill that could release hazardous materials, a coordinated response would occur at the federal, state, and local levels to respond to and assess the situation, as needed.

The required compliance with the numerous laws and regulations discussed above that govern the transportation, use, handling, and disposal of hazardous materials would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure HAZ-1. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

- c) There are no schools located within a quarter mile of the proposed pump stations, AR/AVs and BOs along the Northern Pipeline alignment. The Final EIR determined that no impacts would occur. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- d) The facilities to be constructed to convert the Northern Pipeline to water conveyance are not located on a site listed on a hazardous material site list pursuant to Government Code Section 65962.5. The Northern Pipeline is an existing pipeline. Construction of pump stations, AR/AVs and BOs and appurtenant facilities would occur largely within its previously disturbed alignment. Consequently, unexploded ordinance (UXO) from World War II training exercises, if any, would have already been located and removed during construction of the existing pipeline (See Cadiz Project Draft EIR Section 4.8, *Hazards and Hazardous Materials*, for discussion of unexploded ordinance). The pump stations would be offset from the existing pipeline and could have the potential to encounter UXO. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measures HAZ-2 and HAZ-3. Mitigation measure HAZ-3 would require that the USACE be requested to clear areas that may have experienced military use for UXO. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

- e) From east to west, the Northern Pipeline alignment is located about 0.5 miles south of the Barstow-Daggett Airport, about one mile north of the airstrips for the Edwards Air Force Base, about 0.85 miles south of the Mojave Air and Space Port. However, none of the proposed pump stations are within two miles of an airport. In addition, construction and maintenance activities would extend to a maximum height of four feet above the ground surface, not high enough to interfere with navigational airspace. Once constructed, all Project facilities and components would be located below ground or at the surface with minimal height. The Final EIR determined that impacts would be less than significant. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- f) The elements of the Northern Pipeline are not located on any roads and do not interfere with adopted emergency response plans or evacuation routes defined by any local jurisdictions. The proposed Project area is not located in the immediate vicinity or flight path of a major airport. Private airstrips are located at Amboy, at the Cadiz agricultural operations and at the Iron Mountain Pumping Plant. The proposed Project area is sparsely vegetated, making the likelihood of wildland fires very low. Emergency responses to remote parts of eastern San Bernardino County typically involve helicopter transport, which would not be hindered by proposed Project construction or operation. Therefore, no impact would occur, and no mitigation is required. The Final EIR determined that no impacts would occur. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- g) As discussed in Cadiz Project Draft EIR Section 4.8, *Hazards and Hazardous Materials*, the existing Northern Pipeline alignment is primarily characterized as arid desert terrain with limited sparse vegetation. Some of the western portions pass through irrigated farmland. The Northern Pipeline is located within a low fire hazard severity zone. The Final EIR determined that impacts would be less than significant. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Summary of Potential Effects on Hazards and Hazardous Materials

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to hazards and hazardous materials, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code §21166; CEQA Guidelines §15162.)

Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>		Yes	No
X. HYDROLOGY AND WATER QUALITY — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:			
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:		
i)	result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii)	substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv)	impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) Northern Pipeline Project construction would include ground disturbance activities, such as site clearing, grading, or mass excavation that could contribute to substantial soil erosion. Erosion of exposed soils can occur as a result of the forces of wind or water. During construction, heavy equipment such as bulldozers, graders, earth movers, heavy trucks, trenching equipment and other machinery is likely to be used. Such activity could cause pollutants runoff in the form of sediment and other pollutants such as fuels, oil, lubricants, hydraulic fluid, or other contaminants. Most of the pump stations, AR/AVs and BOs for the Northern Pipeline project are located in areas that would not affect Waters of the U.S. Nevertheless, the Cadiz Project Mitigation Measure HYDRO-1 would be implemented to ensure that construction-related Best Management Practices (BMPs) are implemented to prevent adverse impacts to water quality during construction, as well as to control hazardous materials used during construction from adversely affecting the environment. Once constructed, no further ground disturbance would occur. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measures HYDRO-1 through HYDRO-3. The use of the Northern Pipeline would not increase the severity

of significant impacts identified in the previous CEQA document or result in new significant impacts.

Mitigation Measures from Final EIR

HYDRO-1: A construction Storm Water Pollution Prevention Plan shall be prepared and included in construction specifications for the Project. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures:

- Install temporary sediment fences or straw waddles at stream crossings or washes to prevent erosion and sedimentation during construction, including at each ARZC railroad trestle along the pipeline alignment.
- Establish designated fueling areas equipped with secondary containment,
- Require drip-pans under all idle equipment on the construction sites,
- Ensure that spill prevention kits are present at all construction sites.

HYDRO-2: Project Design Feature 6.4 found in Chapter 6.4 of the GMMMP shall be implemented to address the potential impacts for the migration of the saline/freshwater water interface to adversely affect groundwater quality.

HYDRO-3: Project design features in Chapter 6.2 of the GMMMP shall be implemented to address potential impacts to Third Party wells.

- b) The use of the Northern Pipeline would convey groundwater from the Cadiz Valley to the Barstow area and Antelope Valley. The Final EIR evaluated potential impacts to groundwater in detail and determined that the project would be subject to the GMMMP which would ensure that the project did not substantially decrease water supplies or interfere with groundwater recharge. Use of the Northern Pipeline would not increase the capacity of the proposed groundwater extraction facilities evaluated in the Final EIR. As a result, the use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

As discussed in Chapter 1 of this document, *Project Description, Pipeline Flushing*, the Northern Pipeline construction activities would include the cleaning of the inside of the existing pipeline. This cleaning action would require about 1.1 acre-feet of water, which equates to 0.002% of the total permitted annual use and 0.00004% of the 50-year life of the project. The pipeline flushing would occur once for commissioning and may only be required in the case of pipeline repair. This water would come from the Cadiz Project, which concluded that the impact to water supplies would be less than significant.

As discussed in Chapter 1, *Project Description, Pipeline Flushing*, the Northern Pipeline would add seven pump stations, each with an impervious foundation of about two acres. However, stormwater falling on the pump stations would flow off to the surrounding soil and infiltrate into the ground as it does now. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measures HYDRO-3. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

- c.i, ii, iii, iv) The Northern Pipeline is an existing buried pipeline. All new supporting structures contemplated (e.g., replaced pipeline, pump stations, AR/AVs and BOs) would be constructed to avoid drainages to the extent feasible. Therefore, the Northern Pipeline project would have limited impacts on drainages. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure HYDRO-4. In the event that the Northern Pipeline is unable to avoid a particular drainage, HYDRO-4 would apply and reduce impacts to a less than significant level. The Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.
- d) As discussed in Chapter 1, *Project Description*, Northern Pipeline structures would be placed underground with the exception of pump stations and AR/BO facilities. As discussed in Cadiz project Draft EIR Section 4.9, *Hydrology and Water Quality*, none of the Project area including the Northern Pipeline route is located within the 100-year flood zone maps prepared by FEMA. The area is not subject to seiches, tsunamis, or mudflows. The seven pump stations would avoid washes or other visible drainages where feasible avoid occasional flooding from storms.

Although not identified as being within 100-year flood maps, the general area is known to experience occasional seasonal short-term flooding. The seasonal flooding could damage aboveground structures (e.g., pump stations, AR/AVs and BOs). Implementation of Cadiz Project Mitigation Measure HYDRO-4, provided below, would ensure that the pipeline infrastructure would not adversely affect the floodplain. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure HYDRO-4. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Mitigation Measures from Final EIR

HYDRO-4: Construction plans shall be prepared that use standard best management practices (BMPs) to control drainage around the project infrastructure. The BMPs shall include placing well pads and above-ground appurtenant facilities outside of visible drainages; and grading well pads to disperse runoff from the site in a manner that minimizes scour potential of storm water. Additional BMPs include the use of physical barriers to prevent erosion and siltation straw wattles, hay bales, setbacks and buffers, and other similar methods that reduce the energy in surface water flow.

- e) As discussed in the Final EIR, Appendix B1, the Cadiz Project is to be operated in accordance with the *Groundwater Management, Monitoring, and Mitigation Plan for the Cadiz Groundwater Conservation, Recovery and Storage Project*, dated November 29, 2011, The fundamental purpose of the Project, as stated in the *Project Description* section of this Addendum, is to save substantial quantities of groundwater that are presently wasted and lost to evaporation by natural processes. The Northern Pipeline project would be consistent with that purpose, in that it would facilitate the delivery of water for beneficial use. The recovery and beneficial use of water is consistent with the regional basin plans that encourage such actions. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measures HYDRO-3. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Summary of Potential Effects on Hydrology and Water Quality

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to hydrology and water quality, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Land Use and Planning

Issues (and Supporting Information Sources):

Yes

No

XI. LAND USE AND PLANNING — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:

- | | | |
|--|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

- a) The physical division of an established community is typically associated with the construction of a linear feature, such as a major highway or railroad tracks, which would impair mobility within an existing community or between a community and an outlying area. The proposed modifications would utilize an existing pipeline to convey water, and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water within an existing pipeline and would not divide an established community. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- b) The Northern Pipeline traverses lands in San Bernardino County and Kern County, including the Mojave Trails National Monument (MTNM) and other federal lands managed by the BLM. MTNM was established in 2016, after the Final EIR was certified in 2012, to protect natural resources and historic and cultural values found in this area. MTNM spans 1.6 million acres between Barstow and Needles, California, connecting the Mojave National Preserve to the north with Joshua Tree National Park to the southwest. MTNM is managed by BLM. The Northern Pipeline was an existing pipeline facility when MTNM was established, and as such may be expanded to the extent consistent with the care and management of monument objects. Construction and operation of the Northern Pipeline and pump stations, AR/AVs and BOs would occur within the existing utility easement or within adjacent private or federal parcels. The existing utility easement is administered by BLM and includes several other natural gas pipelines. Use of the Northern Pipeline to convey water rather than natural gas would be subject to BLM approval, which would determine whether its use is consistent with applicable land use plan objectives and consistent with the care and management of monument objects. The Northern Pipeline is physically already installed underground and is parallel with other installed underground pipelines. The pump stations would be constructed on private or federal parcels overlying a previously installed underground pipeline. The AR/AVs and BOs will be located within the existing right-of-way corridor of the Northern Pipeline within previously disturbed soils. The development of seven pump stations would be partially outside of the existing right-of-way but would be located on private or federal parcels and would not conflict with any land use plan, policy or regulation.

The Northern Pipeline crosses through the planning area of the California Desert

Conservation Area Plan, as amended by the West Mojave Plan and the Desert Renewable Energy Conservation Plan. Through the land use planning process, the BLM has designated conservation and recreation management areas to protect important natural and cultural resources. The BLM will assess whether the proposed Northern Pipeline right-of-way is compatible with the management goals of designated areas prior to approving a right-of-way to transport water over public lands.

Construction of pump stations on privately owned parcels would not be subject to County building approvals or Conditional Use Permits (under Government Code Section 53091), as the facilities would be used for water transmission and would fall under FVWA jurisdiction. Additionally, a few of the pump stations may fall within federal land. Coordination with BLM would ensure that the project would conform with land use plans. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Land Use

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to land use and planning, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
XII. MINERAL RESOURCES — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a and b) As discussed in Chapter 1, *Project Description*, the Northern Pipeline is an existing pipeline; mineral resources are not extracted from within this existing pipeline alignment. The proposed structures, such as pump stations, AR/AVs and BOs, would be constructed within the existing alignment and would not extend into areas that could be used for mineral resources. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure MIN-1. The use of the Northern Pipeline would not increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts.

Summary of Potential Effects on Mineral Resources

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to mineral resources, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
XIII. NOISE — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The Cadiz Project Final EIR identified that the Project would require the use of construction equipment for a temporary period of time. As discussed in the Final EIR, noise from construction activities would be generated by the operation of vehicles and equipment used for various construction activities, such as excavation and grading. Noise levels generated by construction equipment would vary depending on factors such as the type and number of equipment and the construction activities being performed. Noise levels at noise-sensitive receptor locations would also depend on the distance from the construction activities to the receptor location, as well as the presence of intervening terrain, vegetation, buildings, or other structures that would absorb or block the transmission of noise. The Final EIR determined that the Project would comply with the County of San Bernardino Municipal Code, which restricts construction to between the allowed hours of 7 a.m. to 7 p.m. Mondays through Fridays, and 9 a.m. to 6 p.m. on Saturdays. As such, construction activities would comply with the County's noise standard and would not result in significant impacts to nearby sensitive receptors. Impacts were found to be less than significant.

The Final EIR determined the closest noise-sensitive receptor to be located approximately 3.3 miles (17,424 feet) to the north of the Project site. However, the nearest noise-sensitive receptors would be located substantially closer. In the most recent analysis, the nearest noise sensitive uses to the Northern Pipeline site was determined to be is a public park approximately 500 feet to the north of the site along the pipeline alignment and planned AR/AV and BO installment sites. These components would require the use of generally similar types of construction equipment as the Final EIR, including excavators, concrete saws, graders, compactors, welders, and cranes. Therefore, construction noise levels were analyzed with construction equipment affecting the noise-sensitive receptors that would occur during pipeline rehabilitation, cathodic protection repair, and AR/AV and BO installment. There are no standardized state or federal regulatory standards developed for assessing construction noise impacts. However, the Federal Transit Administration (FTA) has developed and published a guideline criterion that is considered to be

reasonable to assess noise impacts from construction operations. **Table XIII-1** shows the maximum dBA Leq during construction activities affecting the noise-sensitive receptor.

TABLE XIII-1
ESTIMATED NOISE FROM CONSTRUCTION ACTIVITIES (POUNDS PER DAY)

Construction Component	Noise Level (dBA, Leq)
Pipeline Inspection & Rehabilitation	63.9
AV/AR/BO Installment	63.0
Cathodic Protection Repair	62.7
FTA Construction Noise Threshold^a	80
Exceed Thresholds?	No

^a FTA noise criteria based on 8-hour (dBA Leq) for daytime hours
Source: FTA, Transit Noise and Vibration Impact Assessment Manual, 2018.

The noise exposure to the closest noise-sensitive receptor does not exceed the FTA noise threshold, therefore, noise impacts from construction would be less than significant. Additionally, the Northern Pipeline would generate few daily trips during construction. Worker, vendor, and hauling trips for the Northern Pipeline would be approximately 20, 23, and 2 daily trips (i.e., arriving at the start of the workday or departing at the end of the workday), respectively, across construction phases. Thus, the Northern Pipeline contribution to off-site construction traffic would not substantially contribute to traffic noise levels.

Operation of the Northern Pipeline would generate noise from the pump stations but would not result in significant noise impact as determined in the Final EIR. The Project would require routine inspections, checks of the water supply pipeline alignment, landscaping, and other small-scale work. Typical equipment used for routine maintenance may include hand tools, chainsaws, backhoes, graders, dump trucks, chipper/shredder machines, dozers, cranes, reach lifts, welding trucks, and water trucks for dust control. Noise associated with the project operations is temporary in nature and would not conflict with local noise ordinances. Operation of the Northern Pipeline would not generate substantial numbers of vehicle trips nor require any substantially noisy activities and operational noise impacts would be similar or less than what was determined in the Final EIR.

The Northern Pipeline would result in less than significant impacts with respect to a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards and no mitigation would be required. Therefore, the Northern Pipeline would not result in an increase in severity of impacts compared with the conclusions in the Final EIR. As a result, construction and operation of the Northern Pipeline would not result in a significant impact and would not alter the conclusions of the Final EIR.

- b) The Final EIR identified that the Project would require the use of construction equipment for a temporary period of time. As discussed in the Final EIR, construction activities have the potential to generate low levels of groundborne vibration and groundborne noise from the use of heavy equipment (i.e., backhoe, dozer, grader, loader, and haul trucks, etc.), which generates vibrations that propagate through the ground and diminish in intensity with distance from the source. The

Final EIR determined that construction would not exceed the significance thresholds for groundborne vibration that would cause structural (i.e., building) damage or human annoyance in occupied buildings as a result of separation of distance from construction areas to receptor locations. No high-impact activities, such as pile driving or blasting, would be used during construction of the Northern Pipeline. In addition, operation of the Northern Pipeline would not result in new sources of groundborne vibration and groundborne noise compared to existing conditions. Thus, construction and operational groundborne vibration impacts would be less than significant and would not alter the conclusions of the Final EIR.

- c) The Final EIR determined that the project area would be located within the vicinity of a private airstrip owned and maintained by Cadiz Inc. This airstrip is used less than five times a month and is not available to the public. During construction, there may be a minor increase in the number of flights into and out of the airstrip associated with various contractor personnel visiting the Project area as needed (less than five per week). But it is expected that the increase would amount to less than five visits per week and would be temporary, only lasting throughout construction. In addition, during operation of the Project, flights to the location would remain infrequent and future employees on the Project site are not expected to be subjected to excessive noise levels from airstrip activity, and exposure to airport noise would be a less than significant impact. Similarly, since the Project would not create noise-sensitive land uses in the area, no other potential excessive noise sources exist in the vicinity. These conditions remain the same for the Northern Pipeline, and the Northern Pipeline would not require an increase in the number of trips that were assumed in the Final EIR. As a result, construction and operation of the Northern Pipeline would not result in a significant impact and would not alter the conclusions of the Final EIR.

Summary of Potential Effects on Noise

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to noise, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

References

Federal Transit Administration (FTA), 2018, *Transit Noise and Vibration Impact Assessment Manual*, February.

Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
XIV. POPULATION AND HOUSING — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The proposed project would not include the construction of new housing or extension of roads or other infrastructure connected to housing. The project modifications would utilize an existing pipeline to convey water, with the replacement of up to 16 miles of the pipeline, and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. During construction, the project modifications would require approximately 10 construction workers for installation of all project modifications and would be adequately served by the local workforce. No additional permanent employees “on-site” would be required for operational activities once construction is completed.

The use of the Northern Pipeline would convey water to areas where growth has been planned, and as a result may support planned growth within the delivery areas. This finding is consistent with the impact determination in the Final EIR, that the Cadiz Project could accommodate planned growth. Use of the Northern Pipeline would not increase the capacity of the Cadiz Project, which would remain at an average of 50,000 AFY over 50 years. As noted in the Final EIR, each Project Participant would serve water to jurisdictions responsible for planning growth in their area. Local jurisdictions have identified secondary impacts of growth and have approved General Plans that override significant secondary effects of growth. The use of the Northern Pipeline would not induce growth in the region since it would not construct new or expanded housing or local delivery infrastructure. Any growth for which Project water will be used is an existing use or already planned-for growth that previously underwent CEQA analysis. The use of the Northern Pipeline would serve new locations but would not induce growth in those areas. No new mitigation measures are required.

- b) The project modifications would not require removal of existing housing or displacement of people, necessitating the construction of replacement housing elsewhere. The Final EIR determined that no impacts would occur. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Population and Housing

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to population and housing, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Public Services

Issues (and Supporting Information Sources):

Yes

No

XV. PUBLIC SERVICES —

- a) Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts due to changed circumstances or new information for any of the following public services:

i) Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a.i) The project modifications would utilize an existing pipeline to convey water, with the replacement of up to 16 miles of the pipeline and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. The project modifications would not result in the need for additional housing, schools, or other community facilities that might require fire protection (see Section XIV, Population and Housing). The new pump stations would be served by County public services including fire and police as is currently the case. The new facilities would not significantly increase demand for fire protection services during either construction or operational phases, consistent with the conclusions of the Final EIR. No new significant impacts will occur, and no new mitigation measures are required.
- a.ii) The project modifications would utilize an existing pipeline to convey water, and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. The project would not include the addition of housing, schools, or other community facilities that might require police protection. The project would also not indirectly induce additional housing, schools, or other community facilities (see Section XIV). Construction of the pump station would not change local police protection response times or affect demand for police protection services in the project area. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- a.iii) The project would not involve a housing component that would result in population growth in the region or increased demands on existing schools within the area. Therefore, no impact to schools would occur. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- a.iv) The project would not involve a housing component or increase employment that would result in population growth necessitating the need for additional parks or increasing the use of nearby parks. Therefore, no impacts to parks would occur. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.

- a.v) The project would not involve a housing component or increase employment opportunities that would result in population growth. Therefore, additional demands on other public facilities, such as library or health care services, would not occur as a result of project implementation and no impact would occur. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Public Services

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to public services, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
XVI. RECREATION —Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The Project modifications would utilize an existing pipeline to convey water, with the replacement of up to 16 miles of the pipeline and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. The Project modifications would not result in physical impacts to surrounding recreational facilities and would not result, directly or indirectly, in an increase in population. Therefore, the project modifications would not increase the use of existing neighborhood and regional parks or other recreational facilities. Furthermore, the use of the Northern Pipeline would not increase the capacity of the Cadiz Project evaluated in the Final EIR. The Final EIR determined that no impacts would occur. No new significant impacts will occur, and no new mitigation measures are required.
- b) The project modifications would not require the construction or expansion of additional recreational facilities which might have an adverse physical effect on the environment. Therefore, no new parks or recreational facilities would need to be constructed to serve the proposed project. The Final EIR determined that no impacts would occur. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Recreation

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to recreation, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Transportation

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
XVII. TRANSPORTATION — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:		
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The San Bernardino County Department of Public Works is responsible for maintaining approximately 2,830 miles of both paved and unpaved roadways primarily located in unincorporated areas of the County. These facilities range in classification from major arterial highways to local streets. The existing Northern Pipeline traverses several County and federal highways including Route 66, Interstate I-40, Interstate-15, and State Highway 58.

The San Bernardino County Congestion Management Plan (CMP) created in June 1990 applies to urbanized areas with populations of more than 50,000. The pipeline does not traverse any cities of 50,000 people. The population of Barstow, which the pipeline crosses, is approximately 25,000. Construction of the proposed project would generate a minor number of trips bringing workers, equipment, and supplies to the pump station, AR/AVs and BOs sites. Up to 20 worker trips, 10 vendor trips, and 24 haul truck trips per day would not add substantial traffic to local highways near the pump stations. Once operational, the project would be unmanned, would generate one or two daily vehicle trips, and would not introduce an incompatible use onto the local circulation system. Maintenance of the pipeline as an idle oil/gas pipeline already requires 1-2 daily vehicle trips. Operation of the pipeline for water conveyance will not increase this pre-existing condition and therefore, the project would not result in any impacts to the circulation system that could impact congestion. Additionally, the project does not involve any activities that would conflict with non-vehicular modes of transportation. Impacts due to operation of the project would therefore be less than significant. No new significant impacts will occur, and no new mitigation measures are required.

- b) In accordance with Senate Bill (SB) 743, CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shift the focus from driver delay to reduction of GHG emissions, creation of multimodal networks, and promotion of a mix of land uses.

Vehicle miles traveled (VMT) is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

CEQA Guidelines Section 15064.3 subdivision (b) sets forth specific criteria for determining the significance of transportation impacts. Subdivision (b) pertains to land use projects and describes factors that may indicate whether the amount of a land use project's vehicle miles traveled may be significant or not. Project-related traffic would be limited to 10 to 25 daily trips during the construction period and one or two daily trips for maintenance purposes. Because the project is not a land use project and would not generate substantial vehicle miles traveled for employees, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) and no impact would result. No new significant impacts will occur, and no new mitigation measures are required.

- c) The project modifications would use existing roadways and would not involve permanent alteration of existing roadways, nor would it require incompatible vehicular access. Therefore, the project would have no impact related to an increase in hazards due to design features or incompatible use. The Northern Pipeline is located close to an active railroad easement; therefore, mitigation measures TR-1 through TR-4 would remain applicable to the project. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measures TR-1 through TR-4. No new significant impacts will occur, and no new mitigation measures are required.

Mitigation Measures from Final EIR

TR-1: A Traffic Control Plan shall be implemented that includes the following elements:

- Identify hours of construction and hours for deliveries and include a discussion of haul routes;
- Identify all access restrictions, parking restrictions, and signage restrictions on major roads (e.g. speed limit);
- Identify signage and flag men necessary at turn-off lanes on SR-62 and US-66 to avoid traffic hazards on fast moving roads;
- Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times;
- Arrange for a telephone resource to address public questions and complaints during Project construction.

TR-2: The construction contractor shall submit construction plans for construction within the railroad easement to the railroad owner and operator for their review and approval. Any plans to deliver materials on the rail lines shall be reviewed and approved by the railroad owner and operator. The construction contractor shall obtain approval from the railroad operator for material delivery and staging activities within the railroad right-of-way.

TR-3: During construction, all at-grade railroad crossings shall be clearly flagged and barricaded to ensure that all vehicular traffic comes to a full stop prior to crossing railroad tracks.

TR-4: The construction contractor shall implement mandatory railroad safety training and implement railroad safety measures requested by the railroad operator.

- d) The Project modifications would utilize an existing pipeline to convey water, and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. The project would not involve modifications to access points and would therefore have no impact with regard to inadequate emergency access. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure TR-1. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Transportation

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to transportation, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Tribal Cultural Resources

Issues (and Supporting Information Sources):

Yes

No

XVIII. TRIBAL CULTURAL RESOURCES — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts that could:

- a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or ☐ Yes ☒ No
 - 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. ☐ Yes ☒ No

Discussion

- a.i) The Final EIR was certified prior to AB-52 Native American Consultation requirements. Therefore, AB-52 consultation is not required for the proposed Project. Similarly, the 2012 EIR was certified prior to the addition of Tribal Cultural Resources to the Appendix G Checklist. Nonetheless, in accordance with the 2012 EIR mitigation requirements, impacts to Tribal Cultural Resources will be avoided through the proactive identification of resources using site surveys prior to final designs, and placement of facilities in areas that do not pose significant impacts to existing resources. Most of the construction would occur within an existing utility easement. As a result, the installation of pump stations and AR/AV and BO facilities would be located largely within previously disturbed areas. Ground disturbance within recorded sites will be avoided. In accordance with the 2012 EIR Mitigation Measure **CUL-2**, these sites will be mapped, fenced, and avoided within the affected parcels. As a result, no new significant impacts will occur, and no new mitigation measures are required.
- a.ii) The Final EIR concluded that any resources considered significant pursuant to subdivision (c) of Public Resources Code Section 5024.1 within the project area will be avoided. In accordance with the 2012 EIR mitigation requirements, impacts to Tribal Cultural Resources will be avoided through the proactive identification of resources using site surveys prior to final designs, and placement of facilities in areas that do not pose significant impacts to existing resources. Ground disturbance within recorded sites will be avoided. In accordance with the 2012 EIR Mitigation Measure **CUL-2**, these sites will be mapped, fenced, and avoided within the affected parcels. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Tribal Cultural Resources

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to tribal cultural resources, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Yes</i>	<i>No</i>
XIX. UTILITIES AND SERVICE SYSTEMS — Would project modifications, changed circumstances, or new information substantially increase the severity of significant impacts identified in the previous CEQA document or result in new significant impacts in the following areas:		
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The Project modifications would utilize an existing pipeline to convey water, with the replacement of up to 16 miles of the pipeline, and would construct pump stations, AR/AVs and BOs to assist with the conveyance of water. However, any potential environmental impacts related to installation of new water facilities are already accounted for in this Addendum as part of the impact assessment conducted for the entirety of the proposed project. No adverse physical effects beyond those already disclosed in this Addendum would occur as a result of the installation of new water facilities. As such, impacts associated with the installation of new water facilities would be less than significant. Mitigation measure UTIL-1 would remain applicable to the project. The Final EIR determined that impacts would be less than significant with incorporation of mitigation measure UTIL-1. No new significant impacts will occur, and no new mitigation measures are required.

Mitigation Measures from Final EIR

UTIL-1: Storm water drainages traversed by the water conveyance pipeline alignment shall be returned to pre-construction conditions. Existing structures such as storm flow diversion berms, railroad facilities including bridge supports, access roads, and utility poles shall be returned to pre-construction conditions and protected from scouring by storm water flows, subject to the approval of the railroad owner.

- b) During construction, water usage would be temporary and minimal for watering the specific Project sites and other needs. Once operational, the Project modifications would not increase the use of supplies as the Project modification would primarily enhance the Project's ability to supply existing maximum daily water demands. As such, the existing Project's modifications would not require new or additional sources of water, and impacts associated with water supplies would be less than significant. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- c) The Project's modifications would not result in an increase of wastewater treatment demands. The Project itself would not directly or indirectly increase wastewater treatment demands, and impacts associated with wastewater treatment would be less than significant. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- d) Waste generation and disposal requirements associated with the proposed Project would be limited to minor quantities derived from construction activities (e.g., material packaging) and employees (e.g., food-related trash). Solid waste from the Project would be disposed of at nearby landfills. Therefore, given the minimal waste that would be produced by the Project, it is anticipated that the landfills would have sufficient capacity to accommodate the minimal amount of Project-related waste. Associated potential impacts from project implementation would be less than significant. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.
- e) Construction and operation of the proposed Project would generate minimal solid waste and would not affect landfill capacity. During construction of the Project, construction debris (e.g., excavated soil, asphalt) would be generated. Solid waste debris would be disposed of at a permitted landfill. Moreover, AB 939, also known as the Integrated Waste Management Act, mandates the reduction of solid waste disposal in landfills by requiring a minimum of 50% diversion rate. Accordingly, at least half of the potential construction waste would be diverted from a landfill serving the Project area. Therefore, no impact related to solid waste would occur. The Final EIR determined that impacts would be less than significant. No new significant impacts will occur, and no new mitigation measures are required.

Summary of Potential Effects on Utilities and Service Systems

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to utilities and service systems, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Wildfire

<u>Issues (and Supporting Information Sources):</u>	<u>Yes</u>	<u>No</u>
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would project modifications, changed circumstances, or new information result in new significant impacts or substantially increase the severity of significant impacts identified in the previous CEQA document in the following areas:		
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

While the Final EIR included existing information on vegetation and wildfire hazards in the Project area, the Final EIR did not address Wildfire as a CEQA significance threshold as Wildfire was not included in the *Appendix G Checklist* thresholds at the time of publication. Therefore, no analysis of the above thresholds or mitigation measures were identified in the Final EIR. Consistent with Addendum No. 1, the potential impact of Wildfire due to implementation of the Project is discussed below.

Discussion

- a) As discussed above in Section IX, Hazards and Hazardous Materials, the Project would not be located on any roads and does not interfere with adopted emergency response plans or evacuation routes defined by any local jurisdictions. The proposed Project area is not located in the immediate vicinity or flight path of a major airport. Private airstrips are located at Amboy, at the Cadiz agricultural operations and at the Iron Mountain Pumping Plant. The proposed Project area is sparsely vegetated, making the likelihood of wildland fires very low. Emergency responses to remote parts of eastern San Bernardino County typically involve helicopter transport, which would not be hindered by proposed Project construction or operation. Therefore, no impact would occur, and no mitigation is required.
- b) As discussed in Cadiz Project Draft EIR Section 4.8, *Hazards and Hazardous Materials*, the existing Northern Pipeline alignment is primarily characterized as arid desert terrain with limited sparse vegetation. Some of the western portions pass through irrigated farmland. The Northern Pipeline is located within a low fire hazard severity zone. The Project area is relatively flat and does not contain steep slopes. The Project area is susceptible to winds; however, as the area is not within a fire hazard severity zone and does not contain vegetation that increases risk of wildfire, implementation of the Project would not exacerbate the potential for wildfire to start or spread in the Project area. The pump station generators would not require storage of flammable materials

that could increase fire hazards. Natural gas pipelines would be underground. Potential impacts regarding the exposure to pollutant concentrations from wildfire or uncontrolled spread of wildfire would be considered less than significant.

- c) The Project would not result in the installation of permanent roads, fuel breaks, emergency water sources or new power lines and other utilities. All construction must comply with fire protection and prevention requirements specified by the California Code of Regulations (CCR) and California Division of Occupational Safety and Health (Cal/OSHA). This includes various measures such as easy accessibility of firefighting equipment, proper storage of combustible liquids, no smoking in service and refueling areas, and worker training for firefighter extinguisher use. With adherence to applicable laws and regulations, impacts would be reduced to a less than significant level.
- d) As discussed in Section VII, Geology and Soils and Section X, Hydrology and Water Quality, the Project area is not located within the 100-year flood zone maps prepared by FEMA. Although not identified as being within 100-year flood maps, the general area is known to experience occasional seasonal short-term flooding. As described above, it is highly unlikely the Project area would experience a wildfire. Nonetheless, the seasonal flooding could damage above-ground structures such as pump stations, AR/AVs and BOs, after a wildfire, if one were to occur. The facilities would be constructed to accommodate potential flooding. Project features would be designed to avoid or minimize potential impacts.

Summary of Potential Effects on Wildfire

The proposed modifications in combination with the components evaluated in the Final EIR will not result in substantial changes to wildfire, cause new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects. No further environmental review is required. (Public Resources Code § 21166; CEQA Guidelines § 15162.)

Appendix A
**2019 Final EIR Mitigation
Monitoring and Reporting Plan**

Mitigation Monitoring and Reporting Plan

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) report includes mitigation measures identified in the Final Environmental Impact Report (EIR) that are required to address impacts associated with the Project. The impacts associated with this Project and required mitigation measures are summarized in this program; the full text of the impact analysis and mitigation measures is presented in the Cadiz Valley Water Conservation, Recovery, and Storage Project EIR. The EIR analyzed the impacts for the Project. This MMRP outlines the mitigation monitoring and reporting for the Project.

The MMRP is organized in a table format keyed to each impact and adopted mitigation measure. Each mitigation measure is set out in full, followed by a tabular summary of monitoring requirements. Monitoring requirements include implementation procedure, monitoring and reporting requirements, monitoring responsibility, and monitoring schedule. Implementation procedure is a checklist of actions required to successfully effectuate the mitigation measure. Monitoring and reporting action is a checklist of actions to successfully complete each implementation procedure. Monitoring responsibility names the agency responsible for monitoring enforcement. Finally, the monitoring schedule outlines the phase of the project (e.g., construction, operation, etc.) when each implementation procedure and associated monitoring and reporting action must occur. The implementation procedures, monitoring actions, and schedules identified in this MMRP provide a guide for successful implementation of mitigation measures identified in the Final EIR. The mitigation measures, procedures and actions included below have been updated (without strikethrough and underlined text) for inclusion in the Final EIR.

Cadiz Valley Water Conservation, Recovery, and Storage Project

Aesthetics

Mitigation Measure AES-1: Construction lighting shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way, and towards the construction site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the construction site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AES-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	Before and During, Construction

Mitigation Measure AES-2: Outdoor lighting shall be minimized and installed for safety and security purposes only. Outdoor lighting of Project facilities and access roads shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way and towards the Project site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the Project site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AES-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	Before, During, and After Construction and Operation

Air Quality

Mitigation Measure AQ-1: Construction and operation of the proposed Project shall be conducted in compliance with applicable rules and regulations set forth by the Mojave Desert Air Quality Management District.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	During and After Construction and Operation

Mitigation Measure AQ-2: The following dust control measures shall be implemented during construction:

- All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas.
- Watering shall take place a minimum of twice daily on unpaved/untreated roads in areas with active operations.
- Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method such as non-toxic soil binders to prevent wind-blown fugitive dust.
- On-site vehicle speed on unimproved roads shall be limited to 15 miles per hour.
- Streets adjacent to the Project site shall be kept clean and Project-related accumulated silt shall be removed.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file	SMWD General Manager and Chief Engineer	During Construction

Mitigation Measure AQ-3: The following measures shall be implemented during construction of the proposed Project:

- All equipment shall be maintained as recommended by manufacturer's manuals.
- Idling engines shall be shut down when not in use for over 15 minutes.
- Electric equipment shall be used where available from existing power lines in lieu of diesel or gasoline powered equipment.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-3 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure AQ-4: All trucks hauling dirt, sand, soil, or other loose materials are to be covered.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-4 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure AQ-5: The Project Design Feature in Chapter 6.8 of the GMMMP attached in its Updated form (Updated GMMMP) to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to verify air quality. Chapter 6.8 of the Updated GMMMP is provided in full below.

6.8 Air Quality

The EIR concludes that groundwater is not connected to the erosion potential of the Dry Lake surface soils and therefore the lowering groundwater levels beneath the Dry Lakes is not expected to increase dust generation from the Dry Lakes or otherwise affect regional air quality. Consistent with the recommendations of the Groundwater Stewardship Committee and as a conservative monitoring protocol to be conditioned by the County under its Ordinance, Cadiz will prepare a monitoring plan in consultation with the TRP to address possible sources of fugitive dust emissions (depth to groundwater, surface vegetation, surface soil chemistry) and local air quality over time (nephelometers and weather stations) to verify that the Project does not increase dust generation (i.e., particulate matter) from the Dry Lakes. The monitoring plan, at a minimum, shall set forth specific performance criteria and identify monitoring methods, the location of weather stations and nephelometers, measures to protect quality assurance and quality control, and reporting parameters. The monitoring plan shall be reviewed and approved by the County Representatives before the Project commences construction.

6.8.1 Monitoring

As described in Section 5.3, above, a network of observation wells will be established between the Project wellfield and

Bristol and Cadiz Dry Lakes (see Figures 5-1 and 5-2). Groundwater levels will be monitored in many wells on a continuous basis throughout the term of the Project, which can help identify specific depths to groundwater and hydrological connections to surface soils and vegetation.

Furthermore, Cadiz will install weather stations and four nephelometers—upwind and downwind of the Bristol and Cadiz Dry Lakes—to establish baseline data of visibility in the valley, along with providing air quality data throughout the duration of Project operations. In addition, FVMWC will conduct annual visual observations at four points on each of the Dry Lakes to record surface soil conditions. The visual observations will note soil texture and record susceptibility to wind erosion. Photographs of the soil will be taken. This data will record conditions over time at the same locations on each of these Dry Lake surfaces.

These nephelometers will provide data on a daily basis that records opacity of the air, measuring the effect of dust on visibility. Data will be collected in the early years of the Project, establishing a baseline before groundwater levels beneath the Dry Lake are affected and will continue during Project operations. Since wind velocity and dust storms are highly variable, the data will record trends over time. Data from the nephelometers will be analyzed by FVMWC, with the results of the analysis and associated data summaries submitted annually to the TRP. This data will inform the TRP on the environmental setting, augmenting the weather station data, and provide information for the long term management of the facilities in the valley. The TRP will provide recommendations over time regarding modifications to the verification data collection activities if needed.

6.8.2 Action Criteria

The decision-making process will be initiated if the action criteria are triggered. The action criteria are (1) changes in annual average or peak concentrations of airborne particulate matter as measured by nephelometers that exceed average annual or peak baseline conditions by 5 percent or more, or (2) changes in surface soil conditions on the Dry Lakes that show a degradation of soil structure and increased susceptibility to wind erosion compared to baseline conditions established through monitoring prior to Project pumping. If such changes are measured, the decision-making process will be initiated.

6.8.3 Decision-Making Process

If the action criteria is triggered, the decision-making process will include:

- Assessment of whether the change in air quality or soil conditions are attributable to Project operations;

- If air quality changes are determined to be attributable to Project operations or if degradation of soil structure and increased susceptibility of wind erosion are determined to be attributable to Project operations, one or more of the corrective measures shall be implemented.

6.8.4 Corrective Measures

Action(s) necessary to re-establish baseline airborne particulate levels and soil structure shall include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield;
- Stoppage of groundwater extraction for a duration necessary to restore baseline air quality conditions to correct for Project impacts.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement Project Design Feature in Chapter 6.8 of the GMMMP.	See MM AQ-5	Enforcement: SMWD General Manager/ Chief Engineer	See MM AQ-5
2. Include Mitigation Measure AQ-5 within construction contract specifications.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Biological Resources

Mitigation Measure BIO-1: Pre-construction Surveys. Immediately prior to construction activities, pre-construction surveys that comply with USFWS protocol shall be conducted to document any and all locations of burrows and desert tortoise sightings within all proposed disturbance areas that provide potential habitat for the species. If any active burrows are located in facility construction areas, to completely avoid impact on the burrows, construction will be delayed only to be resumed after a qualified biologist¹ has determined that the tortoise has left

¹ The Qualified Biologist is “approved by the Fish and Wildlife Service or other agency as designated by the Fish and Wildlife Service to conduct activities that may result in a take of the desert tortoise including locating tortoises and their sign, recording and reporting tortoise and sign observations in accordance with approved protocol, and

the area and the burrow is inactive. Following pre-construction surveys, Mitigation Measure **BIO-2** shall be implemented to install exclusion fencing around construction areas. Construction areas fenced but inactive for more than 48-hours will be resurveyed to confirm the absence of tortoise prior to resumption of construction activity.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a qualified biologist shall prepare pre-construction surveys in coordination with USFWS.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure BIO-2: Exclusion Fencing and Monitoring. A chain-link or tortoise fence (one-inch by two-inch welded wire mesh attached to the chain-link fence, with approximately two feet above-ground and one foot buried below ground) shall be installed to exclude small wildlife species from entering the active work areas in areas of documented occurrences of special-status ground dwelling wildlife as determined during pre-construction surveys by a qualified biologist or as directed by USFWS. When crossing drainages, these temporary fences must be designed and maintained to allow storm water runoff to flow past the construction site. Fencing / barriers will be erected to completely surround all stationary construction sites (including staging areas) and will be monitored by an Authorized Biologist or Biological Monitor at all times. Along the pipeline construction corridor, temporary fencing may be used as needed and if any tortoises are observed in the surrounding area. Temporary tortoise-proof fencing may be used along the pipeline right-of-way if trenches or pits must be left open. If temporary fencing is used for this purpose it must be installed at the end of each working day. If pits and trenches are left open overnight, then ramps will be placed within them to allow animals, including tortoise to escape in the unlikely event of entrapment. Alternatively, trenches will be filled or covered when construction is not active.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a chain-link tortoise fence shall be installed as determined during pre-construction surveys conducted by the qualified biologist or as directed by USFWS.	Perform site inspections to verify contractor compliance with the restoration plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

ensuring that the effects of the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or permit. From USFWS, *Desert Tortoise Monitor and Biologist Responsibilities and Qualifications*, March 2004.

Mitigation Measure BIO-3: Desert Tortoise Avoidance and Protection Plan. A Desert Tortoise Avoidance and Protection Plan shall be developed and adopted in consultation with the USFWS and CDFG prior to construction. Elements of the plan shall include, but are not limited to the following:

- Designated Project personnel will implement the avoidance and protection plan. A Field Contact Representative will be designated to oversee compliance with all tortoise avoidance and protective measures during Project construction, operation and maintenance. The Field Contact Representative will have the authority to halt work if there is non-compliance with any of the plan measures and will do so as needed.
- Facility site preparation activities (specifically vegetation grubbing and clearing) and all construction activity in the northeastern area of the wellfield in Sections 17 and 18 will be prohibited during the species' annual periods of high activity (April through May and September through October).
- A step-by-step protocol to be implemented whenever a desert tortoise is observed by construction or operational personnel. See also Mitigation Measure **BIO-4** Temporary Construction Halt. USFWS and CDFG personnel contacts will be identified for Technical Assistance on take avoidance if needed during construction.
- Flagging and delineation requirements for located burrows and areas with tortoise activity.
- An education program for all construction employees. Program will be conducted onsite prior to the onset of construction and will be provided repeatedly as needed to ensure that all Project contractors (firms) as well as all individuals complete the training. Participation will be recorded and verified. Tortoise protection will be emphasized during all scheduled safety meetings.
- Enforcement of speed limits and checking under vehicles for tortoise prior to leaving Project areas.
- Biological monitoring requirements for all ground disturbance activities. All construction sites and activities will be monitored by Authorized Biological Monitors. An Authorized Biologist (approved by USFWS and CDFG) will plan and oversee all construction monitoring activities in the field. The authorized biologist will identify, train, and oversee biological monitors for day-to-day monitoring and reporting activities.
- To prevent increased use of the Project areas by common ravens and coyotes, implementation of measures such as trash management, removal of unnatural sources of standing water, and other means. Drilling mud pits and water discharges will be controlled to minimize the duration of standing water at any one drilling site. A clean workplace will be maintained in all areas. No trash is to be thrown on the ground or left in open containers, equipment, or truck beds. Refuse receptacles with lids will be provided for all construction personnel and are to be maintained and emptied on a regular basis and at least weekly. Trash collection

will be conducted in all construction areas as needed to keep all areas clean on a daily basis. Portable toilets will be provided and used by all construction personnel.

- At the end of construction all equipment removal will be monitored by Authorized Biologists or Biological Monitors.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a Desert Tortoise Avoidance and Protection Plan in consultation with USFWS and CDFG.	Perform site inspections to verify contractor compliance with the avoidance and protection plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Implement the avoidance and protection plan.			
3. The avoidance and protection plan shall be submitted to and adopted by the USFWS and CDFG.			

Mitigation Measure BIO-4: Temporary Construction Halt. If a desert tortoise is observed within 300 feet of construction activities or is determined by the Authorized Biologist to be in harm's way, then construction activities shall be halted in the vicinity as directed by the Authorized Biologist. Work shall only continue once the Authorized Biologist determines there is no risk to the desert tortoise.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Pre-approved qualified biologist by USFWS and/or CDFG shall be contacted in the event a desert tortoise is observed.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. Work shall be halted until no risk to the desert tortoise is determined.			

Mitigation Measure BIO-5: Pipeline Siting to Minimize Vegetation Disruption. The pipeline shall be installed within previously disturbed areas of the easement to the extent feasible. During construction, previously undisturbed areas within the pipeline alignment that are not needed for construction shall be staked and flagged to prevent construction equipment access or disturbance in these areas. The cordoned off areas shall be flagged and monitored by a qualified biologist during construction activities.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. During construction, previously undisturbed areas within the pipeline alignment shall be determined, staked, flagged, and monitored by a qualified biologist.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-6: Site Restoration Plan. A special-status species and sensitive habitat restoration plan shall be prepared prior to construction for unavoidable temporary impacts on special-status plants and sensitive habitats. The plan would include, at a minimum, the following measures:

- A salvage and replacement program for the top 12 inches of surface material and topsoil. The program shall identify soil preparation requirements, including grain size specifications that shall need to be engineered or amended on site to match to the greatest extent feasible the existing surface soil conditions.
- A salvage and replanting program for perennial special-status species.
- An invasive plant species maintenance, monitoring, and removal program.
- Success criteria that establishes yearly thresholds for growth and reestablishment of habitat.
- A five-year maintenance and monitoring plan to ensure successful implementation of the restoration plan.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a special-status species and sensitive restoration plan.	Perform site inspections to verify contractor compliance with the restoration plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. The restoration plan shall be submitted USFWS and CDFG for approval.			

Mitigation Measure BIO-7: Habitat Compensation. A habitat compensation plan would be prepared and implemented that includes at a minimum the following measure:

- Purchase of compensatory mitigation lands or credits at a USFWS and CDFG approved conservation bank at a minimum 1:1 ratio for permanent habitat loss and 0.5:1 for temporary habitat loss for preservation in perpetuity.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A qualified biologist shall prepare a habitat compensation plan	Perform site inspections to verify contractor compliance with the compensation plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-8: Prior to construction, surveys for Mojave fringe-toed lizard shall be conducted by a qualified biologist within the sand dunes and sand fields habitats within the ARZC ROW. If Mojave fringe-toed lizards are identified in the construction zone, the area shall be fenced during construction as described in **BIO-2** to prevent lizards from entering the construction site. Once fenced, a qualified biologist shall trap the area for lizards and release captured lizards into adjacent suitable habitat as determined by the qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a Mojave fringe-toed lizard survey.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. If Mojave fringe-toed lizards are identified in the area, fencing shall be constructed to trap the lizards for capture and release.			

Mitigation Measure BIO-9: If construction and vegetation removal is proposed for the bird nesting period of February 1 through August 31, then pre-construction surveys for nesting bird species shall begin 30 days prior to construction disturbance with subsequent weekly surveys, the last one being no more than three days prior to work initiation. The surveys shall include habitat within 300 feet (500 feet for raptors) of the construction limits. Active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with USFWS and CDFG. This buffer zone shall be delineated in the field with flagging, stakes, or construction fencing. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. 30 days prior to construction during bird nesting season, a qualified biologist shall conduct pre-construction surveys for nesting bird species.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction (During February 1 through August 31)
2. Identified active nests shall be avoided.			
3. A non-disturbance buffer zone shall be established in consultation with USFWS and CDFG.			

Mitigation Measure BIO-10: A burrowing owl survey shall be conducted pursuant to the *Burrowing Owl Survey Protocol and Mitigation Guidelines* of the California Burrowing Owl Consortium (1993) or per the *Staff Report on Burrowing Owl Mitigation* prepared by CDFG (1995). At a minimum, this survey shall include the following:

- A pre-construction survey conducted by a qualified biologist within 30 days of the start of construction. This survey shall include two early morning surveys and two evening surveys to ensure that all owl pairs have been located.
- If pre-construction surveys are undertaken during the breeding season (February 1st through July 31st) active nest burrows should be located within 250 feet of construction zones and an appropriate buffer around them (as determined by the Project biologist) shall remain excluded from construction activities until the breeding season is over.
- During the non-breeding season (August 15th through January 31st), resident owls may be relocated to alternative habitat. Owls shall be encouraged to relocate from the construction disturbance area to off-site habitat areas and undisturbed areas of the Project site through the use of one-way doors on burrows. If ground squirrel burrows, stand pipes, and other structures that have been documented during pre-construction surveys as supporting either a nesting burrowing owl pair or resident owl are removed to accommodate the proposed Project, these structures and burrows shall be relocated or replaced on or adjacent to the Project site. Relocated and replacement structures and burrows shall be sited within suitable foraging habitat within one-half mile of the Project area as determined by the qualified biologist. Suitable development-free buffers shall be maintained between replacement nest burrows and the nearest building, pathway, parking lot, or landscaping. The relocation of resident owls shall be in conformance with all necessary State and federal permits.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified biologist shall conduct a burrowing owl survey in accordance with CDFG requirements.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before (within 30 days) and During Construction

Mitigation Measure BIO-11: A qualified biologist shall conduct focused pre-construction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential adverse effects to the American badger:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

- If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to Project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers have stopped using active dens within the Project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.
- Construction activities shall not occur within 30 feet of active badger dens.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. No more than two weeks prior to construction, a qualified biologist shall conduct focused pre-construction surveys for potential American badger dens.	Perform site inspections to verify contractor compliance with the biologist recommendations and surveys. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before (two weeks) and During Construction
2. If potential dens are observed and determined inactive, a qualified biologist shall excavate the dens.			
3. If potential dens are observed and determined active, a qualified biologist shall block the entrances and then excavate the dens when it is no longer active.			

Mitigation Measure BIO-12: Prior to construction activities, winter and spring surveys shall be conducted to determine the nature of trestle use by pallid bats. Surveys shall follow the appropriate site-specific protocol as determined in coordination with CDFG.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a qualified biologist shall conduct a winter and spring survey for pallid bats.	Perform site inspections to verify contractor compliance with survey recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-13: If a special-status natal bat roost site is found within the limits of construction during pre-construction surveys, the roosts shall be staked, flagged, fenced, or otherwise clearly delineated. Roosts shall be avoided with non-disturbance buffer zones established by a qualified biologist in consultation with the USFWS and CDFG until the site is no longer in active use as a natal roost.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. If natal bat roost sites are found, a qualified biologist shall stake, flag, and fence the area.	1. Perform site inspections to verify contractor compliance with the biologist recommendations and survey. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. A qualified biologist shall establish non-disturbance buffer zones.			
3. Nest sites shall be avoided until directed otherwise by a qualified biologist.			

Mitigation Measure BIO-14: Prior to construction, construction zone limits shall be marked by a qualified biologist and shall be staked, flagged, fenced, or otherwise clearly delineated to ensure that the construction zone is limited to minimize impacts on special-status plant species. These limits shall be identified on the construction drawings. No earth-moving equipment shall be allowed outside demarcated construction zones unless pre-approval is obtained from a qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified biologist shall establish construction zone limits.	1. Established construction zone limits shall be identified on construction drawings.	SMWD General Manager/ Chief Engineer	Before and During Construction
	2. Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file		

Mitigation Measure BIO-15: A Waters of the State Mitigation Plan shall be prepared to include with RWQCB and CDFG permit applications. Conditions of the Mitigation Plan shall include at a minimum the following measures:

- measures to divert flows during construction,
- measures to minimize construction footprint within washes,
- measures to minimize erosion,
- measures to minimize discharge of contaminants through proper storage of chemicals and vehicle maintenance, and
- post-construction site restoration performance standards.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prepare of a Water of the State Mitigation Plan with minimum requirements required by Mitigation Measure BIO-15.	Perform site inspections to verify contractor compliance with the biologist recommendations and the mitigation plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-16: Prior to commencement of ground disturbance activities for any component of the proposed Project, a qualified biologist/arborist shall provide an inventory of the number and size of protected species within the proposed Project's impact areas. The qualified biologist/arborist shall mark any smoke tree (*Dalea spinosa*), mesquites (*Prosopis* spp.), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and Joshua trees within the construction zone. Removal of these plants shall be avoided if possible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to ground disturbance, a qualified biologist/arborist shall provide an inventory of protected tree species.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Avoid removal of any smoke trees, mesquites, all species of the family Agavaceae, creosote rings, and Joshua trees.			

Mitigation Measure BIO-17: If avoidance of the species listed in **BIO-16** is not possible, these species shall be moved or replanted pursuant to the methods required in the Desert Native Plant Protection Ordinance.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure BIO-17 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Cultural Resources

Mitigation Measure CUL-1: A qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology,² shall be retained to carry out all mitigation measures related to archaeological resources.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified archaeologist shall be retained to carry out all archaeological resource mitigation measures.	All significant cultural material will be analyzed and a report will be prepared.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-2: The construction zone shall be narrowed or otherwise altered to avoid all significant historical resources, or resources treated as significant, where feasible. Significant historical resources within 100 feet of the construction zone shall be designated Environmentally Sensitive Areas and shall be marked with exclusion markers to ensure avoidance. In the case of significant historical resources dating to the historic era, the boundaries of the Environmentally Sensitive Areas shall be established around the recorded site boundaries, with the exception of resources CA-SBR-3282H and CA-SBR-3233H, where a 50-foot buffer shall be established outside of recorded site boundaries as an added protective measure to protect historic cemeteries. For significant historical resources dating to the prehistoric era, the boundaries of the ESA shall be established around the recorded site boundaries, plus an additional 50-foot buffer as an added protective measure to protect any subsurface component. Protective fencing shall not identify the protected areas as cultural resource areas in order to discourage unauthorized disturbance or collection of artifact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A construction zone shall be established to avoid historical resources.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. A 50-foot bugger shall be established outside of recorded site boundaries.			

Mitigation Measure CUL-3: A long-term management plan shall be developed for those significant historical resources or portion(s) of resources that can be avoided during Project construction, in order to minimize future impacts during Project operation and maintenance.

² Department of the Interior, *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated): Professional Qualification Standards*, http://www.nps.gov/history/local-law/arch_stnds_9.htm, accessed November 2010.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Develop a long-term management plan for historic resources.	Retain long-term management plan in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure CUL-4: If avoidance of significant historical resources is not feasible, prior to any Project-related ground disturbing activities, a detailed treatment plan shall be prepared and implemented by a qualified archaeologist. The treatment plan shall include a research design and a scope of work for data recovery of the portion(s) of the significant resource(s) to be impacted by the Project. Treatment for most resources shall consist of (but would not be not limited to) sample excavation, surface artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, and curation of artifacts and data at an approved facility.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified archeologist shall prepare and implement a detailed treatment plan for unavoidable historical resources.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure CUL-5: Prior to construction, a qualified archaeologist shall be retained to carry out a Phase 1 cultural resources survey in those portions of the Project area where design changes have modified the proposed Project footprint (including but not limited to: the wellfield, CRA tie-in Options 2a and 2b, and any access roads, staging areas, borrow areas, and any other proposed areas of potential ground disturbance and areas where monitoring and mitigation wells have been installed), and not previously surveyed within the past 5 years. The Phase 1 survey shall identify and evaluate the significance of any potentially eligible resources that may be directly or indirectly impacted by the proposed Project, and shall take Native American comments concerning viewshed impacts into consideration. The Phase 1 Survey effort shall be documented in a Phase 1 Cultural Resources Survey report. Resources determined eligible for listing shall be subject to Mitigation Measures **CUL-1 through CUL-4** and **CUL-6**. All significant cultural resources identified in the wellfield area during surveys shall be avoided.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified archaeologist shall prepare a Phase 1 Cultural Resources Survey.	Retain survey report in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Phase I Survey shall be documented in a Phase 1 Cultural Resources Survey Report.			

Mitigation Measure CUL-6: Prior to construction, an archaeological monitor shall be retained to monitor all ground-disturbing activities, including brush clearance and grubbing, within the following areas: the proposed wellfield area; staging areas; CRA tie-in areas; and within 100 feet of all significant historical resources. The monitor shall work under the supervision of the qualified archaeologist. If ground-disturbing activities are occurring simultaneously in areas located more than 500 feet apart, additional monitors shall be retained. If so requested by the Native American community, a Native American monitor shall also monitor all ground-disturbing activities. The qualified archaeologist, in consultation with the lead agency, shall have the discretion to modify the monitoring requirements based on in-field observations of subsurface conditions. In the event that cultural resources are unearthed during ground-disturbing activities, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated and appropriate treatment determined.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, an archaeological monitor shall be retained.	Retain monitoring report in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-7: If archaeological resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist. If the qualified archaeologist determines that the resources may be significant, he or she will develop an appropriate treatment plan for the resources. Appropriate Native American representatives shall be consulted in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature.

Work may proceed on other parts of the Project site while mitigation for cultural resources is being carried out.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
If archaeological resources are encountered, construction activities shall cease until evaluated by a qualified archaeologist.	Retain monitoring report in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure CUL-8: Prior to construction, those portions of the Project area (including the wellfield, CRA tie-in Options 2a and 2b, access roads, staging areas, and borrow areas) not previously surveyed within the past 5 years, shall be surveyed by a qualified vertebrate paleontologist, defined as one holding an advanced degree in paleontology, biology, or a related discipline, and having at least five years of professional experience. If paleontological resources are encountered, they shall be documented or recovered, and curated, as appropriate, prior to the start of construction. The evaluation will be documented in a report to be submitted for review and approval by the lead agency prior to the start of construction. The report shall also be submitted to the San Bernardino County Museum.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified vertebrate paleontologist shall survey areas not previously surveyed within the past 5 years.	1. Submit findings to the San Bernardino County Museum.	SMWD General Manager/ Chief Engineer	Before Construction
2. Findings shall be documented and submitted for review and approval by the lead agency.	2. Retain survey and findings reports in the project file.		

Mitigation Measure CUL-9: Prior to the start of any earth moving activity, a qualified vertebrate paleontologist shall be retained. The paleontologist shall prepare a Paleontological Mitigation and Monitoring Plan (PMMP) that shall be based on prior paleontological evaluations, including the results of the paleontological survey as described in Mitigation Measure **CUL-8**, and shall address pre-construction salvage and reporting; pre-construction contractor sensitivity training; procedures for paleontological resources monitoring including the identification of specific paleontological monitoring locations as defined by areas where Pleistocene age sediments may be impacted during construction; microscopic examination of samples where applicable; the evaluation, recovery, identification, and curation of fossils; and the preparation of a final mitigation report.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to ground disturbing activities, a qualified vertebrate paleontologist shall prepare a Paleontological Mitigation and Monitoring Plan (PMMP).	Retain PMMP in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-10: All earth-moving activities within those formations identified as sensitive within the PMMP shall be monitored on a full-time basis, unless the paleontologist determines that sediments are previously disturbed or there is no reason to continue monitoring in a particular area due to other depositional factors which would make fossil preservation unlikely or deemed scientifically insignificant. In the event fossils are exposed during earth moving, construction activities shall be redirected to other work areas until the procedures outlined in the PMMP have been implemented or the paleontologist determines work can resume in the vicinity of the find.

When fossils are discovered, they and associated data shall be collected quickly and professionally. Fossil salvage procedures shall include the collection of bulk matrix samples if scientifically significant microfossils are believed to be present based on field evidence. All fossils collected during monitoring shall be transferred to a secure facility for laboratory preparation and identification. Laboratory preparation shall include stabilization, matrix removal, and conservation of individual fossil specimens, as well as screenwashing and picking of bulk matrix samples. Fossils shall be prepared to the point of curation and identified by technical specialists, as needed, to the lowest possible taxonomic level. At the end of the Project, the paleontologist shall prepare a report that includes a description and inventory list of recovered fossil materials; a map showing the location of paleontological resources found in the field; determinations of sensitivity and significance; and a statement that Project impacts to paleontological resources have been mitigated. The results of the paleontological surveys, construction monitoring, and subsequent laboratory work shall be compiled in a final paleontological mitigation report authored by the qualified paleontologist for the Project. The final report shall include all Project data and a copy of the receipt of specimens from the paleontological repository.

Following preparation, the fossils and associated data and a copy of the final paleontological mitigation report shall be transferred to a public museum (paleontological repository) where they will be available for the benefit of current and future generations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A qualified vertebrate paleontologist shall monitor areas identified in the PMMP as sensitive unless otherwise determined by the paleontologist.	1. Submit findings to a public museum (paleontological repository).	SMWD General Manager/ Chief Engineer	Before, During, and After Construction
2. Recommendations identified in the PMMP shall be implemented as required.	2. Perform site inspections to verify contractor compliance. Retain survey, findings, and monitoring reports in the project file.		

Mitigation Measure CUL-11: If human remains are uncovered during Project construction, all work in the vicinity of the find shall be halted and the County Coroner will be contacted to evaluate the remains and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County Coroner determines that the remains are Native American, the NAHC shall be contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c) and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological

standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this Section (PRC 5097.98) with the most likely descendents taking into consideration their recommendations, and developing a treatment plan, taking into account the possibility of multiple human remains.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. If human remains are discovered, all work shall cease and the County Coroner shall be contacted.	Retain survey and findings reports in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. If remains are Native American, the NAHC shall be contacted.			

Geology, Soils, Seismicity, and Mineral Resources

Mitigation Measure GEO-1: The project design features in Chapter 6.3 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for land subsidence. Chapter 6.3 of the Updated GMMMP is provided in full below.

6.3 Land Subsidence

Twenty land survey benchmarks will be established and surveyed by a licensed land surveyor on an annual basis to identify and quantify potential subsidence within the Project area (see Figures 5-1 and 5-2). Three extensometers will be constructed in areas of projected subsidence (see Figure 5-2). The extensometers, which would be monitored continuously from installation through the post-operational period, would verify if the land surface changes (also potentially identified from land surveys and InSAR satellite data obtained and analyzed every 5 years through the post-operational period) are due to (1) subsidence due to groundwater withdrawal; or (2) other mechanisms (e.g. regional tectonic movement).

6.3.1 Action Criteria

The decision-making process will be initiated if either of the action criteria is triggered. The action criteria are: 1) a trend in subsidence that would result in a decline in the ground surface elevation of more than 0.3 feet within 10 years when compared to baseline Project conditions; or 2) a trend in subsidence which, if continued, would be of a magnitude within 10 years that impacts existing infrastructure within the Project area. The magnitude for the railroad tracks is more than one inch vertically over 62 feet linearly along the existing railroad tracks.

6.3.2 Decision-Making Process

If either of the action criteria is triggered, the decision-making process will include:

- Assessment as to whether the subsidence is attributable to Project operations;
- If the subsidence is determined to be attributable to Project operations, then an assessment will be made to determine whether the subsidence constitutes a potential adverse impact to the aquifer or surface uses. Potential adverse impacts include potential damage to surface structures as a result of differential settlement or fissuring, general subsidence sufficient to alter natural drainage patterns or cause damage to structures, or a non-recoverable loss of aquifer storage capacity that affects the beneficial uses of the storage capacity of the aquifer system;
- If no such significant adverse impacts to critical resources are identified, potential actions may include:
 - No action;
 - Proposed refinements to the action criteria;
 - Additional verification monitoring, including a field reconnaissance to assess and detect any differential settlement; or
 - Proposed revisions to the benchmark survey and/or InSAR monitoring frequency.
 - If the subsidence is determined to be attributable to Project operations and the subsidence is determined to constitute a potential adverse impact to the aquifer or surface uses then one or more of the corrective measures set forth in Section 6.3.3 shall be implemented.

6.3.3 Corrective Measures

Corrective measures that shall be implemented to repair damaged structures and/or arrest the subsidence shall include one or more of the following:

- Repairing any structures damaged as a result of subsidence attributable to Project operations;
- Entering into a mitigation agreement with any impacted party(s).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified to arrest the subsidence. For the purposes of these action criteria, “ineffective” shall be defined as a corrective measure that when put

into place did not meet the objective set forth in the corrective action, i.e. to repair damaged structures and arrest the subsidence. “Infeasible” is a corrective measure which cannot be implemented due to cost, technical challenges, or legal restraints. Modifications to Project operations shall include one or more of the following:

- Reduction in pumping from Project well(s);
- Revision or reconfiguration of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the adverse impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure GEO-1 within construction contract specifications.	See GEO-1	Enforcement: SMWD General Manager/ Chief Engineer	See GEO-1
2. Implement Project Design Features in Chapter 6.3 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Greenhouse Gas Emissions

Mitigation Measure GHG-1: Within 90 days of completion of construction of the Groundwater Conservation and Recovery Component of the Project, carbon offset credits shall be purchased from the Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emissions credits under a GHG reduction plan or similar program, in sufficient quantity to reduce the Project’s first year total (direct plus indirect) GHG emissions below 10,000 MTCO₂e per year. The first year offsets identified in the binding agreement shall be purchased and retired no later than 12 calendar months from completion of the first full year of operation. The estimated amount of offsets required is 18,153 MTCO₂e per year (i.e., 28,153 – 10,000 MTCO₂e per year) if the wellfield and intermediate pump station are powered by natural gas. This volume may be reduced if less power is needed, solar power is provided, or diesel powered wells are retired at the Cadiz Ranch that would count as an offset.

If electricity from the grid is used, the required offsets are estimated to be 5,810 MTCO₂e per year (i.e., 15,810 – 10,000 MTCO₂e per year). Since offsets for off-site electricity generation is the responsibility of the energy generators, the Project may obtain verification of these offsets or purchase additional offsets as needed.

A GHG inventory shall be completed which will be verified by an accredited third-party verification body and reported to the Climate Registry. The Applicant shall purchase and retire such additional carbon offset credits (due to a net increase in emissions from the first full year of operations) as may be needed each year to ensure that the Project's total (direct plus indirect) GHG emissions are offset below the benchmark of 10,000 MTCO_{2e} above existing 2011 conditions.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Within 90 days of construction completion of the Groundwater Conservation and Recovery Component, carbon offset credits shall be purchased from the Climate Registry or other source approved by CARB.	Retain records in the project file.	SMWD General Manager/ Chief Engineer	After Construction (within 90 days)
2. An accredited third-party verification body shall complete a GHG inventory and report to the Climate Registry.			

If after further environmental review Phase II is approved, then **Mitigation Measure GHG-2** would be imposed.

Mitigation Measure GHG-2: Imported Water Storage Component. Within 90 days of completion of Project construction, carbon offset credits shall be purchased from The Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emission credits under a GHG Reduction Plan or similar program, in sufficient quantity to reduce the Project's total (direct plus indirect) GHG emissions below 10,000 MTCO_{2e} per year, and each year purchase additional carbon offset credits (due to a net increase in emissions from first year operations) as may be needed to reduce emissions below 10,000 MTCO_{2e}.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Within 90 days of construction completion of the Groundwater Conservation and Recovery Component, carbon offset credits shall be purchased from the Climate Registry or other source approved by CARB.	Retain records in the project file.	SMWD General Manager/ Chief Engineer	After Construction (within 90 days)
2. An accredited third-party verification body shall complete a GHG inventory and report to the Climate Registry.			

Hazards and Hazardous Materials

Mitigation Measure HAZ-1: On-site materials storage, fueling, and vehicle maintenance areas shall be equipped with secondary containment and spill containment equipment. Storage, handling, and disposal of hazardous materials shall comply with applicable regulations including submittal of a Business Plan to the County Fire Department.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure HAZ-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure HAZ-2: If excavation uncovers contaminated materials, excavation activities shall cease in the contaminated area. Soil samples shall be collected to characterize the soils and contamination. The CUPA shall be notified of the sample results. The construction contractor shall stockpile contaminated soils on plastic sheeting as necessary to prevent releasing contamination into the ground and shall ultimately dispose of the materials in coordination with the CUPA in compliance with hazardous material regulations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure HAZ-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure HAZ-3: No construction or other Project activities shall occur at the Cadiz Sonic Lake Target No. 5 and No. 9 areas, until the USACE clears the proposed locations for the potential presence of unexploded ordnance from historical military uses. In the event that the USACE encounters unexploded ordnance, the USACE is obligated to remove the unexploded ordnance under their ongoing investigations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to installation of Project elements, the USACE shall clear the proposed locations for potential presence of unexploded ordnance.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Hydrology and Water Quality

Mitigation Measure HYDRO-1: A construction and maintenance Storm Water Pollution Prevention Plan shall be prepared and included in construction specifications and Operations and Maintenance Manual (OMM) for the Project. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures:

- Install temporary sediment fences or straw waddles at stream crossings or washes to prevent erosion and sedimentation during construction, including at each ARZC railroad trestle along the pipeline alignment.
- Establish designated fueling areas equipped with secondary containment,
- Require drip-pans under all idle equipment on the construction sites,
- Ensure that spill prevention kits are present at all construction sites.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preparation and implementation of a SWPPP, as required by state law.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. Keep SWPPP in the project file at the work site.			

Mitigation Measure HYDRO-2: Project Design Feature 6.4 found in Chapter 6.4 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impacts for the migration of the saline/freshwater water interface to adversely affect groundwater quality. Chapter 6.4 of the Updated GMMMP is provided in full below.

6.4 Induced Flow of Lower-Quality Water from Bristol and Cadiz Dry Lakes

Saline water migration is allowed up to and not to exceed 6,000 feet from the baseline location of the saline-freshwater interface. To prevent migration of saline groundwater beyond 6,000 feet, FVMWC will implement mitigation measures that may include injection or extraction wells or other physical means to maintain the saline-freshwater interface. If these physical measures prove ineffective, reductions in Project pumping will be required (see Sections 6.4.3, below).

6.4.1 Monitoring

To monitor the influence of the Project's operation on the migration of the saline-freshwater interface located between the Project wellfield and the Bristol and Cadiz Dry Lakes, a network of "cluster type" observation wells will be established between the Project wellfield and the saline-freshwater interface. Groundwater TDS concentrations in the well clusters will be monitored on a quarterly basis during the pre-operational period of the Project, semi-annually throughout the operational period, and annually during the post-operational period of the Project. Of the monitoring well network, SCE Well no. 5 and SCE Well no. 11, along with other newly installed well clusters located between the interface and the Project wellfield will be located such that they are appropriate to serve as "sentinel" wells to determine whether there is a progressive migration of the saline-freshwater interface. The locations of SCE Well no. 5, SCE Well no. 11, and the other sentinel well clusters are shown in Figures 5-1 and 5-2.

6.4.2 Action Criteria

The decision-making process will be initiated if the action criterion is triggered. The action criterion is a migration of the interface, as measured by an increase in TDS concentration in excess of 600 mg/L in any cluster or observation well located within a distance of 6,000 feet from pre-Project locations of the interface.

6.4.3 Decision-Making Process

If the action criterion is triggered, the decision-making process will include:

- Assessment of whether the increased TDS concentration or migration of the saline-freshwater interface is attributable to Project pumping;
- Assessment of trends and updated projections of whether and when the saline-freshwater interface is expected to migrate 6,000 feet from its baseline location;
- If the increased TDS concentration within the monitoring wells is determined to be attributable to the Project and the saline-freshwater interface is expected to migrate more than 6,000 feet from its baseline location within 10 years, then one or more of the corrective measures set forth in Section 6.4.3 shall be implemented.

6.4.4 Corrective Measures

Corrective measures that will be implemented to eliminate the further migration of saline groundwater towards the Project wellfield may include the following:

- Installing one or more extraction well(s) or injection well(s) at the northeastern edge of Bristol Playa and/or north of Cadiz Playa where the salt mining source wells are located to maintain the saline-freshwater interface within its 6,000-foot limit subject to the same mitigation measures imposed on the Project well-field as set forth in the SMWD Mitigation Monitoring and Reporting Program (see Figures 5-1 and 5-2).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified to eliminate the further migration of saline groundwater towards the Project wellfield. Modifications to Project operations will include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the predicted impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-2 in the construction contract specification.	See MM HYDRO-2	Enforcement: SMWD General Manager/ Chief Engineer	See MM HYDRO-2
2. Implement Project Design Features in Chapter 6.4 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Mitigation Measure HYDRO-3: Project design features in Chapter 6.2 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address potential impacts to Third Party wells. Chapter 6.2 of the Updated GMMMP is provided in full below.

6.2 Third-Party Wells

It is the intent of the Project to operate without adverse material impacts to wells owned by neighboring landowners in the vicinity of the Project area, and those operated in conjunction with salt mining operations on the Bristol or Cadiz Dry Lakes. To avoid such potential impacts, the groundwater monitoring network will include monitoring wells located in and around the wellfield, near neighboring landholdings, and on and adjacent to the Dry Lakes (see Figures 5-1 and 5-2). Groundwater levels will be monitored on a continuous to semi-annual basis (see Table 5-1) during the preoperational and

operational periods, then annually during the post-operational period. Water quality will be monitored on a quarterly to annual basis during the preoperational period, annually during the operational period of the Project, and triennially during the post-operational period (see Table 5-1). Further, FVMWC shall monitor static (non-pumping) water levels within any third-party wells that are representative of the local groundwater impacts and located within the northern Bristol/Cadiz Sub-Basin or elsewhere in the Fenner Watershed. Such monitoring of third-party wells will be performed on a semi-annual basis during the pre-operational and operational periods, then annually during the post-operational period as established in the Closure Plan.

6.2.1 Action Criteria

The decision-making process will be initiated if any of the action criteria are triggered. The action criteria are: 1) a decline of static water levels of more than twenty feet from pre-Project static water levels or to a degree in which the reduction in static water levels results in an inability to meet existing the production of any third-party well drawing water from the northern Bristol/Cadiz Sub-Basin or elsewhere in the Fenner Watershed; and 2) the receipt of a written complaint from one or more well owner(s) regarding decreased groundwater production yield, degraded water quality, or increased pumping costs submitted by neighboring landowners or the salt mining operators on the Bristol and Cadiz Dry Lakes. Any written complaint by a well owner in accordance with this action criterion shall be directed to FVMWC.

6.2.2 Decision-Making Process

If any of the action criteria are triggered, the decision-making process will include:

- If a written complaint with a documented change in water level as provided for in Section 6.2.1 is received from a third-party well owner located within the area of influence (see Figure 5-1), FVMWC will immediately implement Corrective Measure 6.2.3.1, below;
- Assessment of whether water level changes, decreased yields, increased pumping costs, and/or degraded water quality in the third-party wells are attributable to Project operations or other causes;
- If such water level changes, decreased yields, increased pumping costs and/or degraded water quality are determined to not be attributable to Project operations, then FVMWC would discontinue any interim arrangement to provide water as set forth in Section 6.2.3.1;
- If such water level changes, decreased yields, increased pumping costs and/or degraded water quality are

determined to be attributable to Project operations, then one or more of the corrective measures set forth in Section 6.2.3 shall be implemented.

6.2.3 Corrective Measures

6.2.3.1 Interim Water Supply. If a written complaint as provided for in Section 6.2.1 is received from a third-party well owner located within the area described above (see Figure 5-1), FVMWC will arrange for an immediate interim supply of water to the third-party well owner until the decision-making process is complete in an amount necessary to fully offset any reduced yield to the third-party well owner, as compared to the yield from the impacted well prior to Project operations or, if the impacted well was installed after Project operations commenced, then as compared to the yield of the well immediately after installation

6.2.3.2 Further Corrective Measures. If any of the Action Criteria set forth in 6.2.1 are triggered and the impacts are determined to be attributable to Project operations, one or more of the following further corrective measures shall be implemented to correct the impairment to the beneficial use of the groundwater:

- Continued provision of substitute water supplies;
- Deepening or otherwise improving the efficiency of the impacted well(s);
- Blending of impacted well water with another local source;
- Constructing replacement well(s) on disturbed land subject to the same mitigation measures imposed on the Project wellfield as set forth in the SMWD's Mitigation Monitoring and Reporting Program;
- Paying the impacted third-party well owner for any increased material pumping costs incurred by the well owner; or
- Entering into a mitigation agreement with the impacted third-party well owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-3 in the construction contract specification.	See MM HYDRO-3 .	Enforcement: SMWD General Manager/ Chief Engineer	See MM HYDRO-3
2. Implement project design features in Chapter 6.2 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Mitigation Measure HYDRO-4: All construction and operation plans shall be prepared that identify standard best management practices (BMPs) to control drainage around the Project infrastructure including but not limited to wellpads, pump stations, an energy generation facility, air relief valves, forebay and equalization storage facilities, spreading basins, and railcar wash areas. The BMPs shall include placing facility and well pads and above-ground appurtenant facilities outside of visible drainages; and grading well pads to disperse runoff from the site in a manner that minimizes scour potential of storm water. BMPs include the use of physical barriers to prevent or manage seepage, detain runoff and prevent erosion during construction and operation and may include the use of siltation straw wattles, hay bales, setbacks and buffers, and other similar methods that reduce the energy in surface water flow.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-4 in the construction contract specification.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Construction plans shall include BMPs to control drainage around the Project infrastructure.			

Mineral Resources

Mitigation Measure MIN-1: The Project Design Features in Chapter 6.5 of the Updated GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for groundwater level drawdown on existing salt production operations. Chapter 6.5 of the Updated GMMMP is provided in full below.

6.5 Brine Resources Underlying Bristol and Cadiz Dry Lakes

To monitor potential Project impacts on the salt mining operations on the Bristol and Cadiz Dry Lakes, a network of “cluster type” monitoring wells will be established between the Project wellfield and the margins of the Dry Lakes (see

Figures 5-1 and 5-2). Groundwater levels will be monitored on a continuous basis throughout the operational and post-operational term of the Project.

6.5.1 Action Criteria

The decision-making process will be initiated if either of the action criteria is triggered. The action criteria are:

- A declining trend in groundwater or brine water levels of greater than 50 percent of either (a) the water column above the intake of any of the salt mining operators' wells, or (b) the average depth of brine water level within the brine supply trenches operated by the salt mining operators. Changes in such groundwater or brine water levels, shall be determined by monitoring changes in the static water levels within the network of clustered monitoring wells identified above, as changes in the static water levels within these monitoring wells are correlated with the groundwater or brine water levels within the salt mining operator's wells and brine supply trenches; or
- The receipt of a written complaint from a salt mining operator regarding decreased groundwater production yield or increased pumping costs from one or more of its wells, or decreased water levels within its brine supply trenches. Any written complaint by a salt mining operator in accordance with this action criteria shall be directed to FVMWC.

6.5.2 Decision-Making Process

If either of the action criteria is triggered, the decision-making process will include:

- Assessment of whether the change in groundwater/brine level in excess of the action criteria is attributable to Project operations;
- If the change in groundwater/brine water level in excess of the action criteria is determined to be attributable to Project operations, then an assessment will be made to determine whether the groundwater/brine level change constitutes a potential adverse impact to one or more of the salt mining operations on the Dry Lakes. Adverse impacts include changes to brine chemistry or yields from existing brine production wells or brine supply trenches attributable to Project operations. If no such impacts are identified, potential actions may include:
 - Continued or additional verification monitoring;

- Proposed refinements to the action criteria;
- Proposed revision to the monitoring frequency at the observation well clusters at the margins of the Dry Lakes;
- If the decline in groundwater/brine water level(s) approaching the action criteria is determined to be attributable to Project operations, and the changes constitute a potential adverse impact to one or more of the salt mining operations on the Dry Lakes, then one or more of the corrective measures set forth in Section 6.5.3 shall be implemented.

6.5.3 Corrective Measures

Action(s) necessary to mitigate changes to brine chemistry or yields from existing brine production wells or brine supply trenches attributable to Project operations, and thereby maintain or restore the beneficial use of the groundwater/brine water by the salt mining operations, shall include one or more of the following:

- Compensating the mining operator(s) for the additional costs of pumping;
- Installing one or more brine extraction well(s) and/or injection well(s) where the salt mining source wells are located subject to the same mitigation measures imposed on the Project well-field as set forth in the SMWD Mitigation Monitoring and Reporting Program (see Figure 5-1); or
- Entering into a mitigation agreement with the salt mining operator(s).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified until adverse impacts to the salt mining operations are eliminated. For the purposes of these action criteria, “ineffective” shall be defined as a corrective measure that when put into place did not meet the objective set forth in the corrective action, i.e., to maintain or restore the beneficial use of the groundwater/brine water by the salt mining operations. “Infeasible” is a corrective measure which cannot be implemented due to cost, technical challenges, or environmental and permitting issues as defined under CEQA. Modifications to Project operations shall include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the predicted impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure MIN-1 in the operations specification.	See MM MIN-1	Enforcement: SMWD General Manager/ Chief Engineer	See MM MIN-1
2. Implement Project Design Feature in Chapter 6.5 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Public Services and Utilities

Mitigation Measure UTIL-1: Storm water drainages traversed by the water conveyance pipeline alignment shall be returned to pre-construction conditions. Existing structures such as storm flow diversion berms, railroad facilities including bridge supports, access roads, and utility poles shall be returned to pre-construction conditions and protected from scouring by storm water flows, subject to the approval of the railroad owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
At the end of construction, return storm water drainages to pre-construction conditions.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	After Construction

Mitigation Measure UTIL-2: The owner of the natural gas pipelines traversing the Cadiz Property shall be notified in advance of construction activities near the pipelines sufficient to allow for supervision and approval by the owner of construction methods and pipeline under-crossing designs. The under-crossing designs shall require approval from the pipeline owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
The owner of the natural gas pipelines traversing the Cadiz Property shall be notified in advance of construction activities.	Retain notification records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure UTIL-3: Pumps installed as part of the Project shall be rated for high efficiency to minimize energy consumption.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure UTIL-3 in the construction contract specification.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Transportation and Traffic

Mitigation Measure TR-1: A Traffic Control Plan shall be implemented that includes the following elements:

- Identify hours of construction and hours for deliveries and include a discussion of haul routes;
- Identify all access restrictions, parking restrictions, and signage requirements on major roads (e.g., speed limit);
- Identify signage and flag men necessary at turn-off lanes on SR-62 and US-66 to avoid traffic hazards on fast moving roads;
- Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times;
- Arrange for a telephone resource to address public questions and complaints during Project construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure TR-1 in the construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Implement a Traffic Control Plan.			

TR-2: The construction contractor shall submit construction plans for construction within the railroad easement to the railroad owner and operator for their review and approval. Any plans to deliver materials on the rail lines shall be reviewed and approved by the railroad owner and operator. The construction contractor shall obtain approval from the railroad operator for material delivery and staging activities within the railroad right-of-way.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Construction contractor shall submit construction plans for construction within the railroad.	Perform site inspections to verify contractor compliance with construction plans. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Submit construction plans for review and approval by railroad owner and operator.			

TR-3: During construction, all at-grade railroad crossings shall be clearly flagged and barricaded to ensure that all vehicular traffic comes to a full stop prior to crossing railroad tracks.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Flag and barricade all at-grade railroad crossings.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

TR-4: The construction contractor shall implement mandatory railroad safety training and implement railroad safety measures requested by the railroad operator.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Construction contractor shall implement mandatory railroad safety training and safety measures.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Appendix B

Air Quality Worksheets and Calculations

AQ-1 Assumptions

Cadiz Pipeline - Pump Stations

defaults are in blue

PROJECT CHARACTERISTICS

Location	Cadiz (Mojave Desert)		
Climate Zone			
Land Use Setting	Rural		
Start of Construction	1/1/2026		
End of Construction	9/30/2026	*Assumed 9 month construction per pump station	
Utility Company	SCE		
CO2 intensity	default		

LAND USE

Land Use	Land Use Subtype	Unit Amt	Size Metric	Lot Ac	SF
Light Industry	General Light Industry	43.56	1000 sf	1.000	43560

CONSTRUCTION

Construction Phasing

Construction Phase	Start Date	End Date	Days/wk	Total Days
Site Preparation	1/1/2026	1/28/2026	5	20
Grading	1/29/2026	2/25/2026	5	20
Building Construction	2/26/2026	8/5/2026	5	115
Paving	8/6/2026	9/2/2026	5	20
Architectural Coating	9/3/2026	9/30/2026	5	20
			195	

Offroad Equipment

Equipment Type	Unit Amt	Hours/Day	HP	LF	Construction Phase
Tractor/Loader/Backhoe	1	8	default	default	site prep, grading, building const
Excavator	1	8	default	default	Building const
Paving Equipment	1	8	default	default	paving
Plate compactor	1	8	default	default	paving
generator	1	8	default	default	grading
welder	1	8	default	default	building const
air compressor	1	8	default	default	arch coating
Crane	1	8	default	default	building const
Grader	1	8	default	default	grading
Paver	1	8	default	default	
concrete saw	1	8	default	default	building const
Total	11				

Dust from Material Movement

Phase	Material Import (cy)	Material Export (cy)	Size Metric	Acres Graded
Site Prep	0	0 cy		default
Grading	0	3300 cy		default

Grading/Site Prep

Size Metric	Unit Amt	
Haul Truck Capacity (CY)	16	*CalEEMod Default
Total Haul Amount	3300	
Grading Haul Days	20	
Daily Grading Haul Trips (In/Out)	21	

Trips & VMT

Phase Name	# of worker trips/day	# vendor trips/day	# haul trips/day	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Site prep	20	10	2	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Grading	20	10	24	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Building Construction	20	10	2	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Paving	20	10	2	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT

*10 workers

*5 vendor trucks

*Assume two one-way trips for drop off/demob of off-road equipment

Architectural Coating

Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

MITIGATION MEASURES

Water Exposed Area

3x Per Day

Cadiz Pipeline - Pipeline Inspection defaults are in blue

PROJECT CHARACTERISTICS			
	Location	Cadiz (Mojave Desert)	
	Climate Zone		
	Land Use Setting	Rural	
	Start of Construction	1/1/2026 *Modelling purposes	
	Operational Year	N/A	
	Utility Company	SCE	
	CO2 intensity	default	

LAND USE

Land Use	Land Use Subtype	Unit Amt	Size Metric	Lot Ac	SF	Population
Parking	Other Non-Asphalt Surfaces	1457.28	1000 sf	33.455	1457280	0

CONSTRUCTION

Construction Phasing						
Construction Phase	Start Date	End Date	Days/wk	Total Days		
Trenching	1/1/2026	6/30/2026	5	129	*6 months for pipeline inspection	
Pipeline Rehabilitation (Building Construction)	7/1/2026	10/31/2026	5	88	*4 months of pipeline rehabilitation	
				129		

Offroad Equipment						
Equipment Type	Unit Amt	Hours/Day	HP	LF	Phase	
Grader	1	8	default	default	Trenching	
Excavator	1	8	default	default	Trenching	
Plate compactor	1	8	default	default	Trenching	
Mobile Crane	1	8	default	default	Pipeline Rehabilitation (Building Construction)	
Concrete Saw	1	8	default	default	Trenching	
Welder	1	8	default	default	Pipeline Rehabilitation (Building Construction)	
	Total	6				

Dust from Material Movement				
Phase	Material Import (cy)	Material Export (cy)	Size Metric	Acres Graded
Trenching	0	323,840 cy	default	*Dust movement (no hauling)

Trenching	
Size Metric	Unit Amt
Width (ft)	6
Depth (ft)	6
Length per day (mi)	3
Total Length (mi)	46
Length (ft)	242880
Total (cubic feet)	8743680
Total (cubic yards)	323840.00

Trips & VMT									
Phase Name	# of worker trips/day	# vendor trips/day	# haul trips (total per phase)	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Trenching	20	10	2.00	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Pipeline Rehabilitation (Building Construction)	20	10	2.00	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
*10 workers *5 vendor trucks *Assume two one-way trips for drop off/demob of off-road equipment									

Architectural Coating		
Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

MITIGATION MEASURES

Water Exposed Area
3x Per Day

Cadiz Pipeline - ARAVBO Valves

defaults are in blue

PROJECT CHARACTERISTICS			
Location	Cadiz (Mojave Desert)		
Climate Zone			
Land Use Setting	Rural		
Start of Construction	1/1/2026		
Operational Year	1/7/2026		
Utility Company	SCE		
CO2 intensity	default		

LAND USE			
Land Use	Land Use Subtype	Unit Amt	Size Metric
Parking	Other Asphalt Surfaces		0.05 1000 sf
Valve Unit	Phase 1	Phase 2	
# AR/AV	50	100	
# BO	50	100	

CONSTRUCTION				
Construction Phasing				
Construction Phase	Start Date	End Date	Days/wk	
Trenching	1/1/2026	1/2/2026	5	5
Building Construction	1/3/2026	1/7/2026	5	
Offroad Equipment				
Equipment Type	Unit Amt	Hours/Day	HP	
Excavator	1	8	default	5
Grader	1	8	default	
Plate compactor	1	8	default	
Concrete Saws	1	8	default	
Generators	1	8	default	
Welders	1	8	default	
Total	6			

Dust from Material Movement				
Phase	Material Import (cy)	Material Export (cy)	Size Metric	Acres Graded
Trenching	0	44.44 cy	default	*Contained onsite and used for infill

Trenching	
Size Metric	Unit Amt
Width (ft)	10
Depth (ft)	6
Length per site (ft)	20
Total (cubic feet)	1200
Total (cubic yards)	44.44

Building Construction	
Size Metric	Unit Amt
Valve area (ft2)	50
Elevation (ft)	4
Total number of AR/AV	
Valves	100
Total number of BO	200

Trips & VMT									
Phase Name	# of worker trips/day	# vendor trips/day	# haul trips/day	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Trenching	10	10	10	2 default	default		25 LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Building Construction	10	10	10	2 default	default		25 LDA,LDT1,LDT2	HHDT,MHDT	HHDT
*5 workers		*5 vendor trucks		*Assume two one-way trips for drop off/demob of off-road equipment					

Architectural Coating		
Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

MITIGATION MEASURES	
Water Exposed Area	
3x Per Day	

Cadiz Pipeline - Cathodic Protection Repair

defaults are in blue

PROJECT CHARACTERISTICS

Location	Cadiz (Mojave Desert)	
Climate Zone		
Land Use Setting	Rural	
Start of Construction	7/1/2026	
End of Construction	10/31/2026	
Utility Company	SCE	
CO2 intensity	default	

LAND USE

Land Use	Land Use Subtype	Unit Amt	Size Metric	Lot Ac	SF	Population
Parking	Other Asphalt Surfaces	2.5	1000 sf	0.200	2500	0

NotesBased on 1 50ftx50ft plant footprint

CONSTRUCTION

Construction Phasing

Construction Phase	Start Date	End Date	Days/wk	Total Days
Building Construction	7/1/2026	10/31/2026	5	88

*Assumed construction occurring concurrently with pipeline rehabilitation

Offroad Equipment

Equipment Type	Unit Amt	Hours/Day	HP	LF	Construction Phase
Excavator	1 default	default	default	default	site prep & grading
Grader	1 default	default	default	default	grading
Plate compactor	1 default	default	default	default	site prep and grading and building const
Welder	1 default	default	default	default	grading
Total	4				

Trips & VMT

truck hauling capacity14 cy

Phase Name	# of worker trips/day	# vendor trips/day	# haul trips/day	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Building Construction	10	10	2	default	default	25	LDA,LDT1,LDT2	HHDT,MHDT	HHDT

*5 workers*5 vendor trucks*Assume two one-way trips for drop off/demob of off-road equipment

Architectural Coating

Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

AQ-2 Construction Air Quality Calculations and Modeling

Cadiz Northern Pipeline
Air Quality Construction Analysis - Summary Construction
Unmitigated

Regional Maximums Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
	lb/day									
Pipeline Inspection & Rehabilitation	1.40	11.20	14.83	0.03	0.41	0.96	1.37	0.38	0.21	0.59
AR/AV & BO Installation (1 Unit)	0.92	7.65	9.71	0.02	0.27	0.64	0.91	0.25	0.14	0.39
Cathodic Protection Repair	0.66	5.37	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26
Pump Station (7 Stations)	10.37	9.48	11.70	0.02	0.31	0.90	1.13	0.29	0.21	0.42
Northern Pipeline Daily Maximum Emissions	13.35	33.70	43.47	0.09	1.21	2.76	3.89	1.11	0.62	1.67
FIER Mitigated Daily Emissions from the Final EIR (see EIR Table 4.3-5)	52.00	396.00	474.00	-	-	-	78.00	-	-	19.00
Northern Pipeline + Final EIR Construction Emissions	65.35	429.70	517.47	0.09	1.21	2.76	81.89	1.11	0.62	20.67
MDAQMD Thresholds of Significance	137.00	137.00	548.00	137.00	-	-	82.00	-	-	65.00
Exceed Threshold (Y/N)?	No	Yes	No	No	No	No	No	No	No	No

Cadiz Northern Pipeline
Air Quality Construction Analysis - Facility Modifications
Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
					lb/day					
3.1 Site Preparation (2026) - Unmitigated	0.301	2.651	5.015	0.009	0.08	0.38	0.46	0.07	0.09	0.17
3.3 Grading (2026) - Unmitigated	0.596	6.231	7.313	0.022	0.23	0.90	1.13	0.21	0.21	0.42
3.5 Building Construction (2026) - Unmitigated	1.121	9.479	11.704	0.024	0.31	0.38	0.69	0.29	0.09	0.38
3.7 Paving (2026) - Unmitigated	0.361	3.236	5.690	0.009	0.13	0.38	0.51	0.12	0.09	0.21
3.9 Architectural Coating (2026) - Unmitigated	10.369	1.690	3.219	0.006	0.04	0.38	0.42	0.04	0.09	0.13
Northern Pipeline Facility Modifications Daily Maximum Emissions	10.37	9.48	11.70	0.02	0.31	0.90	1.13	0.29	0.21	0.42
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG per Pump Station	Onsite	Offsite
3.1 Site Preparation (2026) - Unmitigated	5.286338	6.619517
3.3 Grading (2026) - Unmitigated	8.128324	19.953933
3.5 Building Construction (2026) - Unmitigated	103.5038	38.062222
3.7 Paving (2026) - Unmitigated	5.586403	6.619517
3.9 Architectural Coating (2026) - Unmitigated	1.620387	8.2399038
Total	203.6203455	
Total GHG for 7 Pump Stations	1221.722073	

Cadiz Northern Pipeline

Air Quality Construction Analysis - Cathodic REPAIR

Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
lb/day										
3.1 Building Construction (2026) - Unmitigated	0.66	5.37	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26
Northern Pipeline Cathodic Repair Daily Maximum Emissions	0.66	5.37	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG Cathodic repair	Onsite	Offsite
3.1 Building Construction (2026) - Unmitigated	36.736518	23.854126
Total GHG Cathodic repair	60.59064431	

Cadiz Northern Pipeline
Air Quality Construction Analysis - Pipeline
Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10 lb/day	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
3.1 Building Construction (2026) - Unmitigated	0.65	5.34	6.42	0.02	0.18	0.38	0.57	0.17	0.09	0.26
3.3 Pipeline Inspection (2026) - Unmitigated	0.75	5.86	8.41	0.01	0.23	0.58	0.80	0.21	0.12	0.33
Northern Pipeline Pipeline Inspection and rehabilitation Daily Maximum Emissions	1.40	11.20	14.83	0.03	0.41	0.96	1.37	0.38	0.21	0.59
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG for pipeline inspection and rehabilitation	Onsite	Offsite
3.1 Pipeline Rehabilitation/Building Construction (2026) - Unmitigated	48.51166	29.45685
3.3 Pipeline Inspection (2026) - Unmitigated	58.02328	42.695884
Total GHG pipeline inspection and rehabilitation	178.6876749	

Cadiz Northern Pipeline
Air Quality Construction Analysis - ARAVBO Valves
Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10 lb/day	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
3.1 Building Construction (2026) - Unmitigated	0.40	3.34	4.16	0.01	0.08	0.25	0.33	0.07	0.06	0.14
3.3 Trenching (2026) - Unmitigated	0.52	4.31	5.55	0.01	0.19	0.39	0.58	0.18	0.08	0.25
Northern Pipeline Daily Maximum Emissions	0.92	7.65	9.71	0.02	0.27	0.64	0.91	0.25	0.14	0.39
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG per 200 feet of pipeline construction phase	Onsite	Offsite
3.1 Building Construction (2026) - Unmitigated	0.616506	0.8132088
3.3 Trenching (2026) - Unmitigated	0.677446	0.5421392
Total GHG per 1 AR/AV/BO Valve	2.649	
Total GHG of 150 AR/AV & 150 BO Valves	397.395	

AQ-3 Operational Air Quality Calculations and Modeling

Cadiz Northern Pipeline Addendum
Operational Emissions - Natural Gas Pump Engine Emissions
Air Quality and Greenhouse Gas Assessment

last updated: 3/12/2025

Conversion Factors

BTU/HP-hr	2,544.4	Energy Measurements and Conversion: https://www.extension.iastate.edu/agdm/wholefarm/html/c6-86.html
BTU/MMBTU	1,000,000	
PM10 Fraction of Total PM	0.994	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - GASEOUS FUEL
PM2.5 Fraction of Total PM	0.992	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - GASEOUS FUEL
lbs/short ton	2,000	
GWP CH4	25	IPCC AR4 https://www2.arb.ca.gov/ghg-gwps
GWP N2O	298	IPCC AR4 https://www2.arb.ca.gov/ghg-gwps
CO2/CO2e	1	IPCC AR4 https://www2.arb.ca.gov/ghg-gwps

Based on efficiency
of 30%
Heat Rate from specs
8481.44729 9125

Natural Gas Engine Pump - Total 7 pump stations

2 Centaur 40 PS, 4 Taurus 60 PS

Pump Stations		PS information provided by client. HP rating assumes 80% efficiency			Heat Rate		Number of Units		Total kW Req'd	kW per Unit	Gas Consumption (MMBTU/Yr)
		MMBTU/hr	MMBTU/yr		9125 Btu/hp-h		181		43,621	241	3,124,659
Centaur 40											
		24,919									
PS 1		7,123	18	158,766	65.00	569,377.01 MMBTU/yr	Operating Hrs.				
PS 5		3,601	9	80,264	32.86	287,845.94 MMBTU/yr	8,322	Hrs/Year	8,760	0.95	Gas Consumption (MMBTU/kW)
Taurus 60											0.008607545
					10830 Btu/kWh						8607.54
PS 2/3		8,402	21	187,274	90.99	797,104.46	Power Req't's				
PS 4		3,862	10	86,081	41.83	366,391.03	PS1				
PS 6		5,897	15	131,440	63.86	559,453.11	PS2/3				
PS 7		6,758	17	150,631	73.19	641,136.87	PS4				
Max HP:		35,643					PS5				
Centaur 40 MMBTU/HP-hr		27		239,030	97.86	857,222.94	PS6				
Taurus 60 MMBTU/HP-hr		63		555,426	269.87	2,364,085.47	PS7				
Project Total MMBTU/HP-hr		91		794,456	368	3,221,308					

Fuel Cell Component

Minimum kW	4,500	
kW/HP	0.746	
HP	6,032.172	
Fuel Cell MMBTU/HP-hr	15.35	Emissions credits applied to the most conservative emission factor (Taurus 60) engine.

Load Factor:	1.00	(CalEEMod Generator Set CNG Default Load Factor is 0.68, Appendix G, Table G-12)		
Operating Hours per Unit:	24 hours/day	(Assuming 24 hours of operation)	64.4	0.469476
	8,760 hours/year	(Assuming 24 hours of operation, 365 days a year)	2.544	0.01854576
	365 days/year			

Taurus 60 Engine (PS 2,3,5,6)										
Criteria Pollutants ¹							Greenhouse Gases ²			
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CH ₄	N ₂ O	CO ₂ e (tons/yr)
lb/MMBTU	0.00634	0.00729	0.0111	0.0034	0.006	0.006	118.00	0.0104	0.0002	—
lbs/hr	0.40	0.4622	0.70	0.22	0.38	0.38	7,481.76	0.66	0.01	—
lb/day	9.65	11.09	16.89	5.17	9.13	9.13	179,562.27	15.83	0.30	—
lbs/yr	3,521.40	4,049.05	6,165.22	1,888.45	3,332.55	3,332.55	65,540,228	5,776	111	—
short tons/yr	1.76	2.02	3.08	0.94	1.67	1.67	32,770	2.89	0.06	32,859
metric tons/yr	—	—	—	—	—	—	29,729	2.62	0.05	29,809

Centaur 40 Engine (PS 1 and4)										
Criteria Pollutants ³							Greenhouse Gases ²			
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CH ₄	N ₂ O	CO ₂ e (tons/yr)
lb/MMBTU	0.00632	0.00909	0.0221	0.0034	0.006	0.006	118.00	0.0104	0.0002	—
lbs/hr	0.17	0.25	0.60	0.09	0.16	0.16	3,219.81	0.28	0.01	—
lbs/day	4.14	5.95	14.47	2.23	3.93	3.93	77,275	6.81	0.13	—
lbs/yr	1,510.67	2,172.78	5,282.56	812.70	1,434.18	1,434.18	28,205,522	2,486	48	—
short tons/yr	0.76	1.09	2.64	0.41	0.72	0.72	14,103	1.24	0.02	14,141
metric tons/yr	—	—	—	—	—	—	12,794	1.13	0.02	12,828

Nothern Pipeline Pump Stations Emissions (lbs/day)	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CH ₄	N ₂ O	CO ₂ e MTons/year
	13.79	17.05	31.36	7.40	13.06	13.06				42,638

Notes:

1. Taurus 60 Engine Emission factors for criteria pollutants: Estimated Power Island Emissions, Stantec, October 25, 2021. Received from email September 19, 2024.
2. Emission factors for Greenhouse Gases: (CO₂) Estimated Power Island Emissions, Stantec, October 25, 2021. Received from email September 19, 2024. (CH₄, N₂O) CalEEMod, Natural Gas Emission Factors, Appendix G, Table G-4
3. Centaur 40 Engine Emission factors for criteria pollutants: Estimated Power Island Emissions, Stantec, October 25, 2021. Received from email September 19, 2024.

	50000 afy			30998 gpm						
	@ 100% Efficiency			@ Assumed Operating Efficiency ⁽²⁾					Back Calc'd	Back Calc'd
	kWh/yr	kWh/day	kWh	kWh/yr	kWh/day	kWh	MMBTU/year	MMBTU/day	TDH	TDH
Pump Station Operations ⁽¹⁾	22,000,000	60,274	2,511.42	73,333,333	200,913	8,371.4	250,213		322.12	1,073.74
Wellfied Operations ⁽¹⁾	30,800,000	84,384	3,515.98	77,000,000	210,959	8,790.0	262,724		450.97	1,127.43
				150,333,333	411,872	17,161	512,937	1,405		

1kWh = 3,412 BTU

(1) From RBF Power Requirements Analysis Technical Memorandum November 18, 2010

(2) RBF Power Requirements Analysis Technical Memorandum November 18, 2010 30% eff for pump stations, 40% eff for well field

50,000 AFY					CH2M	CH2M				
Pollutant	Emission Factor lb/MMBTU	Emissions/ day lbs/day	Emissions/ye ar tons/year	CH2M Emissions factor lbs/day	Emissions factor (calculated)		Pump Station lbs/day	Wellfield lbs/day	Pump Station lbs/day	Wellfield lbs/day
CO	0.013	18.27	3.33	18.91	0.01346		8.91	9.36	9.22	9.68
NOx	0.009	12.65	2.31	12.94	0.00921		6.17	6.48	6.31	6.63
VOC	0.003	4.22	0.77	3.6	0.00256		2.06	2.16	1.76	1.84
PM10	0.007	9.84	1.80	9.28	0.00660		4.80	5.04	4.52	4.75

	75000 afy			46497 gpm						
	@ 100% Efficiency			@ Assumed Operating Efficiency ⁽²⁾					Back Calc'd	Back Calc'd
	kWh/yr	kWh/day	kWh	kWh/yr	kWh/day	kWh	MMBTU/year	MMBTU/day	TDH	TDH
Pump Station Operations ⁽¹⁾	22,000,000	60,274	2,511.42	73,333,333	200,913	8,371.4	250,213		214.75	715.83
Wellfied Operations ⁽¹⁾	50,700,000	138,904	5,787.67	126,750,000	347,260	14,469.2	432,471		494.90	1,237.24
				200,083,333	548,174	22,841	682,684	1,870		

1kWh = 3,412 BTU

(1) From RBF Power Requirements Analysis Technical Memorandum November 18, 2010

(2) RBF Power Requirements Analysis Technical Memorandum November 18, 2010 30% eff for pump stations, 40% eff for well field

75,000 AFY					CH2M	CH2M				
Pollutant	Emission Factor lb/MMBTU	Emissions/ day lbs/day	Emissions/ye ar tons/year	CH2M Emissions factor lbs/day	Emissions factor (calculated)		Pump Station lbs/day	Wellfield lbs/day	Pump Station lbs/day	Wellfield lbs/day
CO	0.013	24.31	4.44	18.91	0.01011		8.91	15.40	9.22	15.94
NOx	0.009	16.83	3.07	12.94	0.00692		6.17	10.66	6.31	10.91
VOC	0.003	5.61	1.02	3.6	0.00192		2.06	3.55	1.76	3.04
PM10	0.007	13.09	2.39	9.28	0.00496		4.80	8.29	4.52	7.82

From the Revised Calculations provided by CH₂MHill - Heat rate and emission data screen test for gas recip engines 8-May-12 Rev 2

	lb/kW	# of engines	Combined lbs/hr	lbs/day	ESA Emissions 2-25	MMBTU/hr
VOC						
Well Field	0.000280465	2	2.18875	52.53		52.53 15.71
Pump Station	0.000182331	2	2.91875	70.05		70.05 31.245
Total VOC (lbs/day)				122.58	125.33	
NOx						
Well Field	0.00025708	2	2.00625	48.15		48.15
Pump Station	0.000136729	2	2.18875	52.53		52.53
Total NOx (lbs/day)				100.68	117.99	
CO						
Well Field	0.0003739	2	2.917916667	70.03		70.03
Pump Station	0.000379836	2	6.080416667	145.93		145.93
Total CO (lbs/day)				215.96	235.18	

	lb/MMBTU	# of engines	Combined lbs/hr	lbs/day	MMBTU/hr	
PM10						
Well Field	0.0038400	2	0.1207	2.8957	15.71	0.00384 from AP-42
Pump Station	0.0038400	2	0.2400	5.7591	31.245	
Total PM10 (lbs/day)				8.6547	42.69	
PM2.5						
Well Field	0.0007710	2	0.0242	0.5814	15.71	0.00384
Pump Station	0.0007710	2	0.0482	1.1563	31.245	
Total 2.5 (lbs/day)				1.7377	7.68	
SOx						
Well Field	0.0007710	2	0.0242	0.5814	15.71	
Pump Station	0.0007710	2	0.0482	1.1563	31.245	

	kW/Engine	# of engines	kW
Power Provided			
Well Field	1951	2	3902
Pump Station	4002	2	8004
Total Power (kW/MW)			11906 11.906

Emissions Summary

Generator Type		VOC lbs/day	NOx	CO	SOx	PM10	PM2.5	CO ₂ 1	CH ₄ 25	N ₂ O 298	CO ₂ e	CO ₂ e MT/yr
NPS 1	ICE	2.75	3.95	9.61	1.48	2.61	2.61	51,327	4.52	0.09	51,466	8,521
NPS 2/3	ICE	3.25	3.74	5.70	1.74	3.08	3.08	60,543	5.34	0.10	60,707	10,051
NPS 4	ICE	1.50	1.72	2.62	0.80	1.42	1.42	27,829	2.45	0.05	27,904	4,620
NPS 5	ICE	1.39	2.00	4.86	0.75	1.32	1.32	25,948	2.29	0.04	26,019	4,308
NPS 6	ICE	2.28	2.63	4.00	1.22	2.16	2.16	42,493	3.75	0.07	42,608	7,054
NPS 7	ICE	2.62	3.01	4.58	1.40	2.48	2.48	48,697	4.29	0.08	48,829	8,084
Well Field	ICE	52.53	48.15	70.03	0.58	2.90	0.58					
SPS 1	ICE	35.03	26.27	72.97	0.58	2.88	0.58					
		101.34	91.46	174.36	8.56	18.83	14.22					
MDAQMD Thresholds		137.00 no	137.00 no	548.00 no	137.00 no	82.00 no	65.00 no					
NPS	1-5	4.14	5.95	14.47	2.23	3.93	3.93	77,275	6.81	0.13	77,485	12,828
NPS	2,3,4,6,7	9.65	11.09	16.89	5.17	9.13	9.13	179,562	15.83	0.30	180,049	29,809
Total NPS		13.79	17.05	31.36	7.40	13.06	13.06	256,838	22.64	0.44	257,533	42,638
Total Wellfield + SPS 1		87.56	74.42	143.00	1.16	5.78	1.16					

AQ-4 CalEEMod Output Files

Cadiz Pipeline - Pump Station Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Site Preparation (2026) - Unmitigated
 - 3.3. Grading (2026) - Unmitigated
 - 3.5. Building Construction (2026) - Unmitigated
 - 3.7. Paving (2026) - Unmitigated
 - 3.9. Architectural Coating (2026) - Unmitigated
- 4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - Pump Station
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Light Industry	43.6	1000sqft	1.00	43,560	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.4	10.4	9.44	11.7	0.02	0.31	0.38	0.69	0.29	0.09	0.38	—	2,709	2,709	0.09	0.09	2.03	2,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	1.11	9.48	11.2	0.02	0.31	1.31	1.54	0.29	0.25	0.47	—	2,996	2,996	0.08	0.30	0.13	3,087
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.07	0.99	3.75	4.70	0.01	0.12	0.25	0.38	0.11	0.06	0.17	—	1,202	1,202	0.03	0.06	0.54	1,220
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.18	0.68	0.86	< 0.005	0.02	0.05	0.07	0.02	0.01	0.03	—	199	199	0.01	0.01	0.09	202

2.2. Construction Emissions by Year, Unmitigated

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

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

2026	10.4	10.4	9.44	11.7	0.02	0.31	0.38	0.69	0.29	0.09	0.38	—	2,709	2,709	0.09	0.09	2.03	2,740
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.32	1.11	9.48	11.2	0.02	0.31	1.31	1.54	0.29	0.25	0.47	—	2,996	2,996	0.08	0.30	0.13	3,087
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.07	0.99	3.75	4.70	0.01	0.12	0.25	0.38	0.11	0.06	0.17	—	1,202	1,202	0.03	0.06	0.54	1,220
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.19	0.18	0.68	0.86	< 0.005	0.02	0.05	0.07	0.02	0.01	0.03	—	199	199	0.01	0.01	0.09	202

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	2.07	3.82	0.01	0.07	—	0.07	0.06	—	0.06	—	581	581	0.02	< 0.005	—	583
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.8	31.8	< 0.005	< 0.005	—	31.9

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.27	5.27	< 0.005	< 0.005	—	5.29
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.27

3.3. Grading (2026) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	3.99	5.75	0.01	0.19	—	0.19	0.18	—	0.18	—	893	893	0.04	0.01	—	896
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.22	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.9	48.9	< 0.005	< 0.005	—	49.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.10	8.10	< 0.005	< 0.005	—	8.13
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	0.03	0.03	1.81	0.40	0.01	0.03	0.42	0.45	0.03	0.11	0.14	—	1,537	1,537	< 0.005	0.24	0.08	1,609
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	84.2	84.2	< 0.005	0.01	0.08	88.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.01	14.6

3.5. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.21	1.01	8.89	10.00	0.02	0.30	—	0.30	0.28	—	0.28	—	1,977	1,977	0.08	0.02	—	1,984
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.21	1.01	8.89	10.00	0.02	0.30	—	0.30	0.28	—	0.28	—	1,977	1,977	0.08	0.02	—	1,984
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.80	3.15	0.01	0.10	—	0.10	0.09	—	0.09	—	623	623	0.03	0.01	—	625
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.51	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	103	103	< 0.005	< 0.005	—	104
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.1	82.1	< 0.005	< 0.005	0.13	83.2
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	98.4	98.4	< 0.005	0.01	0.11	103
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.1	42.1	< 0.005	0.01	0.04	44.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.02	13.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.3	16.3	< 0.005	< 0.005	0.02	17.0
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.97	6.97	< 0.005	< 0.005	0.01	7.30

3.7. Paving (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.69	3.98	0.01	0.12	—	0.12	0.11	—	0.11	—	614	614	0.02	< 0.005	—	616
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.15	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.6	33.6	< 0.005	< 0.005	—	33.7
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.57	5.57	< 0.005	< 0.005	—	5.59
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.27

3.9. Architectural Coating (2026) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architect ural Coatings	10.1	10.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.75	9.75	< 0.005	< 0.005	—	9.79
Architect ural Coatings	0.55	0.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.61	1.61	< 0.005	< 0.005	—	1.62
Architect ural Coatings	0.10	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290

Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.27

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/28/2026	5.00	20.0	—
Grading	Grading	1/29/2026	2/25/2026	5.00	20.0	—
Building Construction	Building Construction	2/26/2026	8/5/2026	5.00	115	—
Paving	Paving	8/6/2026	9/2/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	9/3/2026	9/30/2026	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Building Construction	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	10.0	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	10.0	10.2	HHDT,MHDT
Grading	Hauling	23.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	10.0	10.2	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	20.0	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	10.0	10.2	HHDT,MHDT

Architectural Coating	Hauling	2.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	65,340	21,780	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	3,300	10.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat

Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9
AQ-PM	13.4
AQ-DPM	0.09
Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00

Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.42858976
Employed	0.61593738
Median HI	9.059412293
Education	—

Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179
Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	33.3504427
Arthritis	0.0
Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0

Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6
Elderly	14.5
English Speaking	72.3
Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—

Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
--------	---------------

Characteristics: Project Details	See project assumptions
Land Use	Assume 1 acre per station
Construction: Construction Phases	9 month construction per station
Construction: Off-Road Equipment	See project assumptions
Construction: Dust From Material Movement	See project assumptions
Construction: Trips and VMT	See project assumptions

Cadiz Pipeline - Pipeline Inspection Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Building Construction (2026) - Unmitigated
 - 3.3. Pipeline Inspection (2026) - Unmitigated
- 4. Operations Emissions Details
 - 4.10. Soil Carbon Accumulation By Vegetation Type
 - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
 - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - Pipeline Inspection
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	1,457	1000sqft	33.5	0.00	1,457,280	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.89	0.75	5.83	8.41	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,929	1,929	0.06	0.08	2.03	1,958
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.87	0.74	5.86	7.90	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,897	1,897	0.05	0.08	0.05	1,923
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.49	0.42	3.38	4.31	0.01	0.12	0.33	0.46	0.12	0.07	0.18	—	1,063	1,063	0.03	0.05	0.52	1,079
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.08	0.62	0.79	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	176	176	< 0.005	0.01	0.09	179

2.2. Construction Emissions by Year, Unmitigated

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

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

2026	0.89	0.75	5.83	8.41	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,929	1,929	0.06	0.08	2.03	1,958
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.87	0.74	5.86	7.90	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,897	1,897	0.05	0.08	0.05	1,923
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.49	0.42	3.38	4.31	0.01	0.12	0.33	0.46	0.12	0.07	0.18	—	1,063	1,063	0.03	0.05	0.52	1,079
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.09	0.08	0.62	0.79	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	176	176	< 0.005	0.01	0.09	179

3. Construction Emissions Details

3.1. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.54	4.75	4.71	0.01	0.18	—	0.18	0.16	—	0.16	—	1,198	1,198	0.05	0.01	—	1,202
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.54	4.75	4.71	0.01	0.18	—	0.18	0.16	—	0.16	—	1,198	1,198	0.05	0.01	—	1,202
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.16	1.15	< 0.005	0.04	—	0.04	0.04	—	0.04	—	292	292	0.01	< 0.005	—	293
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.3	48.3	< 0.005	< 0.005	—	48.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.6	63.6	< 0.005	< 0.005	0.10	64.4
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	76.2	76.2	< 0.005	0.01	0.08	79.4
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.6	32.6	< 0.005	0.01	0.03	34.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.02	10.7

Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.01	13.1
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.39	5.39	< 0.005	< 0.005	< 0.005	5.65

3.3. Pipeline Inspection (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.64	5.28	6.70	0.01	0.22	—	0.22	0.20	—	0.20	—	988	988	0.04	0.01	—	992
Dust From Material Movement	—	—	—	—	—	—	0.29	0.29	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.64	5.28	6.70	0.01	0.22	—	0.22	0.20	—	0.20	—	988	988	0.04	0.01	—	992
Dust From Material Movement	—	—	—	—	—	—	0.29	0.29	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	1.86	2.37	< 0.005	0.08	—	0.08	0.07	—	0.07	—	349	349	0.01	< 0.005	—	350

Dust From Material Movement:	—	—	—	—	—	—	0.10	0.10	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.34	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	57.8	57.8	< 0.005	< 0.005	—	58.0
Dust From Material Movement:	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.04	0.41	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	92.1	92.1	< 0.005	< 0.005	0.15	93.4
Vendor	< 0.005	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	110	110	< 0.005	0.02	0.12	115
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.2	47.2	< 0.005	0.01	0.04	49.5

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.02	15.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	19.0
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.82	7.82	< 0.005	< 0.005	0.01	8.19

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	7/1/2026	10/31/2026	5.00	89.0	—
Pipeline Inspection	Trenching	1/1/2026	6/30/2026	5.00	129	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

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

Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Pipeline Inspection	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Pipeline Inspection	Graders	Diesel	Average	1.00	8.00	148	0.41
Pipeline Inspection	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Pipeline Inspection	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Pipeline Inspection	—	—	—	—
Pipeline Inspection	Worker	20.0	18.5	LDA,LDT1,LDT2
Pipeline Inspection	Vendor	10.0	10.2	HHDT,MHDT
Pipeline Inspection	Hauling	2.00	20.0	HHDT
Pipeline Inspection	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Pipeline Inspection	—	323,840	64.5	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	33.5	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events.

Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9
AQ-PM	13.4
AQ-DPM	0.09
Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00
Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1

Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.42858976
Employed	0.61593738
Median HI	9.059412293
Education	—
Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179

Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	33.3504427
Arthritis	0.0
Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8

Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6
Elderly	14.5
English Speaking	72.3
Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9

Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	See project assumptions
Construction: Construction Phases	Total pipeline inspection 6 months, pipeline rehab 4 months
Construction: Off-Road Equipment	See project assumptions
Land Use	Pipeline inspection area
Construction: Dust From Material Movement	Dust movement

Construction: Trips and VMT	See project assumptions
-----------------------------	-------------------------

Cadiz Pipeline - ARAVBO Valves Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Building Construction (2026) - Unmitigated
 - 3.3. Trenching (2026) - Unmitigated
- 4. Operations Emissions Details
 - 4.10. Soil Carbon Accumulation By Vegetation Type
 - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
 - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - ARAVBO Valves
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	0.05	1000sqft	< 0.005	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.61	0.52	4.31	5.55	0.01	0.19	0.46	0.65	0.18	0.09	0.26	—	1,317	1,317	0.03	0.07	0.04	1,340
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.05	0.07	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	0.01	16.0
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.65

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.61	0.52	4.31	5.55	0.01	0.19	0.46	0.65	0.18	0.09	0.26	—	1,317	1,317	0.03	0.07	0.04	1,340

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.01	0.01	0.05	0.07	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	0.01	16.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.65

3. Construction Emissions Details

3.1. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.34	2.80	3.47	0.01	0.07	—	0.07	0.07	—	0.07	—	452	452	0.02	< 0.005	—	453
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.71	3.71	< 0.005	< 0.005	—	3.72
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.62

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.51	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.07	1.07	< 0.005	< 0.005	< 0.005	1.09
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.57	2.57	< 0.005	< 0.005	< 0.005	2.68
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.44
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19

3.3. Trenching (2026) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	3.78	4.86	0.01	0.18	—	0.18	0.17	—	0.17	—	744	744	0.03	0.01	—	747
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.08	4.08	< 0.005	< 0.005	—	4.09
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.68	0.68	< 0.005	< 0.005	—	0.68
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.51	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.71	0.71	< 0.005	< 0.005	< 0.005	0.72
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.71	1.71	< 0.005	< 0.005	< 0.005	1.78
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.77
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.13

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	1/6/2026	1/8/2026	5.00	3.00	—
Trenching	Trenching	1/1/2026	1/2/2026	5.00	2.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trenching	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Trenching	Graders	Diesel	Average	1.00	8.00	148	0.41

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Trenching	—	—	—	—
Trenching	Worker	10.0	18.5	LDA,LDT1,LDT2
Trenching	Vendor	10.0	10.2	HHDT,MHDT
Trenching	Hauling	2.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	10.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Trenching	—	44.4	1.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
----------	--------------------	-----------

Other Non-Asphalt Surfaces	< 0.005	0%
----------------------------	---------	----

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events.

Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9
AQ-PM	13.4
AQ-DPM	0.09

Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00
Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.42858976

Employed	0.61593738
Median HI	9.059412293
Education	—
Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179
Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	33.3504427
Arthritis	0.0

Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6
Elderly	14.5
English Speaking	72.3

Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	See project assumptions
Construction: Construction Phases	1 week per valve
Construction: Off-Road Equipment	See project assumptions
Construction: Dust From Material Movement	See project assumptions
Construction: Trips and VMT	See project assumptions

Cadiz Pipeline - Cathodic Protection Repair Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Building Construction (2026) - Unmitigated
- 4. Operations Emissions Details
 - 4.10. Soil Carbon Accumulation By Vegetation Type
 - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
 - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated
 - 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - Cathodic Protection Repair
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	1,457	1000sqft	33.5	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.79	0.66	5.33	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,506	1,506	0.04	0.08	1.55	1,531
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.78	0.66	5.37	6.98	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,490	1,490	0.04	0.08	0.04	1,514
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.16	1.29	1.70	< 0.005	0.05	0.06	0.11	0.05	0.02	0.06	—	360	360	0.01	0.02	0.16	366
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.03	0.24	0.31	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	59.6	59.6	< 0.005	< 0.005	0.03	60.6

2.2. Construction Emissions by Year, Unmitigated

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

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

2026	0.79	0.66	5.33	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,506	1,506	0.04	0.08	1.55	1,531
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.78	0.66	5.37	6.98	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,490	1,490	0.04	0.08	0.04	1,514
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.19	0.16	1.29	1.70	< 0.005	0.05	0.06	0.11	0.05	0.02	0.06	—	360	360	0.01	0.02	0.16	366
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03	0.03	0.24	0.31	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	59.6	59.6	< 0.005	< 0.005	0.03	60.6

3. Construction Emissions Details

3.1. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	4.83	6.29	0.01	0.21	—	0.21	0.19	—	0.19	—	917	917	0.04	0.01	—	920
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	4.83	6.29	0.01	0.21	—	0.21	0.19	—	0.19	—	917	917	0.04	0.01	—	920
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.16	1.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	221	221	0.01	< 0.005	—	222
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.21	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.6	36.6	< 0.005	< 0.005	—	36.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.77	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	143	143	0.01	< 0.005	0.48	145
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.51	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.4	31.4	< 0.005	< 0.005	0.05	31.8
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.3	75.3	< 0.005	0.01	0.08	78.5
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	0.03	33.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.20	5.20	< 0.005	< 0.005	0.01	5.27

Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.01	13.0
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.33	5.33	< 0.005	< 0.005	< 0.005	5.59

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	7/1/2026	10/31/2026	5.00	88.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Graders	Diesel	Average	1.00	8.00	148	0.41

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Building Construction	—	—	—	—
Building Construction	Worker	10.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
------------	------------------------	------------------------	----------------------	-------------------------------	---------------------

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	33.5	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9

AQ-PM	13.4
AQ-DPM	0.09
Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00
Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
-----------	---------------------------------

Economic	—
Above Poverty	20.42858976
Employed	0.61593738
Median HI	9.059412293
Education	—
Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179
Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—

Insured adults	33.3504427
Arthritis	0.0
Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6

Elderly	14.5
English Speaking	72.3
Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	See project assumptions
Construction: Construction Phases	See project assumptions
Construction: Off-Road Equipment	See project assumptions
Construction: Trips and VMT	See project assumptions

Appendix C
**Biological Resources Technical
Memorandum**



2355 Northside Drive
Suite 100
San Diego, CA 92108
619.719.4200 [phone](tel:619.719.4200)
619.719.4201 [fax](tel:619.719.4201)

esassoc.com

July 24, 2025

Fenner Valley Water Authority
Attn: Mr. Robert Grantham, Executive Director
2049 Century Park E, Unit 3550
Los Angeles, California 90067

Subject: Cadiz Groundwater Project Northern Pipeline Component Biological Technical Letter Report Addendum

Dear Mr. Robert Grantham:

Environmental Science Associates (ESA) has conducted additional fieldwork and research in support of the Cadiz Groundwater Project Northern Pipeline Component (Project), building upon the Final Environmental Impact Report (EIR) (2012), as amended in 2019. This Biological Technical Letter Report (Report) is based on 2024 and 2025 biological survey results. This report documents the existing biological conditions, including a list of species observed and an analysis of the potential for sensitive biological or aquatic resources to occur within the existing pipeline alignment and within and around eight potential sites where up to seven pump stations (PS) may be located. This report also provides a discussion of potential impacts on biological and aquatic resources resulting from the proposed Project and identifies relevant mitigation measures from the Project's Mitigation Monitoring and Reporting Program (MMRP), designed to protect sensitive biological resources. The information used to support this report includes the results of a field reconnaissance survey and research of available literature and databases. This Report, and associated data, has been compiled to assist the Fenner Valley Water Authority in Project planning and permitting.

Project Location/Study Area

The Project sites consist of eight potential PS site locations along an approximately 161-mile alignment of the existing El Paso Natural Gas (EPNG) pipeline, extending through the Mojave Desert from Cadiz, California in eastern San Bernardino County continuing west past Barstow to Kern County, California, as shown in **Figure 1, Regional Location**, and **Figures 2-1 to 2-8, Project Location**. The EPNG pipeline was constructed in 1985 to transport natural gas from the San Juan, Permian, and Anadarko basins to California, Arizona, Nevada, New Mexico, Oklahoma, Texas, and northern Mexico. A portion of the EPNG underground pipeline traverses the Cadiz Valley Water Conservation, Recovery, and Storage Project (Water Project) wellfield in San Bernardino and continues northwestward to Barstow and then westward to the Mojave.

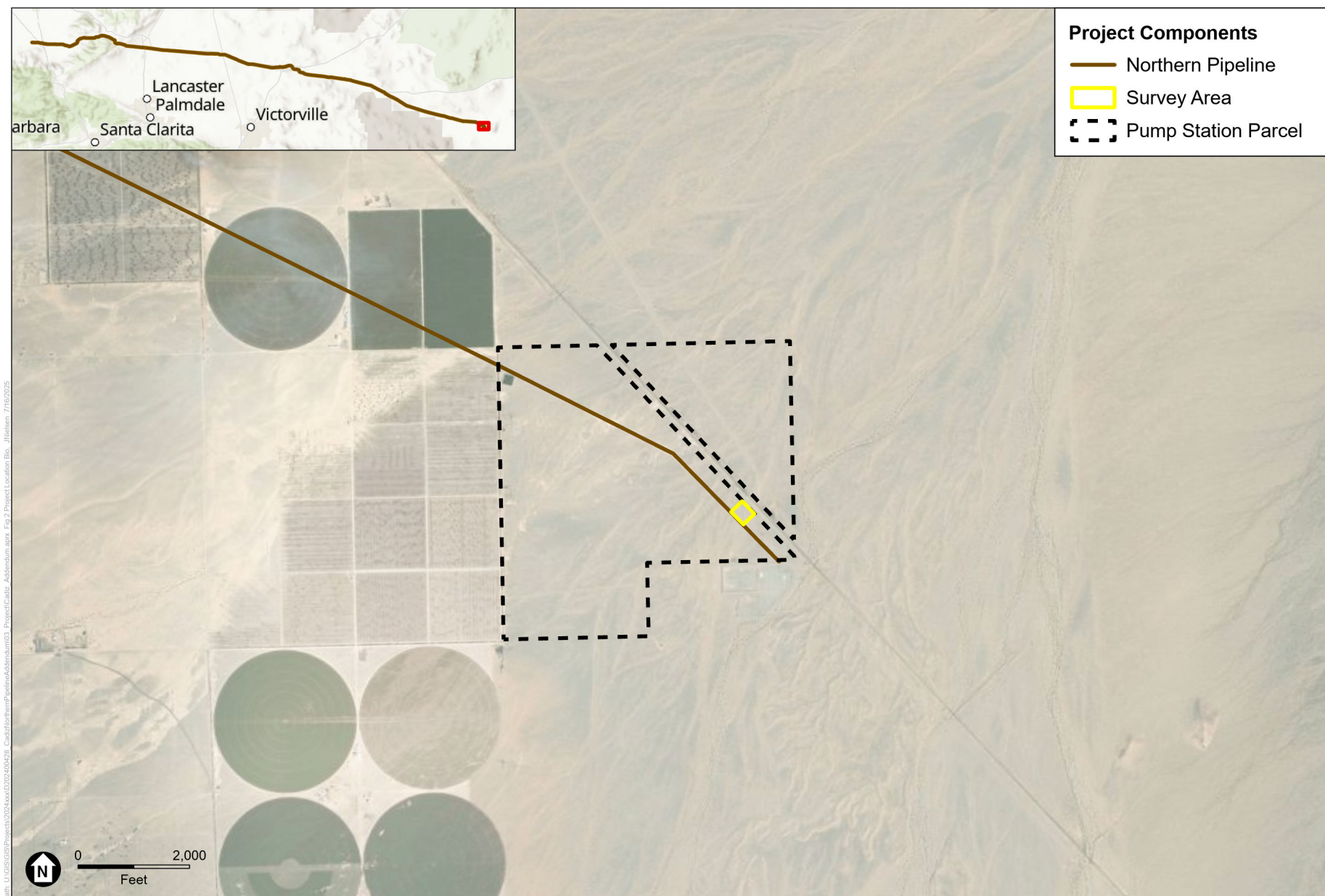
The biological study area (BSA) includes the 161-mile pipeline alignment, eight potential PS sites and a 200-foot buffer surrounding each of the potential PS sites. The potential PS sites and associated survey areas account for approximately 19.66 acres of the BSA. which was observed on foot.



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

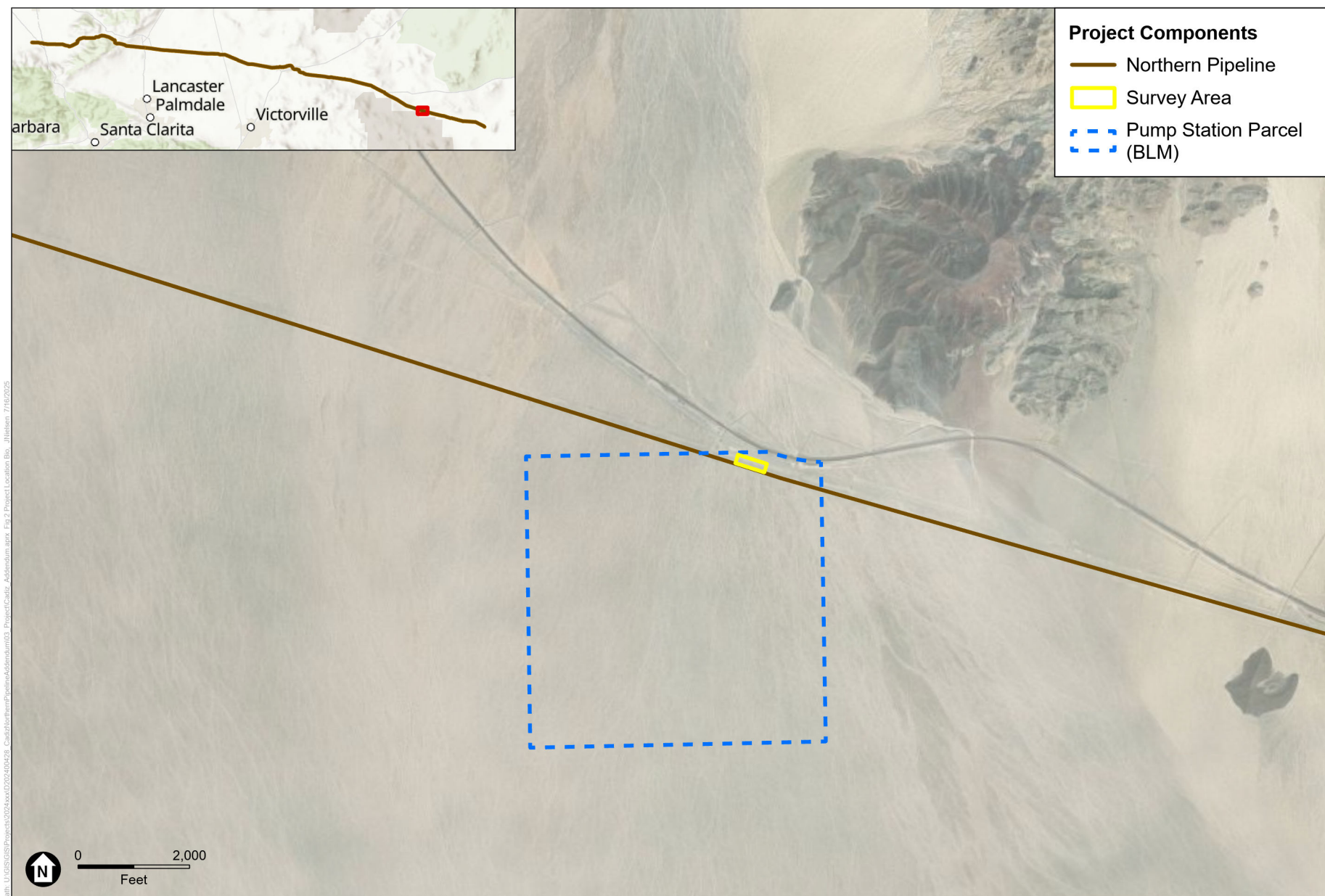
Figure 1
Biological Resources Letter Report
Regional Location



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

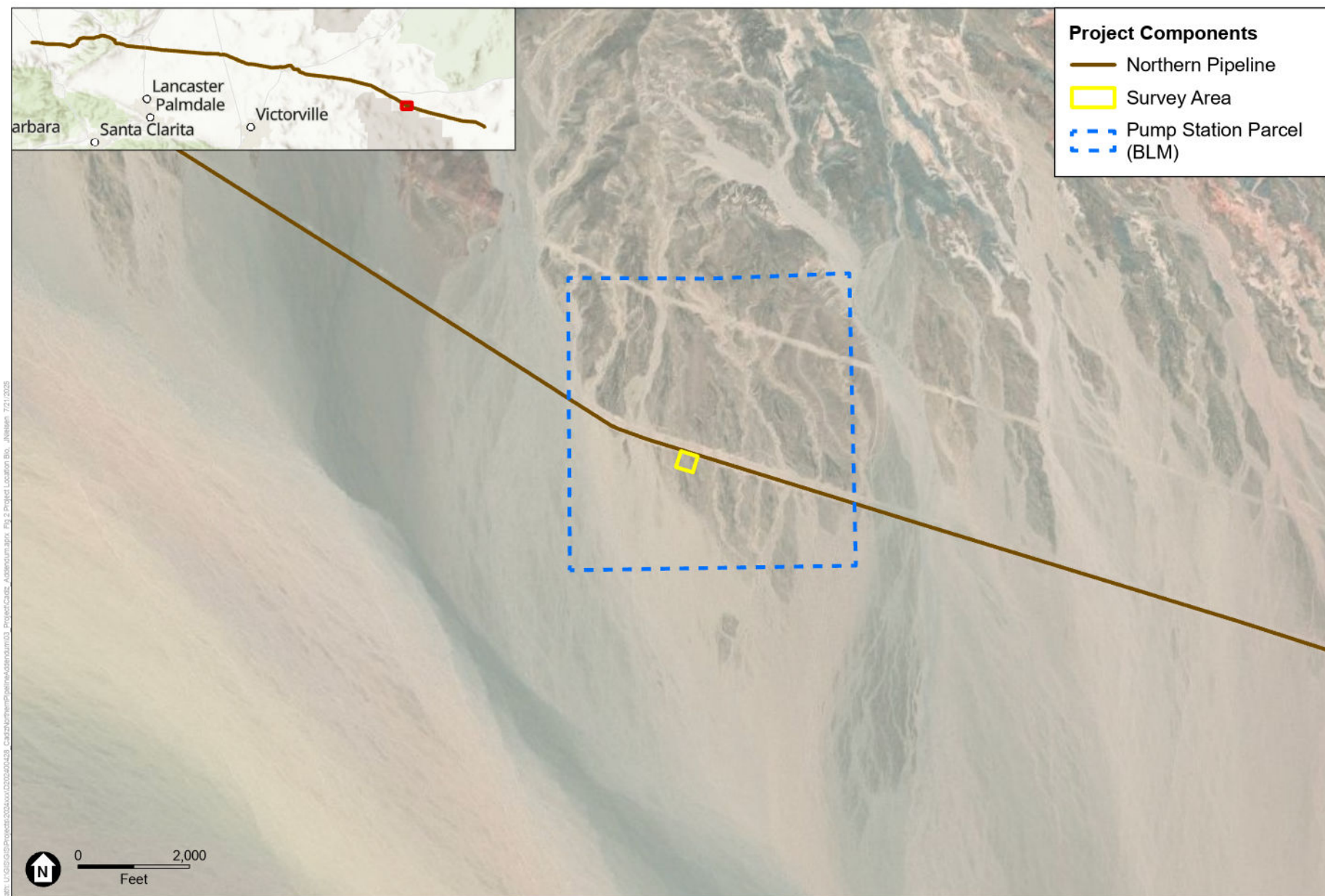
Figure 2-1
Project Location



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

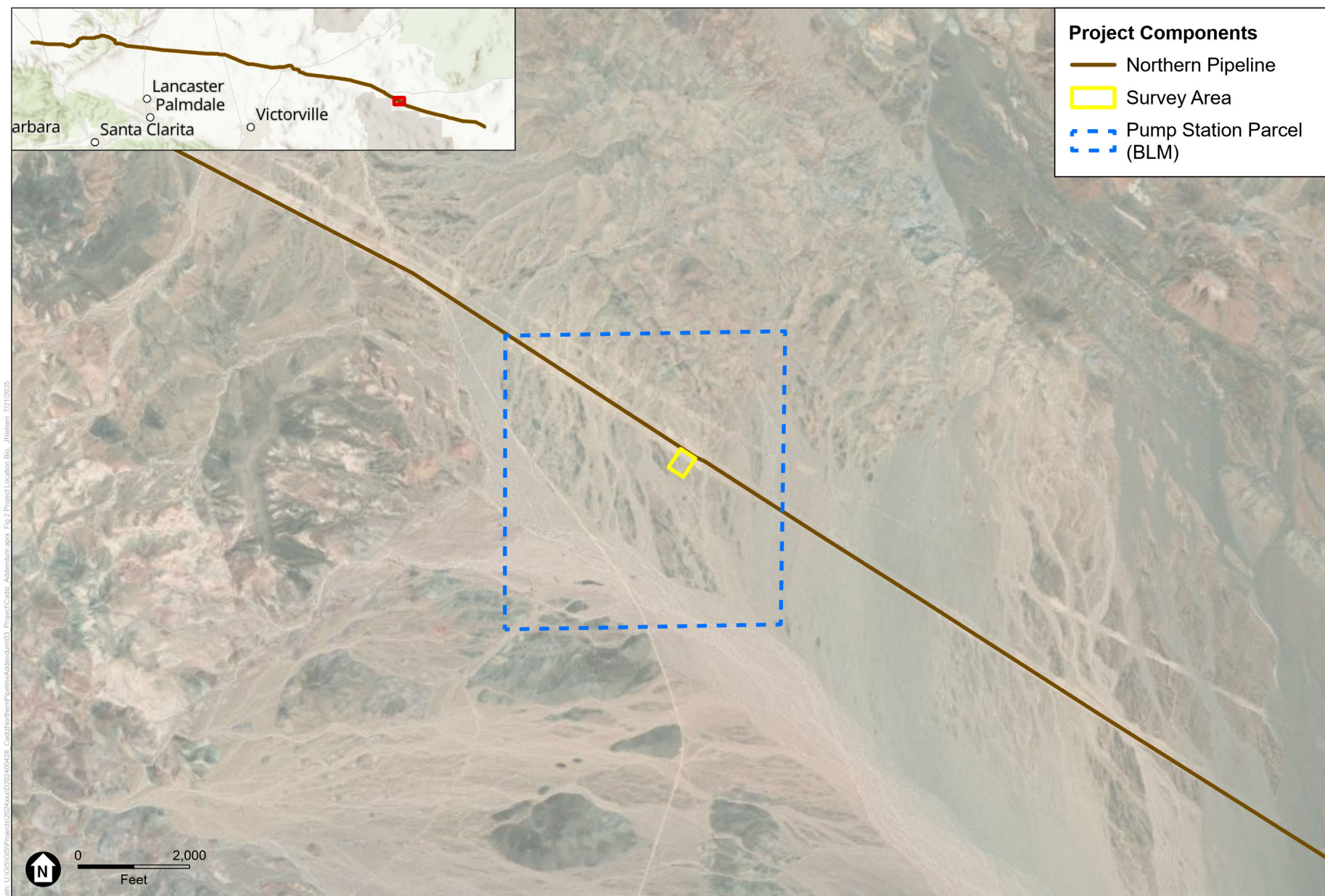
Figure 2-2
Project Location



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

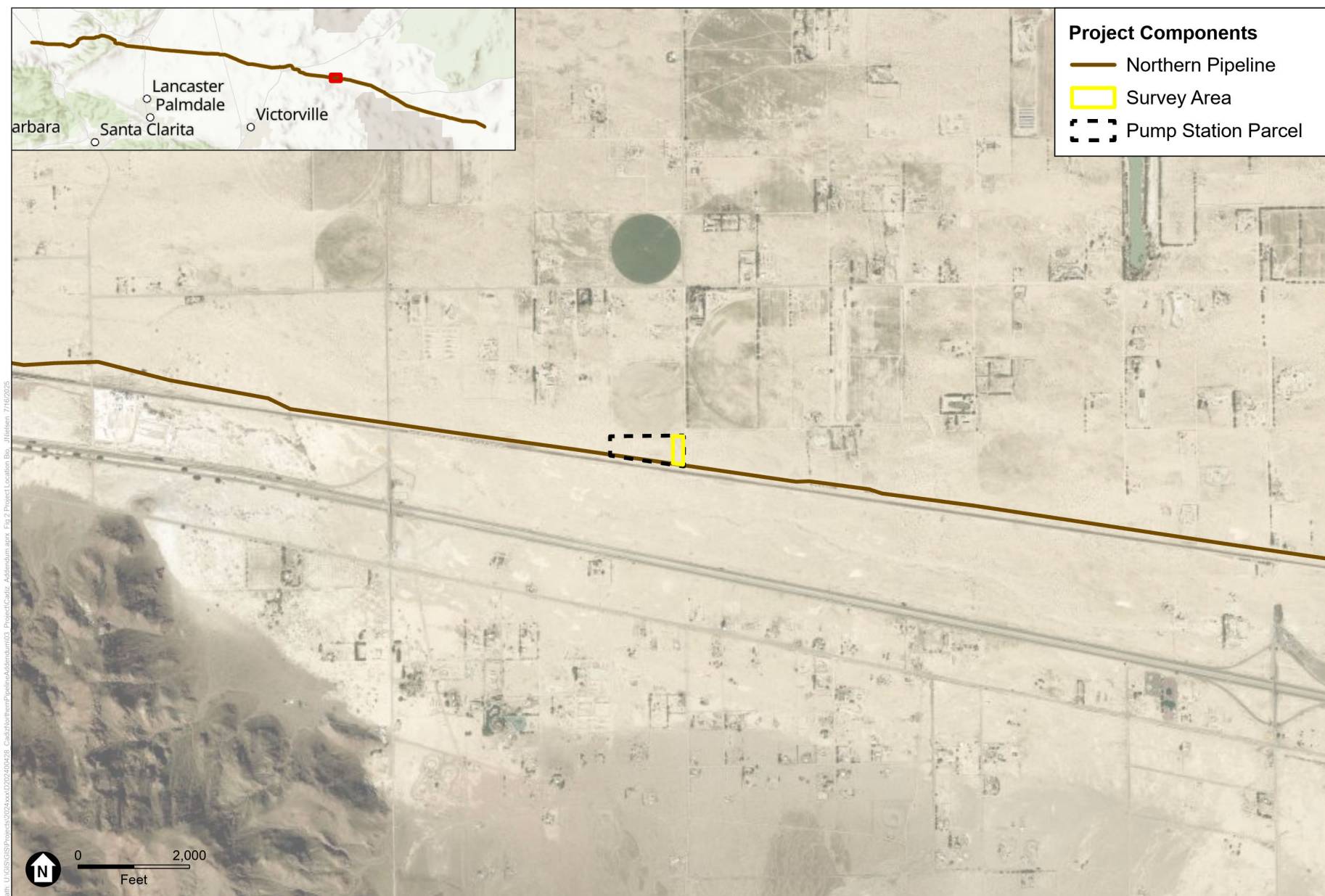
Figure 2-3
Project Location



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

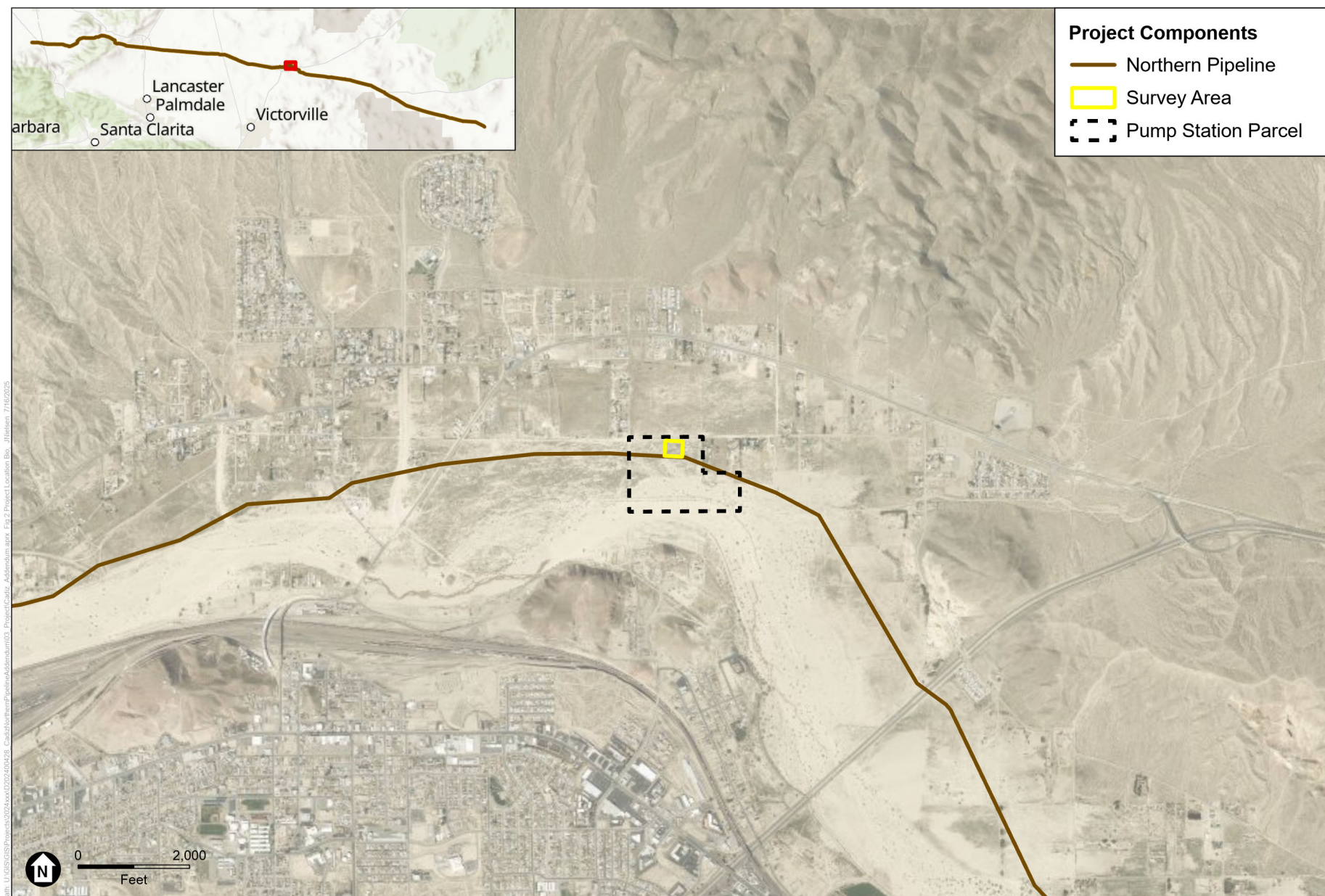
Figure 2-4
Project Location



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

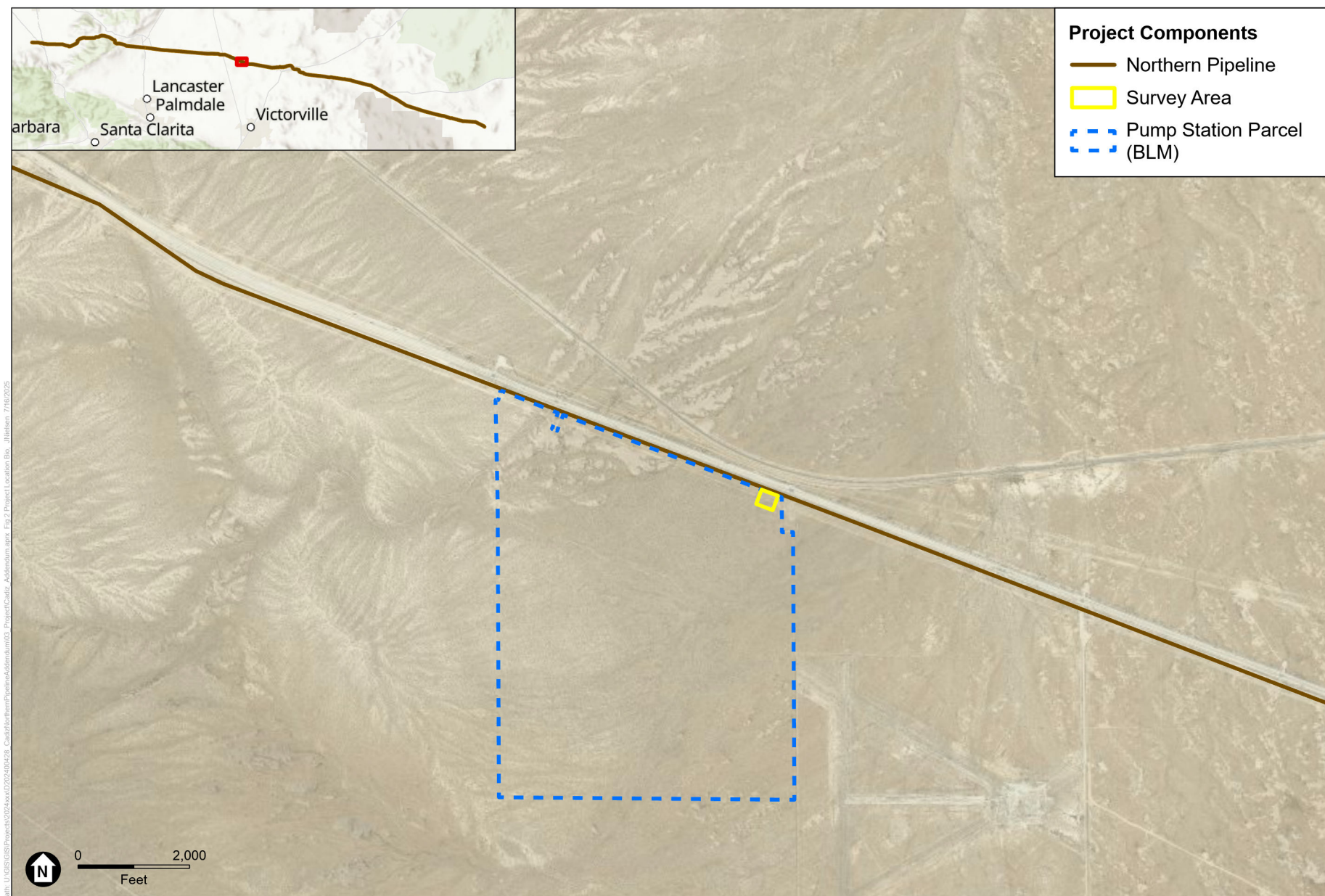
Figure 2-5
Project Location



SOURCE: ESA, 2025

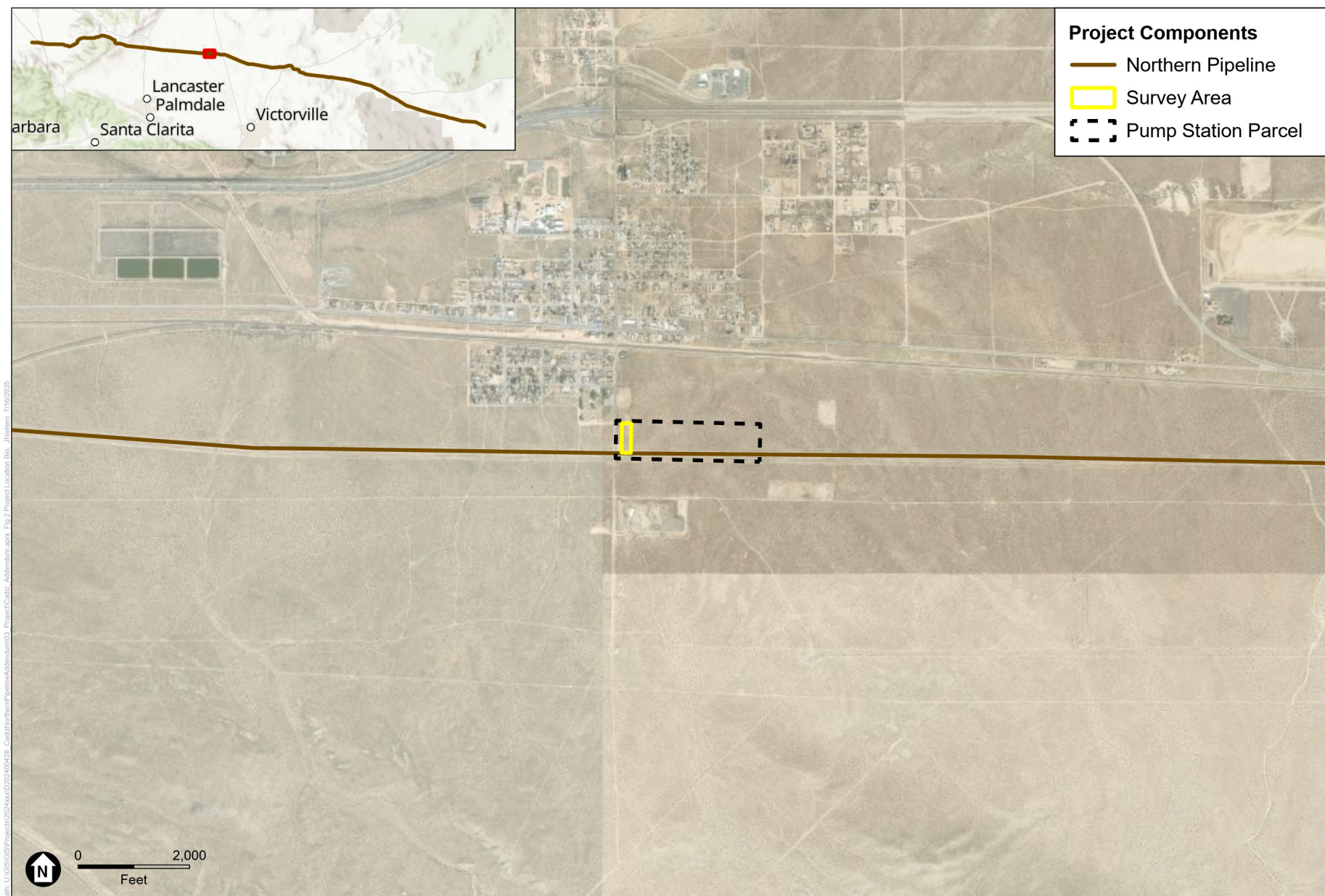
Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 2-6
Project Location



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 2-8
Project Location



Mr. Robert Grantham
July 24, 2025
Page 11

Project Description

The proposed Project includes the rehabilitation and refurbishment of the EPNG pipeline to convey water and would include the construction of appurtenances (such as blow-offs and air valves) and up to seven booster PS sites along the alignment. Two alternative locations for PS7 were surveyed for this report; therefore, the BSA includes eight potential PS sites. The water source for the proposed Project would be the groundwater basin underlying a portion of the Cadiz and Fenner Valleys, located in the eastern Mojave Desert region of San Bernardino County, California. The Project's purpose would be to capture groundwater that would otherwise be lost to evaporation and create a beneficial use as potable drinking water or for agricultural purposes.

Database Search and Literature Review

Databases from the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Data Base (CNDDB), United States Fish and Wildlife Service (USFWS), California Native Plant Society (CNPS) and California Invasive Plant Council (Cal-IPC) were queried for records of special-status plant and wildlife species and sensitive habitat occurrences within 5 miles of the pipeline alignment.

A literature review and desktop analysis were performed prior to initiating the 2025 biological surveys. Previous literature reviews and field surveys in 2024, when different potential PS sites locations were under consideration (which have since been removed from consideration). For the Report, ESA reviewed that literature review for any changes to species with potential to occur as well as existing conditions along the proposed project alignment. The desktop analysis for the 2025 biological surveys did not indicate additional species with potential to occur or a change in the existing conditions (e.g., no new development, flooding, fire) within the BSA; therefore, the 2024 list of 31 special-status species that have the potential to occur within the region was utilized for the 2025 biological surveys. See **Attachment A**, *Sensitive Species Evaluated for a Potential to Occur within the Project Area*, for a comprehensive list of all sensitive species considered based on the database search. **Table 1**, *Species with Moderate Potential or Assumed Presence within the Biological Study Area*, lists the species with moderate or assumed presence within the BSA.



Mr. Robert Grantham
 July 24, 2025
 Page 12

TABLE 1
SPECIES WITH MODERATE POTENTIAL OR ASSUMED PRESENCE WITHIN THE BIOLOGICAL STUDY AREA

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence within the BSA
Birds			
<i>Toxostoma bendirei</i>	Bendire's thrasher	BLM S, CDFW SSC	Moderate Potential – Preference for scattered cholla, yucca, mesquite, agave, or Joshua tree. Scattered cholla habitat is present at the site. The most recent observation of this species with the BSA occurred in 1998.
<i>Athene cunicularia</i>	burrowing owl	State Candidate Endangered; BLM S, CDFW SSC	Moderate Potential – Inhabits dry grasslands and deserts, preference for sparsely vegetated areas, often requires areas with pre-existing burrows. The most recent observation of this species with the BSA occurred in 2012.
<i>Gymnogyps californianus</i>	California condor	Federally Endangered, State Endangered, CDFW FP	Moderate Potential – Prefers areas with large trees/snags, rocky outcrops and cliffs. Limited rocky outcrops occur at the project site and grassland foraging habitats are limited within the project area. However, the western portion of the project site is within foraging range of known condor nests and individual observations. The most recent observation of this species near the survey area occurred in 2015 approximately 2.5 miles from the site.
<i>Aquila chrysaetos</i>	golden eagle	BLM S, CDFW FP, CDFW WL	Moderate Potential – Prefer mountainous regions with grassland, shrubland, chaparral shrubland, forest and other vegetated areas. Observed foraging approximately 2 miles south of the project site. The most recent observation of this species near the survey area was in 2012 approximately 0.66 miles from the site.
<i>Toxostoma lecontei</i>	Le Conte's thrasher	BLM S, CDFW SSC	Moderate Potential – Inhabits low, sandy open desert areas with saltbush, cholla cactus, creosote bush scrub and other desert-type regions. Suitable habitat is present within the project site. The most recent observation of this species within the survey area was in 2013.
<i>Lanius ludovicianus</i>	loggerhead shrike	CDFW SSC	Moderate Potential – Preference for short vegetation and well-spaced shrubs/low trees with spines or thorns, frequently in desert scrublands. Also often present along fence lines and utility poles. The most recent observation of this species near the survey area was in 2006 approximately 0.5 miles from the site.
<i>Asio otus</i>	long-eared owl	CDFW SSC	Moderate Potential – Preference for dense trees for nesting and roosting and open areas for hunting, occupies a wide range of territories including meadows, forests and deserts. The most recent observation of this species near the survey area was in 2001 approximately 2.2 miles from the site.
<i>Falco mexicanus</i>	prairie falcon	CDFW WL	Moderate Potential – Inhabit wide-open sagebrush and desert habitats with nests on sheer rocky cliffs. Suitable foraging habitat is present at the project site. The most recent observation of this species within the survey area was in 2020.
Mammals			
<i>Taxidea taxus</i>	American badger	CDFW SSC	Moderate Potential – Inhabits alkali marsh, desert wash, Great Basin scrub, marsh and swamp, meadow and seep, Mojave Desert scrub, riparian scrub, riparian woodland, valley and foothill grassland. Most abundant in drier open stages of shrub, forest, and herbaceous habitats, with friable soils. The most recent observation of this species near the survey area was in 2013 approximately 0.3 miles from the site.
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	BLM S, CDFW FP	Moderate Potential – Typically inhabits rocky slopes and cliffs, washes and alluvial fans and generally eat a wide variety of desert plants, including cacti. The most recent observation of this species near the survey area was in 1989 approximately 1.5 miles from the site.



Mr. Robert Grantham
 July 24, 2025
 Page 13

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence within the BSA
<i>Xerospermophilus mohavensis</i>	Mojave ground squirrel	State Threatened, BLM S	High Potential – Preference for sandy soils within all types of major scrub habitats within the Mojave Desert, predominantly creosote bush scrub and desert saltbush scrub. Suitable habitat is present throughout the BSA. The most recent observation of this species within the survey area was in 2018.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	BLM S, CDFW SSC	Moderate Potential – Found in a wide variety of habitats including deserts, forests, prairies, riparian communities and agricultural areas. Suitable habitat is located adjacent to the project site in several areas. The most recent observation of this species near the survey area was in 2007 approximately 3.1 miles from the site.
Plants			
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	Federal Endangered, State Endangered CNPS 1B.1	Moderate Potential – Prefers Sierra-Tehachapi saltbush scrub but is also found in blue oak woodland and riparian woodland. In desert areas, occurs on arid land with sparse vegetation.
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	CNPS 1B.2, BLM S	Moderate Potential – Inhabits creosote bush scrub and shadscale scrub. Suitable habitat is present within the project site.
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	CNPS 1B.2, BLM S	Moderate Potential – Inhabits creosote bush scrub and Joshua tree woodlands with gravelly and sandy soils. Creosote scrub is present throughout the project site.
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral sand-verbena	CNPS 1B.1, BLM S	Moderate Potential – Inhabits creosote bush communities, lower dry desert areas and well-drained sandy soils. Suitable habitat is present within the project site.
<i>Senna covesii</i>	Cove's cassia	CNPS 2B.2	Moderate Potential – Prefers dry rocky slopes and sandy desert washes, both of which are present throughout the project site.
<i>Mentzelia tridentata</i>	creamy blazing star	CNPS 1B.3, BLM S	Moderate Potential – Prefers creosote bush scrub and rocky outcrops, both of which are present throughout the project site.
<i>Mentzelia puberula</i>	Darlington's blazing star	CNPS 2B.2	Moderate Potential – Prefers sandy crevices in cliffs or rocky slopes within creosote bush scrub. Suitable habitat is present within the project site.
<i>Cymopterus deserticola</i>	desert cymopterus	CNPS 1B.2, BLM S	Moderate Potential – Inhabits well-drained, fine to coarse sandy soils within creosote bush scrub and desert saltbush scrub, generally sharing habitats with the desert tortoise and Mojave ground squirrel. Suitable habitat is present within the project site.
<i>Castela emoryi</i>	Emory's crucifixion-thorn	CNPS 2B.2	Moderate Potential – Preference towards creosote bush scrub communities in dry gravelly washes and slopes. Suitable habitat is present within the project site.
<i>Ditaxis claryana</i>	glandular ditaxis	CNPS 2B.2	Moderate Potential – Prefers desert scrub, sandy and rocky slopes and calcareous soils. Sufficient habitat is not found at project site.
<i>Eremalche parryi</i> ssp. <i>kernensis</i>	Kern mallow	Federally Endangered CNPS 1B.2	Moderate Potential – Prefers saltbush scrub habitats and eroded hillsides with sparse vegetation. Suitable habitat is present within the project site.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	CNPS 1B.2, BLM S	Moderate Potential – Occurs in dry, rocky and sandy desert canyon environments. Suitable habitat is not present within the project site.
<i>Sclerocactus polyancistrus</i>	Mojave fish-hook cactus	CNPS 4.2	High – Inhabits Mojave creosote bush scrub and Joshua Tree woodland communities typically on carbonate soils. This species was observed during the 2024 field reconnaissance survey (ESA 2024).
<i>Diplacus mohavensis</i>	Mojave monkeyflower	CNPS 1B.2, BLM S	Moderate Potential – Preference for gravelly, sandy habitats within desert washes. Some desert washes are present throughout the project site.



Mr. Robert Grantham
July 24, 2025
Page 14

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence within the BSA
<i>Phacelia parishii</i>	Parish's phacelia	CNPS 1B.1, BLM S	Moderate Potential – Inhabits creosote bush scrub and inhabits the area along the National Trails Highway. Higher likelihood in dried desert washes/watersheds.
<i>Androstephium breviflorum</i>	small-flowered androstephium	CNPS 2B.2	Moderate Potential – Inhabits open desert scrub and creosote brush scrub with sandy to rocky soil. Suitable habitat is present within the project site.
Invertebrates			
<i>Bombus crotchii</i>	Crotch's bumble bee	State Candidate Endangered	Low Potential – inhabits open scrub, chaparral, grassland and creosote bush scrub habitats with floral diversity as nectar resources. Marginally suitable habitat is present within the project site.
Reptiles			
<i>Arizona elegans occidentalis</i>	California glossy snake	CDFW SSC	Moderate Potential – Inhabits arid scrub, rocky washes, and chaparral with microhabitats of open areas that allow for easy burrowing. The most recent observation of this species within the survey area was in 2017.
<i>Gopherus agassizii</i>	desert tortoise	Federally Threatened, State Threatened	High Potential – Inhabits arid habitats with desert scrub, sandy flats and rocky slopes. Preference for firm soil for burrowing and sparse, low-growing shrubs for shelter. Suitable habitat was detected within the BSA. This species is known to occur within 0.5 miles of the BSA but is not in a known designated critical habitat area (CDFW 2025). The most recent observation of this species within the survey area was in 2013.
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	CDFW SSC	High Potential – Inhabits open, dry, treeless areas with little to no cover including valley grasslands. Suitable habitat was detected within the BSA. This species is known to occur within 5 miles of the BSA (CDFW 2024). The most recent observation of this species near the survey area was in 2014 approximately 1.2 miles from the site.

BLM Ranking:

S = Sensitive

CDFW Rankings:

SSC = Species of Special Concern

FP = Fully Protected

WL = Watch List

CNPS Rankings:

1A= Plants presumed extirpated in California and are either rare or extinct elsewhere

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

1B.2 = Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

1B.3 = Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California

2B.1= Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California

2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

3.3= Review list, plants about which more information is needed; not very threatened in California

4.2= Plants of limited distribution; moderately threatened in California



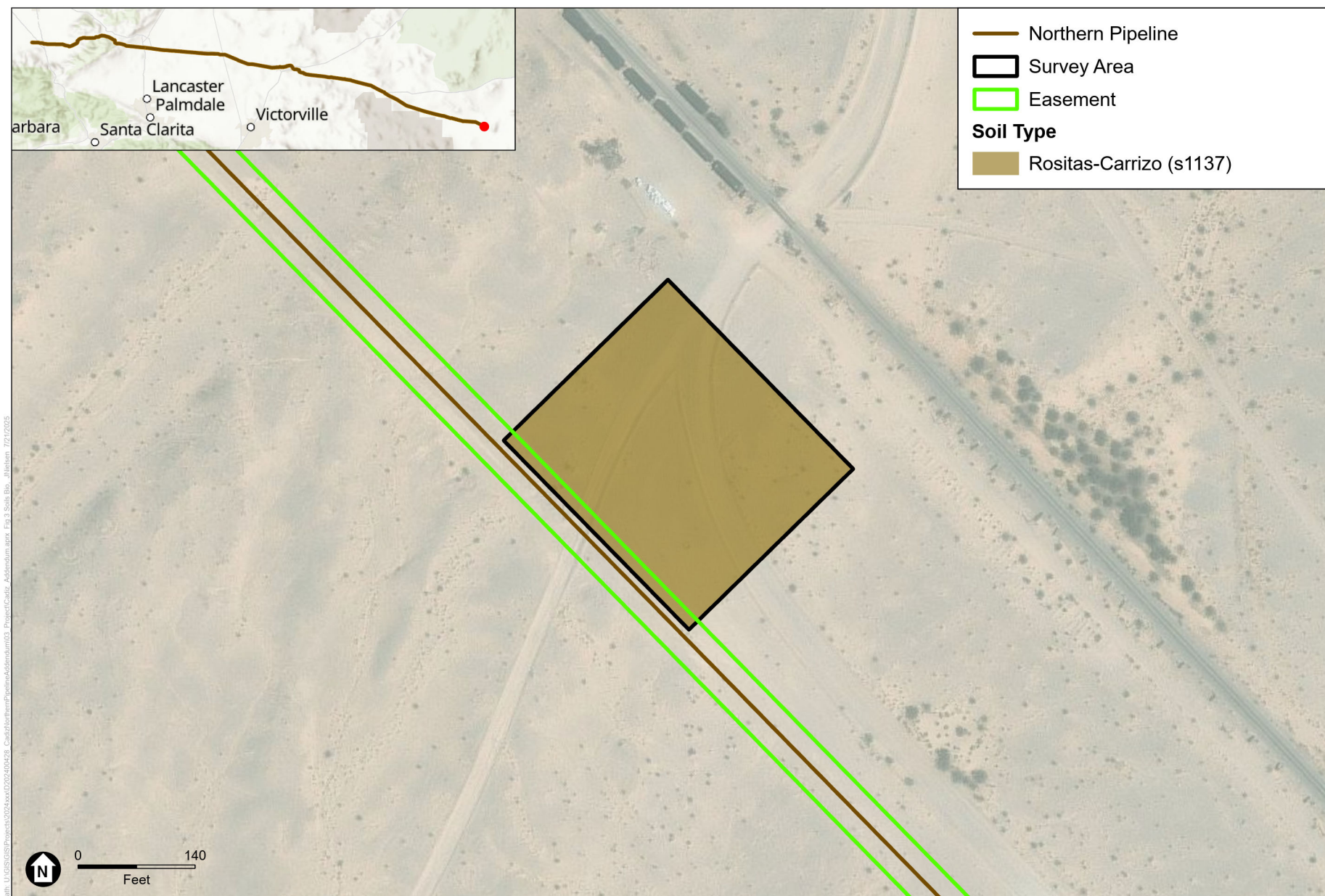
Mr. Robert Grantham
July 24, 2025
Page 15

Site Assessment Methodology

Site assessment surveys were conducted from May 27 to May 28, 2025 by ESA biologists, Brenda McMillan and Anna Weber, who conducted visual inspections of eight potential PS sites alternatives on parcels along the EPNG pipeline alignment on private and public lands. The visual inspections included a combination of walking transects across eight potential PS location alternatives within the BSA and driving the pipeline alignment between PS site locations, when possible, to visually survey the access road and the immediate surrounding area. The eight potential PS sites and their associated buffer areas were surveyed for special-status species and suitable habitat, aquatic resources, and other possible biological constraints to the proposed Project. Aquatic resources and vegetation communities were mapped using a handheld Global Positioning System (GPS) device.

Biologists took representative photos during each site assessment to document existing biological resources occurring in the PS BSA. All plant and wildlife species observed during the site assessment were documented within electronic datasheets and can be found in **Attachment B, Datasheets**. See **Attachment C, Mitigation Monitoring and Reporting Program Mitigation Measures**, for a list of project mitigation, avoidance, and minimization measures. Biological resources, vegetation communities including aquatic resources, and soils, are shown in **Figures 3-1 through 3-8** and **Figures 4-1 through 4-8**.

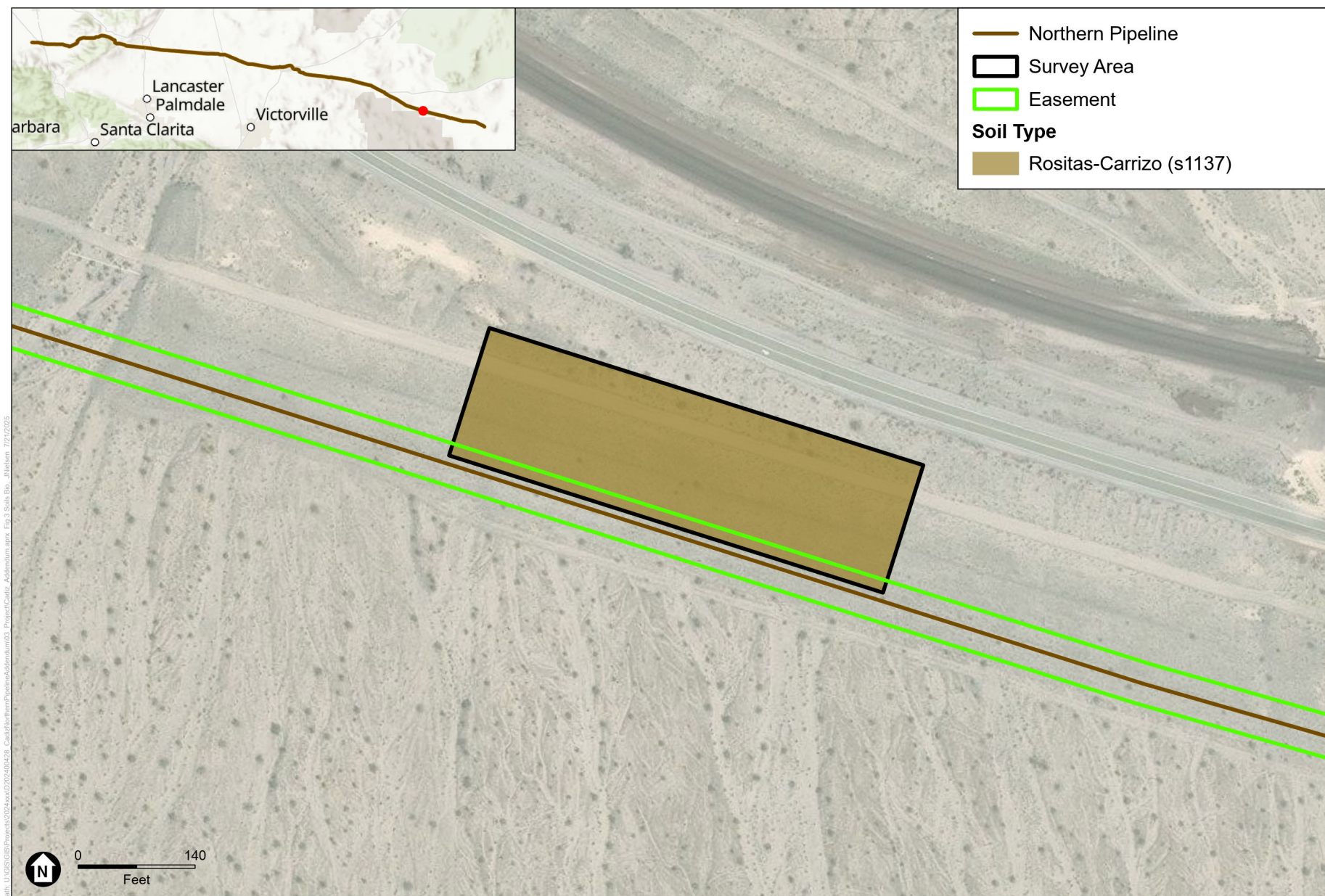
Focused, or protocol, surveys for special-status species, aquatic resources delineations, and detailed vegetation mapping were not performed during this site visit. Any sightings of plants, wildlife, or wildlife signs recorded were incidental and should not be interpreted to mean that those species are absent from other sites. Mitigation Measures from the Final EIR (2012) (Attachment C) should be implemented, where applicable, to avoid, minimize and mitigate for potential impacts to special-status species and aquatic habitat as a result of Project activities. The following section outlines the results of each site assessment, and provides potential mitigation, avoidance and minimization measures that should be implemented during project activities.



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

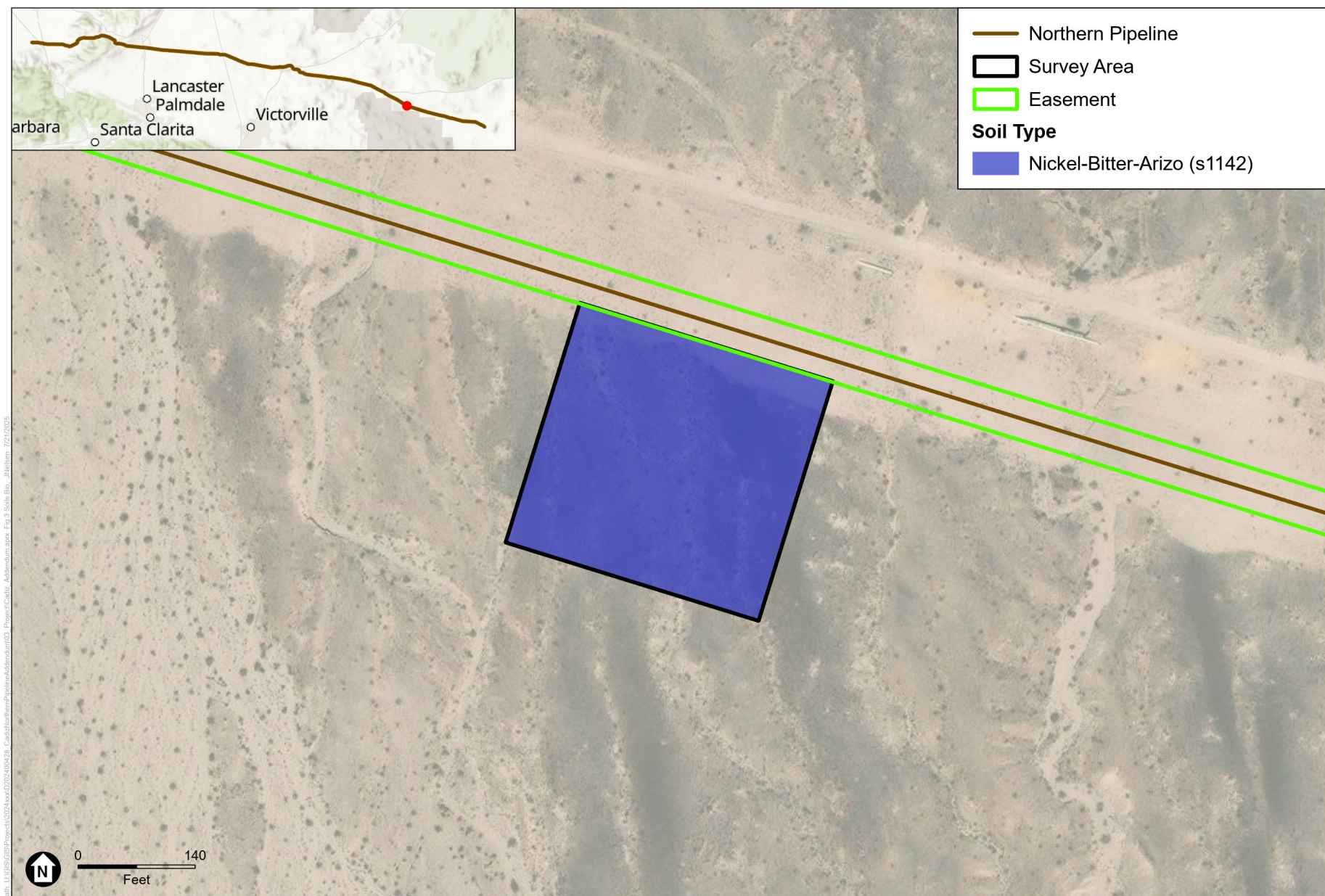
Figure 3-1
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

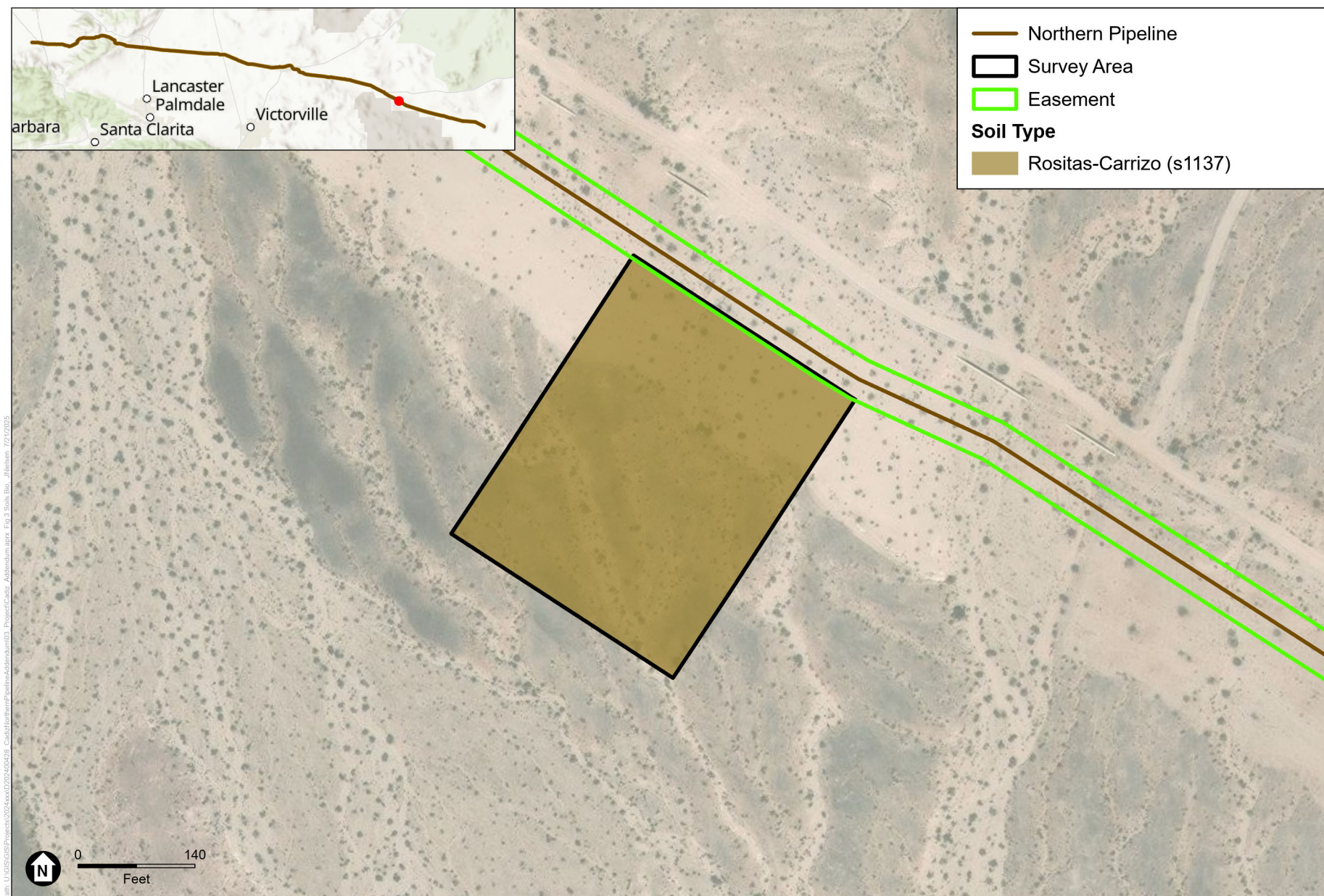
Figure 3-2
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

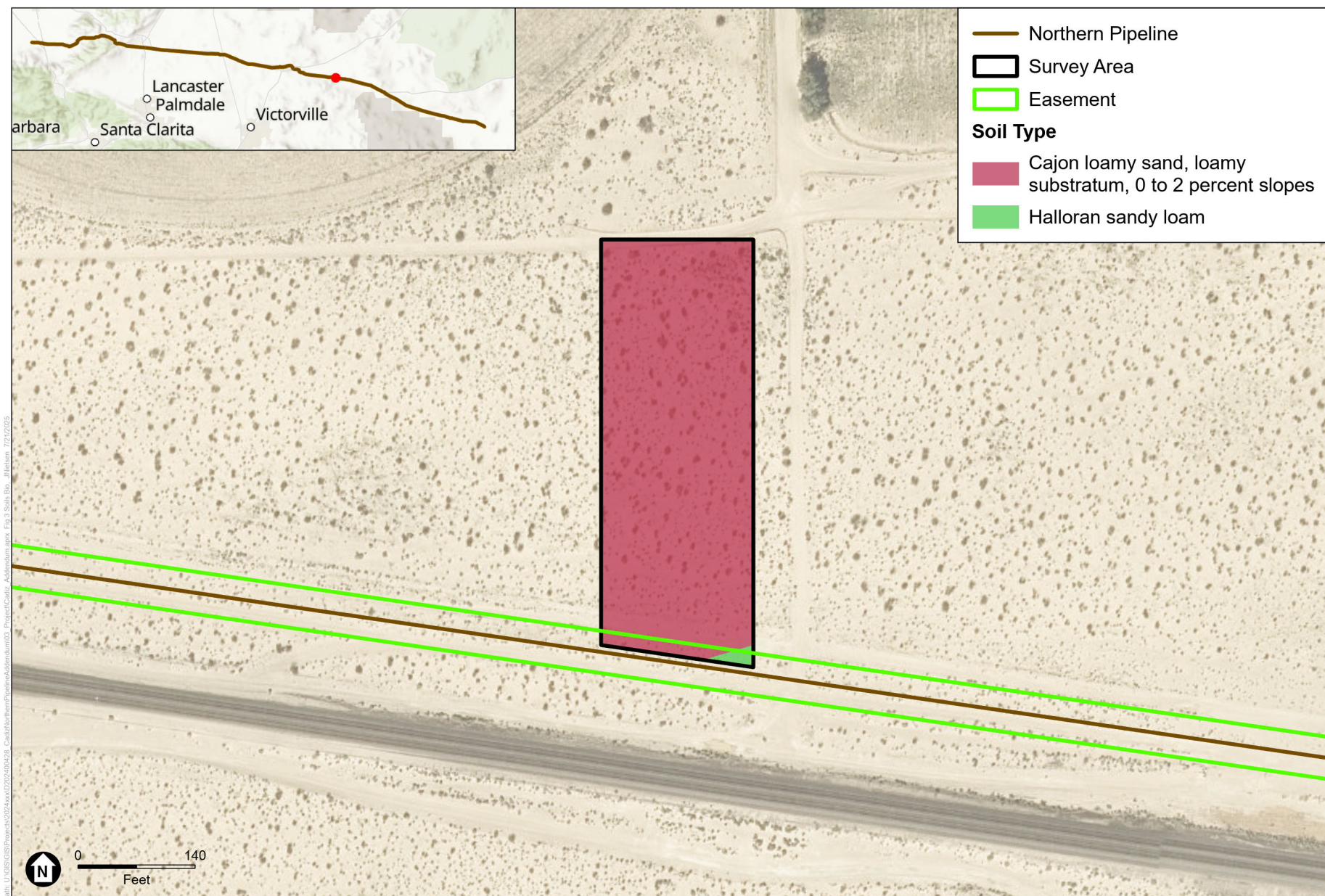
Figure 3-3
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

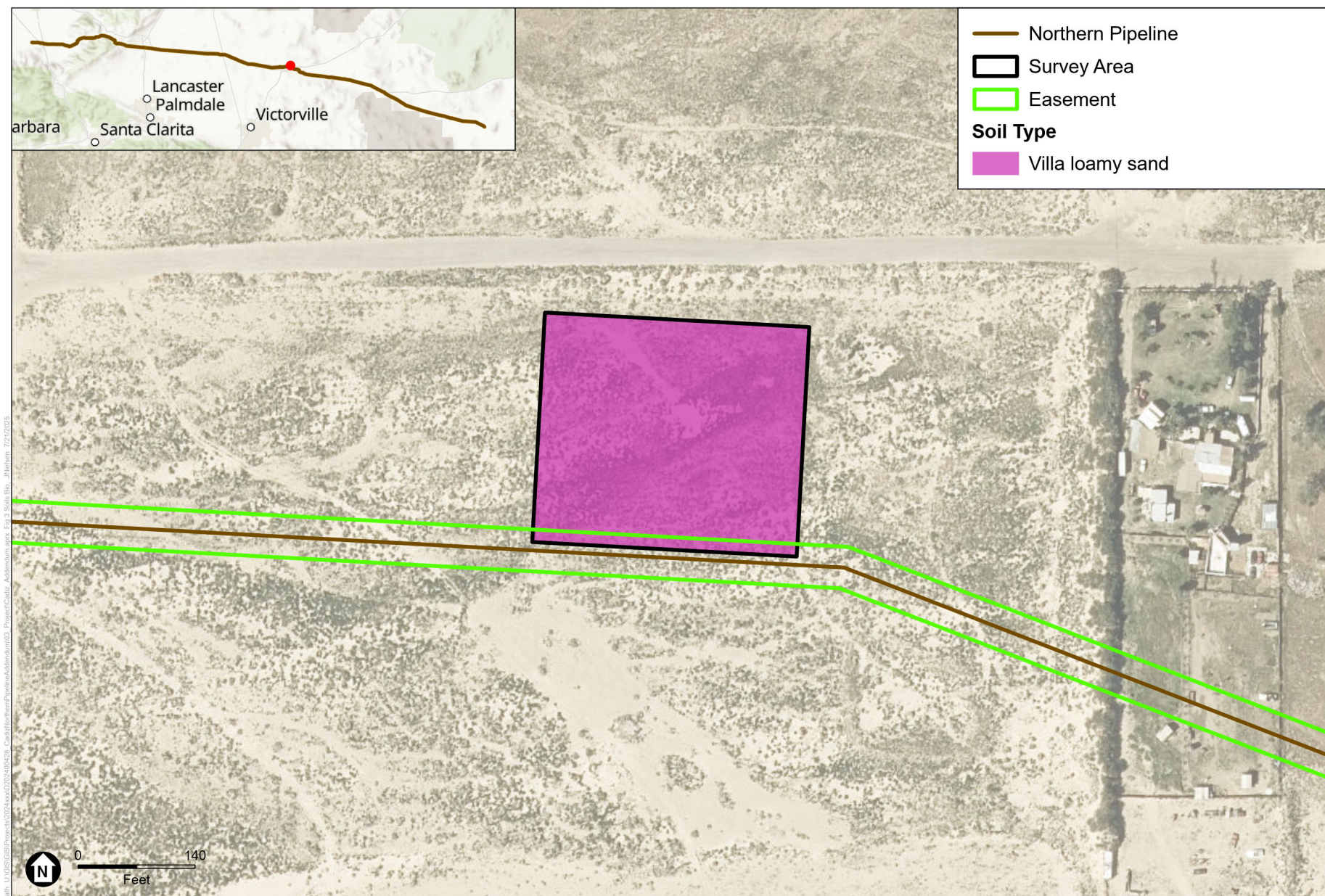
Figure 3-4
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

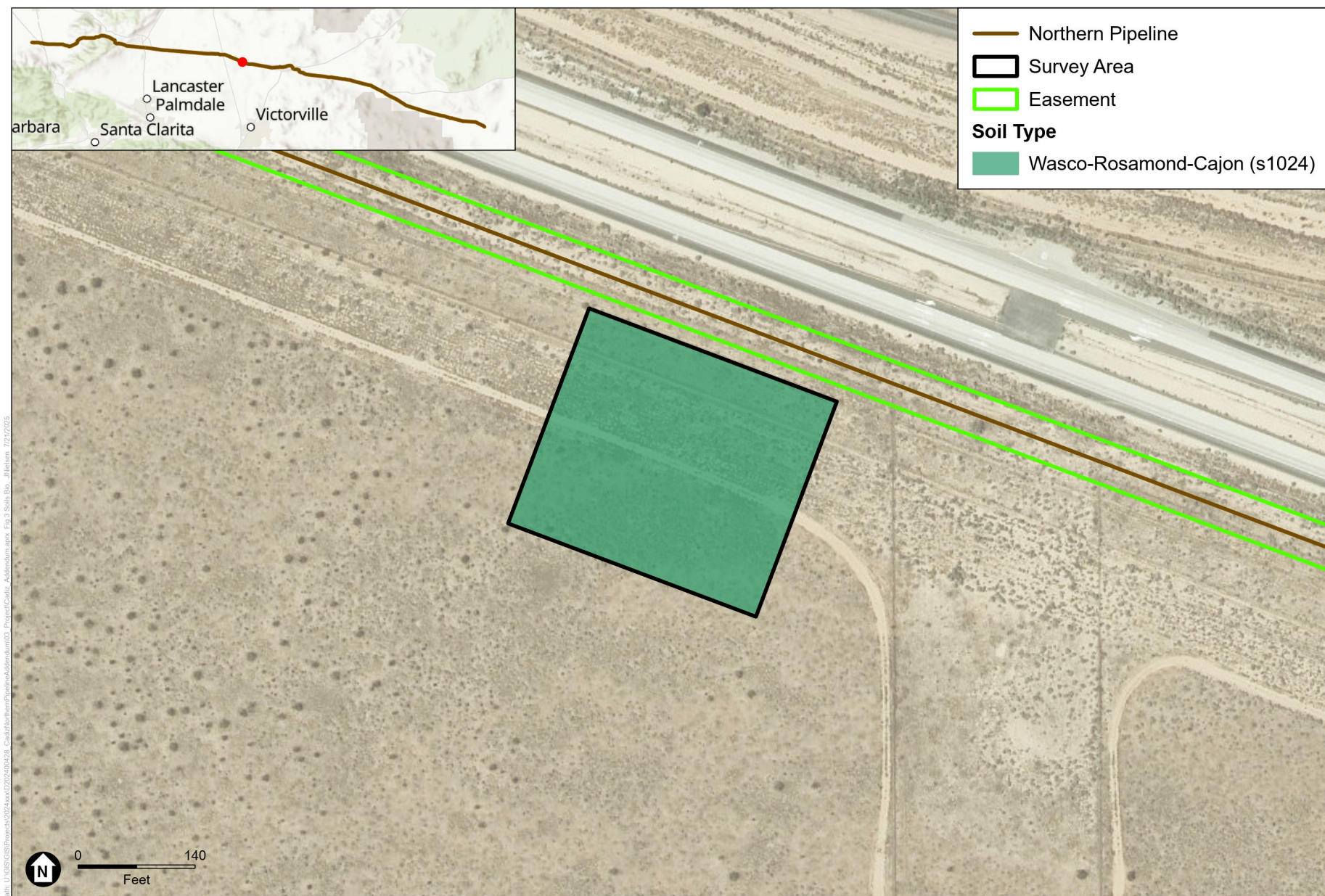
Figure 3-5
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

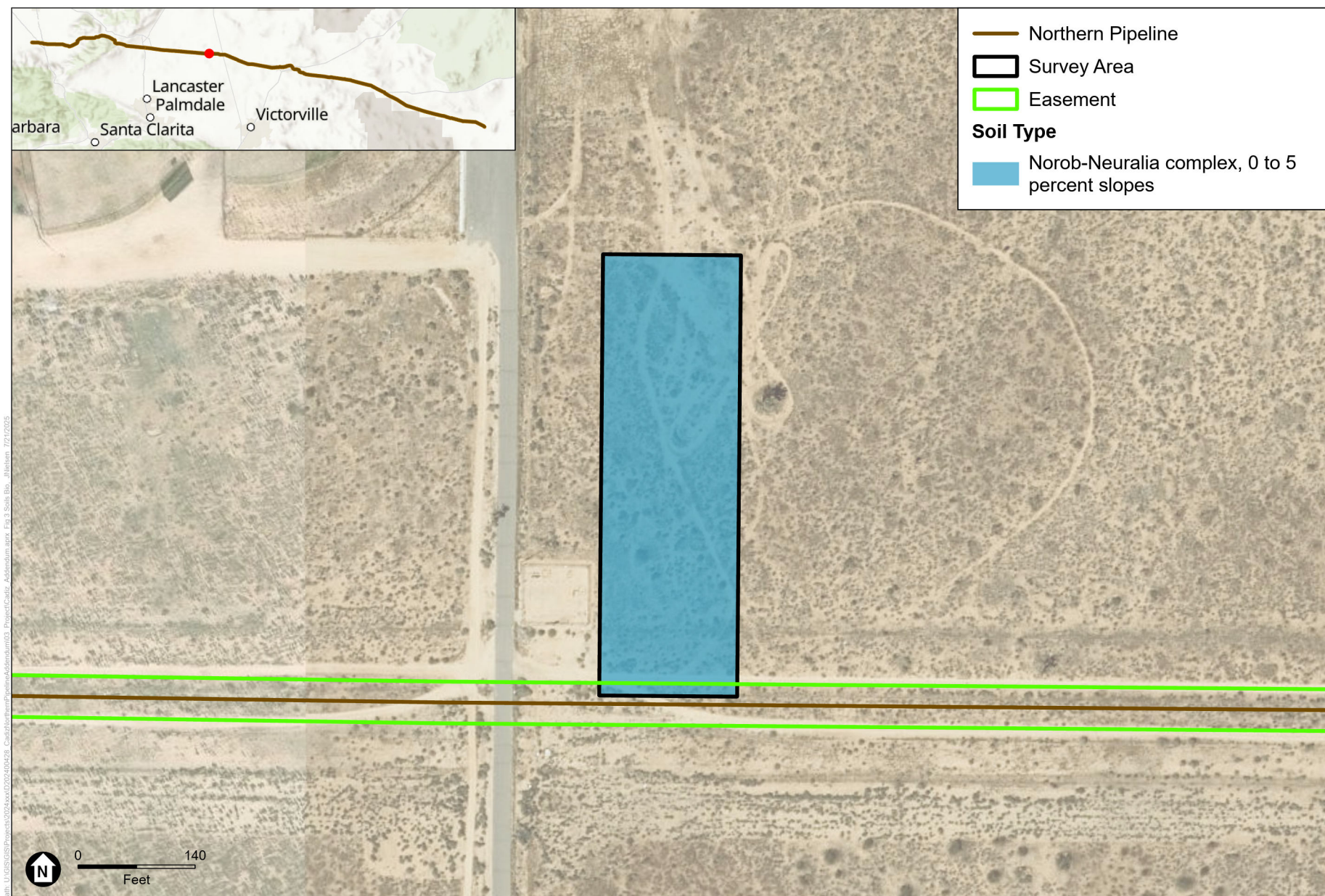
Figure 3-6
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

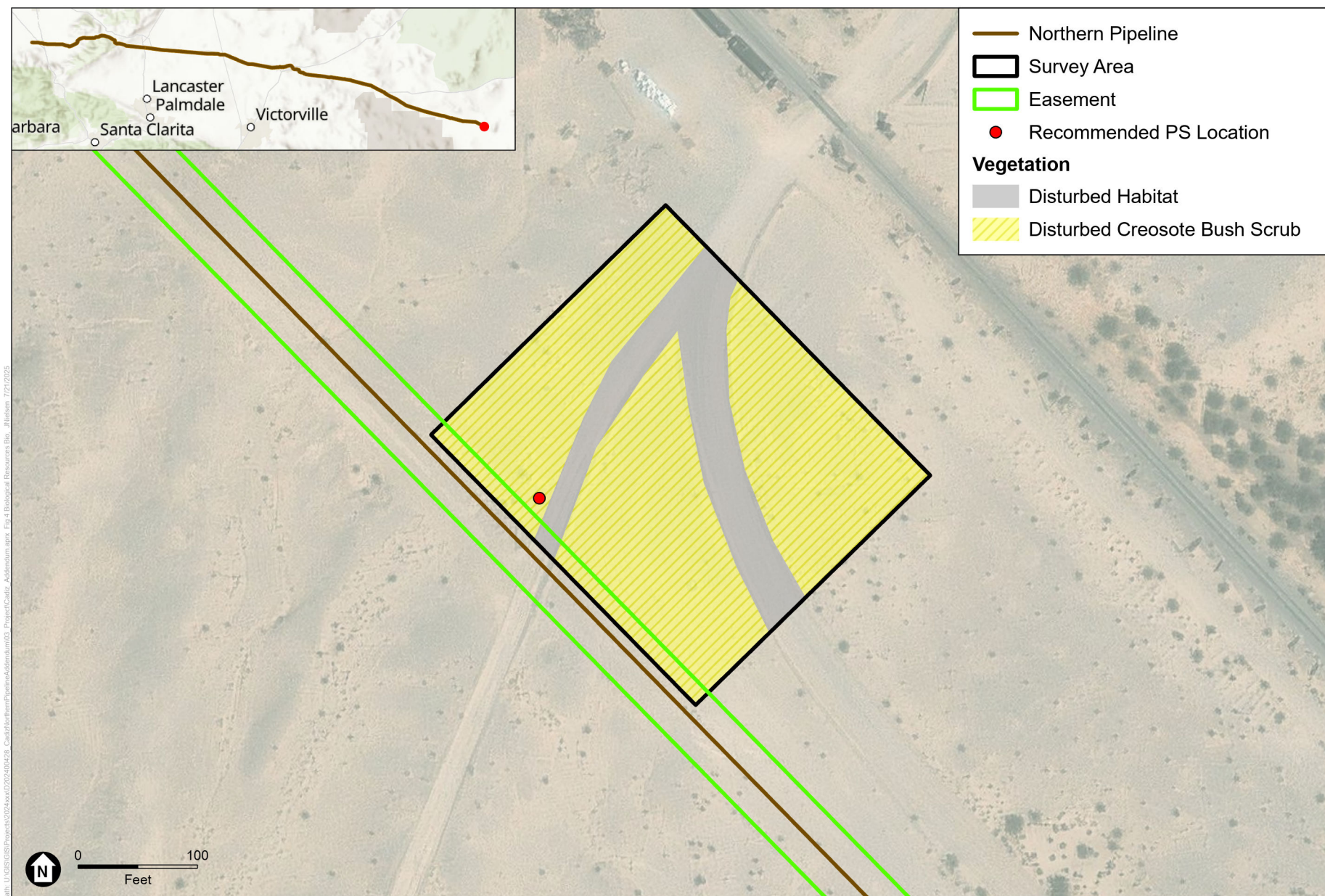
Figure 3-7
Soils



SOURCE: USDA Web Soil Survey, 2024; ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

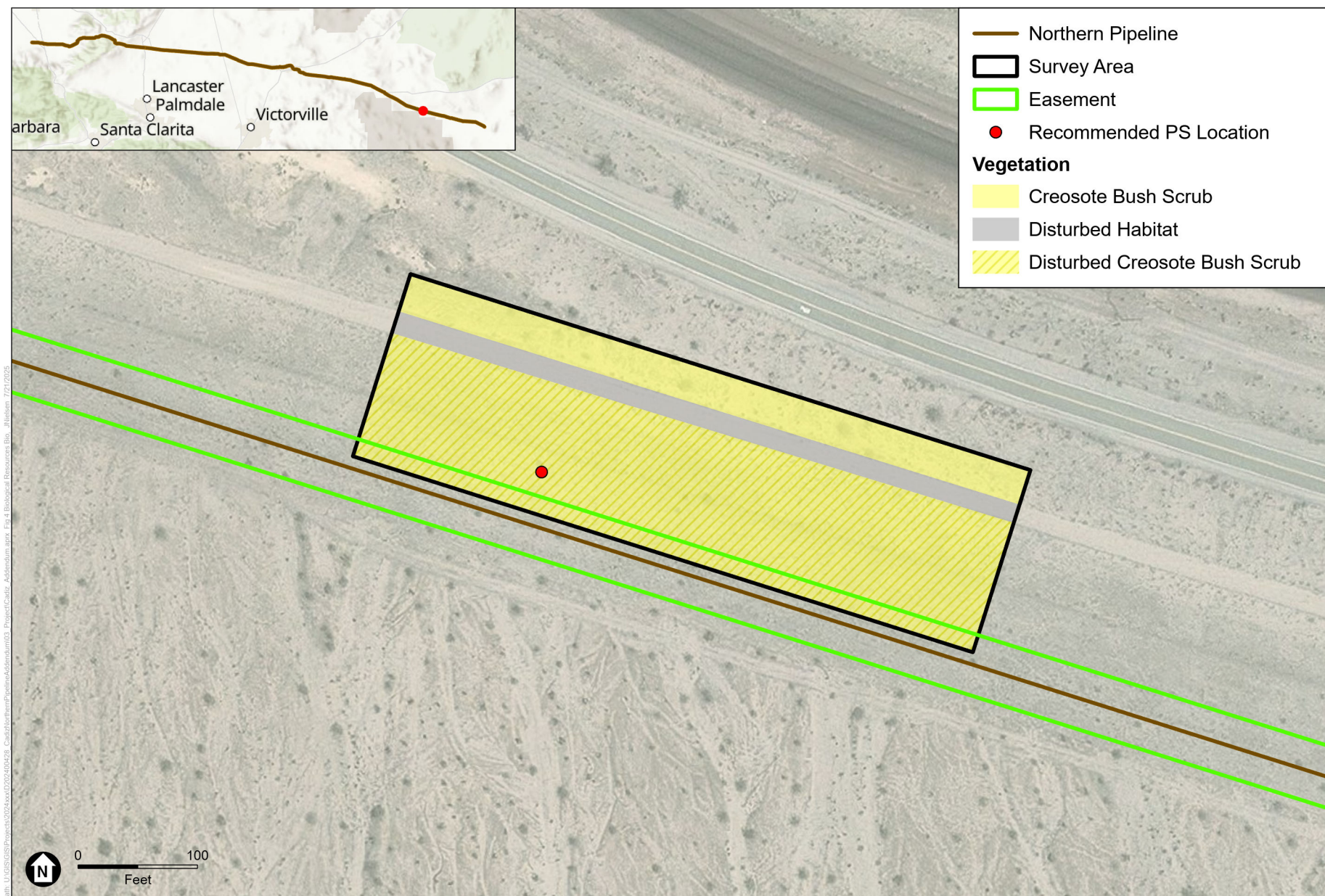
Figure 3-8
Soils



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

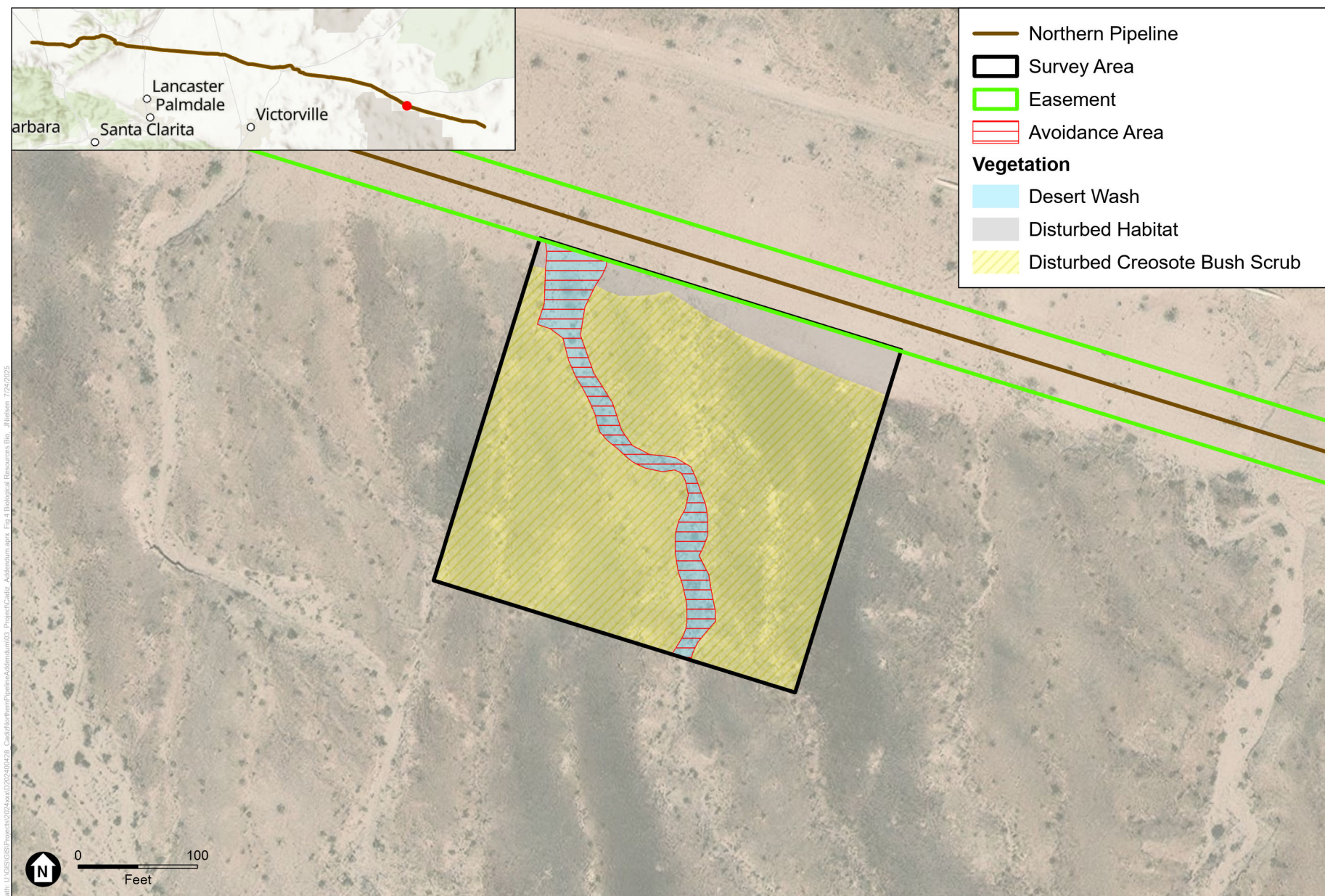
Figure 4-1
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

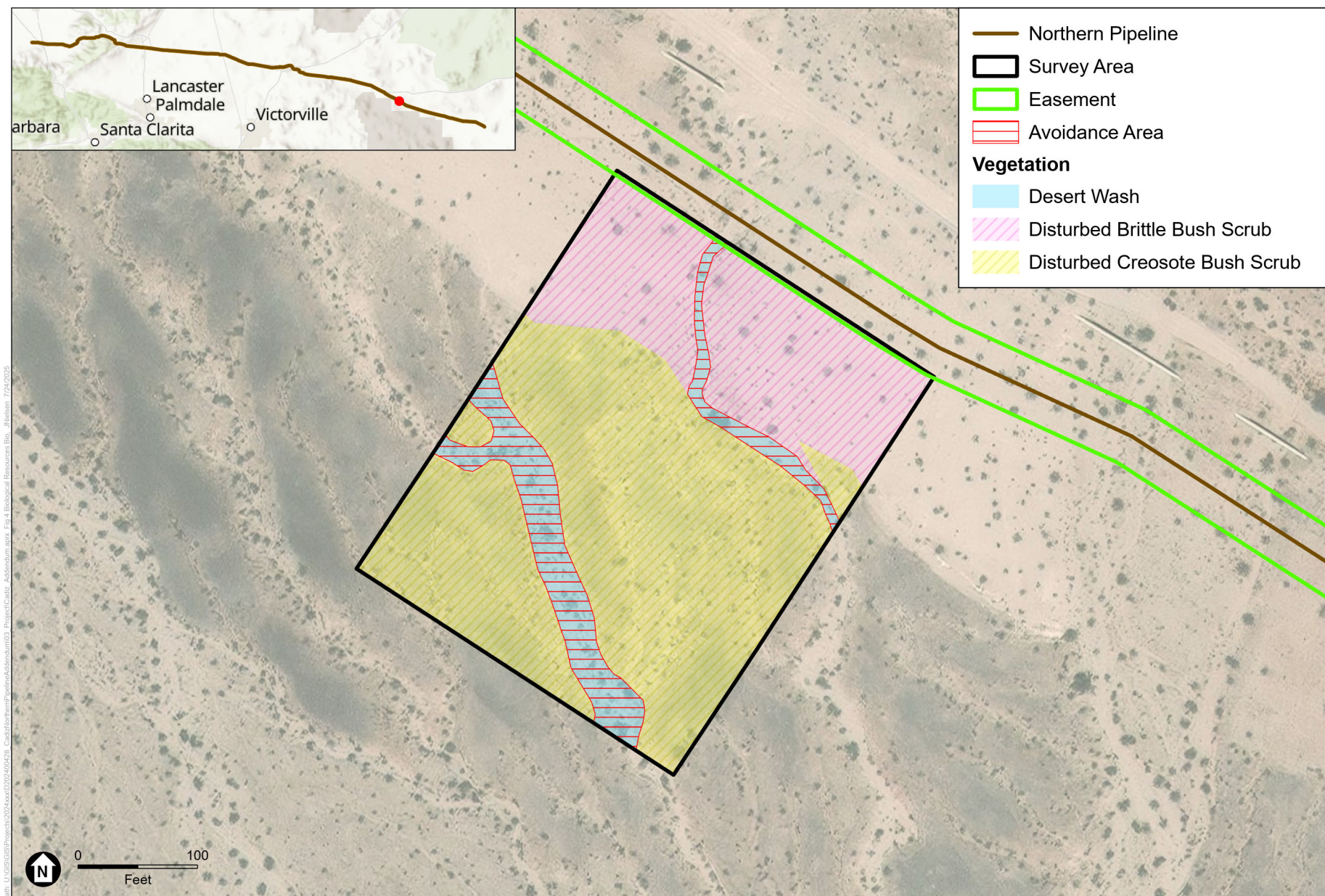
Figure 4-2
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

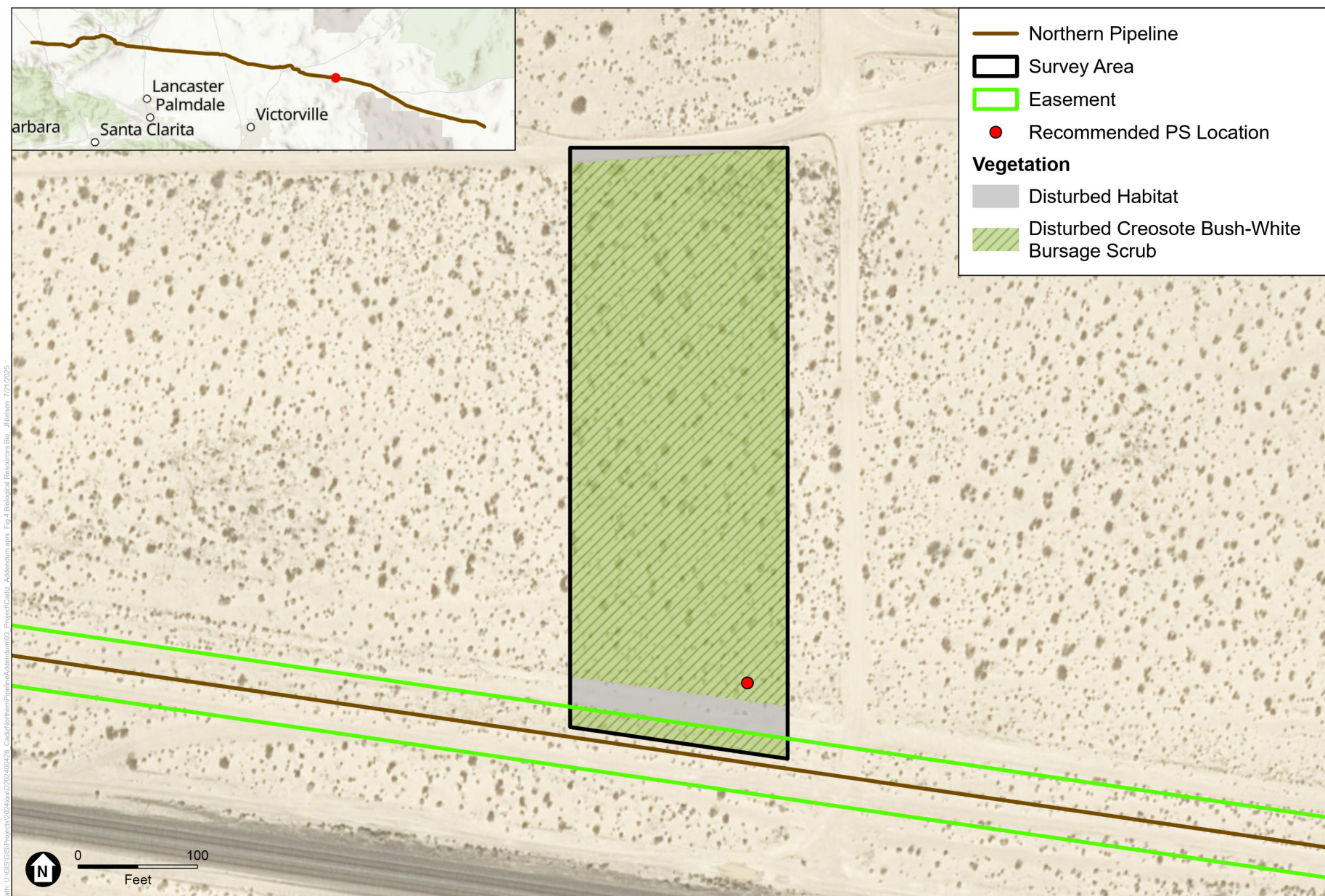
Figure 4-3
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

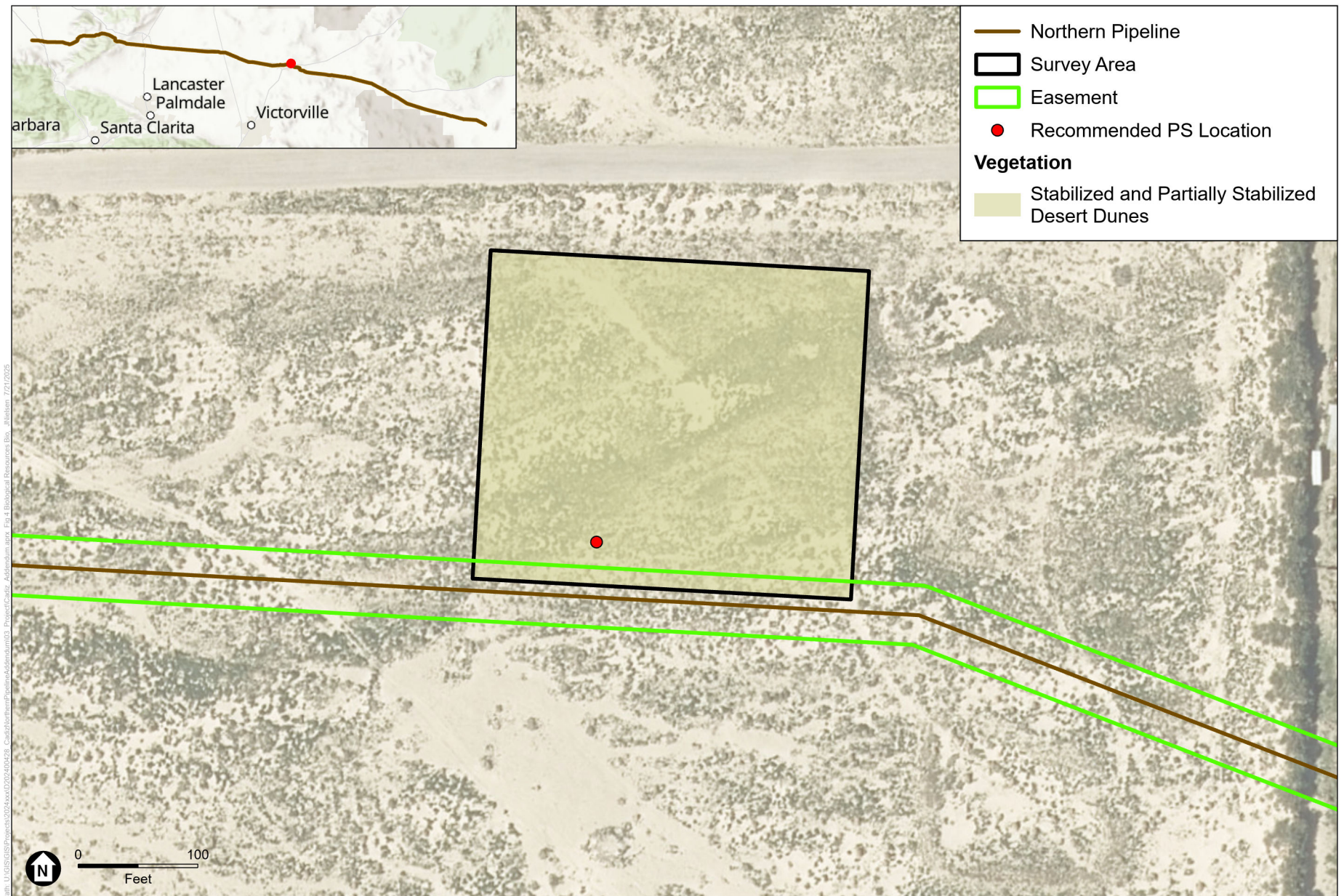
Figure 4-4
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

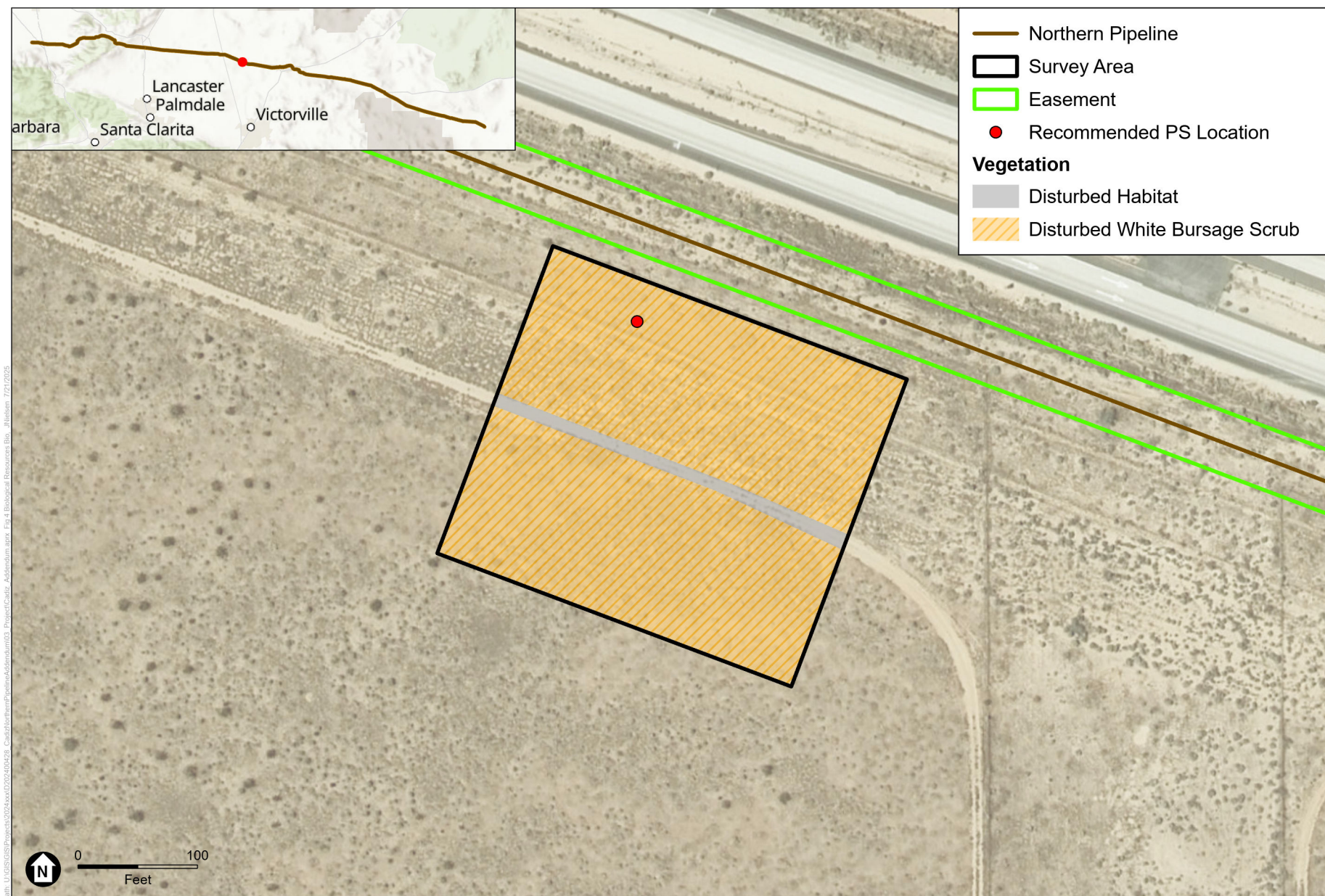
Figure 4-5
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

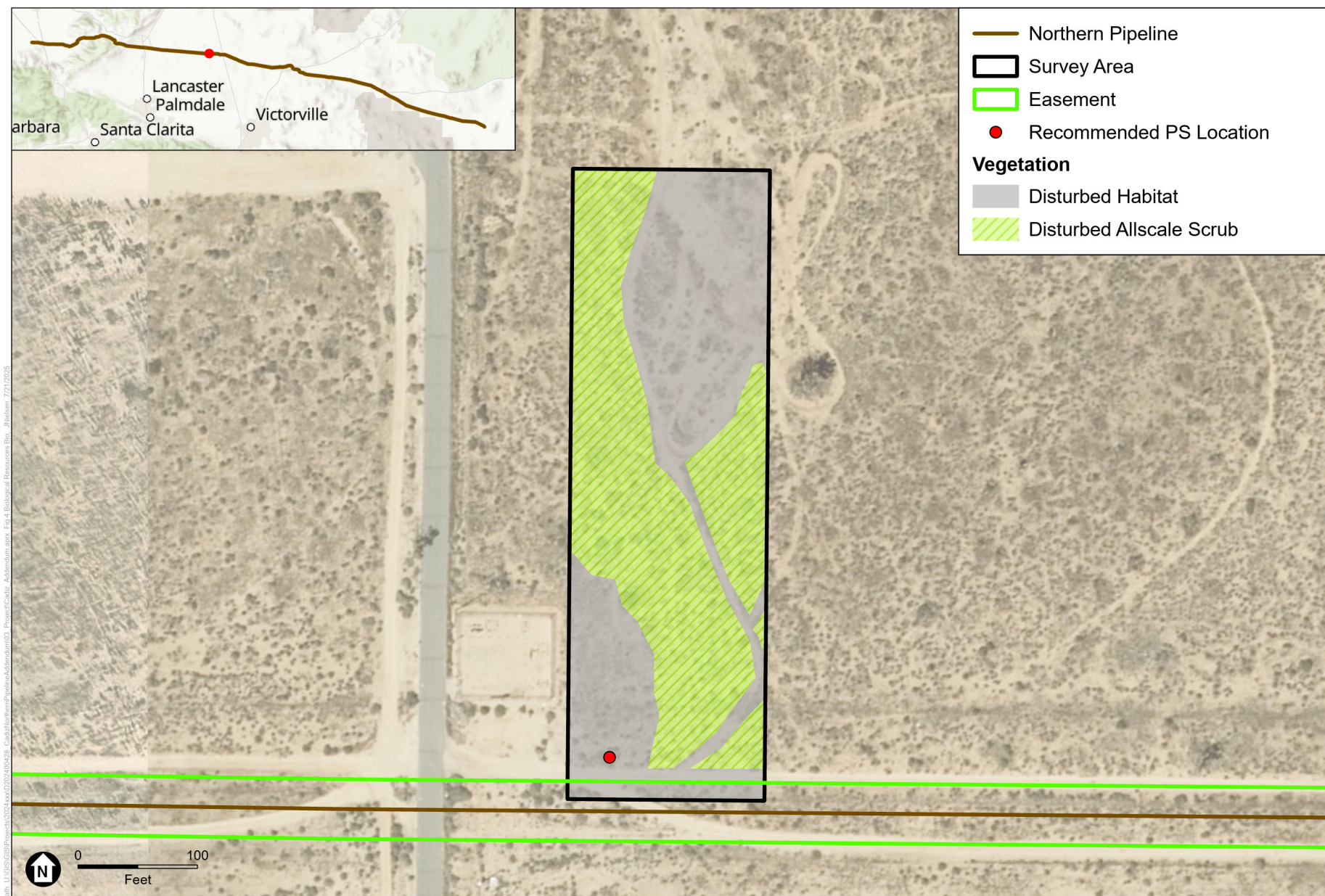
Figure 4-6
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 4-7
Biological Resources



SOURCE: ESA, 2025

Fenner Gap Mutual Water Company Northern Pipeline Conversion

Figure 4-8
Biological Resources



Mr. Robert Grantham
July 24, 2025
Page 32

Site Assessment and Impacts

Site 1: PS1 (34.490767, -115.4477987; Cadiz) 2.88 Acres

Aquatic Resources

No aquatic resources were detected within the BSA at PS1.

Plant Communities and Special-Status Plants

Disturbed Mojave creosote bush scrub (Holland 1986); Creosote bush scrub (*Larrea tridentata* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed Mojave creosote bush scrub is a variation of Mojave creosote bush scrub Disturbed and is present throughout the BSA. This vegetation community is characterized by a widely spaced sparse shrub layer consisting of creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) with an understory comprised of scattered herbaceous species such as silky dalea (*Dalea mollissima*), narrow-leaved Johnstonea (*Johnstonea angustifolia*), narrow-leaved stillingia (*Stillingia linearifolia*), and Spanish needles (*Palafoxia arida*). Open sandy soils were bare and disturbed by roads, several pipeline installation areas, and maintenance roads.

Removal approximately 2.0 acres of this habitat is anticipated during project activities; however, disturbed Mojave creosote bush scrub is not considered a sensitive vegetation community; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

No special-status plant species were observed within the BSA during the survey. Mojave fish-hook cactus (*Sclerocactus polyancistrus*) was observed within the vicinity in 2024 on sites that were previously under consideration as potential pump station locations (ESA 2024). This species was not found within the BSA during 2025 surveys despite the presence of the species within 1 mile. Based on the current project footprint, no potential impacts to special-status species would occur as a result of proposed project activities.

Special-Status Wildlife

No sensitive wildlife species were observed within the BSA, and it is not located within designated critical habitat for the desert tortoise. Given its proximity to development (i.e., high-traffic roads) and ongoing disturbance in the area, it is unlikely that sensitive wildlife species would occur on-site. However, desert tortoises have a low potential to occur at this site based on the presence of suitable habitat and historical occurrences. Mitigation Measures BIO-1, *Pre-construction Surveys*; BIO-2, *Exclusion Fencing and Monitoring*; BIO-3, *Desert Tortoise Avoidance and Protection Plan*; and BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, should be implemented to avoid and minimize impacts to this species.

Nesting Birds

This site supports low quality suitable breeding habitat for nesting birds and no impacts are anticipated as a result of vegetation removal. However, if construction or vegetation removal is proposed during the bird nesting period,



Mr. Robert Grantham
July 24, 2025
Page 33

February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts to nesting birds.

See the PS1 datasheet in Attachment B for a full list of plant and animal species and representative photos; see Attachment C for MMRP mitigation measures.

Site 2: PS2 – Section 20 (34.602430, -115.958093; BLM) 2.00 Acres

Aquatic Resources

No active washes were detected in the BSA. Numerous washes run under overpasses on the National Trails Highway and are characterized by a gravelly substrate, sparse vegetation, and areas of sediment deposition and are located outside of the BSA.

Staying within the dirt access road footprint would avoid impacts to the desert washes.

Plant Communities and Special-Status Plants

Disturbed Mojave creosote bush scrub (Holland 1986); Creosote bush scrub (*Larrea tridentata* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed Mojave creosote bush scrub is a variation of Mojave creosote bush scrub and is found on the northside of the BSA and pipeline alignment. It is characterized by widely spaced shrubs consisting of creosote bush and white bursage (*Ambrosia dumosa*) and an understory comprised of scattered herbaceous species such as Mediterranean grass, narrow-leaved Johnstonea, Spanish needles and disturbed soils. Disturbed Mojave creosote bush scrub is the dominant vegetation community throughout the BSA.

Removal of 2.0 acres of this plant community is anticipated as a result of project activities; however, disturbed Mojave creosote bush scrub is not considered a sensitive vegetation community; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

No special-status plants were observed within the BSA. However, springtime surveys need to be performed to confirm the presence or absence of annual special-status plants in work areas. If special-status plants are present, the implementation of Mitigation Measures BIO-6, *Site Restoration Plan*, and BIO-14, *Construction Zone Limits*, would require avoidance of special-status plants and delineation of construction areas, which will aid in avoidance of special-status plants prior to vegetation removal or ground disturbance.

Special-Status Wildlife

No sensitive wildlife species were observed at this site. Given its proximity to high-traffic roads and ongoing disturbance in the area, it is unlikely that sensitive wildlife species would occur on-site. Although the project site is not located within critical habitat for desert tortoise, the species does have a potential to occur at this site based on the presence of suitable habitat. Mitigation Measures BIO-1, *Pre-construction Surveys*; BIO-2, *Exclusion*



Mr. Robert Grantham
July 24, 2025
Page 34

Fencing and Monitoring; BIO-3, *Desert Tortoise Avoidance and Protection Plan*; and BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, should be implemented to avoid and minimize impacts to this species.

Nesting Birds

This site supports low quality suitable breeding habitat for nesting birds and no impacts are anticipated as a result of vegetation removal. However, if construction or vegetation removal is proposed during the bird nesting period, February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts to nesting birds.

See the PS2 datasheet in Attachment B for a full list of plant and animal species and representative site photos; see Attachment C for MMRP mitigation measures.

Site 3: PS3 (34.638275, -116.085484; BLM) 2.0 Acres

Aquatic Resources

Desert wash scrub (Holland 1986); Cheesebush-sweetbush scrub (*Ambrosia salsola-Bebbia juncea* Shrubland Alliance); MCV2 (CNPS 2025)

One desert wash encompassing 0.106 acres was observed within the BSA. The wash originates on the north side of the pipeline alignment and flows across the dirt access road. The wash is characterized by gravelly soils and sparse vegetation; no typical desert wash vegetation was observed. However, evidence of an ordinary high-water mark (OHWM) was observed as bed and bank and sediment sorting and there was evidence of recent flows. Vegetation was sparse in the wash bed and included disturbed Mojave creosote bush scrub.

No direct impacts to desert wash are anticipated as a result of the proposed Project. However, staying within the dirt access road footprint and in the pipeline installation scar away from the desert wash would avoid impacts to the desert wash. If desert wash habitat is indirectly or temporarily impacted, Mitigation Measure BIO-15, *Waters of the State Mitigation Plan*, should be implemented for any unavoidable impacts to desert washes.

Plant Communities and Special-Status Plants

1.82 acres of Mojave Creosote Bush Scrub (Holland 1986)

Creosote bush-white bursage (*Larrea tridentata*- *Ambrosia dumosa* Shrubland Alliance); MCV2 (CNPS 2025): Mojave creosote bush scrub is present throughout the upland areas. This vegetation community is characterized by a shrub layer consisting of creosote bush, brittlebush (*Encelia farinosa*), white bur-sage, silky dalea, honeysweet (*Tidestromia suffrutescens* var. *oblongifolia*), and cheesebush. This site also contained some scattered herb species, such as smallseed sandmat, Peirson's clavate fruited primrose (*Chylisma claviformis* ssp. *peirsonii*), Mediterranean grass, desert plantain (*Plantago ovata* var. *insularis*), and devil's spineflower (*Chorizanthe rigida*).

0.17 acres of Disturbed Habitat (Holland 1986); no MCV2 description

Disturbed habitat was observed along the Northern Pipeline ROW. This land cover type is characterized by bare or sparsely vegetated ground that has been altered by human activities, and the natural vegetation community is



Mr. Robert Grantham
July 24, 2025
Page 35

no longer recognizable. This land cover type includes the access road and northern pipeline alignment with sparsely scattered Mediterranean grass with honeysweet growing along the edge of the road.

No special-status plant species were observed within the BSA.

Special-Status Wildlife

No sensitive wildlife species were observed at this site. Although the project site is not located within critical habitat for desert tortoise, the species has been seen within 1,000 feet of the BSA during previous surveys (CNDDDB 2025) and has a high potential to occur at this site based on the presence of suitable habitat. Mitigation Measures BIO-1, *Pre-construction Surveys*; BIO-2, *Exclusion Fencing and Monitoring*; BIO-3, *Desert Tortoise Avoidance and Protection Plan*; and BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, should be implemented to avoid and minimize impacts to this species.

Nesting Birds

This site supports suitable breeding habitat for nesting birds. If construction or vegetation removal is proposed during the bird nesting period, from February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts on nesting birds.

See the PS3 datasheet in Attachment B for a full list of plant and animal species and representative site photos; see Attachment C for MMRP mitigation measures.

Site 4: PS4 (34.670138, -116.145628; BLM) 2.0 Acres

Aquatic Resources

0.31 acres of Desert wash (Holland 1986); Cheesebush-sweetbush scrub (*Ambrosia salsola-Bebbia juncea* Shrubland Alliance); MCV2 (CNPS 2025):

Two desert washes were observed within the BSA encompassing a total of 0.31 acres. The washes are isolated and characterized by gravelly soils and sparse vegetation, including creosote bush, cheeseweed, and sweetbush and an exposed pipeline is visible as it crosses over the washes.

Based on the current project footprint, potential impacts to desert washes may occur as a result of proposed project activities. However, staying within the pipeline installation scar footprint would avoid direct impacts and minimize indirect impacts to the desert washes. If desert wash habitat is indirectly or temporarily impacted, Mitigation Measure BIO-15, *Waters of the State Mitigation Plan*, should be implemented for any unavoidable impacts to desert washes.

Plant Communities and Special-Status Plants

1.75 acres of Disturbed Mojave creosote bush scrub (Holland 1986); Creosote bush scrub (*Larrea tridentata* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed Mojave creosote bush scrub is a variation of Mojave creosote bush scrub and is found on the northside of the BSA and pipeline alignment. This vegetation community is characterized by a sparse shrub layer consisting



Mr. Robert Grantham
July 24, 2025
Page 36

of creosote bush, brittlebush, white bur-sage, honeysweet, rayless encelia (*Encelia frutescens*), and cheesebush. This site also contained some scattered herb species such as smallseed sandmat, narrow-leaved Johnstonella, and Mediterranean grass. Disturbed creosote bush scrub covers 1.75 acres within the BSA.

0.84 acres of Mojave creosote bush scrub (Holland 1986); Brittlebush Scrub (*Larrea tridentata*-*Encelia farinosa* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed -brittlebush scrub is found on the south side of the access road in the BSA encompassing 0.84 acres. This vegetation community is disturbed and is characterized by a sparse shrub layer consisting of creosote bush, brittlebush, rayless encelia, and cheesebush with scattered white bursage. This site also contained some scattered herb species, such as smallseed sandmat, and Mediterranean grass.

Removal of up to 0.622 acres of disturbed brittlebush scrub and 0.103 acres of disturbed creosote bush scrub are anticipated during project activities; however, these are not considered a sensitive vegetation communities; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

No special-status plant species were observed within the BSA. Springtime surveys need to be performed to confirm the presence or absence of annual special-status plants in work areas. If special-status plants are present, the implementation of Mitigation Measures BIO-6, *Site Restoration Plan*, and BIO-14, *Construction Zone Limits*, would require avoidance of special-status plants and delineation of construction areas which will aid in avoidance of special-status plants prior to vegetation removal or ground disturbance.

Special-Status Wildlife

No sensitive wildlife species were observed at this site. Although the project site is not located within critical habitat for desert tortoise, the species is known to occur within the BSA (CNDDDB 2025) and has the potential to occur at this site based on the presence of suitable habitat throughout the greater area. Mitigation Measures BIO-1, *Pre-construction Surveys*; BIO-2, *Exclusion Fencing and Monitoring*; BIO-3, *Desert Tortoise Avoidance and Protection Plan*; and BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, should be implemented to avoid and minimize impacts to this species.

Nesting Birds

This site supports suitable breeding habitat for nesting birds. If construction or vegetation removal is proposed during the bird nesting period, from February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts to nesting birds.

See the PS4 datasheet in Attachment B for a full list of plant and animal species and representative site photos; see Attachment C for MMRP mitigation measures.



Mr. Robert Grantham
July 24, 2025
Page 37

Site 5: PS5 (34.828430, -116.645599; Private) 2.08 Acres

Aquatic Resources

No aquatic resources were observed within the PS5 site.

Plant Communities and Special-Status Plants

Mojave creosote bush scrub (Holland 1986); Creosote bush-white bursage scrub (*Larrea tridentata*-*Ambrosia dumosa* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed Mojave creosote bush-white bursage scrub is the dominant vegetation community in the BSA covering 1.95 acres. This vegetation community is highly disturbed (i.e., previously cleared) and located next to the railroad tracks, with the dirt roads on the north and south ends of the BSA. It is characterized by soft sandy soils and a sparse shrub layer consisting of creosote bush, slenderleaf saltbush (*Atriplex canescens* var. *linearis*), and white-bursage. The understory is dominated by Mediterranean grass with scattered narrow-leaved Johnstonella, desert red root (*Eremocarya micrantha*), and Russian thistle (*Salsola tragus*).

Removal of 1.95 acres of this plant community is anticipated as a result of project activities; however, disturbed Mojave creosote bush-white bursage scrub is not considered a sensitive vegetation community; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

Disturbed Habitat (Holland 1986); no MCV2 description

Disturbed habitat was found in the BSA covering 0.129 acres. This land cover type is characterized by bare or sparsely vegetated ground that has been altered by human activities, so the natural vegetation community is no longer recognizable. This land cover type includes two dirt access roads on the north and south ends of the BSA. Approximately 0.129 acres of disturbed habitat would be impacted by the proposed Project.

No special-status plants were observed within the site. Based on the current project footprint, no potential impacts to special-status species may occur as a result of proposed project activities.

Special-Status Wildlife

No sensitive wildlife species were observed at this site. Due to the proximity to development (i.e., railroad tracks and maintenance road) and associated ongoing disturbance in the area, it is unlikely sensitive species would occur on-site.

Nesting Birds

This site supports suitable breeding habitat for nesting birds. If construction or vegetation removal is proposed during the bird nesting period, from February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts on nesting birds.

See the PS5 datasheet in Attachment B for a full list of plant and animal species and representative photos; see Attachment C for MMRP mitigation measures.



Mr. Robert Grantham
July 24, 2025
Page 38

Site 6: PS6 (34.912395, -117.003578; Private) 2.0 Acres

Aquatic Resources

No aquatic resources were observed within the PS6 site.

Plant Communities and Special-Status Plants

2 acres of Stabilized and Partially Stabilized Desert Dunes (Holland 1986); Desert Dunes (*Dicoria canescens-Abronia villosa*) Sparsely Vegetated Alliance; MCV2 (CNPS 2025)

Desert dunes are characterized by areas of moving sand worked into dunes and hummocks in stabilized dunes. The shrub layer is sparse with creosote, white bursage and saltbush in areas with less disturbance. The understory is comprised of desert lantern (*Oenothera deltoides*), desert red root, stork's bill (*Erodium cicutarium*) and Mediterranean grass.

Disturbed desert dunes is a subset of desert dunes and is characterized by a dominance of non-native shrubs and forbs including Russian thistle (*Salsola tragus*), Mediterranean grass, prickly ox tongue (*Helminthotheca echinoides*), and Saharan mustard. Soils are disturbed with small mammal burrows detected throughout the BSA. Approximately 2.0 acres of disturbed desert dune habitat occurs within the BSA.

Removal 2.0 acres of this plant community is anticipated as a result of project activities; however, desert dunes and disturbed desert dunes are not considered sensitive vegetation communities; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

No special-status plants were observed within the site. However, suitable habitat is present within the Project study. Springtime surveys need to be performed to confirm the presence or absence of special-status plants in work areas. If special-status plants are present, implementation of Mitigation Measures BIO-6, *Site Restoration Plan*, and BIO-14, *Construction Zone Limits*, would require avoidance of special-status plants and delineation of construction areas which will aid in the avoidance of special-status plants prior to vegetation removal or ground disturbance.

Special-Status Wildlife

In 2019, the California Fish and Game Commission advanced the California Crotch's Bumble Bee (*Bombus crotchii*; CBB) to "candidacy" status for listing under CESA. After a legal challenge was resolved, the candidacy was reinstated in 2022. As a result, the CBB is currently a candidate for State listing as Endangered. The CNDDDB reports the closest observation of CBB at approximately 21 miles south of Pump Station 6. The potential for CBB to forage or nest on the proposed project area is considered low based on the disturbed existing vegetation communities and the lack of diverse plant communities that would be used by CBB for pollen and nectar resources. The project area habitat is primarily Mojave creosote bush scrub, disturbed Mojave creosote bush scrub and desert dunes, which have a low floral diversity therefore, CBB has a low potential to occur within the Project Area. CBB preferred habitat consists of grasslands, sage scrub, chaparral, and creosote bush scrub



Mr. Robert Grantham
July 24, 2025
Page 39

habitats. The conversion of the Northern Pipeline would therefore not remove CBB suitable foraging or nesting habitat. Mitigation Measures BIO-1, *Pre-construction Surveys*; and BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, should be implemented to avoid and minimize impacts to this species.

No sensitive wildlife species were observed at this site. Due to the proximity to development (railroad tracks and residential) and associated ongoing disturbance in the area, it is unlikely sensitive species would occur on-site.

Nesting Birds

This site supports suitable breeding habitat for nesting birds. If construction or vegetation removal is proposed during the bird nesting period, from February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts on nesting birds.

See the PS6 datasheet in Attachment B for a full list of plant and animal species and representative site photos; see Attachment C for MMRP mitigation measures.

Site 7: PS7 (34.937752, -117.385057; BLM) 2.00 Acres

Aquatic Resources

No aquatic resources were observed within the PS7–Alternative site.

Plant Communities and Special-Status Plants

Disturbed Mojave creosote bush scrub (Holland 1986); White bursage scrub (*Ambrosia dumosa* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed White bursage scrub is the sole vegetation community within the BSA encompassing 2.0 acres. This vegetation community is highly disturbed and characterized by a sparse shrub layer consisting of white bursage with scattered creosote bush, and brittle bush. This site also contained some scattered herbaceous species such as Mediterranean grass, London rocket (*Sisymbrium irio*), and stork's bill.

Removal of 2.0 acres this plant community is anticipated as a result of project activities; however, disturbed white bursage scrub is not considered a sensitive vegetation community; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

No special-status plants were observed within the site. Based on the current project footprint, no potential impacts to special-status species may occur as a result of proposed project activities.

Special-Status Wildlife

No sensitive wildlife species were observed at this site. The project site is located within critical habitat for desert tortoise, however, this species was not observed during surveys and has a low potential to occur at this site based on the presence of marginally suitable habitat throughout the greater area. MM BIO-1 through BIO-3, and MM BIO-5 (*Pre-Construction Surveys, Exclusion Fencing and Monitoring, Desert Tortoise Avoidance and Protection*



Mr. Robert Grantham
July 24, 2025
Page 40

Plan, and *Pipeline Siting to Minimize Vegetation Disruption*) should be implemented to avoid and minimize impacts to this species. Due to the proximity to SR58 and ongoing disturbance in the area, it is unlikely sensitive species would occur on-site.

Nesting Birds

This site supports suitable breeding habitat for nesting birds. If construction or vegetation removal is proposed during the bird nesting period, from February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts on nesting birds. See Photos 38–39 for general site pictures.

See the PS7–BLM datasheet in Attachment B for a full list of plant and animal species and representative site photos; see Attachment C for MMRP mitigation measures.

Site 8: PS7–Preferred (34.993684, -117.649037; Private) 2.08 Acres

Aquatic Resources

No aquatic resources were observed within the site.

Plant Communities and Special-Status Plants

1.03 acres of Desert saltbush scrub (Holland 1986); Allscale scrub (*Atriplex polycarpa* Shrubland Alliance); MCV2 (CNPS 2025)

Disturbed Allscale scrub is the dominant vegetation community within the BSA encompassing 1.03 acres. This vegetation community is characterized by a shrub layer consisting of allscale (*Atriplex polycarpa*), creosote bush, allscale (*Atriplex polycarpa*), and Indian rice grass (*Stipa hymenoides*). This site also contained some scattered herb species, such as common fiddleneck (*Amsinckia intermedia*), stork's bill, Sahara mustard, Mediterranean grass and cheat grass (*Bromus tectorum*).

Removal 1.03 acres of this plant community is anticipated as a result of project activities; however, disturbed allscale scrub is not considered a sensitive vegetation community; therefore, impacts would not require mitigation. However, implementation of Mitigation Measure BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*, would minimize impacts to vegetated areas.

0.97 acres of Disturbed Habitat (Holland 1986); no MCV2 description

Disturbed habitat was found in the BSA encompassing 0.97 acres. This land cover type is characterized by bare or sparsely vegetated ground that has been altered by human activities, and the natural vegetation community is no longer recognizable. This land cover type is found in the BSA associated with dirt roads and trails and is dominated by Sahara mustard, jimson weed (*Datura wrightii*), and Mediterranean grass. Approximately 0.97 acres of disturbed habitat would be impacted by the proposed Project.

No special-status plants species was observed within the BSA. Joshua tree (*Yucca brevifolia*) were observed throughout the area and adjacent to the potential PS site location, outside of the BSA. As special-status plants are



Mr. Robert Grantham
July 24, 2025
Page 41

present in the vicinity, if temporary or indirect impacts occur to the Joshua tree, implementation of Mitigation Measures BIO-6, *Site Restoration Plan*, and BIO-14, *Construction Zone Limits*, should be implemented for any unavoidable impacts.

Special-Status Wildlife

No sensitive wildlife species were observed at this site. Due to the proximity to development (pipeline and utility infrastructure, roadways, residential areas, railroad and illegal trash dumping) and associated ongoing disturbance in the area, it is unlikely sensitive species would occur on-site.

Nesting Birds

This site supports suitable breeding habitat for nesting birds. If construction or vegetation removal is proposed during the bird nesting period, from February 1 through August 31, Mitigation Measure BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid impacts on nesting birds. See Photos 40-41 for general site pictures.

See the PS7–Preferred datasheet in Attachment B for a full list of plant and animal species and representative site photos; see Attachment C for MMRP mitigation measures.

Conclusions

Several of the potential PS sites have the potential to support special-status species and two sites support aquatic resources (dry ephemeral washes) within the BSA. As summarized in **Table 2**, PS3, and PS4, are more constrained compared to the other sites based on the presence of desert wash habitat. The proposed potential PS sites are located in areas that do not support sensitive resources and avoid direct impacts to desert wash habitat. Springtime surveys may need to be conducted to confirm the presence or absence of special-status plants in the new proposed potential PS sites.

Springtime surveys may need to be conducted to confirm the presence or absence of special-status plants in the new proposed potential PS sites.

If waters of the state have the potential to be impacted by project activities, a mitigation plan should be prepared for review by the Regional Water Quality Control Board and California Department of Fish and Wildlife in accordance with Mitigation Measure BIO-15, *Waters of the State Mitigation Plan*. No special-status birds, mammals, or reptile species were observed within the surveyed areas or potential work areas. However, there is suitable habitat within and adjacent to the existing pipeline that may support special-status species or their migration through the area. Mitigation Measures BIO-1, *Pre-construction Surveys*; BIO-2, *Exclusion Fencing and Monitoring*; BIO-3, *Desert Tortoise Avoidance and Protection Plan*; BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*; and BIO-9, *Pre-construction Surveys for Nesting Birds*, should be implemented to avoid and minimize impacts to special-status species.

Vegetation in the BSA and proposed potential PS sites is not substantially different; therefore, based on existing conditions during the 2025 survey, the proposed PS sites are not located on sensitive vegetation communities.

Mojave creosote bush scrub was the dominant vegetation community documented during the survey. This vegetation community is not considered sensitive; therefore, impacts would not require compensatory mitigation. However, implementation of Mitigation Measures BIO-5, *Pipeline Siting to Minimize Vegetation Disruption*; BIO-6, *Site Restoration Plan*, and BIO-14, *Construction Zone Limits*, would minimize impacts to vegetated areas containing Joshua tree, a sensitive plant species.

Potential PS sites located on lands owned by the BLM include PS2, PS3, PS4, and PS7 (alt) covering 8 acres; each PS encompasses 2.0 acres. The proposed Project would impact 6 to 8 acres of disturbed desert scrub communities including disturbed creosote bush scrub, disturbed creosote bush-white bursage scrub, disturbed brittle bush scrub and disturbed white bursage scrub. PS1, PS5, PS6, and PS7 (preferred) sites are on lands privately owned. The proposed Project will impact 2.0 acres of disturbed creosote bush scrub on PS1, 1.65 acres of disturbed white bursage scrub on PS5, 1,82 acres of Mojave creosote scrub on PS3; 0.3 desert wash, 1.75 acres Mojave creosote scrub, and 0.84 acres brittlebrush scrub on PS4; 2.0 acres of desert dunes on PS6, and 1.02 acres of disturbed allscale scrub on PS7–Preferred.

Potential PS site locations are recommended to be located away from desert wash habitat to avoid and minimize indirect impacts to desert wash habitat and no direct impacts are expected to occur as a result of the proposed Project.

TABLE 2
SUMMARY OF BIOLOGICAL SITE CONSTRAINTS

Site	Aquatic Resources Present?	Sensitive Natural Communities Present?	Special-Status Plants Observed?	Suitable Habitat for Special-Status Wildlife Present?	Suitable Habitat for Nesting Birds Present?
Site 1	No	No	No	No	No
Site 2	No	No	No	Yes	No
Site 3	Yes	No	No	Yes	Yes
Site 4	Yes	No	No	Yes	Yes
Site 5	No	No	No	No	Yes
Site 6	No	No	No	Yes	Yes
Site 7–BLM	No	No	No	No	Yes
Site 7–Preferred	No	No	Yes	No	Yes

To mitigate potential impacts to aquatic resources, or local wildlife, relevant measures from the Project’s MMRP should be implemented. The MMRP consists of mitigation measures originally identified in the Final EIR (2012). These measures were designed to address impacts associated with the construction or maintenance activities



Mr. Robert Grantham
July 24, 2025
Page 43

within the Project area. The MMRP is organized in a tabular format focused on each impact and adopted mitigation measures. The original 2012 EIR MMRP is included in Attachment C.

Please contact Ashley Gimer at 321.446.5036 or Brenda McMillan at 619.368.9522 or bcmcmillan@esassoc.com with any questions.

Sincerely,

A handwritten signature in black ink that reads "Ashley Gimer". The script is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Ashley Gimer
Principal Environmental Scientist

A handwritten signature in black ink that reads "Brenda McMillan". The script is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Brenda McMillan
Senior Biologist

Attachments

Attachment A: Sensitive Species Evaluated for a Potential to Occur

Attachment B: Datasheets

Attachment C: Mitigation Monitoring and Reporting Program Mitigation Measures



Mr. Robert Grantham
July 24, 2025
Page 44

References

- Cadiz Groundwater Project. *Spring Survey Memorandum*. June 2018.
- Cadiz, Incorporated. *Biological Resources Assessment of Sections 22, 26, 34, and 35*. October 2019.
- Cadiz, Incorporated. *Biological Resources Memorandum for the Cadiz Valley Water Conservation, Recovery, and Storage Project*. April 2019.
- [CBOC] California Burrowing Owl Consortium. 1993. *California Burrowing Owl Consortium Guidelines*.
- [CDFW] California Department of Fish and Wildlife. California Natural Diversity Database (CNDDB). 2025. RareFind. Accessed May 2025. <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>.
- CDFW. 2020. *Evaluation of a Petition from the Center for Biological Diversity to List Western Joshua Tree (Yucca brevifolia) as Threatened Under the California Endangered Species Act. Report to the California Fish and Game Commission*. February 2020.
- California Fish and Game Commission. 2023. *Notice of Findings on the Petition to List Western Joshua Tree (Yucca brevifolia) as Threatened*. September 24, 2020.
- [CNPS] California Native Plant Society. 2025. *Inventory of Rare and Endangered Plants* (online edition). California Native Plant Society. Sacramento, CA. Accessed May 2025. <http://www.cnps.org/inventory>.
- [ESA] Environmental Science Associates. 2024. *Cadiz Groundwater Project Northern Pipeline Component Biological Technical Letter Report*.
- Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*.
- Jepson Flora Project (eds.). 2024. *Jepson eFlora*. [Accessed on May 26, 2025]. <https://ucjeps.berkeley.edu/eflora/>.
- [NRCS] Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2, 2018. Edited by L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz. U.S. Department of Agriculture, Natural Resources Conservation Service, in cooperation with the National Technical Committee for Hydric Soils.
- NRCS. Hydric Soil Lists. <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>. Accessed May 23, 2025.
- San Bernardino County. 2021. Land Use Services Building and Safety Division, Information Bulletin (IB-0016). February 12, 2021.
- Santa Margarita Water District. 2012. *Cadiz Valley Water Conservation, Recovery, and Storage Project Final Environmental Impact Report*. SCH# 2011031002. July 2012.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation*. 2nd Edition. California Native Plant Society. Accessed June 2025.



Mr. Robert Grantham
July 24, 2025
Page 45

- [USACE] U.S. Army Corps of Engineers. 2008a. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*. August 2008; revised 2010.
- USACE. [2023]. 2022 National Wetland Plant List, version 3.6. U.S. Army Engineer Research and Development Center, Vicksburg, MS. <http://wetland-plants.usace.army.mil/>.
- U.S. Bureau of Land Management. 2016. *Lane Use Plan Amendment, Desert Renewable Energy Conservation Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan*. September 2016.
- U.S. Fish and Wildlife Service. 2018. *Western Joshua Tree Species Status Assessment*. July 20, 2018.
- U.S. Fish and Wildlife Service. [2025]. National Wetland Inventory. Accessed [May 27, 2025]. <https://www.fws.gov/wetlands/data/Mapper.html>.
- U.S. Geological Survey. [2016]. [Bonsall] 7.5-Minute Quadrangle Topographic Map.
- U.S. Department of Agriculture, Natural Resources Conservation Service. [Undated.] Web Soil Survey. Accessed May 23, 2025. <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

Attachment A

**Sensitive Species Evaluated for
a Potential to Occur within the
Project Area**

ATTACHMENT A: SENSITIVE SPECIES EVALUATED FOR A POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
Amphibians			
<i>Anaxyrus californicus</i>	Arroyo toad	Federally Endangered, CDFW SSC	Not Expected – Inhabits areas with shallow aquatic and riparian habitats. No suitable aquatic habitats are present at the project site.
<i>Rana boylei</i> pop. 5	foothill yellow-legged frog - south Sierra DPS	Federally Endangered, State Endangered, BLM S	Not Expected – Inhabits areas with shallow aquatic habitat and rocky streams. No suitable aquatic habitats are present at the project site.
<i>Batrachoseps stebbinsi</i>	Tehachapi slender salamander	State Threatened, BLM S	Not Expected – Inhabits moist canyon areas, ravines and mixed woodlands in the southern portion of the San Joaquin Valley. The project site is outside of the known distribution range for the species, and no suitable habitat exists within the project site.
<i>Spea hammondi</i>	western spadefoot	Federally Proposed Threatened, BLM S, CDFW SSC	Not Expected – Predominantly inhabits grassland and mixed woodlands areas with vernal pools. No suitable habitats are present at the project site.
<i>Ensatina eschscholtzii croceater</i>	yellow-blotched salamander	BLM S, CDFW WL	Not Expected – Inhabits cool, moist environments in evergreen and deciduous forests. No suitable aquatic habitats are present at the project site.
Birds			
<i>Toxostoma bendirei</i>	Bendire's thrasher	BLM S, CDFW SSC,	Moderate Potential – Preference for scattered cholla, yucca, mesquite, agave, or Joshua tree. Scattered cholla habitat is present at the site. The most recent observation of this species with the study area occurred in 1998.
<i>Athene cunicularia</i>	burrowing owl	State Candidate Endangered; BLM S, CDFW SSC	Moderate Potential – Inhabits dry grasslands and deserts, preference for sparsely vegetated areas, often requires areas with pre-existing burrows. The most recent observation of this species with the study area occurred in 2012.
<i>Gymnogyps californianus</i>	California condor	Federally Endangered, State Endangered, CDFW FP	Moderate Potential – Prefers areas with large trees/snags, rocky outcrops and cliffs. Limited rocky outcrops occur at the project site and grassland foraging habitats are limited within the project area. However, the western portion of the project site is within foraging range of known condor nests and individual observations. The most recent observation of this species near the survey area occurred in 2015 approximately 2.5 miles from the site.
<i>Eremophila alpestris actia</i>	California horned lark	CDFW WL	Not Expected – Prefers locations without trees and shrubs. Nests, and forages in open areas. Marginally suitable habitat is present at project site.
<i>Aquila chrysaetos</i>	golden eagle	BLM S, CDFW FP, CDFW WL	Moderate Potential – Prefer mountainous regions with grassland, shrubland, chaparral shrubland, forest and other vegetated areas. Observed foraging approximately 2 miles south of the project site. The most recent observation of this species near the survey area was in 2012 approximately 0.66 miles from the site.

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
<i>Toxostoma lecontei</i>	Le Conte's thrasher	BLM S, CDFW SSC	Moderate Potential – Inhabits low, sandy open desert areas with saltbush, cholla cactus, creosote bush scrub and other desert-type regions. Suitable habitat is present within the project site. The most recent observation of this species within the survey area was in 2013.
<i>Lanius ludovicianus</i>	loggerhead shrike	CDFW SSC	Moderate Potential – Preference for short vegetation and well-spaced shrubs/low trees with spines or thorns, frequently in desert scrublands. Also often present along fence lines and utility poles. The most recent observation of this species near the survey area was in 2006 approximately 0.5 miles from the site.
<i>Asio otus</i>	long-eared owl	CDFW SSC	Moderate Potential – Preference for dense trees for nesting and roosting and open areas for hunting, occupies a wide range of territories including meadows, forests and deserts. The most recent observation of this species near the survey area was in 2001 approximately 2.2 miles from the site.
<i>Falco columbarius</i>	merlin	CDFW WL	Low Potential – Inhabits open areas with scrub or shrublands, and grasslands. The species is distributed over a wide range, primarily focused in the San Joaquin Valley and west of the San Gabriel Mountains. The project site has the potential to support species habitat, but it is not considered an area of high suitability.
<i>Falco mexicanus</i>	prairie falcon	CDFW WL	Moderate Potential – Inhabit wide-open sagebrush and desert habitats with nests on sheer rocky cliffs. Suitable foraging habitat is present at project site. The most recent observation of this species within the survey area was in 2020.
<i>Progne subis</i>	purple martin	CDFW SSC	Not Expected – Prefers mountainous forests and saguaro desert areas; semi-open country near water. No suitable habitats are present at the project site.
<i>Agelaius tricolor</i>	Tricolored blackbird	State Threatened, BLM S, CDFW SSC	Not Expected – Occupies wetlands and agricultural fields. No suitable habitats are present at the project site.
<i>Icteria virens</i>	yellow-breasted chat	CDFW SSC	Not Expected – Prefers areas with dense shrubbery, agricultural areas, forest openings, swamps and near ponds. The project area does not contain suitable habitat for the species.
Fish			
<i>Siphateles bicolor mohavensis</i>	Mohave tui chub	Federally Endangered, State Endangered, CDFW FP	Not Expected – Endemic to the Mojave River. No aquatic habitats within the project site.
Invertebrates			
<i>Bombus crotchii</i>	Crotch's bumble bee	State Candidate Endangered	Not Expected – Inhabits grasslands but has a preference towards drier environments and food sources that, if present, are likely sparse throughout the project area.
Mammals			
<i>Taxidea taxus</i>	American badger	CDFW SSC	Moderate Potential – Inhabits alkali marsh, desert wash, Great Basin scrub, marsh and swamp, meadow and seep, Mojavean desert scrub, riparian scrub, riparian woodland, valley and foothill grassland. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. The most recent observation of this species near the survey area was in 2013 approximately 0.3 miles from the site.
<i>Sorex ornatus relictus</i>	Buena Vista Lake ornate shrew	Federally Endangered, CDFW SSC	Not Expected – Preference for dense groundcover within the Tulare Basin region. No such habitat present at project site.

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	BLM S, CDFW FP	Moderate Potential – Typically inhabits rocky slopes and cliffs, washes and alluvial fans and generally eats a wide variety of desert plants, including cacti. The most recent observation of this species near the survey area was in 1989 approximately 1.5 miles from the site.
<i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	State Threatened, BLM S	High Potential – Preference for sandy soils within all types of major scrub habitats within the Mojave Desert, predominantly creosote bush scrub and desert saltbush scrub. Suitable habitat is present throughout the study area. The most recent observation of this species within the survey area was in 2018.
<i>Erethizon dorsatum</i>	North American porcupine	—	Not Expected – Typically inhabits montane conifer and wet meadows over a wide range. The project area does not support historic or suitable habitat.
<i>Ammospermophilus nelsoni</i>	San Joaquin antelope squirrel	State Threatened, BLM S	Not Expected – Inhabits Carrizo Plain area of San Joaquin Valley which is outside of the project area.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	Federally Endangered, State Threatened	Low Potential – Prefer to inhabit grasslands and shrublands, many areas with extensive modification (i.e. oil exploration and extraction, irrigated pastures, orchards, etc.) and loose-texture soils for dens. Soil conditions at project site are marginally suitable for den construction.
<i>Perognathus inornatus</i>	San Joaquin pocket mouse	BLM S	Not Expected – Inhabits Joshua tree woodlands in desert regions. Closest occurrence, within the southeast region of the Tehachapi Mountains, is not within the project area.
<i>Perognathus alticola inexpectatus</i>	Tehachapi pocket mouse	CDFW SSC	Not Expected – Inhabits Tehachapi Mountains and lower slopes of the Sierra Nevada Mountains, they also occur in the San Joaquin Valley and Salinas Valley. The project site is outside of the expected and historical range for the species.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	BLM S, CDFW SSC	Moderate Potential – Found in a wide variety of habitats including deserts, forests, prairies, riparian communities and agricultural areas. Suitable habitat is located adjacent to the project site in several areas. The most recent observation of this species near the survey area was in 2007 approximately 3.1 miles from the site.
<i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	BLM S, CDFW SSC	Not Expected – Inhabits Carrizo Plain area of San Joaquin Valley which is outside of the project area.
Plants			
<i>Calochortus striatus</i>	alkali mariposa-lily	CNPS 1B.2, BLM S	Low Potential - Primarily inhabits alkaline soils, usually in wetland-riparian areas, in Shadscale scrub and chaparral habitats; sufficient habitat is not present at the project site.
<i>Navarretia peninsularis</i>	Baja Navarretia	CNPS 1B.2	Low Potential – Primarily inhabits vernal pools, alkali playas and alkali sinks; sufficient habitat is not present at the project site.
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	Federal Endangered, State Endangered, CNPS 1B.1	Moderate Potential – Prefers Sierra-Tehachapi saltbush scrub but is also found in blue oak woodland and riparian woodland. In desert areas, prefers arid land with sparse vegetation.
<i>Atriplex tularensis</i>	Bakersfield smallscale	State Endangered, CNPS 1A	Not Expected – Inhabits alkali soils of flooded salt pans, agricultural activities have made conditions too dry for this species and it is believed to be extinct.
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	CNPS 1B.2, BLM S	Moderate Potential – Inhabits creosote bush scrub and shadscale scrub. Suitable habitat is present within the project site.
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	CNPS 1B.2, BLM S	Moderate Potential – Inhabits creosote bush scrub and Joshua tree woodlands with gravelly and sandy soils. Creosote scrub is present throughout the project site.

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
<i>Diplacus pictus</i>	calico monkeyflower	CNPS 1B.2, BLM S	Not Expected – Occurs only above the southeastern San Joaquin Valley within Kern and Tulare counties and prefers open California oak woodland habitat. No suitable habitat is present within the project site.
<i>Caulanthus californicus</i>	California jewelflower	Federally Endangered, State Endangered, CNPS 1B.1	Not Expected – Historically occurs in saltbush scrub and non-native grassland, but populations near the project site are unlikely/mostly eradicated.
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral sand-verbena	CNPS 1B.1, BLM S	Moderate Potential – Inhabits creosote bush communities, lower dry desert areas and well-drained sandy soils. Suitable habitat is present within the project site.
<i>Layia leucopappa</i>	Comanche Point layia	CNPS 1B.1, BLM S	Low Potential – Preference for sparsely-vegetated microhabitats in annual grasslands. Sufficient habitat is not found at project site.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	CNPS 1B.1, BLM S	Not Expected – Inhabits coastal salt marshes, swamps, and vernal pools. No suitable habitat is present within the project site.
<i>Senna covesii</i>	Cove's cassia	CNPS 2B.2	Moderate Potential – Prefers dry rocky slopes and sandy desert washes, both of which are present throughout the project site.
<i>Mentzelia tridentata</i>	creamy blazing star	CNPS 1B.3, BLM S	Moderate Potential – Prefers creosote bush scrub and rocky outcrops, both of which are present throughout the project site.
<i>Mentzelia puberula</i>	Darlington's blazing star	CNPS 2B.2	Moderate Potential – Prefers sandy crevices in cliffs or rocky slopes within creosote bush scrub. Suitable habitat is present within the project site.
<i>Cymopterus deserticola</i>	desert cymopterus	CNPS 1B.2, BLM S	Moderate Potential – Inhabits well-drained, fine to coarse sandy soils within creosote bush scrub and desert saltbush scrub, generally sharing habitats with the desert tortoise and Mohave ground squirrel. Suitable habitat is present within the project site.
<i>Castela emoryi</i>	Emory's crucifixion-thorn	CNPS 2B.2	Moderate Potential – Preference towards creosote bush scrub communities in dry gravelly washes and slopes. Suitable habitat is present within the project site.
<i>Ditaxis claryana</i>	glandular ditaxis	CNPS 2B.2	Moderate Potential – Prefers desert scrub, sandy and rocky slopes and calcareous soils. Sufficient habitat is not found at project site.
<i>Viola pinetorum</i> ssp. <i>grisea</i>	grey-leaved violet	CNPS 1B.2, BLM S	Not Expected – Inhabits mountain peaks and alpine zones. Suitable habitat is not present at project site.
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	hispid salty bird's-beak	CNPS 1B.1, BLM S	Not Expected – Inhabits wetlands, meadows, playas in alkali sink communities, valley grasslands and riparian areas. Suitable habitat is not present at project site.
<i>Eremalche parryi</i> ssp. <i>kernensis</i>	Kern mallow	Federally Endangered CNPS 1B.2	Moderate Potential – Prefers saltbush scrub habitats and eroded hillsides with sparse vegetation. Suitable habitat is present within the project site.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	CNPS 1B.2, BLM S	Moderate Potential – Occurs in dry, rocky and sandy desert canyon environments. Suitable habitat is not present within the project site.
<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	CNPS 1B.2, BLM S	Not Expected – Inhabits juniper woodlands and valley grasslands. Suitable habitat is not present at project site.
<i>Atriplex coronata</i> var. <i>vallicola</i>	Lost Hills crownscale	CNPS 1B.2, BLM S	Not Expected – Inhabits wetlands and vernal pools near freshwater communities, and valley grasslands. Suitable habitat is not present at project site.

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
<i>Leptosiphon serrulatus</i>	Madera leptosiphon	CNPS 1B.2, BLM S	Not Expected – Inhabits yellow pine forests and foothill woodlands. Suitable habitat is not present at project site.
<i>Sclerocactus polyanctistrus</i>	Mojave fish-hook cactus	CNPS 4.2	Present – Inhabits Mojave creosote bush scrub and Joshua Tree woodland communities typically on carbonate soils. This species was observed at Site 1 (PS1 MP 215) Site 3 (PS2C MP194), Site 4 (PS2A MP190), Site 7 (PS4B MP142) during the field reconnaissance survey.
<i>Menodora spinescens</i> var. <i>mohavensis</i>	Mojave menodora	CNPS 1B.2, BLM S	Low Potential – Inhabits rocky slopes and canyons within Mojavean desert scrub. Some rocky hillsides are present throughout the project site.
<i>Diplacus mohavensis</i>	Mojave monkeyflower	CNPS 1B.2, BLM S	Moderate Potential – Preference for gravelly, sandy habitats within desert washes. Some desert washes are present throughout the project site.
<i>Allium howellii</i> var. <i>clokeyi</i>	Mt. Pinos onion	CNPS 1B.3	Not Expected – Inhabits sagebrush scrub communities. No suitable sagebrush communities are present within the project site.
<i>Euphorbia jaegeri</i>	Orocopia Mountains spurge	CNPS 1B.1, BLM S	Not Expected – Inhabits desert scrub communities in Riverside County and San Bernadino County. Typically found along rocky hillsides. Suitable habitat is not present at project site.
<i>Layia heterotricha</i>	pale-yellow layia	CNPS 1B.1, BLM S	Low Potential – Prefers clay or sandy soils. Project site location does not have appropriate habitat.
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	CNPS 1B.2, BLM S	Not Expected – Inhabits wetland communities such as meadows, also found in yellow pine forests, chaparral and riparian areas. No suitable habitats are present within the project site.
<i>Phacelia parishii</i>	Parish's phacelia	CNPS 1B.1, BLM S	Moderate Potential – Inhabits creosote bush scrub and inhabits the area along the National Trails Highway. Higher likelihood in dried desert washes/watersheds.
<i>Navarretia setiloba</i>	Piute Mountains navarretia	CNPS 1B.1, BLM S	Not Expected – Inhabits foothill woodlands, valley grasslands and pinyon-juniper woodlands. No suitable habitats are present within the project site.
<i>Cymopterus multinervatus</i>	purple-nerve cymopterus	CNPS 2B.2	Not Expected – Inhabits pinyon-juniper woodlands and Joshua Tree woodlands. No suitable habitats are present within the project site, however previous occurrences were documented most recently in 2016, the species is presumed extant.
<i>Delphinium recurvatum</i>	recurved larkspur	CNPS 1B.2, BLM S	Not Expected – Inhabits shadescale scrub, foothill woodlands and valley grasslands. No suitable habitats are present within the project site.
<i>Loeflingia squarrosa</i>	Sagebrush loeflinga	CNPS 2B.2, BLM S	Not Expected – Prefers creosote bush scrub and sagebrush scrub, but unlikely to be in project site due to absence of suitable habitat.
<i>Pseudobahia peirsonii</i>	San Joaquin adobe sunburst	Federally Threatened, State Endangered, CNPS 1B.1	Not Expected – Typically found in foothill woodlands and valley grasslands. Not expected to be in project site due to absence of suitable habitat.
<i>Androstephium breviflorum</i>	small-flowered androstephium	CNPS 2B.2	Moderate Potential – Inhabits open desert scrub and creosote brush scrub with sandy to rocks soil. Suitable habitat is present within the project site.
<i>Monardella linoides</i> ssp. <i>anemonoides</i>	southern Sierra monardella	CNPS 1B.3	Not Expected – Typically found in desert habitats, chaparral and woodlands. Not expected to be in project site due to absence of suitable habitat.

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
<i>Mentzelia tricuspidis</i>	spiny-hair blazing star	CNPS 2B.1	Not Expected – Typically found along desert slopes, flats and washes, and on sandy slopes. Not expected to be in project site due to lack of suitable habitat and isolation from known populations further west.
<i>Eryngium spinosepalum</i>	spiny-sealed button-celery	CNPS 1B.2, BLM S	Not Expected – Typically found in wetlands and vernal-pool communities. Not expected to be in project site due to absence of suitable habitat.
<i>Fritillaria striata</i>	striped adobe-lily	State Threatened, CNPS 1B.1, BLM S	Not Expected – Occurs in the southern Sierra Nevada foothills in Kern and Tulare Counties, and east of the Tejon hills in the Tehachapi Mountains in adobe clay soils. Not expected to be in project site due to absence of suitable habitat.
<i>Monardella linoides</i> ssp. <i>oblonga</i>	Tehachapi monardella	CNPS 1B.3, BLM S	Low Potential – Prefers gravelly, dry slopes when found in desert regions. Otherwise inhabits chaparral, conifer woodlands and forests. No suitable habitat is present within the project site.
Reptiles			
<i>Anniella grinnelli</i>	Bakersfield legless lizard	CDFW SSC	Low Potential – Inhabits beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and other woodland areas.
<i>Gambelia sila</i>	blunt-nosed leopard lizard	Federally Endangered, State Endangered, CDFW FP	Not Expected – Preference for arid, open areas with patchy/sparse vegetation. Species population range does not generally extend as southeast as the project site.
<i>Arizona elegans occidentalis</i>	California glossy snake	CDFW SSC	Moderate Potential – Inhabits arid scrub, rocky washes, and chaparral with microhabitats of open areas that allow for easy burrowing.
<i>Anniella</i> spp.	California legless lizard	CDFW SSC	Not Expected – Inhabits beach dunes and stream terraces, prefers areas with saturated soils. No suitable habitat is present within the project site.
<i>Phrynosoma blainvillii</i>	coast horned lizard	BLM S, CDFW SSC	Not Expected – Inhabits grasslands but preference towards grasslands near chaparral and with scattered shrub vegetation. Some suitable habitat is present but marginal at best.
<i>Gopherus agassizii</i>	desert tortoise	Federally Threatened, State Threatened	High Potential – Inhabits arid habitats with desert scrub, sandy flats and rocky slopes. Preference for firm soil for burrowing and sparse, low-growing shrubs for shelter. Suitable habitat was detected within the study area. This species is known to occur within 5 miles of the study area but is not in a known designated critical habitat area (CDFW 2024). The most recent observation of this species within the survey area was in 2013.
<i>Uma scoparia</i>	Mojave fringe-toed lizard	BLM S, CDFW SSC	Low Potential – Inhabits sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.
<i>Anniella pulchra</i>	Northern California legless lizard	CDFW SSC	Low Potential – Inhabits coniferous riparian forests with moist sandy areas and damp woodland. No such suitable habitat at project site.
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	CDFW SSC	High Potential – Inhabits open, dry, treeless areas with little to no cover including valley grasslands. Suitable habitat is present throughout study area. This species is known to occur within 5 miles of the study area (CDFW 2024). The most recent observation of this species near the survey area was in 2014 approximately 1.2 miles from the site.
<i>Charina umbratica</i>	southern rubber boa	State Threatened	Not Expected – Inhabits coniferous riparian forests with moist sandy areas and damp woodland. No such suitable habitat at project site.

Scientific Name	Common Name	Status (Federal, State, Other)	Likelihood of Occurrence at Project Site
<i>Actinemys marmorata</i>	western pond turtle	Federally Proposed Threatened, BLM S, CDFW SSC	Not Expected – Requires aquatic habitat. No such suitable habitat at project site.

BLM Ranking

S = Sensitive

CDFW Rankings:

SSC = Species of Special Concern

FP = Fully Protected

WL = Watch List

CNPS Rankings:

1A = Plants presumed extirpated in California and are either rare or extinct elsewhere

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

1B.2 = Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

1B.3 = Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California

2B.1 = Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California

2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

3.3 = Review list, plants about which more information is needed; not very threatened in California

4.2 = Plants of limited distribution; moderately threatened in California

Intentionally Blank

Attachment B

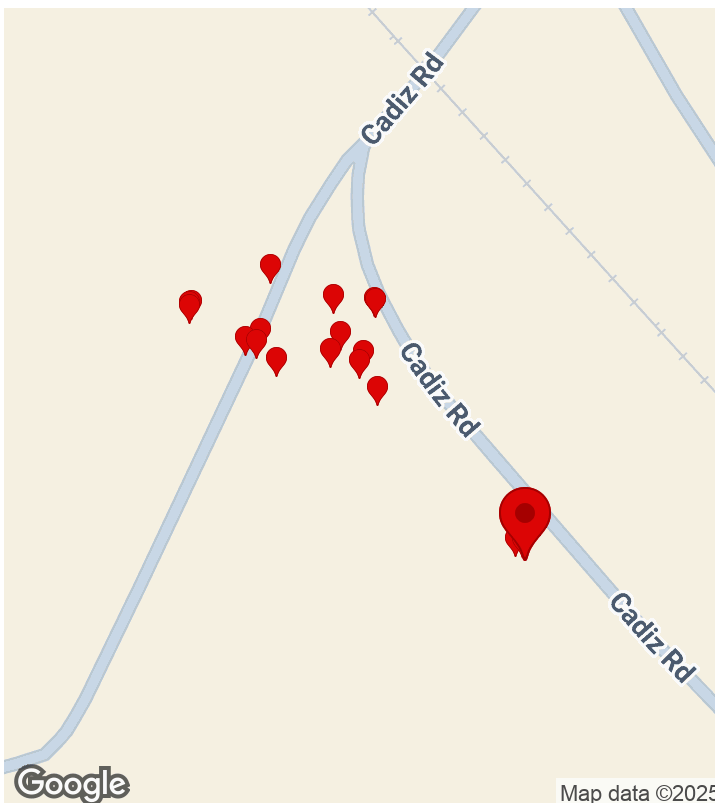
Datasheets

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS1

5/28/2025, 3:43:45 PM UTC



CREATED

🕒 5/27/2025, 6:49:46 PM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 3:43:45 PM UTC

👤 by Anna Weber

LOCATION

📍 34.489672, -115.476594

Parent Form

Project Name:	Cadiz PS1
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Anna Weber, Brenda McMillan
Assistant Observer/Surveyor:	
Date:	May 27, 2025

START Weather Details:

Start - Time:	11:49
Start - Temperature:	92
Start - Wind Direction From (select one):	S
Start - Low Wind Speed:	6
Start - High Wind Speed:	12
Start - Average Wind Speed:	6
Start - Cloud Cover (%):	10
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	13:00
End - Temperature:	
End - Wind Direction From (select one):	
End - Low Wind Speed:	
End - High Wind Speed:	
End - Average Wind Speed:	
End - Cloud Cover (%):	
End - Precipitation (select one):	None
End - Visibility (select one):	
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 1
---------------------------------	----------------

Notes

Gravelly, open soils
In active area (disturbed with O&M activities)
Natural gas line runs through area.

Proposed pump station may intersect with existing dirt access road.

Vegetation:
Disturbed creosote bush scrub (cover: 5%), sparse annual understory

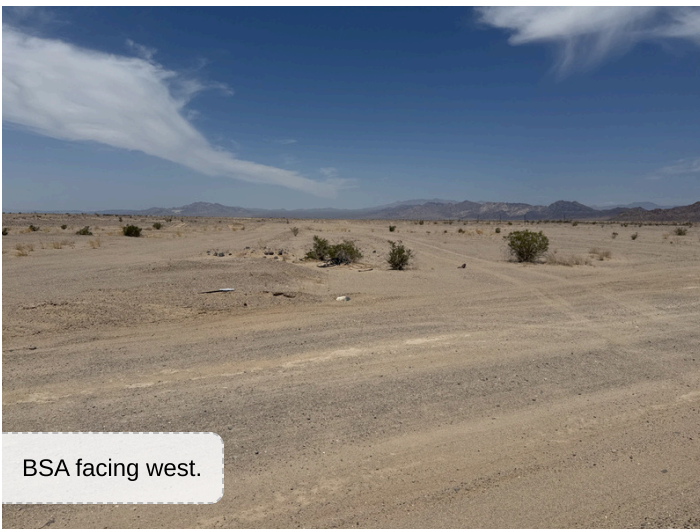
Observation Type:

Plant, Reptile

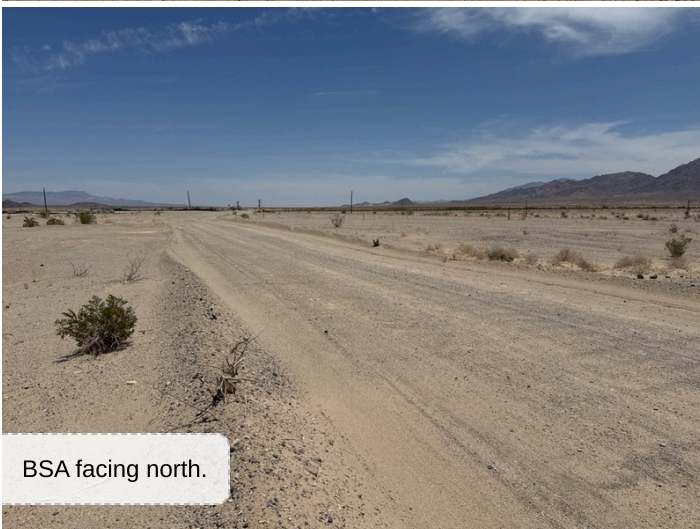
Photos



BSA facing west.



BSA facing west.



BSA facing north.

Plants

Plant Observation: (17 Items)

Plant Observation: - 1. 1 record**Plant (Common or Scientific Name):** Larrea tridentata**Sensitive?** no**State** N/A**Federal** N/A**CA Rare Plant Rank** N/A**Number of individuals observed:****Additional Notes:****Photo(s) of Plant:****Plant Observation: - 2. 1 record****Plant (Common or Scientific Name):** Ambrosia dumosa**Sensitive?** no**State** N/A**Federal** N/A**CA Rare Plant Rank** N/A**Number of individuals observed:****Additional Notes:****Photo(s) of Plant:****Plant Observation: - 3. 1 record****Plant (Common or Scientific Name):** Geraea canescens**Sensitive?** no**State** N/A**Federal** N/A**CA Rare Plant Rank** N/A**Number of individuals observed:****Additional Notes:****Photo(s) of Plant:****Plant Observation: - 4. 1 record****Plant (Common or Scientific Name):** Chorizanthe rigida

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 5. 1 record

Plant (Common or Scientific Name):	Camissonia strigulosa
------------------------------------	-----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name):	Schismus barbatus
------------------------------------	-------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name):	Plantago ovata
------------------------------------	----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name): Palafoxia arida

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name): Eremothera boothii subsp. desertorum

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 10. 1 record

Plant (Common or Scientific Name): Hesperocallis undulata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name): Loeseliastrum matthewsii

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 12. 1 record

Plant (Common or Scientific Name): Camissoniopsis bistorta

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 13.

Plant (Common or Scientific Name):

Other Plant Species Desert puffball

Is the Plant Sensitive ?

Sensitive?

State

Federal

CA Rare Plant Rank

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 14. 1 record

Plant (Common or Scientific Name): Stillingia linearifolia

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 15. 1 record

Plant (Common or Scientific Name): Johnstonella angustifolia [Cryptantha angustifolia]

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 16. 1 record

Plant (Common or Scientific Name): Dalea mollissima

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 17. 1 record

Plant (Common or Scientific Name): Aliciella latifolia subsp. latifolia

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Reptile

Reptile Observation: (1 Item)

Reptile Observation: - 1. 1 record

Reptile (Common or Scientific Name):	Zebra-tailed Lizard; Callisaurus draconoides
--------------------------------------	--

Is the Reptile Sensitive ?	no
----------------------------	----

Sub-Species Info:	N/A
-------------------	-----

Additional Notes:	
-------------------	--

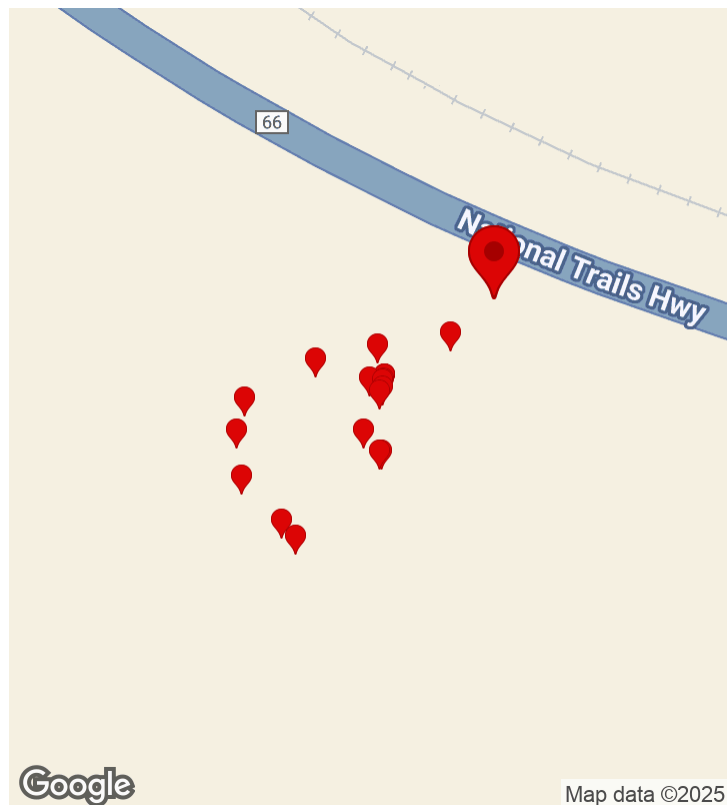
Photo(s) of Reptile:	
----------------------	--

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS2

5/28/2025, 3:47:28 PM UTC



CREATED

🕒 5/27/2025, 9:22:16 PM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 3:47:28 PM UTC

👤 by Anna Weber

LOCATION

📍 34.602879, -115.957438

Parent Form

Project Name:	Cadiz PS2
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Anna Weber, Brenda McMillan
Assistant Observer/Surveyor:	
Date:	May 27, 2025

START Weather Details:

Start - Time:	14:22
Start - Temperature:	93
Start - Wind Direction From (select one):	
Start - Low Wind Speed:	6
Start - High Wind Speed:	12
Start - Average Wind Speed:	6
Start - Cloud Cover (%):	5
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	15:34
End - Temperature:	
End - Wind Direction From (select one):	
End - Low Wind Speed:	
End - High Wind Speed:	
End - Average Wind Speed:	
End - Cloud Cover (%):	
End - Precipitation (select one):	None
End - Visibility (select one):	
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 2
---------------------------------	----------------

Notes

Dry desert wash within proposed pump station. No jurisdictional vegetation present (e.g. smokers, ironwood, cottonwood, desert willow). Wash no longer conveys water flows regularly through the area due to railroad, pipeline and road infrastructure disturbance.

Open creosote bush scrub with natural disturbance (cover: 13%). Sparse annual understory. Cobble and gravel found throughout the survey area. 3 parallel dirt access roads between railroad and BSA.

Observation Type:

Plant, Reptile

Photos



BSA facing west.



Proposed pump station location. Facing southwest.





Desert wash. Facing north.



Main wash adjacent to (west of) the project area. Facing north.

Plants

Plant Observation: (17 Items)

Plant Observation: - 1. 1 record

Plant (Common or Scientific Name): Dalea mollissima

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 2. 1 record

Plant (Common or Scientific Name): Larrea tridentata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 3. 1 record

Plant (Common or Scientific Name): Plantago ovata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 4. 1 record

Plant (Common or Scientific Name): Ambrosia dumosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 5. 1 record

Plant (Common or Scientific Name): Euphorbia polycarpa

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name):	Opuntia basilaris var. basilaris
------------------------------------	----------------------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name):	Plantago erecta
------------------------------------	-----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name):	Chorizanthe brevicornu
------------------------------------	------------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name): Schismus barbatus

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 10. 1 record

Plant (Common or Scientific Name): Cylindropuntia acanthocarpa var. acanthocarpa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name): Chorizanthe rigida

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 12. 1 record

Plant (Common or Scientific Name):	Dasyochloa pulchella
---	----------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:	
--------------------------	--

Photo(s) of Plant:

**Plant Observation: - 13. 1 record**

Plant (Common or Scientific Name):	Ambrosia salsola
---	------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 14. 1 record

Plant (Common or Scientific Name): Malacothrix glabrata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 15. 1 record

Plant (Common or Scientific Name): Eschscholzia glyptosperma

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 16. 1 record

Plant (Common or Scientific Name): Johnstonella angustifolia [Cryptantha angustifolia]

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 17. 1 record**Plant (Common or Scientific Name):** Aliciella latifolia subsp. latifolia**Sensitive?** no**State** N/A**Federal** N/A**CA Rare Plant Rank** N/A**Number of individuals observed:****Additional Notes:****Photo(s) of Plant:****Reptile****Reptile Observation: (1 Item)****Reptile Observation: - 1. 1 record****Reptile (Common or Scientific Name):** Zebra-tailed Lizard; Callisaurus draconoides**Is the Reptile Sensitive ?** no**Sub-Species Info:** N/A**Additional Notes:****Photo(s) of Reptile:**

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS3

5/28/2025, 3:50:05 PM UTC



CREATED

🕒 5/27/2025, 11:04:08 PM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 3:50:05 PM UTC

👤 by Anna Weber

LOCATION

📍 34.638520, -116.085053



Parent Form

Project Name:	Cadiz PS3
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Brenda McMillan
Assistant Observer/Surveyor:	Anna Weber
Date:	May 27, 2025

START Weather Details:

Start - Time:	16:04
Start - Temperature:	94
Start - Wind Direction From (select one):	SE
Start - Low Wind Speed:	12
Start - High Wind Speed:	15
Start - Average Wind Speed:	12
Start - Cloud Cover (%):	5
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	16:35
End - Temperature:	94
End - Wind Direction From (select one):	SE
End - Low Wind Speed:	12
End - High Wind Speed:	15
End - Average Wind Speed:	12
End - Cloud Cover (%):	2
End - Precipitation (select one):	None
End - Visibility (select one):	Good
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 3
---------------------------------	----------------

Notes

Proposed pump location is within active desert wash. Recommended to move pump location west, as marked on field maps. Stay on southern side of access roads between railroad, within the disturbed areas.

Brittlebush scrub (cover: 5%) with scattered *Larrea tridentata* and *Ambrosia dumosa*.

Rocky soils within pipeline scars. Evidence of hydrology throughout BSA.

Roadsides are disturbed.

No desert tortoise observed within BSA.

Observation Type:

Plant, Reptile

Photos



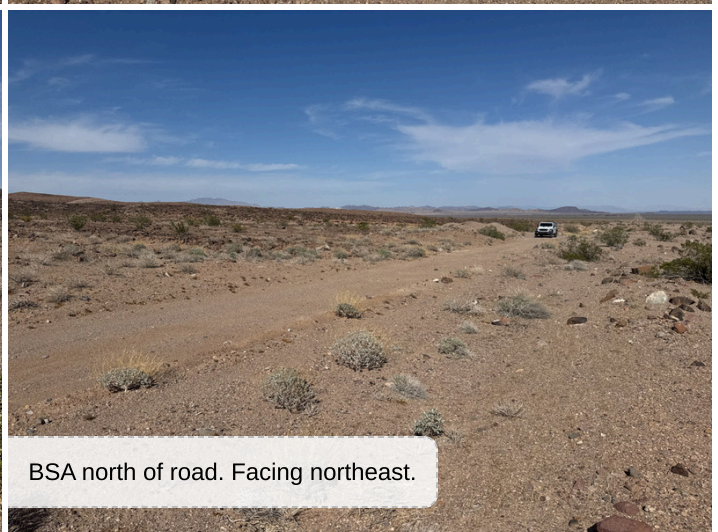
BSA facing west.



Proposed pump location within desert wash. Facing southeast.



BSA facing northwest.



BSA north of road. Facing northeast.

Plants

Plant Observation: (20 Items)

Plant Observation: - 1. 1 record

Plant (Common or Scientific Name): Euphorbia polycarpa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 2. 1 record

Plant (Common or Scientific Name): Ambrosia dumosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 3. 1 record

Plant (Common or Scientific Name): Encelia farinosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 4. 1 record

Plant (Common or Scientific Name): Larrea tridentata

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 5. 1 record

Plant (Common or Scientific Name):	Dalea mollissima
------------------------------------	------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name):	Malacothrix glabrata
------------------------------------	----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name):	Chorizanthe angustifolia
------------------------------------	--------------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name): Dasyochloa pulchella

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name): Ambrosia salsola

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 10. 1 record

Plant (Common or Scientific Name): Chorizanthe rigida

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name):	Eriogonum reniforme
---	---------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:	
--------------------------	--

Photo(s) of Plant:

**Plant Observation: - 12. 1 record**

Plant (Common or Scientific Name):	Schismus barbatus
---	-------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:	
--------------------------	--

Photo(s) of Plant:

Plant Observation: - 13. 1 record

Plant (Common or Scientific Name):	Loeseliastrum schottii
---	------------------------

Sensitive?	no
-------------------	----

State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	
Additional Notes:	
Photo(s) of Plant:	

Plant Observation: - 14. 1 record

Plant (Common or Scientific Name):	Plantago ovata
Sensitive?	no
State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	
Additional Notes:	
Photo(s) of Plant:	

Plant Observation: - 15. 1 record

Plant (Common or Scientific Name):	Geraea canescens
Sensitive?	no
State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	
Additional Notes:	
Photo(s) of Plant:	

Plant Observation: - 16. 1 record

Plant (Common or Scientific Name):	Chylismia claviformis
Sensitive?	no
State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 17. 1 record

Plant (Common or Scientific Name): Aliciella latifolia subsp. latifolia

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 18. 1 record

Plant (Common or Scientific Name): Amsinckia intermedia

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 19. 1 record

Plant (Common or Scientific Name): Tidestromia suffruticosa var. oblongifolia

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 20. 1 record

Plant (Common or Scientific Name):	Phacelia crenulata var. crenulata
---	-----------------------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:	
--------------------------	--

Photo(s) of Plant:	
---------------------------	--

Reptile**Reptile Observation: (1 Item)****Reptile Observation: - 1. 1 record**

Reptile (Common or Scientific Name):	Tiger Whiptail; Aspidoscelis tigris
---	-------------------------------------

Is the Reptile Sensitive ?	no
-----------------------------------	----

Sub-Species Info:	N/A
--------------------------	-----

Additional Notes:	
--------------------------	--

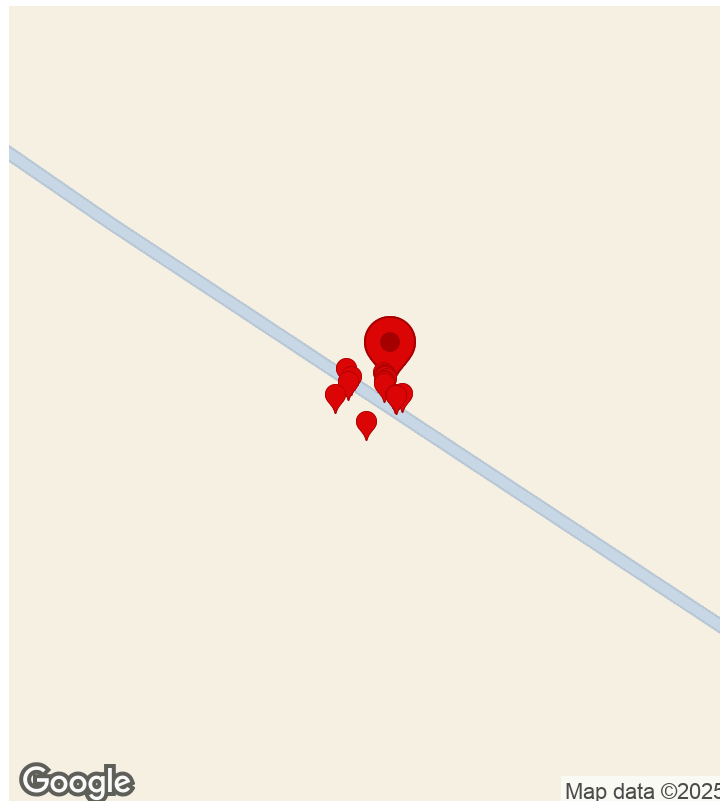
Photo(s) of Reptile:	
-----------------------------	--

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS4

5/28/2025, 1:00:46 AM UTC



CREATED

🕒 5/28/2025, 12:06:21 AM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 1:00:46 AM UTC

👤 by Anna Weber

LOCATION

📍 34.670389, -116.145336

Parent Form

Project Name:	Cadiz PS4
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Brenda McMillan
Assistant Observer/Surveyor:	Anna Weber
Date:	May 27, 2025

START Weather Details:

Start - Time:	17:06
Start - Temperature:	94
Start - Wind Direction From (select one):	SW
Start - Low Wind Speed:	12
Start - High Wind Speed:	15
Start - Average Wind Speed:	12
Start - Cloud Cover (%):	0
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	17:06
End - Temperature:	
End - Wind Direction From (select one):	
End - Low Wind Speed:	
End - High Wind Speed:	
End - Average Wind Speed:	
End - Cloud Cover (%):	
End - Precipitation (select one):	None
End - Visibility (select one):	
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 4
---------------------------------	----------------

Notes	<p>Proposed pump station 4 is located within an active desert wash. Recommended pump location moved south, as shown on Field Maps.</p> <p>Rocky soil in active desert wash. Evidence of recent hydrology.</p> <p>Creosote bush scrub (Cover: 7%). Sparse cover in understory.</p> <p>Erosion observed within BSA.</p>
Observation Type:	Plant

Photos



BSA facing west.



Proposed pump station 4 located within active desert wash. Facing south.





Plants

Plant Observation: (21 Items)

Plant Observation: - 1. 1 record

Plant (Common or Scientific Name):	Euphorbia polycarpa
Sensitive?	no
State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	
Additional Notes:	
Photo(s) of Plant:	

Plant Observation: - 2. 1 record**Plant (Common or Scientific Name):** | Ambrosia dumosa**Sensitive?** | no**State** | N/A**Federal** | N/A**CA Rare Plant Rank** | N/A**Number of individuals observed:** |**Additional Notes:** |**Photo(s) of Plant:****Plant Observation: - 3. 1 record****Plant (Common or Scientific Name):** | Encelia farinosa**Sensitive?** | no**State** | N/A**Federal** | N/A**CA Rare Plant Rank** | N/A**Number of individuals observed:** |**Additional Notes:** |**Photo(s) of Plant:****Plant Observation: - 4. 1 record****Plant (Common or Scientific Name):** | Eriogonum inflatum**Sensitive?** | no**State** | N/A**Federal** | N/A**CA Rare Plant Rank** | N/A**Number of individuals observed:** |**Additional Notes:** |**Photo(s) of Plant:****Plant Observation: - 5. 1 record****Plant (Common or Scientific Name):** | Eriogonum nidularium

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 6.

Plant (Common or Scientific Name):	
------------------------------------	--

Other Plant Species	Phacelia crenulata
---------------------	--------------------

Is the Plant Sensitive ?	
--------------------------	--

Sensitive?	
------------	--

State	
-------	--

Federal	
---------	--

CA Rare Plant Rank	
--------------------	--

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name):	Plantago patagonica
------------------------------------	---------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name):	Parry's Dalea
------------------------------------	---------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name):	Larrea tridentata
------------------------------------	-------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 10.

Plant (Common or Scientific Name):	
------------------------------------	--

Other Plant Species	Unknown 1
---------------------	-----------

Is the Plant Sensitive ?	
--------------------------	--

Sensitive?	
------------	--

State	
-------	--

Federal	
---------	--

CA Rare Plant Rank	
--------------------	--

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name):	Malacothrix glabrata
------------------------------------	----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 12. 1 record

Plant (Common or Scientific Name): Schismus barbatus

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 13. 1 record

Plant (Common or Scientific Name): Psathyrotes ramosissima

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 14.

Plant (Common or Scientific Name):

Other Plant Species Mentzelia sp.

Is the Plant Sensitive ?

Sensitive?

State

Federal

CA Rare Plant Rank

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:



Plant Observation: - 15. 1 record

Plant (Common or Scientific Name):	Dasyochloa pulchella
------------------------------------	----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 16. 1 record

Plant (Common or Scientific Name):	Encelia frutescens
------------------------------------	--------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--



Plant Observation: - 17.

Plant (Common or Scientific Name):	
------------------------------------	--

Other Plant Species	Amsinckia sp.
---------------------	---------------

Is the Plant Sensitive ?	
--------------------------	--

Sensitive?	
------------	--

State	
-------	--

Federal	
---------	--

CA Rare Plant Rank	
--------------------	--

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:**Plant Observation: - 18. 1 record**

Plant (Common or Scientific Name):	Chylismia claviformis
---	-----------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:	
--------------------------	--

Photo(s) of Plant:	
---------------------------	--

Plant Observation: - 19. 1 record

Plant (Common or Scientific Name):	Chorizanthe rigida
---	--------------------

Sensitive?	no
-------------------	----

State	N/A
--------------	-----

Federal	N/A
----------------	-----

CA Rare Plant Rank	N/A
---------------------------	-----

Number of individuals observed:	
--	--

Additional Notes:	
--------------------------	--

Photo(s) of Plant:	
---------------------------	--

Plant Observation: - 20. 1 record

Plant (Common or Scientific Name): | Ambrosia salsola

Sensitive? | no

State | N/A

Federal | N/A

CA Rare Plant Rank | N/A

Number of individuals observed: |

Additional Notes: |

Photo(s) of Plant:

Plant Observation: - 21. 1 record

Plant (Common or Scientific Name): | Cyllindropuntia ramosissima

Sensitive? | no

State | N/A

Federal | N/A

CA Rare Plant Rank | N/A

Number of individuals observed: |

Additional Notes: |

Photo(s) of Plant:

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS5

5/28/2025, 8:33:23 PM UTC



CREATED

🕒 5/28/2025, 5:44:33 PM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 8:33:23 PM UTC

👤 by Anna Weber

LOCATION

📍 34.829070, -116.645865

Parent Form

Project Name:	Cadiz PS5
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Brenda McMillan
Assistant Observer/Surveyor:	Anna Weber
Date:	May 28, 2025

START Weather Details:

Start - Time:	10:44
Start - Temperature:	84
Start - Wind Direction From (select one):	E
Start - Low Wind Speed:	7
Start - High Wind Speed:	13
Start - Average Wind Speed:	7
Start - Cloud Cover (%):	15
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	11:44
End - Temperature:	86
End - Wind Direction From (select one):	NE
End - Low Wind Speed:	7
End - High Wind Speed:	13
End - Average Wind Speed:	7
End - Cloud Cover (%):	20
End - Precipitation (select one):	None
End - Visibility (select one):	Good
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump station 5
---------------------------------	----------------

Notes

Loose sand dunes with hummocks. No evidence of hydrology in BSA.

Creosote bush-white bursage scrub (cover: 15%), with high cover of *Atriplex canescens*. Sparse vegetation in understory.

Observation Type:

Plant, Mammal

Photos

BSA facing west.



BSA facing southeast.



BSA. Facing northwest.

BSA.
Facing
north.

Mammal

Mammal Observation: (1 Item)

Mammal Observation: - 1. 1 record, no

Mammal (Common or Scientific Name):	Black-tailed Jackrabbit; Lepus californicus
Is the Mammal Sensitive ?	no
Sub-Species Info:	N/A
Additional Notes:	
Photo(s) of Mammal:	

Plants

Plant Observation: (18 Items)

Plant Observation: - 1. 1 record

Plant (Common or Scientific Name):	Schismus barbatus
Sensitive?	no
State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	
Additional Notes:	
Photo(s) of Plant:	

Plant Observation: - 2. 1 record

Plant (Common or Scientific Name):	Larrea tridentata
Sensitive?	no
State	N/A
Federal	N/A
CA Rare Plant Rank	N/A
Number of individuals observed:	

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 3. 1 record

Plant (Common or Scientific Name): Ambrosia dumosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 4. 1 record

Plant (Common or Scientific Name): Salsola tragus

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 5.

Plant (Common or Scientific Name):

Other Plant Species Camissonia sp.

Is the Plant Sensitive ?

Sensitive?

State

Federal

CA Rare Plant Rank

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name): Eremothera boothii

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name): Hilaria rigida

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name): Gerarea canescens

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name): Malacothrix glabrata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 10. 1 record

Plant (Common or Scientific Name): Atriplex canescens var. linearis

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name): Johnstonella angustifolia [Cryptantha angustifolia]

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 12. 1 record

Plant (Common or Scientific Name): Loeseliastrum schottii

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 13. 1 record

Plant (Common or Scientific Name):	Adenophyllum cooperi
------------------------------------	----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 14. 1 record

Plant (Common or Scientific Name):	Cylindropuntia echinocarpa
------------------------------------	----------------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 15. 1 record

Plant (Common or Scientific Name):	Ephedra viridis
------------------------------------	-----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:

Plant Observation: - 16. 1 record

Plant (Common or Scientific Name): Eremocarya micrantha

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 17. 1 record

Plant (Common or Scientific Name): Logfia arizonica

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 18. 1 record

Plant (Common or Scientific Name): Halogeton glomeratus

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

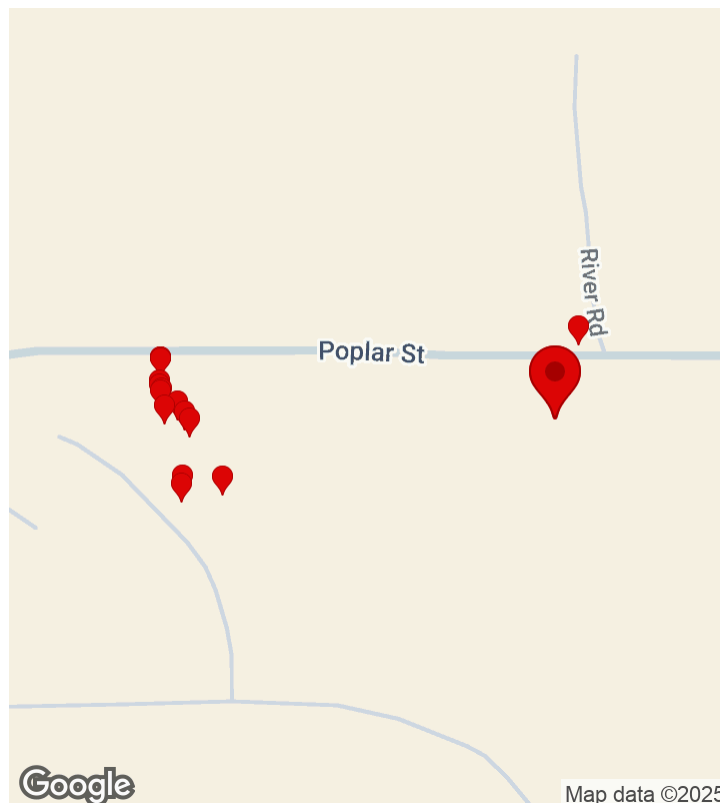
Photo(s) of Plant:

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS6

5/28/2025, 8:42:15 PM UTC



CREATED

🕒 5/28/2025, 7:27:38 PM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 8:42:15 PM UTC

👤 by Anna Weber

LOCATION

📍 34.912619, -116.999764

Parent Form

Project Name:	Cadiz PS6
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Brenda McMillan
Assistant Observer/Surveyor:	Anna Weber
Date:	May 28, 2025

START Weather Details:

Start - Time:	12:27
Start - Temperature:	86
Start - Wind Direction From (select one):	E
Start - Low Wind Speed:	1
Start - High Wind Speed:	9
Start - Average Wind Speed:	5
Start - Cloud Cover (%):	10
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	13:41
End - Temperature:	89
End - Wind Direction From (select one):	N
End - Low Wind Speed:	2
End - High Wind Speed:	9
End - Average Wind Speed:	5
End - Cloud Cover (%):	10
End - Precipitation (select one):	None
End - Visibility (select one):	Good
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 6
---------------------------------	----------------

Notes

Disturbed habitat-Salsola tragus. Dominated by non-native vegetation (Salsola tragus, Schismus barbatus). 20% vegetative cover.

Evidence of high reptile and small mammal use in area.

Loose sand dunes with hummocks. Located within floodplain. Avoid river to the south.

Observation Type:

Plant, Reptile

Photos

BSA. Facing south.



BSA facing north.

BSA.
Facing
west.

Plants**Plant Observation: (14 Items)****Plant Observation: - 1. 1 record**

Plant (Common or Scientific Name): Salsola tragus

Sensitive? no

State N/A

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 2. 1 record

Plant (Common or Scientific Name):	Atriplex canescens var. linearis
------------------------------------	----------------------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 3. 1 record

Plant (Common or Scientific Name):	Schismus barbatus
------------------------------------	-------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 4. 1 record

Plant (Common or Scientific Name):	Helminthotheca echioides
------------------------------------	--------------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:

Plant Observation: - 5. 1 record

Plant (Common or Scientific Name): Brassica tournefortii

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name): Oenothera deltoides

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 7.

Plant (Common or Scientific Name):

Other Plant Species Salsola kali

Is the Plant Sensitive ?

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name): Amsinckia intermedia

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name): Cryptantha micrantha

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 10. 1 record

Plant (Common or Scientific Name): Ambrosia dumosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name): Erodium cicutarium

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 12. 1 record

Plant (Common or Scientific Name):	Tiquilia plicata
------------------------------------	------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 13. 1 record

Plant (Common or Scientific Name):	Eremalche exilis
------------------------------------	------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 14. 1 record

Plant (Common or Scientific Name):	Cryptantha pterocarya
------------------------------------	-----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Reptile

Reptile Observation: (1 Item)

Reptile Observation: - 1. 1 record

Reptile (Common or Scientific Name):

Zebra-tailed Lizard; Callisaurus draconoides

Is the Reptile Sensitive ?

no

Sub-Species Info:

N/A

Additional Notes:

Photo(s) of Reptile:

1_Biology Surveys (SoCal Bio ONLY)

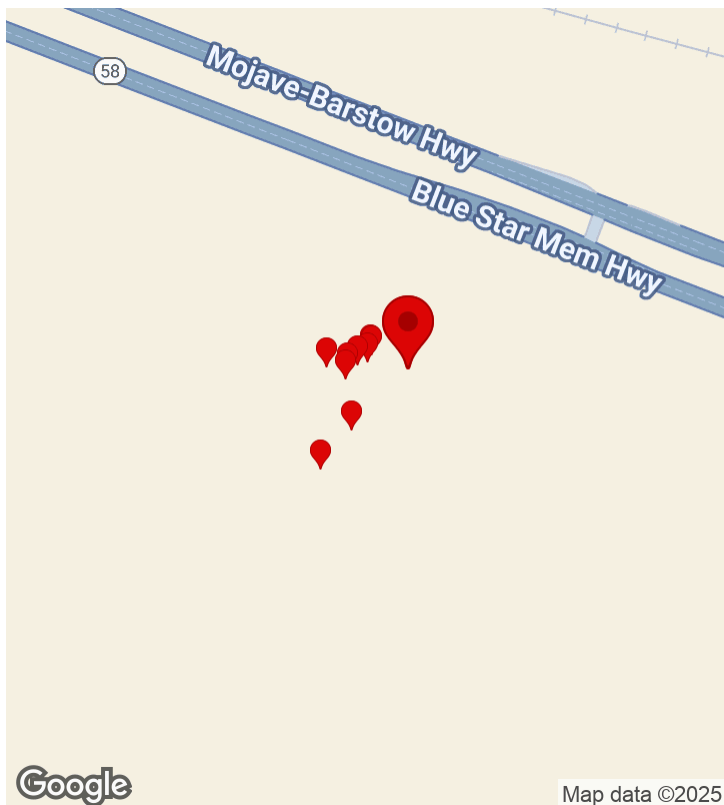
Biology Surveys (SoCal Bio ONLY)

Cadiz PS7-BLM

5/28/2025, 9:47:43 PM UTC



BSA. Facing south.



CREATED

🕒 5/28/2025, 9:25:53 PM UTC

👤 by Anna Weber

UPDATED

🕒 5/28/2025, 9:47:43 PM UTC

👤 by Anna Weber

LOCATION

📍 34.937621, -117.384622

Parent Form

Project Name:	Cadiz PS7-BLM
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Brenda McMillan
Assistant Observer/Surveyor:	Anna Weber
Date:	May 28, 2025

START Weather Details:

Start - Time:	14:25
Start - Temperature:	90
Start - Wind Direction From (select one):	NE
Start - Low Wind Speed:	2
Start - High Wind Speed:	8
Start - Average Wind Speed:	4
Start - Cloud Cover (%):	90
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	14:25
End - Temperature:	
End - Wind Direction From (select one):	
End - Low Wind Speed:	
End - High Wind Speed:	
End - Average Wind Speed:	
End - Cloud Cover (%):	
End - Precipitation (select one):	None
End - Visibility (select one):	
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 7- BLM
---------------------------------	---------------------

Notes

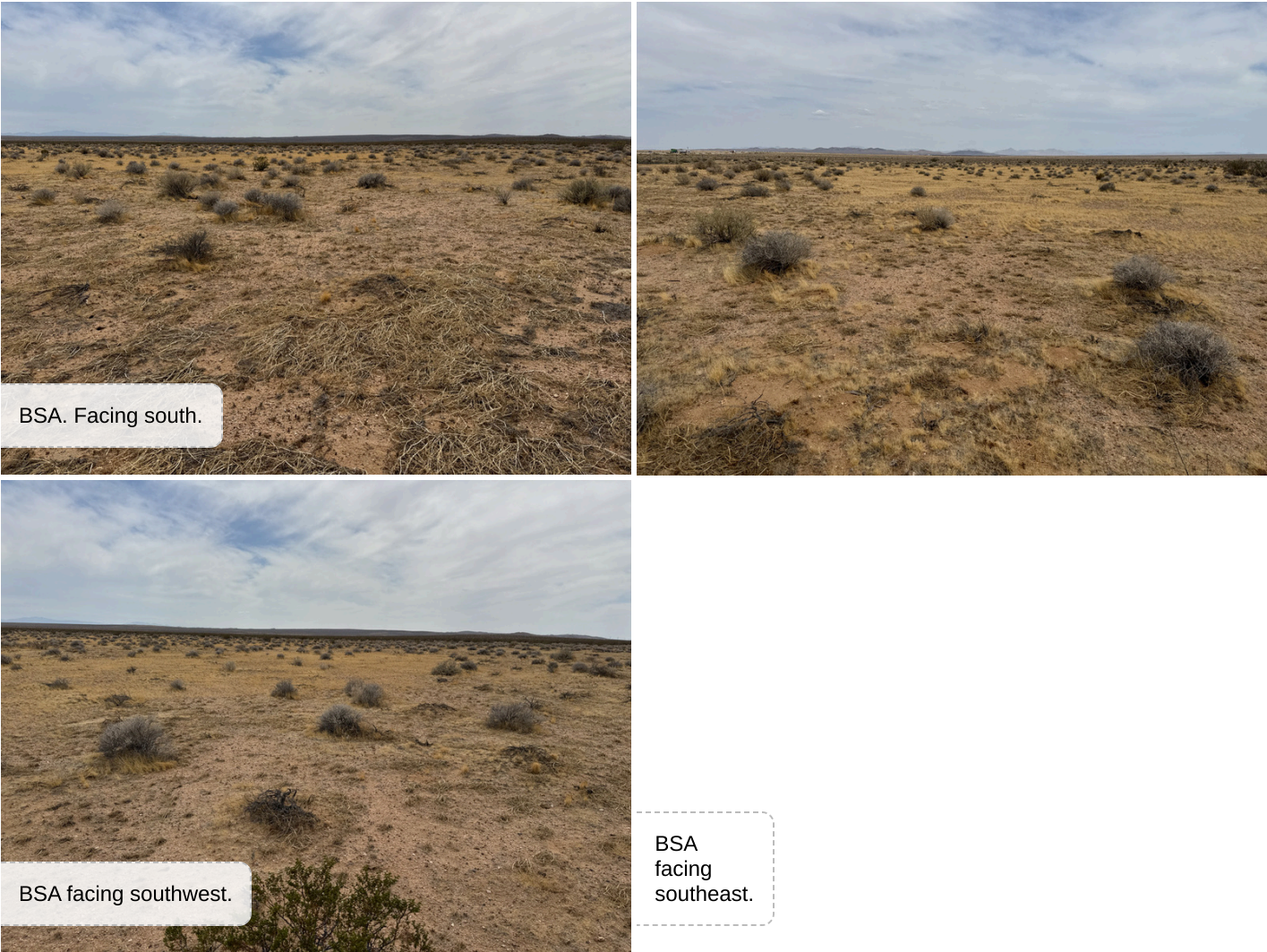
Ambrosia dumosa scrub. 10% cover on shub story. Carpets of Schismus barbatus in understory.

Slightly gravelly soils. Disturbed.

Observation Type:

Plant

Photos



Plants

Plant Observation: (9 Items)

Plant Observation: - 1. 1 record

Plant (Common or Scientific Name):	Erodium cicutarium
Sensitive?	no
State	N/A
Federal	N/A

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 2. 1 record

Plant (Common or Scientific Name):	Schismus barbatus
------------------------------------	-------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 3. 1 record

Plant (Common or Scientific Name):	Croton setiger
------------------------------------	----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 4. 1 record

Plant (Common or Scientific Name):	Ambrosia dumosa
------------------------------------	-----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:

Plant Observation: - 5. 1 record

Plant (Common or Scientific Name): Sisymbrium irio

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name): Larrea tridentata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name): Malacothrix glabrata

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name): Grayia spinosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name): Fagonia laevis

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

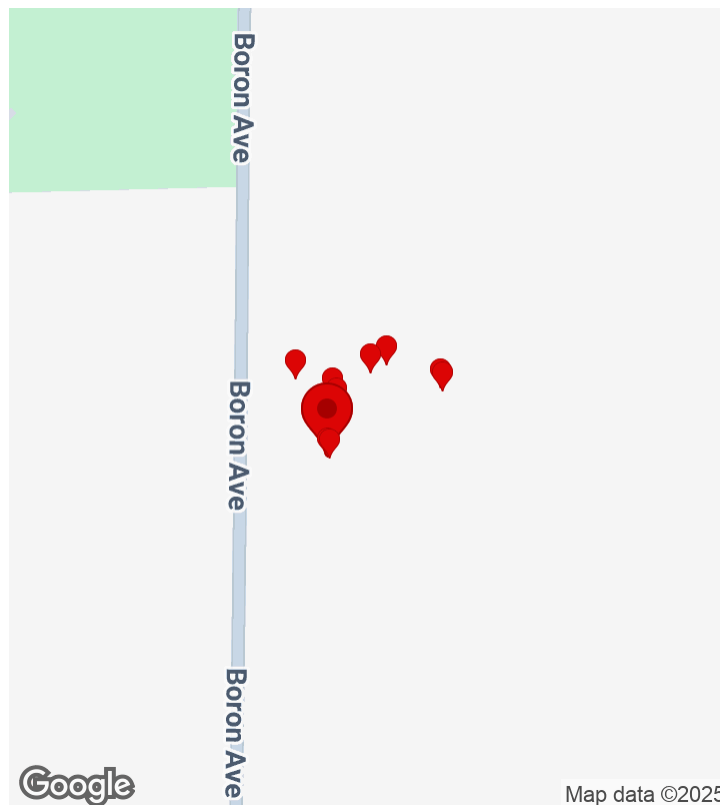
Photo(s) of Plant:

1_Biology Surveys (SoCal Bio ONLY)

Biology Surveys (SoCal Bio ONLY)

Cadiz PS7- Preferred

6/3/2025, 5:36:41 PM UTC



CREATED

🕒 5/28/2025, 10:21:10 PM UTC

👤 by Anna Weber

UPDATED

🕒 6/3/2025, 5:36:41 PM UTC

👤 by SC Fulcrum13

LOCATION

📍 34.993682, -117.649374

Parent Form

Project Name:	Cadiz PS7- Preferred
Specific Survey Type	General Survey/Habitat Assessment
Observer/Surveyor:	Brenda McMillan
Assistant Observer/Surveyor:	Anna Weber
Date:	May 28, 2025

START Weather Details:

Start - Time:	15:21
Start - Temperature:	89
Start - Wind Direction From (select one):	SW
Start - Low Wind Speed:	6
Start - High Wind Speed:	11
Start - Average Wind Speed:	6
Start - Cloud Cover (%):	75
Start - Precipitation (select one):	None
Start - Visibility (select one):	Good
Start - Notes	

END Weather Details:

Time Out:	16:21
End - Temperature:	90
End - Wind Direction From (select one):	NW
End - Low Wind Speed:	6
End - High Wind Speed:	13
End - Average Wind Speed:	6
End - Cloud Cover (%):	60
End - Precipitation (select one):	None
End - Visibility (select one):	Good
End - Notes (if applicable):	
Total Hours:	

Project Location (description):	Pump Station 7- Preferred
---------------------------------	---------------------------

Notes

Allscale scrub (20% cover). Weedy understory with few scattered natives. One juvenile WJT within survey area.

Gravelly soils.

Pump station recommended to stay near existing infrastructure.

Observation Type:

Plant

Photos

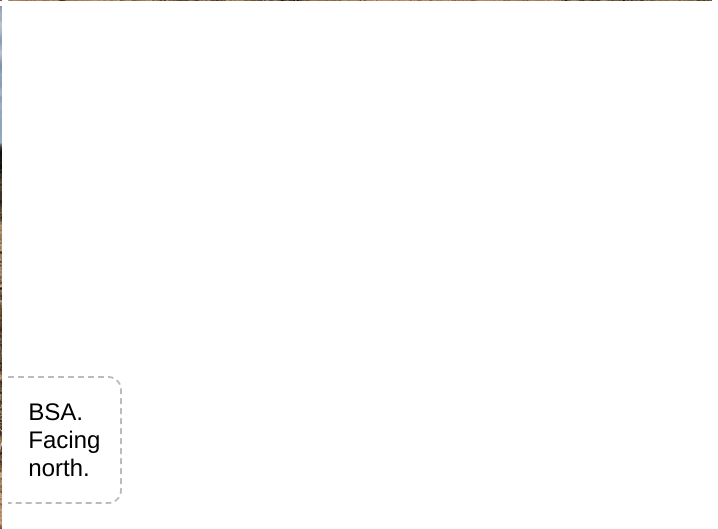
BSA. Facing southeast.



BSA. Facing north.



BSA facing west.



BSA.
Facing
north.

Plants

Plant Observation: (21 Items)

Plant Observation: - 1. 1 record

Plant (Common or Scientific Name): Atriplex polycarpa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 2. 1 record

Plant (Common or Scientific Name): Schismus barbatus

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 3. 1 record

Plant (Common or Scientific Name): Erodium cicutarium

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 4. 1 record

Plant (Common or Scientific Name): Ambrosia salsola

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 5. 1 record

Plant (Common or Scientific Name): Stipa hymenoides

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 6. 1 record

Plant (Common or Scientific Name): Brassica tournefortii

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 7. 1 record

Plant (Common or Scientific Name): Datura wrightii

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 8. 1 record

Plant (Common or Scientific Name):	Bromus tectorum
------------------------------------	-----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 9. 1 record

Plant (Common or Scientific Name):	Amsinckia intermedia
------------------------------------	----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 10. 1 record

Plant (Common or Scientific Name):	Sisymbrium irio
------------------------------------	-----------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 11. 1 record

Plant (Common or Scientific Name): Salsola tragus

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 12. 1 record

Plant (Common or Scientific Name): Ambrosia acanthicarpa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 13. 1 record

Plant (Common or Scientific Name): Atriplex canescens

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 14. 1 record

Plant (Common or Scientific Name): Cryptantha micrantha

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 15. 1 record

Plant (Common or Scientific Name): Eriogonum reniforme

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 16. 1 record

Plant (Common or Scientific Name): Oenothera caespitosa

Sensitive? no

State N/A

Federal N/A

CA Rare Plant Rank N/A

Number of individuals observed:

Additional Notes:

Photo(s) of Plant:

Plant Observation: - 17. 1 record

Plant (Common or Scientific Name): Stillingia linearifolia

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 18. 1 record

Plant (Common or Scientific Name):	Prunus andersonii
------------------------------------	-------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 19. 1 record

Plant (Common or Scientific Name):	Camissonia strigulosa
------------------------------------	-----------------------

Sensitive?	no
------------	----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	N/A
--------------------	-----

Number of individuals observed:	
---------------------------------	--

Additional Notes:	
-------------------	--

Photo(s) of Plant:	
--------------------	--

Plant Observation: - 20. 1 record

Plant (Common or Scientific Name):	Yucca brevifolia
------------------------------------	------------------

Sensitive?	yes
------------	-----

State	N/A
-------	-----

Federal	N/A
---------	-----

CA Rare Plant Rank	1B.1
--------------------	------

Number of individuals observed: |

Additional Notes: |

Photo(s) of Plant:



Plant Observation: - 21. 1 record

Plant (Common or Scientific Name): | Eriastrum eremicum subsp. eremicum

Sensitive? | no

State | N/A

Federal | N/A

CA Rare Plant Rank | N/A

Number of individuals observed: |

Additional Notes: |

Photo(s) of Plant:

Attachment C

Mitigation Monitoring and Reporting Program Mitigation Measures

Mitigation Monitoring and Reporting Plan

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) report includes mitigation measures identified in the Final Environmental Impact Report (EIR) that are required to address impacts associated with the Project. The impacts associated with this Project and required mitigation measures are summarized in this program; the full text of the impact analysis and mitigation measures is presented in the Cadiz Valley Water Conservation, Recovery, and Storage Project EIR. The EIR analyzed the impacts for the Project. This MMRP outlines the mitigation monitoring and reporting for the Project.

The MMRP is organized in a table format keyed to each impact and adopted mitigation measure. Each mitigation measure is set out in full, followed by a tabular summary of monitoring requirements. Monitoring requirements include implementation procedure, monitoring and reporting requirements, monitoring responsibility, and monitoring schedule. Implementation procedure is a checklist of actions required to successfully effectuate the mitigation measure. Monitoring and reporting action is a checklist of actions to successfully complete each implementation procedure. Monitoring responsibility names the agency responsible for monitoring enforcement. Finally, the monitoring schedule outlines the phase of the project (e.g., construction, operation, etc.) when each implementation procedure and associated monitoring and reporting action must occur. The implementation procedures, monitoring actions, and schedules identified in this MMRP provide a guide for successful implementation of mitigation measures identified in the Final EIR. The mitigation measures, procedures and actions included below have been updated (without strikethrough and underlined text) for inclusion in the Final EIR.

Cadiz Valley Water Conservation, Recovery, and Storage Project

Aesthetics

Mitigation Measure AES-1: Construction lighting shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way, and towards the construction site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the construction site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AES-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	Before and During, Construction

Mitigation Measure AES-2: Outdoor lighting shall be minimized and installed for safety and security purposes only. Outdoor lighting of Project facilities and access roads shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way and towards the Project site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the Project site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AES-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	Before, During, and After Construction and Operation

Air Quality

Mitigation Measure AQ-1: Construction and operation of the proposed Project shall be conducted in compliance with applicable rules and regulations set forth by the Mojave Desert Air Quality Management District.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	During and After Construction and Operation

Mitigation Measure AQ-2: The following dust control measures shall be implemented during construction:

- All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas.
- Watering shall take place a minimum of twice daily on unpaved/untreated roads in areas with active operations.
- Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method such as non-toxic soil binders to prevent wind-blown fugitive dust.
- On-site vehicle speed on unimproved roads shall be limited to 15 miles per hour.
- Streets adjacent to the Project site shall be kept clean and Project-related accumulated silt shall be removed.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file	SMWD General Manager and Chief Engineer	During Construction

Mitigation Measure AQ-3: The following measures shall be implemented during construction of the proposed Project:

- All equipment shall be maintained as recommended by manufacturer's manuals.
- Idling engines shall be shut down when not in use for over 15 minutes.
- Electric equipment shall be used where available from existing power lines in lieu of diesel or gasoline powered equipment.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-3 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure AQ-4: All trucks hauling dirt, sand, soil, or other loose materials are to be covered.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-4 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure AQ-5: The Project Design Feature in Chapter 6.8 of the GMMMP attached in its Updated form (Updated GMMMP) to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to verify air quality. Chapter 6.8 of the Updated GMMMP is provided in full below.

6.8 Air Quality

The EIR concludes that groundwater is not connected to the erosion potential of the Dry Lake surface soils and therefore the lowering groundwater levels beneath the Dry Lakes is not expected to increase dust generation from the Dry Lakes or otherwise affect regional air quality. Consistent with the recommendations of the Groundwater Stewardship Committee and as a conservative monitoring protocol to be conditioned by the County under its Ordinance, Cadiz will prepare a monitoring plan in consultation with the TRP to address possible sources of fugitive dust emissions (depth to groundwater, surface vegetation, surface soil chemistry) and local air quality over time (nephelometers and weather stations) to verify that the Project does not increase dust generation (i.e., particulate matter) from the Dry Lakes. The monitoring plan, at a minimum, shall set forth specific performance criteria and identify monitoring methods, the location of weather stations and nephelometers, measures to protect quality assurance and quality control, and reporting parameters. The monitoring plan shall be reviewed and approved by the County Representatives before the Project commences construction.

6.8.1 Monitoring

As described in Section 5.3, above, a network of observation wells will be established between the Project wellfield and

Bristol and Cadiz Dry Lakes (see Figures 5-1 and 5-2). Groundwater levels will be monitored in many wells on a continuous basis throughout the term of the Project, which can help identify specific depths to groundwater and hydrological connections to surface soils and vegetation.

Furthermore, Cadiz will install weather stations and four nephelometers—upwind and downwind of the Bristol and Cadiz Dry Lakes—to establish baseline data of visibility in the valley, along with providing air quality data throughout the duration of Project operations. In addition, FVMWC will conduct annual visual observations at four points on each of the Dry Lakes to record surface soil conditions. The visual observations will note soil texture and record susceptibility to wind erosion. Photographs of the soil will be taken. This data will record conditions over time at the same locations on each of these Dry Lake surfaces.

These nephelometers will provide data on a daily basis that records opacity of the air, measuring the effect of dust on visibility. Data will be collected in the early years of the Project, establishing a baseline before groundwater levels beneath the Dry Lake are affected and will continue during Project operations. Since wind velocity and dust storms are highly variable, the data will record trends over time. Data from the nephelometers will be analyzed by FVMWC, with the results of the analysis and associated data summaries submitted annually to the TRP. This data will inform the TRP on the environmental setting, augmenting the weather station data, and provide information for the long term management of the facilities in the valley. The TRP will provide recommendations over time regarding modifications to the verification data collection activities if needed.

6.8.2 Action Criteria

The decision-making process will be initiated if the action criteria are triggered. The action criteria are (1) changes in annual average or peak concentrations of airborne particulate matter as measured by nephelometers that exceed average annual or peak baseline conditions by 5 percent or more, or (2) changes in surface soil conditions on the Dry Lakes that show a degradation of soil structure and increased susceptibility to wind erosion compared to baseline conditions established through monitoring prior to Project pumping. If such changes are measured, the decision-making process will be initiated.

6.8.3 Decision-Making Process

If the action criteria is triggered, the decision-making process will include:

- Assessment of whether the change in air quality or soil conditions are attributable to Project operations;

- If air quality changes are determined to be attributable to Project operations or if degradation of soil structure and increased susceptibility of wind erosion are determined to be attributable to Project operations, one or more of the corrective measures shall be implemented.

6.8.4 Corrective Measures

Action(s) necessary to re-establish baseline airborne particulate levels and soil structure shall include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield;
- Stoppage of groundwater extraction for a duration necessary to restore baseline air quality conditions to correct for Project impacts.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement Project Design Feature in Chapter 6.8 of the GMMMP.	See MM AQ-5	Enforcement: SMWD General Manager/ Chief Engineer	See MM AQ-5
2. Include Mitigation Measure AQ-5 within construction contract specifications.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Biological Resources

Mitigation Measure BIO-1: Pre-construction Surveys. Immediately prior to construction activities, pre-construction surveys that comply with USFWS protocol shall be conducted to document any and all locations of burrows and desert tortoise sightings within all proposed disturbance areas that provide potential habitat for the species. If any active burrows are located in facility construction areas, to completely avoid impact on the burrows, construction will be delayed only to be resumed after a qualified biologist¹ has determined that the tortoise has left

¹ The Qualified Biologist is “approved by the Fish and Wildlife Service or other agency as designated by the Fish and Wildlife Service to conduct activities that may result in a take of the desert tortoise including locating tortoises and their sign, recording and reporting tortoise and sign observations in accordance with approved protocol, and

the area and the burrow is inactive. Following pre-construction surveys, Mitigation Measure **BIO-2** shall be implemented to install exclusion fencing around construction areas. Construction areas fenced but inactive for more than 48-hours will be resurveyed to confirm the absence of tortoise prior to resumption of construction activity.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a qualified biologist shall prepare pre-construction surveys in coordination with USFWS.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure BIO-2: Exclusion Fencing and Monitoring. A chain-link or tortoise fence (one-inch by two-inch welded wire mesh attached to the chain-link fence, with approximately two feet above-ground and one foot buried below ground) shall be installed to exclude small wildlife species from entering the active work areas in areas of documented occurrences of special-status ground dwelling wildlife as determined during pre-construction surveys by a qualified biologist or as directed by USFWS. When crossing drainages, these temporary fences must be designed and maintained to allow storm water runoff to flow past the construction site. Fencing / barriers will be erected to completely surround all stationary construction sites (including staging areas) and will be monitored by an Authorized Biologist or Biological Monitor at all times. Along the pipeline construction corridor, temporary fencing may be used as needed and if any tortoises are observed in the surrounding area. Temporary tortoise-proof fencing may be used along the pipeline right-of-way if trenches or pits must be left open. If temporary fencing is used for this purpose it must be installed at the end of each working day. If pits and trenches are left open overnight, then ramps will be placed within them to allow animals, including tortoise to escape in the unlikely event of entrapment. Alternatively, trenches will be filled or covered when construction is not active.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a chain-link tortoise fence shall be installed as determined during pre-construction surveys conducted by the qualified biologist or as directed by USFWS.	Perform site inspections to verify contractor compliance with the restoration plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

ensuring that the effects of the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or permit. From USFWS, *Desert Tortoise Monitor and Biologist Responsibilities and Qualifications*, March 2004.

Mitigation Measure BIO-3: Desert Tortoise Avoidance and Protection Plan. A Desert Tortoise Avoidance and Protection Plan shall be developed and adopted in consultation with the USFWS and CDFG prior to construction. Elements of the plan shall include, but are not limited to the following:

- Designated Project personnel will implement the avoidance and protection plan. A Field Contact Representative will be designated to oversee compliance with all tortoise avoidance and protective measures during Project construction, operation and maintenance. The Field Contact Representative will have the authority to halt work if there is non-compliance with any of the plan measures and will do so as needed.
- Facility site preparation activities (specifically vegetation grubbing and clearing) and all construction activity in the northeastern area of the wellfield in Sections 17 and 18 will be prohibited during the species' annual periods of high activity (April through May and September through October).
- A step-by-step protocol to be implemented whenever a desert tortoise is observed by construction or operational personnel. See also Mitigation Measure **BIO-4** Temporary Construction Halt. USFWS and CDFG personnel contacts will be identified for Technical Assistance on take avoidance if needed during construction.
- Flagging and delineation requirements for located burrows and areas with tortoise activity.
- An education program for all construction employees. Program will be conducted onsite prior to the onset of construction and will be provided repeatedly as needed to ensure that all Project contractors (firms) as well as all individuals complete the training. Participation will be recorded and verified. Tortoise protection will be emphasized during all scheduled safety meetings.
- Enforcement of speed limits and checking under vehicles for tortoise prior to leaving Project areas.
- Biological monitoring requirements for all ground disturbance activities. All construction sites and activities will be monitored by Authorized Biological Monitors. An Authorized Biologist (approved by USFWS and CDFG) will plan and oversee all construction monitoring activities in the field. The authorized biologist will identify, train, and oversee biological monitors for day-to-day monitoring and reporting activities.
- To prevent increased use of the Project areas by common ravens and coyotes, implementation of measures such as trash management, removal of unnatural sources of standing water, and other means. Drilling mud pits and water discharges will be controlled to minimize the duration of standing water at any one drilling site. A clean workplace will be maintained in all areas. No trash is to be thrown on the ground or left in open containers, equipment, or truck beds. Refuse receptacles with lids will be provided for all construction personnel and are to be maintained and emptied on a regular basis and at least weekly. Trash collection

will be conducted in all construction areas as needed to keep all areas clean on a daily basis. Portable toilets will be provided and used by all construction personnel.

- At the end of construction all equipment removal will be monitored by Authorized Biologists or Biological Monitors.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a Desert Tortoise Avoidance and Protection Plan in consultation with USFWS and CDFG.	Perform site inspections to verify contractor compliance with the avoidance and protection plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Implement the avoidance and protection plan.			
3. The avoidance and protection plan shall be submitted to and adopted by the USFWS and CDFG.			

Mitigation Measure BIO-4: Temporary Construction Halt. If a desert tortoise is observed within 300 feet of construction activities or is determined by the Authorized Biologist to be in harm's way, then construction activities shall be halted in the vicinity as directed by the Authorized Biologist. Work shall only continue once the Authorized Biologist determines there is no risk to the desert tortoise.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Pre-approved qualified biologist by USFWS and/or CDFG shall be contacted in the event a desert tortoise is observed.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. Work shall be halted until no risk to the desert tortoise is determined.			

Mitigation Measure BIO-5: Pipeline Siting to Minimize Vegetation Disruption. The pipeline shall be installed within previously disturbed areas of the easement to the extent feasible. During construction, previously undisturbed areas within the pipeline alignment that are not needed for construction shall be staked and flagged to prevent construction equipment access or disturbance in these areas. The cordoned off areas shall be flagged and monitored by a qualified biologist during construction activities.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. During construction, previously undisturbed areas within the pipeline alignment shall be determined, staked, flagged, and monitored by a qualified biologist.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-6: Site Restoration Plan. A special-status species and sensitive habitat restoration plan shall be prepared prior to construction for unavoidable temporary impacts on special-status plants and sensitive habitats. The plan would include, at a minimum, the following measures:

- A salvage and replacement program for the top 12 inches of surface material and topsoil. The program shall identify soil preparation requirements, including grain size specifications that shall need to be engineered or amended on site to match to the greatest extent feasible the existing surface soil conditions.
- A salvage and replanting program for perennial special-status species.
- An invasive plant species maintenance, monitoring, and removal program.
- Success criteria that establishes yearly thresholds for growth and reestablishment of habitat.
- A five-year maintenance and monitoring plan to ensure successful implementation of the restoration plan.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a special-status species and sensitive restoration plan.	Perform site inspections to verify contractor compliance with the restoration plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. The restoration plan shall be submitted USFWS and CDFG for approval.			

Mitigation Measure BIO-7: Habitat Compensation. A habitat compensation plan would be prepared and implemented that includes at a minimum the following measure:

- Purchase of compensatory mitigation lands or credits at a USFWS and CDFG approved conservation bank at a minimum 1:1 ratio for permanent habitat loss and 0.5:1 for temporary habitat loss for preservation in perpetuity.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A qualified biologist shall prepare a habitat compensation plan	Perform site inspections to verify contractor compliance with the compensation plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-8: Prior to construction, surveys for Mojave fringe-toed lizard shall be conducted by a qualified biologist within the sand dunes and sand fields habitats within the ARZC ROW. If Mojave fringe-toed lizards are identified in the construction zone, the area shall be fenced during construction as described in **BIO-2** to prevent lizards from entering the construction site. Once fenced, a qualified biologist shall trap the area for lizards and release captured lizards into adjacent suitable habitat as determined by the qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a Mojave fringe-toed lizard survey.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. If Mojave fringe-toed lizards are identified in the area, fencing shall be constructed to trap the lizards for capture and release.			

Mitigation Measure BIO-9: If construction and vegetation removal is proposed for the bird nesting period of February 1 through August 31, then pre-construction surveys for nesting bird species shall begin 30 days prior to construction disturbance with subsequent weekly surveys, the last one being no more than three days prior to work initiation. The surveys shall include habitat within 300 feet (500 feet for raptors) of the construction limits. Active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with USFWS and CDFG. This buffer zone shall be delineated in the field with flagging, stakes, or construction fencing. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. 30 days prior to construction during bird nesting season, a qualified biologist shall conduct pre-construction surveys for nesting bird species.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction (During February 1 through August 31)
2. Identified active nests shall be avoided.			
3. A non-disturbance buffer zone shall be established in consultation with USFWS and CDFG.			

Mitigation Measure BIO-10: A burrowing owl survey shall be conducted pursuant to the *Burrowing Owl Survey Protocol and Mitigation Guidelines* of the California Burrowing Owl Consortium (1993) or per the *Staff Report on Burrowing Owl Mitigation* prepared by CDFG (1995). At a minimum, this survey shall include the following:

- A pre-construction survey conducted by a qualified biologist within 30 days of the start of construction. This survey shall include two early morning surveys and two evening surveys to ensure that all owl pairs have been located.
- If pre-construction surveys are undertaken during the breeding season (February 1st through July 31st) active nest burrows should be located within 250 feet of construction zones and an appropriate buffer around them (as determined by the Project biologist) shall remain excluded from construction activities until the breeding season is over.
- During the non-breeding season (August 15th through January 31st), resident owls may be relocated to alternative habitat. Owls shall be encouraged to relocate from the construction disturbance area to off-site habitat areas and undisturbed areas of the Project site through the use of one-way doors on burrows. If ground squirrel burrows, stand pipes, and other structures that have been documented during pre-construction surveys as supporting either a nesting burrowing owl pair or resident owl are removed to accommodate the proposed Project, these structures and burrows shall be relocated or replaced on or adjacent to the Project site. Relocated and replacement structures and burrows shall be sited within suitable foraging habitat within one-half mile of the Project area as determined by the qualified biologist. Suitable development-free buffers shall be maintained between replacement nest burrows and the nearest building, pathway, parking lot, or landscaping. The relocation of resident owls shall be in conformance with all necessary State and federal permits.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified biologist shall conduct a burrowing owl survey in accordance with CDFG requirements.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before (within 30 days) and During Construction

Mitigation Measure BIO-11: A qualified biologist shall conduct focused pre-construction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential adverse effects to the American badger:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

- If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to Project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers have stopped using active dens within the Project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.
- Construction activities shall not occur within 30 feet of active badger dens.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. No more than two weeks prior to construction, a qualified biologist shall conduct focused pre-construction surveys for potential American badger dens.	Perform site inspections to verify contractor compliance with the biologist recommendations and surveys. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before (two weeks) and During Construction
2. If potential dens are observed and determined inactive, a qualified biologist shall excavate the dens.			
3. If potential dens are observed and determined active, a qualified biologist shall block the entrances and then excavate the dens when it is no longer active.			

Mitigation Measure BIO-12: Prior to construction activities, winter and spring surveys shall be conducted to determine the nature of trestle use by pallid bats. Surveys shall follow the appropriate site-specific protocol as determined in coordination with CDFG.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a qualified biologist shall conduct a winter and spring survey for pallid bats.	Perform site inspections to verify contractor compliance with survey recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-13: If a special-status natal bat roost site is found within the limits of construction during pre-construction surveys, the roosts shall be staked, flagged, fenced, or otherwise clearly delineated. Roosts shall be avoided with non-disturbance buffer zones established by a qualified biologist in consultation with the USFWS and CDFG until the site is no longer in active use as a natal roost.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. If natal bat roost sites are found, a qualified biologist shall stake, flag, and fence the area.	1. Perform site inspections to verify contractor compliance with the biologist recommendations and survey. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. A qualified biologist shall establish non-disturbance buffer zones.			
3. Nest sites shall be avoided until directed otherwise by a qualified biologist.			

Mitigation Measure BIO-14: Prior to construction, construction zone limits shall be marked by a qualified biologist and shall be staked, flagged, fenced, or otherwise clearly delineated to ensure that the construction zone is limited to minimize impacts on special-status plant species. These limits shall be identified on the construction drawings. No earth-moving equipment shall be allowed outside demarcated construction zones unless pre-approval is obtained from a qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified biologist shall establish construction zone limits.	1. Established construction zone limits shall be identified on construction drawings.	SMWD General Manager/ Chief Engineer	Before and During Construction
	2. Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file		

Mitigation Measure BIO-15: A Waters of the State Mitigation Plan shall be prepared to include with RWQCB and CDFG permit applications. Conditions of the Mitigation Plan shall include at a minimum the following measures:

- measures to divert flows during construction,
- measures to minimize construction footprint within washes,
- measures to minimize erosion,
- measures to minimize discharge of contaminants through proper storage of chemicals and vehicle maintenance, and
- post-construction site restoration performance standards.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prepare of a Water of the State Mitigation Plan with minimum requirements required by Mitigation Measure BIO-15.	Perform site inspections to verify contractor compliance with the biologist recommendations and the mitigation plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-16: Prior to commencement of ground disturbance activities for any component of the proposed Project, a qualified biologist/arborist shall provide an inventory of the number and size of protected species within the proposed Project's impact areas. The qualified biologist/arborist shall mark any smoke tree (*Dalea spinosa*), mesquites (*Prosopis* spp.), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and Joshua trees within the construction zone. Removal of these plants shall be avoided if possible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to ground disturbance, a qualified biologist/arborist shall provide an inventory of protected tree species.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Avoid removal of any smoke trees, mesquites, all species of the family Agavaceae, creosote rings, and Joshua trees.			

Mitigation Measure BIO-17: If avoidance of the species listed in **BIO-16** is not possible, these species shall be moved or replanted pursuant to the methods required in the Desert Native Plant Protection Ordinance.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure BIO-17 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Cultural Resources

Mitigation Measure CUL-1: A qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology,² shall be retained to carry out all mitigation measures related to archaeological resources.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified archaeologist shall be retained to carry out all archaeological resource mitigation measures.	All significant cultural material will be analyzed and a report will be prepared.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-2: The construction zone shall be narrowed or otherwise altered to avoid all significant historical resources, or resources treated as significant, where feasible. Significant historical resources within 100 feet of the construction zone shall be designated Environmentally Sensitive Areas and shall be marked with exclusion markers to ensure avoidance. In the case of significant historical resources dating to the historic era, the boundaries of the Environmentally Sensitive Areas shall be established around the recorded site boundaries, with the exception of resources CA-SBR-3282H and CA-SBR-3233H, where a 50-foot buffer shall be established outside of recorded site boundaries as an added protective measure to protect historic cemeteries. For significant historical resources dating to the prehistoric era, the boundaries of the ESA shall be established around the recorded site boundaries, plus an additional 50-foot buffer as an added protective measure to protect any subsurface component. Protective fencing shall not identify the protected areas as cultural resource areas in order to discourage unauthorized disturbance or collection of artifact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A construction zone shall be established to avoid historical resources.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. A 50-foot bugger shall be established outside of recorded site boundaries.			

Mitigation Measure CUL-3: A long-term management plan shall be developed for those significant historical resources or portion(s) of resources that can be avoided during Project construction, in order to minimize future impacts during Project operation and maintenance.

² Department of the Interior, *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated): Professional Qualification Standards*, http://www.nps.gov/history/local-law/arch_stnds_9.htm, accessed November 2010.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Develop a long-term management plan for historic resources.	Retain long-term management plan in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure CUL-4: If avoidance of significant historical resources is not feasible, prior to any Project-related ground disturbing activities, a detailed treatment plan shall be prepared and implemented by a qualified archaeologist. The treatment plan shall include a research design and a scope of work for data recovery of the portion(s) of the significant resource(s) to be impacted by the Project. Treatment for most resources shall consist of (but would not be not limited to) sample excavation, surface artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, and curation of artifacts and data at an approved facility.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified archeologist shall prepare and implement a detailed treatment plan for unavoidable historical resources.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure CUL-5: Prior to construction, a qualified archaeologist shall be retained to carry out a Phase 1 cultural resources survey in those portions of the Project area where design changes have modified the proposed Project footprint (including but not limited to: the wellfield, CRA tie-in Options 2a and 2b, and any access roads, staging areas, borrow areas, and any other proposed areas of potential ground disturbance and areas where monitoring and mitigation wells have been installed), and not previously surveyed within the past 5 years. The Phase 1 survey shall identify and evaluate the significance of any potentially eligible resources that may be directly or indirectly impacted by the proposed Project, and shall take Native American comments concerning viewshed impacts into consideration. The Phase 1 Survey effort shall be documented in a Phase 1 Cultural Resources Survey report. Resources determined eligible for listing shall be subject to Mitigation Measures **CUL-1 through CUL-4** and **CUL-6**. All significant cultural resources identified in the wellfield area during surveys shall be avoided.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified archaeologist shall prepare a Phase 1 Cultural Resources Survey.	Retain survey report in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Phase I Survey shall be documented in a Phase 1 Cultural Resources Survey Report.			

Mitigation Measure CUL-6: Prior to construction, an archaeological monitor shall be retained to monitor all ground-disturbing activities, including brush clearance and grubbing, within the following areas: the proposed wellfield area; staging areas; CRA tie-in areas; and within 100 feet of all significant historical resources. The monitor shall work under the supervision of the qualified archaeologist. If ground-disturbing activities are occurring simultaneously in areas located more than 500 feet apart, additional monitors shall be retained. If so requested by the Native American community, a Native American monitor shall also monitor all ground-disturbing activities. The qualified archaeologist, in consultation with the lead agency, shall have the discretion to modify the monitoring requirements based on in-field observations of subsurface conditions. In the event that cultural resources are unearthed during ground-disturbing activities, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated and appropriate treatment determined.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, an archaeological monitor shall be retained.	Retain monitoring report in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-7: If archaeological resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist. If the qualified archaeologist determines that the resources may be significant, he or she will develop an appropriate treatment plan for the resources. Appropriate Native American representatives shall be consulted in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature.

Work may proceed on other parts of the Project site while mitigation for cultural resources is being carried out.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
If archaeological resources are encountered, construction activities shall cease until evaluated by a qualified archaeologist.	Retain monitoring report in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure CUL-8: Prior to construction, those portions of the Project area (including the wellfield, CRA tie-in Options 2a and 2b, access roads, staging areas, and borrow areas) not previously surveyed within the past 5 years, shall be surveyed by a qualified vertebrate paleontologist, defined as one holding an advanced degree in paleontology, biology, or a related discipline, and having at least five years of professional experience. If paleontological resources are encountered, they shall be documented or recovered, and curated, as appropriate, prior to the start of construction. The evaluation will be documented in a report to be submitted for review and approval by the lead agency prior to the start of construction. The report shall also be submitted to the San Bernardino County Museum.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified vertebrate paleontologist shall survey areas not previously surveyed within the past 5 years.	1. Submit findings to the San Bernardino County Museum.	SMWD General Manager/ Chief Engineer	Before Construction
2. Findings shall be documented and submitted for review and approval by the lead agency.	2. Retain survey and findings reports in the project file.		

Mitigation Measure CUL-9: Prior to the start of any earth moving activity, a qualified vertebrate paleontologist shall be retained. The paleontologist shall prepare a Paleontological Mitigation and Monitoring Plan (PMMP) that shall be based on prior paleontological evaluations, including the results of the paleontological survey as described in Mitigation Measure **CUL-8**, and shall address pre-construction salvage and reporting; pre-construction contractor sensitivity training; procedures for paleontological resources monitoring including the identification of specific paleontological monitoring locations as defined by areas where Pleistocene age sediments may be impacted during construction; microscopic examination of samples where applicable; the evaluation, recovery, identification, and curation of fossils; and the preparation of a final mitigation report.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to ground disturbing activities, a qualified vertebrate paleontologist shall prepare a Paleontological Mitigation and Monitoring Plan (PMMP).	Retain PMMP in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-10: All earth-moving activities within those formations identified as sensitive within the PMMP shall be monitored on a full-time basis, unless the paleontologist determines that sediments are previously disturbed or there is no reason to continue monitoring in a particular area due to other depositional factors which would make fossil preservation unlikely or deemed scientifically insignificant. In the event fossils are exposed during earth moving, construction activities shall be redirected to other work areas until the procedures outlined in the PMMP have been implemented or the paleontologist determines work can resume in the vicinity of the find.

When fossils are discovered, they and associated data shall be collected quickly and professionally. Fossil salvage procedures shall include the collection of bulk matrix samples if scientifically significant microfossils are believed to be present based on field evidence. All fossils collected during monitoring shall be transferred to a secure facility for laboratory preparation and identification. Laboratory preparation shall include stabilization, matrix removal, and conservation of individual fossil specimens, as well as screenwashing and picking of bulk matrix samples. Fossils shall be prepared to the point of curation and identified by technical specialists, as needed, to the lowest possible taxonomic level. At the end of the Project, the paleontologist shall prepare a report that includes a description and inventory list of recovered fossil materials; a map showing the location of paleontological resources found in the field; determinations of sensitivity and significance; and a statement that Project impacts to paleontological resources have been mitigated. The results of the paleontological surveys, construction monitoring, and subsequent laboratory work shall be compiled in a final paleontological mitigation report authored by the qualified paleontologist for the Project. The final report shall include all Project data and a copy of the receipt of specimens from the paleontological repository.

Following preparation, the fossils and associated data and a copy of the final paleontological mitigation report shall be transferred to a public museum (paleontological repository) where they will be available for the benefit of current and future generations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A qualified vertebrate paleontologist shall monitor areas identified in the PMMP as sensitive unless otherwise determined by the paleontologist.	1. Submit findings to a public museum (paleontological repository).	SMWD General Manager/ Chief Engineer	Before, During, and After Construction
2. Recommendations identified in the PMMP shall be implemented as required.	2. Perform site inspections to verify contractor compliance. Retain survey, findings, and monitoring reports in the project file.		

Mitigation Measure CUL-11: If human remains are uncovered during Project construction, all work in the vicinity of the find shall be halted and the County Coroner will be contacted to evaluate the remains and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County Coroner determines that the remains are Native American, the NAHC shall be contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c) and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological

standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this Section (PRC 5097.98) with the most likely descendents taking into consideration their recommendations, and developing a treatment plan, taking into account the possibility of multiple human remains.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. If human remains are discovered, all work shall cease and the County Coroner shall be contacted.	Retain survey and findings reports in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. If remains are Native American, the NAHC shall be contacted.			

Geology, Soils, Seismicity, and Mineral Resources

Mitigation Measure GEO-1: The project design features in Chapter 6.3 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for land subsidence. Chapter 6.3 of the Updated GMMMP is provided in full below.

6.3 Land Subsidence

Twenty land survey benchmarks will be established and surveyed by a licensed land surveyor on an annual basis to identify and quantify potential subsidence within the Project area (see Figures 5-1 and 5-2). Three extensometers will be constructed in areas of projected subsidence (see Figure 5-2). The extensometers, which would be monitored continuously from installation through the post-operational period, would verify if the land surface changes (also potentially identified from land surveys and InSAR satellite data obtained and analyzed every 5 years through the post-operational period) are due to (1) subsidence due to groundwater withdrawal; or (2) other mechanisms (e.g. regional tectonic movement).

6.3.1 Action Criteria

The decision-making process will be initiated if either of the action criteria is triggered. The action criteria are: 1) a trend in subsidence that would result in a decline in the ground surface elevation of more than 0.3 feet within 10 years when compared to baseline Project conditions; or 2) a trend in subsidence which, if continued, would be of a magnitude within 10 years that impacts existing infrastructure within the Project area. The magnitude for the railroad tracks is more than one inch vertically over 62 feet linearly along the existing railroad tracks.

6.3.2 Decision-Making Process

If either of the action criteria is triggered, the decision-making process will include:

- Assessment as to whether the subsidence is attributable to Project operations;
- If the subsidence is determined to be attributable to Project operations, then an assessment will be made to determine whether the subsidence constitutes a potential adverse impact to the aquifer or surface uses. Potential adverse impacts include potential damage to surface structures as a result of differential settlement or fissuring, general subsidence sufficient to alter natural drainage patterns or cause damage to structures, or a non-recoverable loss of aquifer storage capacity that affects the beneficial uses of the storage capacity of the aquifer system;
- If no such significant adverse impacts to critical resources are identified, potential actions may include:
 - No action;
 - Proposed refinements to the action criteria;
 - Additional verification monitoring, including a field reconnaissance to assess and detect any differential settlement; or
 - Proposed revisions to the benchmark survey and/or InSAR monitoring frequency.
 - If the subsidence is determined to be attributable to Project operations and the subsidence is determined to constitute a potential adverse impact to the aquifer or surface uses then one or more of the corrective measures set forth in Section 6.3.3 shall be implemented.

6.3.3 Corrective Measures

Corrective measures that shall be implemented to repair damaged structures and/or arrest the subsidence shall include one or more of the following:

- Repairing any structures damaged as a result of subsidence attributable to Project operations;
- Entering into a mitigation agreement with any impacted party(s).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified to arrest the subsidence. For the purposes of these action criteria, “ineffective” shall be defined as a corrective measure that when put

into place did not meet the objective set forth in the corrective action, i.e. to repair damaged structures and arrest the subsidence. “Infeasible” is a corrective measure which cannot be implemented due to cost, technical challenges, or legal restraints. Modifications to Project operations shall include one or more of the following:

- Reduction in pumping from Project well(s);
- Revision or reconfiguration of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the adverse impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure GEO-1 within construction contract specifications.	See GEO-1	Enforcement: SMWD General Manager/ Chief Engineer	See GEO-1
2. Implement Project Design Features in Chapter 6.3 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Greenhouse Gas Emissions

Mitigation Measure GHG-1: Within 90 days of completion of construction of the Groundwater Conservation and Recovery Component of the Project, carbon offset credits shall be purchased from the Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emissions credits under a GHG reduction plan or similar program, in sufficient quantity to reduce the Project’s first year total (direct plus indirect) GHG emissions below 10,000 MTCO₂e per year. The first year offsets identified in the binding agreement shall be purchased and retired no later than 12 calendar months from completion of the first full year of operation. The estimated amount of offsets required is 18,153 MTCO₂e per year (i.e., 28,153 – 10,000 MTCO₂e per year) if the wellfield and intermediate pump station are powered by natural gas. This volume may be reduced if less power is needed, solar power is provided, or diesel powered wells are retired at the Cadiz Ranch that would count as an offset.

If electricity from the grid is used, the required offsets are estimated to be 5,810 MTCO₂e per year (i.e., 15,810 – 10,000 MTCO₂e per year). Since offsets for off-site electricity generation is the responsibility of the energy generators, the Project may obtain verification of these offsets or purchase additional offsets as needed.

A GHG inventory shall be completed which will be verified by an accredited third-party verification body and reported to the Climate Registry. The Applicant shall purchase and retire such additional carbon offset credits (due to a net increase in emissions from the first full year of operations) as may be needed each year to ensure that the Project's total (direct plus indirect) GHG emissions are offset below the benchmark of 10,000 MTCO_{2e} above existing 2011 conditions.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Within 90 days of construction completion of the Groundwater Conservation and Recovery Component, carbon offset credits shall be purchased from the Climate Registry or other source approved by CARB.	Retain records in the project file.	SMWD General Manager/ Chief Engineer	After Construction (within 90 days)
2. An accredited third-party verification body shall complete a GHG inventory and report to the Climate Registry.			

If after further environmental review Phase II is approved, then **Mitigation Measure GHG-2** would be imposed.

Mitigation Measure GHG-2: Imported Water Storage Component. Within 90 days of completion of Project construction, carbon offset credits shall be purchased from The Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emission credits under a GHG Reduction Plan or similar program, in sufficient quantity to reduce the Project's total (direct plus indirect) GHG emissions below 10,000 MTCO_{2e} per year, and each year purchase additional carbon offset credits (due to a net increase in emissions from first year operations) as may be needed to reduce emissions below 10,000 MTCO_{2e}.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Within 90 days of construction completion of the Groundwater Conservation and Recovery Component, carbon offset credits shall be purchased from the Climate Registry or other source approved by CARB.	Retain records in the project file.	SMWD General Manager/ Chief Engineer	After Construction (within 90 days)
2. An accredited third-party verification body shall complete a GHG inventory and report to the Climate Registry.			

Hazards and Hazardous Materials

Mitigation Measure HAZ-1: On-site materials storage, fueling, and vehicle maintenance areas shall be equipped with secondary containment and spill containment equipment. Storage, handling, and disposal of hazardous materials shall comply with applicable regulations including submittal of a Business Plan to the County Fire Department.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure HAZ-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure HAZ-2: If excavation uncovers contaminated materials, excavation activities shall cease in the contaminated area. Soil samples shall be collected to characterize the soils and contamination. The CUPA shall be notified of the sample results. The construction contractor shall stockpile contaminated soils on plastic sheeting as necessary to prevent releasing contamination into the ground and shall ultimately dispose of the materials in coordination with the CUPA in compliance with hazardous material regulations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure HAZ-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure HAZ-3: No construction or other Project activities shall occur at the Cadiz Sonic Lake Target No. 5 and No. 9 areas, until the USACE clears the proposed locations for the potential presence of unexploded ordnance from historical military uses. In the event that the USACE encounters unexploded ordnance, the USACE is obligated to remove the unexploded ordnance under their ongoing investigations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to installation of Project elements, the USACE shall clear the proposed locations for potential presence of unexploded ordnance.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Hydrology and Water Quality

Mitigation Measure HYDRO-1: A construction and maintenance Storm Water Pollution Prevention Plan shall be prepared and included in construction specifications and Operations and Maintenance Manual (OMM) for the Project. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures:

- Install temporary sediment fences or straw wattles at stream crossings or washes to prevent erosion and sedimentation during construction, including at each ARZC railroad trestle along the pipeline alignment.
- Establish designated fueling areas equipped with secondary containment,
- Require drip-pans under all idle equipment on the construction sites,
- Ensure that spill prevention kits are present at all construction sites.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preparation and implementation of a SWPPP, as required by state law.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. Keep SWPPP in the project file at the work site.			

Mitigation Measure HYDRO-2: Project Design Feature 6.4 found in Chapter 6.4 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impacts for the migration of the saline/freshwater water interface to adversely affect groundwater quality. Chapter 6.4 of the Updated GMMMP is provided in full below.

6.4 Induced Flow of Lower-Quality Water from Bristol and Cadiz Dry Lakes

Saline water migration is allowed up to and not to exceed 6,000 feet from the baseline location of the saline-freshwater interface. To prevent migration of saline groundwater beyond 6,000 feet, FVMWC will implement mitigation measures that may include injection or extraction wells or other physical means to maintain the saline-freshwater interface. If these physical measures prove ineffective, reductions in Project pumping will be required (see Sections 6.4.3, below).

6.4.1 Monitoring

To monitor the influence of the Project's operation on the migration of the saline-freshwater interface located between the Project wellfield and the Bristol and Cadiz Dry Lakes, a network of "cluster type" observation wells will be established between the Project wellfield and the saline-freshwater interface. Groundwater TDS concentrations in the well clusters will be monitored on a quarterly basis during the pre-operational period of the Project, semi-annually throughout the operational period, and annually during the post-operational period of the Project. Of the monitoring well network, SCE Well no. 5 and SCE Well no. 11, along with other newly installed well clusters located between the interface and the Project wellfield will be located such that they are appropriate to serve as "sentinel" wells to determine whether there is a progressive migration of the saline-freshwater interface. The locations of SCE Well no. 5, SCE Well no. 11, and the other sentinel well clusters are shown in Figures 5-1 and 5-2.

6.4.2 Action Criteria

The decision-making process will be initiated if the action criterion is triggered. The action criterion is a migration of the interface, as measured by an increase in TDS concentration in excess of 600 mg/L in any cluster or observation well located within a distance of 6,000 feet from pre-Project locations of the interface.

6.4.3 Decision-Making Process

If the action criterion is triggered, the decision-making process will include:

- Assessment of whether the increased TDS concentration or migration of the saline-freshwater interface is attributable to Project pumping;
- Assessment of trends and updated projections of whether and when the saline-freshwater interface is expected to migrate 6,000 feet from its baseline location;
- If the increased TDS concentration within the monitoring wells is determined to be attributable to the Project and the saline-freshwater interface is expected to migrate more than 6,000 feet from its baseline location within 10 years, then one or more of the corrective measures set forth in Section 6.4.3 shall be implemented.

6.4.4 Corrective Measures

Corrective measures that will be implemented to eliminate the further migration of saline groundwater towards the Project wellfield may include the following:

- Installing one or more extraction well(s) or injection well(s) at the northeastern edge of Bristol Playa and/or north of Cadiz Playa where the salt mining source wells are located to maintain the saline-freshwater interface within its 6,000-foot limit subject to the same mitigation measures imposed on the Project well-field as set forth in the SMWD Mitigation Monitoring and Reporting Program (see Figures 5-1 and 5-2).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified to eliminate the further migration of saline groundwater towards the Project wellfield. Modifications to Project operations will include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the predicted impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-2 in the construction contract specification.	See MM HYDRO-2	Enforcement: SMWD General Manager/ Chief Engineer	See MM HYDRO-2
2. Implement Project Design Features in Chapter 6.4 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Mitigation Measure HYDRO-3: Project design features in Chapter 6.2 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address potential impacts to Third Party wells. Chapter 6.2 of the Updated GMMMP is provided in full below.

6.2 Third-Party Wells

It is the intent of the Project to operate without adverse material impacts to wells owned by neighboring landowners in the vicinity of the Project area, and those operated in conjunction with salt mining operations on the Bristol or Cadiz Dry Lakes. To avoid such potential impacts, the groundwater monitoring network will include monitoring wells located in and around the wellfield, near neighboring landholdings, and on and adjacent to the Dry Lakes (see Figures 5-1 and 5-2). Groundwater levels will be monitored on a continuous to semi-annual basis (see Table 5-1) during the preoperational and

operational periods, then annually during the post-operational period. Water quality will be monitored on a quarterly to annual basis during the preoperational period, annually during the operational period of the Project, and triennially during the post-operational period (see Table 5-1). Further, FVMWC shall monitor static (non-pumping) water levels within any third-party wells that are representative of the local groundwater impacts and located within the northern Bristol/Cadiz Sub-Basin or elsewhere in the Fenner Watershed. Such monitoring of third-party wells will be performed on a semi-annual basis during the pre-operational and operational periods, then annually during the post-operational period as established in the Closure Plan.

6.2.1 Action Criteria

The decision-making process will be initiated if any of the action criteria are triggered. The action criteria are: 1) a decline of static water levels of more than twenty feet from pre-Project static water levels or to a degree in which the reduction in static water levels results in an inability to meet existing the production of any third-party well drawing water from the northern Bristol/Cadiz Sub-Basin or elsewhere in the Fenner Watershed; and 2) the receipt of a written complaint from one or more well owner(s) regarding decreased groundwater production yield, degraded water quality, or increased pumping costs submitted by neighboring landowners or the salt mining operators on the Bristol and Cadiz Dry Lakes. Any written complaint by a well owner in accordance with this action criterion shall be directed to FVMWC.

6.2.2 Decision-Making Process

If any of the action criteria are triggered, the decision-making process will include:

- If a written complaint with a documented change in water level as provided for in Section 6.2.1 is received from a third-party well owner located within the area of influence (see Figure 5-1), FVMWC will immediately implement Corrective Measure 6.2.3.1, below;
- Assessment of whether water level changes, decreased yields, increased pumping costs, and/or degraded water quality in the third-party wells are attributable to Project operations or other causes;
- If such water level changes, decreased yields, increased pumping costs and/or degraded water quality are determined to not be attributable to Project operations, then FVMWC would discontinue any interim arrangement to provide water as set forth in Section 6.2.3.1;
- If such water level changes, decreased yields, increased pumping costs and/or degraded water quality are

determined to be attributable to Project operations, then one or more of the corrective measures set forth in Section 6.2.3 shall be implemented.

6.2.3 Corrective Measures

6.2.3.1 Interim Water Supply. If a written complaint as provided for in Section 6.2.1 is received from a third-party well owner located within the area described above (see Figure 5-1), FVMWC will arrange for an immediate interim supply of water to the third-party well owner until the decision-making process is complete in an amount necessary to fully offset any reduced yield to the third-party well owner, as compared to the yield from the impacted well prior to Project operations or, if the impacted well was installed after Project operations commenced, then as compared to the yield of the well immediately after installation

6.2.3.2 Further Corrective Measures. If any of the Action Criteria set forth in 6.2.1 are triggered and the impacts are determined to be attributable to Project operations, one or more of the following further corrective measures shall be implemented to correct the impairment to the beneficial use of the groundwater:

- Continued provision of substitute water supplies;
- Deepening or otherwise improving the efficiency of the impacted well(s);
- Blending of impacted well water with another local source;
- Constructing replacement well(s) on disturbed land subject to the same mitigation measures imposed on the Project wellfield as set forth in the SMWD's Mitigation Monitoring and Reporting Program;
- Paying the impacted third-party well owner for any increased material pumping costs incurred by the well owner; or
- Entering into a mitigation agreement with the impacted third-party well owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-3 in the construction contract specification.	See MM HYDRO-3 .	Enforcement: SMWD General Manager/ Chief Engineer	See MM HYDRO-3
2. Implement project design features in Chapter 6.2 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Mitigation Measure HYDRO-4: All construction and operation plans shall be prepared that identify standard best management practices (BMPs) to control drainage around the Project infrastructure including but not limited to wellpads, pump stations, an energy generation facility, air relief valves, forebay and equalization storage facilities, spreading basins, and railcar wash areas. The BMPs shall include placing facility and well pads and above-ground appurtenant facilities outside of visible drainages; and grading well pads to disperse runoff from the site in a manner that minimizes scour potential of storm water. BMPs include the use of physical barriers to prevent or manage seepage, detain runoff and prevent erosion during construction and operation and may include the use of siltation straw wattles, hay bales, setbacks and buffers, and other similar methods that reduce the energy in surface water flow.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-4 in the construction contract specification.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Construction plans shall include BMPs to control drainage around the Project infrastructure.			

Mineral Resources

Mitigation Measure MIN-1: The Project Design Features in Chapter 6.5 of the Updated GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for groundwater level drawdown on existing salt production operations. Chapter 6.5 of the Updated GMMMP is provided in full below.

6.5 Brine Resources Underlying Bristol and Cadiz Dry Lakes

To monitor potential Project impacts on the salt mining operations on the Bristol and Cadiz Dry Lakes, a network of “cluster type” monitoring wells will be established between the Project wellfield and the margins of the Dry Lakes (see

Figures 5-1 and 5-2). Groundwater levels will be monitored on a continuous basis throughout the operational and post-operational term of the Project.

6.5.1 Action Criteria

The decision-making process will be initiated if either of the action criteria is triggered. The action criteria are:

- A declining trend in groundwater or brine water levels of greater than 50 percent of either (a) the water column above the intake of any of the salt mining operators' wells, or (b) the average depth of brine water level within the brine supply trenches operated by the salt mining operators. Changes in such groundwater or brine water levels, shall be determined by monitoring changes in the static water levels within the network of clustered monitoring wells identified above, as changes in the static water levels within these monitoring wells are correlated with the groundwater or brine water levels within the salt mining operator's wells and brine supply trenches; or
- The receipt of a written complaint from a salt mining operator regarding decreased groundwater production yield or increased pumping costs from one or more of its wells, or decreased water levels within its brine supply trenches. Any written complaint by a salt mining operator in accordance with this action criteria shall be directed to FVMWC.

6.5.2 Decision-Making Process

If either of the action criteria is triggered, the decision-making process will include:

- Assessment of whether the change in groundwater/brine level in excess of the action criteria is attributable to Project operations;
- If the change in groundwater/brine water level in excess of the action criteria is determined to be attributable to Project operations, then an assessment will be made to determine whether the groundwater/brine level change constitutes a potential adverse impact to one or more of the salt mining operations on the Dry Lakes. Adverse impacts include changes to brine chemistry or yields from existing brine production wells or brine supply trenches attributable to Project operations. If no such impacts are identified, potential actions may include:
 - Continued or additional verification monitoring;

- Proposed refinements to the action criteria;
- Proposed revision to the monitoring frequency at the observation well clusters at the margins of the Dry Lakes;
- If the decline in groundwater/brine water level(s) approaching the action criteria is determined to be attributable to Project operations, and the changes constitute a potential adverse impact to one or more of the salt mining operations on the Dry Lakes, then one or more of the corrective measures set forth in Section 6.5.3 shall be implemented.

6.5.3 Corrective Measures

Action(s) necessary to mitigate changes to brine chemistry or yields from existing brine production wells or brine supply trenches attributable to Project operations, and thereby maintain or restore the beneficial use of the groundwater/brine water by the salt mining operations, shall include one or more of the following:

- Compensating the mining operator(s) for the additional costs of pumping;
- Installing one or more brine extraction well(s) and/or injection well(s) where the salt mining source wells are located subject to the same mitigation measures imposed on the Project well-field as set forth in the SMWD Mitigation Monitoring and Reporting Program (see Figure 5-1); or
- Entering into a mitigation agreement with the salt mining operator(s).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified until adverse impacts to the salt mining operations are eliminated. For the purposes of these action criteria, “ineffective” shall be defined as a corrective measure that when put into place did not meet the objective set forth in the corrective action, i.e., to maintain or restore the beneficial use of the groundwater/brine water by the salt mining operations. “Infeasible” is a corrective measure which cannot be implemented due to cost, technical challenges, or environmental and permitting issues as defined under CEQA. Modifications to Project operations shall include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the predicted impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure MIN-1 in the operations specification.	See MM MIN-1	Enforcement: SMWD General Manager/ Chief Engineer	See MM MIN-1
2. Implement Project Design Feature in Chapter 6.5 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Public Services and Utilities

Mitigation Measure UTIL-1: Storm water drainages traversed by the water conveyance pipeline alignment shall be returned to pre-construction conditions. Existing structures such as storm flow diversion berms, railroad facilities including bridge supports, access roads, and utility poles shall be returned to pre-construction conditions and protected from scouring by storm water flows, subject to the approval of the railroad owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
At the end of construction, return storm water drainages to pre-construction conditions.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	After Construction

Mitigation Measure UTIL-2: The owner of the natural gas pipelines traversing the Cadiz Property shall be notified in advance of construction activities near the pipelines sufficient to allow for supervision and approval by the owner of construction methods and pipeline under-crossing designs. The under-crossing designs shall require approval from the pipeline owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
The owner of the natural gas pipelines traversing the Cadiz Property shall be notified in advance of construction activities.	Retain notification records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure UTIL-3: Pumps installed as part of the Project shall be rated for high efficiency to minimize energy consumption.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure UTIL-3 in the construction contract specification.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Transportation and Traffic

Mitigation Measure TR-1: A Traffic Control Plan shall be implemented that includes the following elements:

- Identify hours of construction and hours for deliveries and include a discussion of haul routes;
- Identify all access restrictions, parking restrictions, and signage requirements on major roads (e.g., speed limit);
- Identify signage and flag men necessary at turn-off lanes on SR-62 and US-66 to avoid traffic hazards on fast moving roads;
- Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times;
- Arrange for a telephone resource to address public questions and complaints during Project construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure TR-1 in the construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Implement a Traffic Control Plan.			

TR-2: The construction contractor shall submit construction plans for construction within the railroad easement to the railroad owner and operator for their review and approval. Any plans to deliver materials on the rail lines shall be reviewed and approved by the railroad owner and operator. The construction contractor shall obtain approval from the railroad operator for material delivery and staging activities within the railroad right-of-way.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Construction contractor shall submit construction plans for construction within the railroad.	Perform site inspections to verify contractor compliance with construction plans. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Submit construction plans for review and approval by railroad owner and operator.			

TR-3: During construction, all at-grade railroad crossings shall be clearly flagged and barricaded to ensure that all vehicular traffic comes to a full stop prior to crossing railroad tracks.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Flag and barricade all at-grade railroad crossings.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

TR-4: The construction contractor shall implement mandatory railroad safety training and implement railroad safety measures requested by the railroad operator.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Construction contractor shall implement mandatory railroad safety training and safety measures.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Appendix D

Greenhouse Gas Worksheets and Calculations



GHG-1 Assumptions

Cadiz Pipeline - Pump Stations

defaults are in blue

PROJECT CHARACTERISTICS

Location	Cadiz (Mojave Desert)		
Climate Zone			
Land Use Setting	Rural		
Start of Construction	1/1/2026		
End of Construction	9/30/2026	*Assumed 9 month construction per pump station	
Utility Company	SCE		
CO2 intensity	default		

LAND USE

Land Use	Land Use Subtype	Unit Amt	Size Metric	Lot Ac	SF
Light Industry	General Light Industry	43.56	1000 sf	1.000	43560

CONSTRUCTION

Construction Phasing

Construction Phase	Start Date	End Date	Days/wk	Total Days
Site Preparation	1/1/2026	1/28/2026	5	20
Grading	1/29/2026	2/25/2026	5	20
Building Construction	2/26/2026	8/5/2026	5	115
Paving	8/6/2026	9/2/2026	5	20
Architectural Coating	9/3/2026	9/30/2026	5	20
195				

Offroad Equipment

Equipment Type	Unit Amt	Hours/Day	HP	LF	Construction Phase
Tractor/Loader/Backhoe	1	8	default	default	site prep, grading, building const
Excavator	1	8	default	default	Building const
Paving Equipment	1	8	default	default	paving
Plate compactor	1	8	default	default	paving
generator	1	8	default	default	grading
welder	1	8	default	default	building const
air compressor	1	8	default	default	arch coating
Crane	1	8	default	default	building const
Grader	1	8	default	default	grading
Paver	1	8	default	default	
concrete saw	1	8	default	default	building const
Total	11				

Dust from Material Movement

Phase	Material Import (cy)	Material Export (cy)	Size Metric	Acres Graded
Site Prep	0	0 cy		default
Grading	0	3300 cy		default

Grading/Site Prep

Size Metric	Unit Amt	
Haul Truck Capacity (CY)	16	*CalEEMod Default
Total Haul Amount	3300	
Grading Haul Days	20	
Daily Grading Haul Trips (In/Out)	21	

Trips & VMT

Phase Name	# of worker trips/day	# vendor trips/day	# haul trips/day	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Site prep	20	10	2	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Grading	20	10	24	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Building Construction	20	10	2	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Paving	20	10	2	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT

*10 workers

*5 vendor trucks

*Assume two one-way trips for drop off/demob of off-road equipment

Architectural Coating

Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

MITIGATION MEASURES

Water Exposed Area

3x Per Day

Cadiz Pipeline - Pipeline Inspection defaults are in blue

PROJECT CHARACTERISTICS			
	Location	Cadiz (Mojave Desert)	
	Climate Zone		
	Land Use Setting	Rural	
	Start of Construction	1/1/2026 *Modelling purposes	
	Operational Year	N/A	
	Utility Company	SCE	
	CO2 intensity	default	

LAND USE

Land Use	Land Use Subtype	Unit Amt	Size Metric	Lot Ac	SF	Population
Parking	Other Non-Asphalt Surfaces	1457.28	1000 sf	33.455	1457280	0

CONSTRUCTION

Construction Phasing						
Construction Phase	Start Date	End Date	Days/wk	Total Days		
Trenching	1/1/2026	6/30/2026	5	129	*6 months for pipeline inspection	
Pipeline Rehabilitation (Building Construction)	7/1/2026	10/31/2026	5	88	*4 months of pipeline rehabilitation	
				129		

Offroad Equipment						
Equipment Type	Unit Amt	Hours/Day	HP	LF	Phase	
Grader	1	8	default	default	Trenching	
Excavator	1	8	default	default	Trenching	
Plate compactor	1	8	default	default	Trenching	
Mobile Crane	1	8	default	default	Pipeline Rehabilitation (Building Construction)	
Concrete Saw	1	8	default	default	Trenching	
Welder	1	8	default	default	Pipeline Rehabilitation (Building Construction)	
	Total	6				

Dust from Material Movement				
Phase	Material Import (cy)	Material Export (cy)	Size Metric	Acres Graded
Trenching	0	323,840 cy	default	*Dust movement (no hauling)

Trenching	
Size Metric	Unit Amt
Width (ft)	6
Depth (ft)	6
Length per day (mi)	3
Total Length (mi)	46
Length (ft)	242880
Total (cubic feet)	8743680
Total (cubic yards)	323840.00

Trips & VMT									
Phase Name	# of worker trips/day	# vendor trips/day	# haul trips (total per phase)	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Trenching	20	10	2.00	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Pipeline Rehabilitation (Building Construction)	20	10	2.00	default	default	default	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
*10 workers *5 vendor trucks *Assume two one-way trips for drop off/demob of off-road equipment									

Architectural Coating		
Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

MITIGATION MEASURES

Water Exposed Area
3x Per Day

Cadiz Pipeline - ARAVBO Valves

defaults are in blue

PROJECT CHARACTERISTICS			
Location	Cadiz (Mojave Desert)		
Climate Zone			
Land Use Setting	Rural		
Start of Construction	1/1/2026		
Operational Year	1/7/2026		
Utility Company	SCE		
CO2 intensity	default		

LAND USE			
Land Use	Land Use Subtype	Unit Amt	Size Metric
Parking	Other Asphalt Surfaces		0.05 1000 sf
Valve Unit	Phase 1	Phase 2	
# AR/AV	50	100	
# BO	50	100	

CONSTRUCTION				
Construction Phasing				
Construction Phase	Start Date	End Date	Days/wk	
Trenching	1/1/2026	1/2/2026	5	5
Building Construction	1/3/2026	1/7/2026	5	
Offroad Equipment				
Equipment Type	Unit Amt	Hours/Day	HP	
Excavator	1	8	default	5
Grader	1	8	default	
Plate compactor	1	8	default	
Concrete Saws	1	8	default	
Generators	1	8	default	
Welders	1	8	default	
Total	6			

Dust from Material Movement				
Phase	Material Import (cy)	Material Export (cy)	Size Metric	Acres Graded
Trenching	0	44.44 cy	default	*Contained onsite and used for infill

Trenching	
Size Metric	Unit Amt
Width (ft)	10
Depth (ft)	6
Length per site (ft)	20
Total (cubic feet)	1200
Total (cubic yards)	44.44

Building Construction	
Size Metric	Unit Amt
Valve area (ft2)	50
Elevation (ft)	4
Total number of AR/AV	
Valves	100
Total number of BO	200

Trips & VMT									
Phase Name	# of worker trips/day	# vendor trips/day	# haul trips/day	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Trenching	10	10	2	default	default	25	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Building Construction	10	10	2	default	default	25	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
*5 workers		*5 vendor trucks		*Assume two one-way trips for drop off/demob of off-road equipment					

Architectural Coating		
Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

MITIGATION MEASURES	
Water Exposed Area	
3x Per Day	

Cadiz Pipeline - Cathodic Protection Repair

defaults are in blue

PROJECT CHARACTERISTICS			
Location	Cadiz (Mojave Desert)		
Climate Zone			
Land Use Setting	Rural		
Start of Construction	7/1/2026		
End of Construction	10/31/2026		
Utility Company	SCE		
CO2 intensity	default		

LAND USE

Land Use	Land Use Subtype	Unit Amt	Size Metric	Lot Ac	SF	Population
Parking	Other Asphalt Surfaces	2.5	1000 sf	0.200	2500	0

CONSTRUCTION

Construction Phasing					
Construction Phase	Start Date	End Date	Days/wk	Total Days	
Building Construction	7/1/2026	10/31/2026	5	88	*Assumed construction occurring concurrently with pipeline rehabilitation
88					

Offroad Equipment					
Equipment Type	Unit Amt	Hours/Day	HP	LF	Construction Phase
Excavator	1 default	default	default	default	site prep & grading
Grader	1 default	default	default	default	grading
Plate compactor	1 default	default	default	default	site prep and grading and building const
Welder	1 default	default	default	default	grading
Total	4				

Trips & VMT									
truck hauling capacity		14 cy							
Phase Name	# of worker trips/day	# vendor trips/day	# haul trips/day	Trip length worker (mi)	trip length vendor (mi)	Trip length haul (mi)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Building Construction	10	10	2	default	default	25	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
*5 workers *5 vendor trucks *Assume two one-way trips for drop off/demob of off-road equipment									

Architectural Coating		
Phase	VOC for Parking Lot Paint	Parking Area
Arch Coating	default	default

GHG-2 Construction GHG Calculations and Modeling

Cadiz Northern Pipeline**GHG Construction Analysis - Summary Construction****Unmitigated**

Regional Maximums Source	MTCO2 Mton/year
Pipeline Inspection & Rehabilitation	179
AR/AV & BO Installation	397
Cathodic Protection Repair	61
Pump Station (7 Stations)	1222
Northern Pipeline Annual Construction GHG Emissions	1858
Northern Pipeline Annual Construction GHG Emissions (50-years amortized)	37
FIER Construction GHG Emissions from the Final EIR (see EIR Table 4.3-5)	448
Northern Pipeline + Final EIR Construction GHG Emissions	485

Cadiz Northern Pipeline
Air Quality Construction Analysis - Facility Modifications
Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
					lb/day					
3.1 Site Preparation (2026) - Unmitigated	0.301	2.651	5.015	0.009	0.08	0.38	0.46	0.07	0.09	0.17
3.3 Grading (2026) - Unmitigated	0.596	6.231	7.313	0.022	0.23	0.90	1.13	0.21	0.21	0.42
3.5 Building Construction (2026) - Unmitigated	1.121	9.479	11.704	0.024	0.31	0.38	0.69	0.29	0.09	0.38
3.7 Paving (2026) - Unmitigated	0.361	3.236	5.690	0.009	0.13	0.38	0.51	0.12	0.09	0.21
3.9 Architectural Coating (2026) - Unmitigated	10.369	1.690	3.219	0.006	0.04	0.38	0.42	0.04	0.09	0.13
Northern Pipeline Facility Modifications Daily Maximum Emissions	10.37	9.48	11.70	0.02	0.31	0.90	1.13	0.29	0.21	0.42
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG per Pump Station	Onsite	Offsite
3.1 Site Preparation (2026) - Unmitigated	5.286338	6.619517
3.3 Grading (2026) - Unmitigated	8.128324	19.953933
3.5 Building Construction (2026) - Unmitigated	103.5038	38.062222
3.7 Paving (2026) - Unmitigated	5.586403	6.619517
3.9 Architectural Coating (2026) - Unmitigated	1.620387	8.2399038
Total	203.6203455	
Total GHG for 7 Pump Stations	1221.722073	

Cadiz Northern Pipeline

Air Quality Construction Analysis - Cathodic REPAIR

Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
lb/day										
3.1 Building Construction (2026) - Unmitigated	0.66	5.37	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26
Northern Pipeline Cathodic Repair Daily Maximum Emissions	0.66	5.37	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG Cathodic repair	Onsite	Offsite
3.1 Building Construction (2026) - Unmitigated	36.736518	23.854126
Total GHG Cathodic repair	60.59064431	

Cadiz Northern Pipeline
Air Quality Construction Analysis - Pipeline
Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10 lb/day	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
3.1 Building Construction (2026) - Unmitigated	0.65	5.34	6.42	0.02	0.18	0.38	0.57	0.17	0.09	0.26
3.3 Pipeline Inspection (2026) - Unmitigated	0.75	5.86	8.41	0.01	0.23	0.58	0.80	0.21	0.12	0.33
Northern Pipeline Pipeline Inspection and rehabilitation Daily Maximum Emissions	1.40	11.20	14.83	0.03	0.41	0.96	1.37	0.38	0.21	0.59
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG for pipeline inspection and rehabilitation	Onsite	Offsite
3.1 Pipeline Rehabilitation/Building Construction (2026) - Unmitigated	48.51166	29.45685
3.3 Pipeline Inspection (2026) - Unmitigated	58.02328	42.695884
Total GHG pipeline inspection and rehabilitation	178.6876749	

Cadiz Northern Pipeline
Air Quality Construction Analysis - ARAVBO Valves
Unmitigated

Regional Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
					lb/day					
3.1 Building Construction (2026) - Unmitigated	0.40	3.34	4.16	0.01	0.08	0.25	0.33	0.07	0.06	0.14
3.3 Trenching (2026) - Unmitigated	0.52	4.31	5.55	0.01	0.19	0.39	0.58	0.18	0.08	0.25
Northern Pipeline Daily Maximum Emissions	0.92	7.65	9.71	0.02	0.27	0.64	0.91	0.25	0.14	0.39
AVAQMD & MDAQMD Threshold	137.0	137.0	548.0	137.0	N/A	N/A	82.0	N/A	N/A	65.0
Exceed Threshold (Y/N)?	No	No	No	No	N/A	N/A	No	N/A	N/A	No

GHG per 200 feet of pipeline construction phase	Onsite	Offsite
3.1 Building Construction (2026) - Unmitigated	0.616506	0.8132088
3.3 Trenching (2026) - Unmitigated	0.677446	0.5421392
Total GHG per 1 AR/AV/BO Valve	2.649	
Total GHG of 150 AR/AV & 150 BO Valves	397.395	

GHG-3 Operational GHG Calculations and Modeling

Cadiz Northern Pipeline Addendum
Operational Emissions - Natural Gas Pump Engine Emissions
Air Quality and Greenhouse Gas Assessment

last updated: 3/12/2025

Conversion Factors

BTU/HP-hr	2,544.4	Energy Measurements and Conversion: https://www.extension.iastate.edu/agdm/wholefarm/html/c6-86.html
BTU/MMBTU	1,000,000	
PM10 Fraction of Total PM	0.994	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - GASEOUS FUEL
PM2.5 Fraction of Total PM	0.992	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - GASEOUS FUEL
lbs/short ton	2,000	
GWP CH4	25	IPCC AR4 https://www2.arb.ca.gov/ghg-gwps
GWP N2O	298	IPCC AR4 https://www2.arb.ca.gov/ghg-gwps
CO2/CO2e	1	IPCC AR4 https://www2.arb.ca.gov/ghg-gwps

Based on efficiency
of 30%
8481.44729
Heat Rate from specs
9125

Natural Gas Engine Pump - Total 7 pump stations

2 Centaur 40 PS, 4 Taurus 60 PS

Pump Stations		PS information provided by client. HP rating assumes 80% efficiency			Heat Rate		L-Gen Units From Mainspring PPT 1-23-25			
	HP	MMBTU/hr	MMBTU/yr				Number of Units	Total kW Req'd	kW per Unit	Gas Consumption (MMBTU/Yr)
	Centaur 40				9125 Btu/hp-h		181	43,621	241	3,124,659
		24,919								
PS 1		7,123	18	158,766	65.00	569,377.01 MMBTU/yr	Operating Hrs.	Hrs/Year	Operating Up Time	Gas Consumption (MMBTU/kW)
PS 4		3,601	9	80,264	32.86	287,845.94 MMBTU/yr	8,322	8,760	0.95	0.008607545
	Taurus 60				10830 Btu/kWh					8607.54
PS 2		8,402	21	187,274	90.99	797,104.46	Power Req't's			
PS 3		3,862	10	86,081	41.83	366,391.03	PS1			
PS 5		5,897	15	131,440	63.86	559,453.11	PS2			
PS 6		6,758	17	150,631	73.19	641,136.87	PS3			
							PS4			
							PS5			
							PS6			
Max HP:		35,643								
Centaur 40 MMBTU/HP-hr		27		239,030	97.86	857,222.94				
Taurus 60 MMBTU/HP-hr		63		555,426	269.87	2,364,085.47				
Project Total MMBTU/HP-hr		91		794,456	368	3,221,308				

Fuel Cell Component

Minimum kW	4,500	
kW/HP	0.746	
HP	6,032.172	
Fuel Cell MMBTU/HP-hr	15.35	Emissions credits applied to the most conservative emission factor (Taurus 60) engine.

Load Factor:	1.00	(CalEEMod Generator Set CNG Default Load Factor is 0.68, Appendix G, Table G-12)		
Operating Hours per Unit:	24 hours/day	(Assuming 24 hours of operation)	64.4	0.469476
	8,760 hours/year	(Assuming 24 hours of operation, 365 days a year)	2.544	0.01854576
	365 days/year			

Taurus 60 Engine (PS 2,3,5,6)										
Criteria Pollutants ¹							Greenhouse Gases ²			
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CH ₄	N ₂ O	CO ₂ e (tons/yr)
lb/MMBTU	0.00634	0.00729	0.0111	0.0034	0.006	0.006	118.00	0.0104	0.0002	—
lbs/hr	0.40	0.4622	0.70	0.22	0.38	0.38	7,481.76	0.66	0.01	—
lb/day	9.65	11.09	16.89	5.17	9.13	9.13	179,562.27	15.83	0.30	—
lbs/yr	3,521.40	4,049.05	6,165.22	1,888.45	3,332.55	3,332.55	65,540,228	5,776	111	—
short tons/yr	1.76	2.02	3.08	0.94	1.67	1.67	32,770	2.89	0.06	32,859
metric tons/yr	—	—	—	—	—	—	29,729	2.62	0.05	29,809

Centaur 40 Engine (PS 1 and4)										
Criteria Pollutants ³							Greenhouse Gases ²			
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CH ₄	N ₂ O	CO ₂ e (tons/yr)
lb/MMBTU	0.00632	0.00909	0.0221	0.0034	0.006	0.006	118.00	0.0104	0.0002	—
lbs/hr	0.17	0.25	0.60	0.09	0.16	0.16	3,219.81	0.28	0.01	—
lbs/day	4.14	5.95	14.47	2.23	3.93	3.93	77,275	6.81	0.13	—
lbs/yr	1,510.67	2,172.78	5,282.56	812.70	1,434.18	1,434.18	28,205,522	2,486	48	—
short tons/yr	0.76	1.09	2.64	0.41	0.72	0.72	14,103	1.24	0.02	14,141
metric tons/yr	—	—	—	—	—	—	12,794	1.13	0.02	12,828

Nothern Pipeline Pump Stations Emissions (lbs/day)	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CH ₄	N ₂ O	CO ₂ e MTons/year
	13.79	17.05	31.36	7.40	13.06	13.06				42,638

Notes:

1. Taurus 60 Engine Emission factors for criteria pollutants: Estimated Power Island Emissions, Stantec, October 25, 2021. Received from email September 19, 2024.
2. Emission factors for Greenhouse Gases: (CO₂) Estimated Power Island Emissions, Stantec, October 25, 2021. Received from email September 19, 2024. (CH₄, N₂O) CalEEMod, Natural Gas Emission Factors, Appendix G, Table G-4
3. Centaur 40 Engine Emission factors for criteria pollutants: Estimated Power Island Emissions, Stantec, October 25, 2021. Received from email September 19, 2024.

Emissions Summary

Generator Type		VOC lbs/day	NOx	CO	SOx	PM10	PM2.5	CO ₂ 1	CH ₄ 25	N ₂ O 298	CO ₂ e	CO ₂ e MT/yr
NPS 1	ICE	2.75	3.95	9.61	1.48	2.61	2.61	51,327	4.52	0.09	51,466	8,521
NPS 2	ICE	3.25	3.74	5.70	1.74	3.08	3.08	60,543	5.34	0.10	60,707	10,051
NPS 3	ICE	1.50	1.72	2.62	0.80	1.42	1.42	27,829	2.45	0.05	27,904	4,620
NPS 4	ICE	1.39	2.00	4.86	0.75	1.32	1.32	25,948	2.29	0.04	26,019	4,308
NPS 5	ICE	2.28	2.63	4.00	1.22	2.16	2.16	42,493	3.75	0.07	42,608	7,054
NPS 6	ICE	2.62	3.01	4.58	1.40	2.48	2.48	48,697	4.29	0.08	48,829	8,084
Well Field	ICE	52.53	48.15	70.03	0.58	2.90	0.58					
SPS 1	ICE	35.03	26.27	72.97	0.58	2.88	0.58					
		101.34	91.46	174.36	8.56	18.83	14.22					
MDAQMD Thresholds		137.00 no	137.00 no	548.00 no	137.00 no	82.00 no	65.00 no					
NPS	1-4	4.14	5.95	14.47	2.23	3.93	3.93	77,275	6.81	0.13	77,485	12,828
NPS	2,3,5,6	9.65	11.09	16.89	5.17	9.13	9.13	179,562	15.83	0.30	180,049	29,809
Total NPS		13.79	17.05	31.36	7.40	13.06	13.06	256,838	22.64	0.44	257,533	42,638
Total Wellfield + SPS 1		87.56	74.42	143.00	1.16	5.78	1.16					

GHG-4 CalEEMod Output Files

Cadiz Pipeline - Pump Station Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Site Preparation (2026) - Unmitigated
 - 3.3. Grading (2026) - Unmitigated
 - 3.5. Building Construction (2026) - Unmitigated
 - 3.7. Paving (2026) - Unmitigated
 - 3.9. Architectural Coating (2026) - Unmitigated
- 4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - Pump Station
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Light Industry	43.6	1000sqft	1.00	43,560	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.4	10.4	9.44	11.7	0.02	0.31	0.38	0.69	0.29	0.09	0.38	—	2,709	2,709	0.09	0.09	2.03	2,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	1.11	9.48	11.2	0.02	0.31	1.31	1.54	0.29	0.25	0.47	—	2,996	2,996	0.08	0.30	0.13	3,087
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.07	0.99	3.75	4.70	0.01	0.12	0.25	0.38	0.11	0.06	0.17	—	1,202	1,202	0.03	0.06	0.54	1,220
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.18	0.68	0.86	< 0.005	0.02	0.05	0.07	0.02	0.01	0.03	—	199	199	0.01	0.01	0.09	202

2.2. Construction Emissions by Year, Unmitigated

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

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

2026	10.4	10.4	9.44	11.7	0.02	0.31	0.38	0.69	0.29	0.09	0.38	—	2,709	2,709	0.09	0.09	2.03	2,740
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.32	1.11	9.48	11.2	0.02	0.31	1.31	1.54	0.29	0.25	0.47	—	2,996	2,996	0.08	0.30	0.13	3,087
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.07	0.99	3.75	4.70	0.01	0.12	0.25	0.38	0.11	0.06	0.17	—	1,202	1,202	0.03	0.06	0.54	1,220
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.19	0.18	0.68	0.86	< 0.005	0.02	0.05	0.07	0.02	0.01	0.03	—	199	199	0.01	0.01	0.09	202

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	2.07	3.82	0.01	0.07	—	0.07	0.06	—	0.06	—	581	581	0.02	< 0.005	—	583
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.8	31.8	< 0.005	< 0.005	—	31.9

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.27	5.27	< 0.005	< 0.005	—	5.29
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.27

3.3. Grading (2026) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	3.99	5.75	0.01	0.19	—	0.19	0.18	—	0.18	—	893	893	0.04	0.01	—	896
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.22	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.9	48.9	< 0.005	< 0.005	—	49.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.10	8.10	< 0.005	< 0.005	—	8.13
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	0.03	0.03	1.81	0.40	0.01	0.03	0.42	0.45	0.03	0.11	0.14	—	1,537	1,537	< 0.005	0.24	0.08	1,609
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	84.2	84.2	< 0.005	0.01	0.08	88.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.01	14.6

3.5. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.21	1.01	8.89	10.00	0.02	0.30	—	0.30	0.28	—	0.28	—	1,977	1,977	0.08	0.02	—	1,984
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.21	1.01	8.89	10.00	0.02	0.30	—	0.30	0.28	—	0.28	—	1,977	1,977	0.08	0.02	—	1,984
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.80	3.15	0.01	0.10	—	0.10	0.09	—	0.09	—	623	623	0.03	0.01	—	625
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.51	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	103	103	< 0.005	< 0.005	—	104
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.1	82.1	< 0.005	< 0.005	0.13	83.2
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	98.4	98.4	< 0.005	0.01	0.11	103
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.1	42.1	< 0.005	0.01	0.04	44.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.02	13.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.3	16.3	< 0.005	< 0.005	0.02	17.0
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.97	6.97	< 0.005	< 0.005	0.01	7.30

3.7. Paving (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.69	3.98	0.01	0.12	—	0.12	0.11	—	0.11	—	614	614	0.02	< 0.005	—	616
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.15	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.6	33.6	< 0.005	< 0.005	—	33.7
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.57	5.57	< 0.005	< 0.005	—	5.59
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.27

3.9. Architectural Coating (2026) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architect ural Coatings	10.1	10.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.75	9.75	< 0.005	< 0.005	—	9.79
Architect ural Coatings	0.55	0.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.61	1.61	< 0.005	< 0.005	—	1.62
Architect ural Coatings	0.10	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290

Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.02	17.8
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.67
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	< 0.005	2.95
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.27

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/28/2026	5.00	20.0	—
Grading	Grading	1/29/2026	2/25/2026	5.00	20.0	—
Building Construction	Building Construction	2/26/2026	8/5/2026	5.00	115	—
Paving	Paving	8/6/2026	9/2/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	9/3/2026	9/30/2026	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Building Construction	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	10.0	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	10.0	10.2	HHDT,MHDT
Grading	Hauling	23.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	10.0	10.2	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	20.0	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	10.0	10.2	HHDT,MHDT

Architectural Coating	Hauling	2.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	65,340	21,780	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	3,300	10.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat

Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9
AQ-PM	13.4
AQ-DPM	0.09
Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00

Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.42858976
Employed	0.61593738
Median HI	9.059412293
Education	—

Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179
Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	33.3504427
Arthritis	0.0
Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0

Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6
Elderly	14.5
English Speaking	72.3
Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—

Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
--------	---------------

Characteristics: Project Details	See project assumptions
Land Use	Assume 1 acre per station
Construction: Construction Phases	9 month construction per station
Construction: Off-Road Equipment	See project assumptions
Construction: Dust From Material Movement	See project assumptions
Construction: Trips and VMT	See project assumptions

Cadiz Pipeline - Pipeline Inspection Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Building Construction (2026) - Unmitigated
 - 3.3. Pipeline Inspection (2026) - Unmitigated
- 4. Operations Emissions Details
 - 4.10. Soil Carbon Accumulation By Vegetation Type
 - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
 - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - Pipeline Inspection
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	1,457	1000sqft	33.5	0.00	1,457,280	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.89	0.75	5.83	8.41	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,929	1,929	0.06	0.08	2.03	1,958
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.87	0.74	5.86	7.90	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,897	1,897	0.05	0.08	0.05	1,923
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.49	0.42	3.38	4.31	0.01	0.12	0.33	0.46	0.12	0.07	0.18	—	1,063	1,063	0.03	0.05	0.52	1,079
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.08	0.62	0.79	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	176	176	< 0.005	0.01	0.09	179

2.2. Construction Emissions by Year, Unmitigated

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

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

2026	0.89	0.75	5.83	8.41	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,929	1,929	0.06	0.08	2.03	1,958
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.87	0.74	5.86	7.90	0.02	0.23	0.67	0.90	0.21	0.13	0.34	—	1,897	1,897	0.05	0.08	0.05	1,923
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.49	0.42	3.38	4.31	0.01	0.12	0.33	0.46	0.12	0.07	0.18	—	1,063	1,063	0.03	0.05	0.52	1,079
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.09	0.08	0.62	0.79	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	176	176	< 0.005	0.01	0.09	179

3. Construction Emissions Details

3.1. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.54	4.75	4.71	0.01	0.18	—	0.18	0.16	—	0.16	—	1,198	1,198	0.05	0.01	—	1,202
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.54	4.75	4.71	0.01	0.18	—	0.18	0.16	—	0.16	—	1,198	1,198	0.05	0.01	—	1,202
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.16	1.15	< 0.005	0.04	—	0.04	0.04	—	0.04	—	292	292	0.01	< 0.005	—	293
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.3	48.3	< 0.005	< 0.005	—	48.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.6	63.6	< 0.005	< 0.005	0.10	64.4
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	76.2	76.2	< 0.005	0.01	0.08	79.4
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.6	32.6	< 0.005	0.01	0.03	34.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.02	10.7

Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.01	13.1
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.39	5.39	< 0.005	< 0.005	< 0.005	5.65

3.3. Pipeline Inspection (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.64	5.28	6.70	0.01	0.22	—	0.22	0.20	—	0.20	—	988	988	0.04	0.01	—	992
Dust From Material Movement	—	—	—	—	—	—	0.29	0.29	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.64	5.28	6.70	0.01	0.22	—	0.22	0.20	—	0.20	—	988	988	0.04	0.01	—	992
Dust From Material Movement	—	—	—	—	—	—	0.29	0.29	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	1.86	2.37	< 0.005	0.08	—	0.08	0.07	—	0.07	—	349	349	0.01	< 0.005	—	350

Dust From Material Movement:	—	—	—	—	—	—	0.10	0.10	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.34	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	57.8	57.8	< 0.005	< 0.005	—	58.0
Dust From Material Movement:	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	0.97	290
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.10	1.03	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	0.03	256
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.04	0.41	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	92.1	92.1	< 0.005	< 0.005	0.15	93.4
Vendor	< 0.005	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	110	110	< 0.005	0.02	0.12	115
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.2	47.2	< 0.005	0.01	0.04	49.5

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.02	15.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	19.0
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.82	7.82	< 0.005	< 0.005	0.01	8.19

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	7/1/2026	10/31/2026	5.00	89.0	—
Pipeline Inspection	Trenching	1/1/2026	6/30/2026	5.00	129	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

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

Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Pipeline Inspection	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Pipeline Inspection	Graders	Diesel	Average	1.00	8.00	148	0.41
Pipeline Inspection	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Pipeline Inspection	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Pipeline Inspection	—	—	—	—
Pipeline Inspection	Worker	20.0	18.5	LDA,LDT1,LDT2
Pipeline Inspection	Vendor	10.0	10.2	HHDT,MHDT
Pipeline Inspection	Hauling	2.00	20.0	HHDT
Pipeline Inspection	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Pipeline Inspection	—	323,840	64.5	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	33.5	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events.

Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9
AQ-PM	13.4
AQ-DPM	0.09
Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00
Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1

Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.42858976
Employed	0.61593738
Median HI	9.059412293
Education	—
Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179

Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	33.3504427
Arthritis	0.0
Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8

Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6
Elderly	14.5
English Speaking	72.3
Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9

Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	See project assumptions
Construction: Construction Phases	Total pipeline inspection 6 months, pipeline rehab 4 months
Construction: Off-Road Equipment	See project assumptions
Land Use	Pipeline inspection area
Construction: Dust From Material Movement	Dust movement

Construction: Trips and VMT	See project assumptions
-----------------------------	-------------------------

Cadiz Pipeline - ARAVBO Valves Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Building Construction (2026) - Unmitigated
 - 3.3. Trenching (2026) - Unmitigated
- 4. Operations Emissions Details
 - 4.10. Soil Carbon Accumulation By Vegetation Type
 - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
 - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - ARAVBO Valves
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	0.05	1000sqft	< 0.005	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.61	0.52	4.31	5.55	0.01	0.19	0.46	0.65	0.18	0.09	0.26	—	1,317	1,317	0.03	0.07	0.04	1,340
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.05	0.07	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	0.01	16.0
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.65

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.61	0.52	4.31	5.55	0.01	0.19	0.46	0.65	0.18	0.09	0.26	—	1,317	1,317	0.03	0.07	0.04	1,340

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.01	0.01	0.05	0.07	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	0.01	16.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.65

3. Construction Emissions Details

3.1. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.34	2.80	3.47	0.01	0.07	—	0.07	0.07	—	0.07	—	452	452	0.02	< 0.005	—	453
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.71	3.71	< 0.005	< 0.005	—	3.72
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.62

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.51	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.07	1.07	< 0.005	< 0.005	< 0.005	1.09
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.57	2.57	< 0.005	< 0.005	< 0.005	2.68
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.44
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19

3.3. Trenching (2026) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	3.78	4.86	0.01	0.18	—	0.18	0.17	—	0.17	—	744	744	0.03	0.01	—	747
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.08	4.08	< 0.005	< 0.005	—	4.09
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.68	0.68	< 0.005	< 0.005	—	0.68
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.51	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.71	0.71	< 0.005	< 0.005	< 0.005	0.72
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.71	1.71	< 0.005	< 0.005	< 0.005	1.78
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.77
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.13

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	1/6/2026	1/8/2026	5.00	3.00	—
Trenching	Trenching	1/1/2026	1/2/2026	5.00	2.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Trenching	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Trenching	Graders	Diesel	Average	1.00	8.00	148	0.41

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Trenching	—	—	—	—
Trenching	Worker	10.0	18.5	LDA,LDT1,LDT2
Trenching	Vendor	10.0	10.2	HHDT,MHDT
Trenching	Hauling	2.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	10.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Trenching	—	44.4	1.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
----------	--------------------	-----------

Other Non-Asphalt Surfaces	< 0.005	0%
----------------------------	---------	----

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events.

Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9
AQ-PM	13.4
AQ-DPM	0.09

Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00
Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.42858976

Employed	0.61593738
Median HI	9.059412293
Education	—
Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179
Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—
Insured adults	33.3504427
Arthritis	0.0

Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6
Elderly	14.5
English Speaking	72.3

Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	See project assumptions
Construction: Construction Phases	1 week per valve
Construction: Off-Road Equipment	See project assumptions
Construction: Dust From Material Movement	See project assumptions
Construction: Trips and VMT	See project assumptions

Cadiz Pipeline - Cathodic Protection Repair Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Building Construction (2026) - Unmitigated
- 4. Operations Emissions Details
 - 4.10. Soil Carbon Accumulation By Vegetation Type
 - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
 - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated
 - 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cadiz Pipeline - Cathodic Protection Repair
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	6.80
Location	Cadiz, CA 92277, USA
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5194
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	1,457	1000sqft	33.5	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.79	0.66	5.33	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,506	1,506	0.04	0.08	1.55	1,531
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.78	0.66	5.37	6.98	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,490	1,490	0.04	0.08	0.04	1,514
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.19	0.16	1.29	1.70	< 0.005	0.05	0.06	0.11	0.05	0.02	0.06	—	360	360	0.01	0.02	0.16	366
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.03	0.24	0.31	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	59.6	59.6	< 0.005	< 0.005	0.03	60.6

2.2. Construction Emissions by Year, Unmitigated

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

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

2026	0.79	0.66	5.33	7.23	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,506	1,506	0.04	0.08	1.55	1,531
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.78	0.66	5.37	6.98	0.01	0.22	0.25	0.47	0.20	0.06	0.26	—	1,490	1,490	0.04	0.08	0.04	1,514
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.19	0.16	1.29	1.70	< 0.005	0.05	0.06	0.11	0.05	0.02	0.06	—	360	360	0.01	0.02	0.16	366
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03	0.03	0.24	0.31	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	59.6	59.6	< 0.005	< 0.005	0.03	60.6

3. Construction Emissions Details

3.1. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	4.83	6.29	0.01	0.21	—	0.21	0.19	—	0.19	—	917	917	0.04	0.01	—	920
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	4.83	6.29	0.01	0.21	—	0.21	0.19	—	0.19	—	917	917	0.04	0.01	—	920
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.16	1.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	221	221	0.01	< 0.005	—	222
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.21	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.6	36.6	< 0.005	< 0.005	—	36.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.77	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	143	143	0.01	< 0.005	0.48	145
Vendor	0.01	0.01	0.31	0.13	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	< 0.005	0.04	0.79	326
Hauling	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.28	140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.51	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.01	0.01	0.33	0.14	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	313	313	< 0.005	0.04	0.02	325
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	< 0.005	0.02	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.4	31.4	< 0.005	< 0.005	0.05	31.8
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.3	75.3	< 0.005	0.01	0.08	78.5
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	0.03	33.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.20	5.20	< 0.005	< 0.005	0.01	5.27

Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.01	13.0
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.33	5.33	< 0.005	< 0.005	< 0.005	5.59

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	7/1/2026	10/31/2026	5.00	88.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Graders	Diesel	Average	1.00	8.00	148	0.41

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Building Construction	—	—	—	—
Building Construction	Worker	10.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	10.2	HHDT,MHDT
Building Construction	Hauling	2.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
------------	------------------------	------------------------	----------------------	-------------------------------	---------------------

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	33.5	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	64.9

AQ-PM	13.4
AQ-DPM	0.09
Drinking Water	61.3
Lead Risk Housing	67.3
Pesticides	0.00
Toxic Releases	6.40
Traffic	0.38
Effect Indicators	—
CleanUp Sites	97.5
Groundwater	22.1
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	94.1
Sensitive Population	—
Asthma	34.4
Cardio-vascular	99.5
Low Birth Weights	61.7
Socioeconomic Factor Indicators	—
Education	50.7
Housing	4.03
Linguistic	24.8
Poverty	79.8
Unemployment	76.1

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
-----------	---------------------------------

Economic	—
Above Poverty	20.42858976
Employed	0.61593738
Median HI	9.059412293
Education	—
Bachelor's or higher	30.4889003
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	58.83485179
Active commuting	1.039394328
Social	—
2-parent households	73.18105993
Voting	62.09418709
Neighborhood	—
Alcohol availability	97.0101373
Park access	20.00513281
Retail density	2.630565892
Supermarket access	6.775311177
Tree canopy	0.10265623
Housing	—
Homeownership	46.75991274
Housing habitability	57.3206724
Low-inc homeowner severe housing cost burden	90.69677916
Low-inc renter severe housing cost burden	87.54010009
Uncrowded housing	55.19055563
Health Outcomes	—

Insured adults	33.3504427
Arthritis	0.0
Asthma ER Admissions	58.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	5.5
Physically Disabled	3.9
Heart Attack ER Admissions	8.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	85.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	51.6

Elderly	14.5
English Speaking	72.3
Foreign-born	4.1
Outdoor Workers	67.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.3
Traffic Density	0.2
Traffic Access	23.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	75.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	See project assumptions
Construction: Construction Phases	See project assumptions
Construction: Off-Road Equipment	See project assumptions
Construction: Trips and VMT	See project assumptions